Part I: Project Information

Name of Parent Program
Financing Agrochemical Reduction and Management (FARM)

GEF ID
10910

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Promoting eco-friendly crop protection solutions for persistent organic pollutant and highly hazardous pesticide reduction in Asia

Countries
Regional, India, Philippines

Agency(ies)
UNIDO

Other Executing Partner(s)
HIL(India) Limited; Philippine Agriculture and Resources Research Foundation, Inc.

Executing Partner Type
Government

GEF Focal Area
Chemicals and Waste

Sector

Mixed & Others

Taxonomy

Biodiversity, Focal Areas, Protected Areas and Landscapes, Community Based Natural Resource Mngt, Sustainable Land Management, Land Degradation, Community-Based Natural Resource Management, Sustainable Agriculture, Chemicals and Waste, Pesticides, DDT - Other, Sound Management of chemicals and waste, Green Chemistry, Influencing models, Transform policy and regulatory environments, Demonstrate innovative approache, Convene multi-stakeholder alliances, Deploy innovative financial instruments, Strengthen institutional capacity and decision-making, Type of Engagement, Stakeholders, Information Dissemination, Partnership, Consultation, Participation, Private Sector, SMEs, Communications, Behavior change, Awareness Raising, Public Campaigns, Strategic Communications, Education, Local Communities, Civil Society, Non-Governmental Organization, Community Based Organization, Gender Equality, Gender Mainstreaming, Beneficiaries, Gender-sensitive indicators, Sex-disaggregated indicators, Gender results areas, Capacity Development, Knowledge Generation and Exchange, Access to benefits and services, Capacity, Knowledge and Research

Rio Markers

Climate Change Mitigation

No Contribution 0

Climate Change Adaptation

No Contribution 0

Biodiversity

Significant Objective 1

Land Degradation

Significant Objective 1

Submission Date

3/30/2023

Expected Implementation Start

7/1/2023

Expected Completion Date

6/30/2028

Duration

60In Months

Agency Fee($)

630,000.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CW-1-2	Strengthen the sound management of agricultural chemicals and their wastes, through better control, and reduction and/or elimination	GET	7,000,000.00	52,735,730.00
		Total Project Cost($)	**7,000,000.00**	**52,735,730.00**

B. Project description summary

Project Objective

To establish sustainable financing, investment and incentive mechanisms in the formulations, production and application of eco-friendly crop protection solutions for reduction of persistent organic pollutants (POPs) and highly hazardous pesticides (HHPs) enhancing livelihood, food safety and protection to human health and the environment

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 1: Government regulatory capacity	Technical Assistance	Outcome 1.1 Enabling environment for introduction of crop protection solutions to reduce POPs and HHPs	Output 1.1.1: Legislative and policy framework covering clear definition for bio-pesticides, their registration modalities, and import/export rules harmonized among India and the Philippines Output 1.1.2: Database on pesticide manufacturing, import, export and usage, including HHP, POPs and biopesticides in the Philippines improved	GET	300,000.00	3,607,685.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2: Finance and investment	Investment	Outcome 2.1. Enhancing finance and investment in development, production and application of biopesticides	Output 2.1.1: Technology transfer and upscaling of biopesticide production Output 2.1.2 Financing mechanisms established including loans, marketing infrastructures and insurance schemes, quality enhancement application and fair price initiatives to facilitate the shifting from conventional pesticides to biopesticides Output 2.1.3 Demonstration of biopesticides and phasing-out of HHPs in significant crops in the Philippines, including on-field training Output 2.1.4: Scaling up of bio-pesticides manufacturing and phasing out of POPs	GET	5,000,000.00	35,513,568.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
			and HHPs in India			
Component 3: Capacity and knowledge dissemination	Technical Assistance	Output 3.1. Capacity building and awareness raising in the formulation, production and application of biopesticides with Integrated Pest Management practices	Output 3.1.1. Relevant stakeholders in the agricultural sector (decision makers, manufacturers in public and private sector, farmers including women and youth, and others trained and awareness raised on greener and eco-friendly alternatives Output 3.1.2: Digital hub established for global exchange and access to best practices, knowledge and experience and promote further business opportunities with international and regional buyers	GET	1,047,000.00	7,863,691.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 4: Project Monitoring and Evaluation	Technical Assistance	Outcome 4.1: Project monitoring and evaluation based on lesson learnt ensured	Output 4.1.1. Project inception and monitoring carried out Output 4.1.2 Independent mid-term review and terminal evaluation undertaken	GET	320,000.00	2,875,786.00
			Sub Total ($)		**6,667,000.00**	**49,860,730.00**
Project Management Cost (PMC)						
				GET	333,000.00	2,875,000.00
			Sub Total($)		**333,000.00**	**2,875,000.00**
			Total Project Cost($)		**7,000,000.00**	**52,735,730.00**

Please provide justification

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	HIL(India) Limited	Equity	Investment mobilized	600,000.00
Recipient Country Government	HIL (India) Limited	Grant	Investment mobilized	12,900,000.00
Recipient Country Government	HIL(India) Limited	In-kind	Recurrent expenditures	2,000,000.00
Recipient Country Government	Vivekananda Institute of Biotechnology	In-kind	Recurrent expenditures	25,000.00
Recipient Country Government	Fertilizer and Pesticide Authority	Equity	Investment mobilized	1,296,296.00
Recipient Country Government	Fertilizer and Pesticide Authority	In-kind	Recurrent expenditures	3,796,852.00
Recipient Country Government	Development Bank of the Philippines	Loans	Investment mobilized	10,000,000.00
Recipient Country Government	Department of Agrarian Reform Tarlac	Grant	Investment mobilized	6,482.00
Recipient Country Government	Department of Agrarian Reform Tarlac	In-kind	Recurrent expenditures	831,620.00
Civil Society Organization	District 1 of Tarlac Province	Equity	Investment mobilized	61,111.00
Civil Society Organization	District 1 of Tarlac Province	In-kind	Recurrent expenditures	111,333.00

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Private Sector	JC Dots Agri Trading	Equity	Investment mobilized	2,572,222.00
Private Sector	JC DOts Agri Trading	Grant	Investment mobilized	593,704.00
Private Sector	JC Dots AgriTrading	In-kind	Recurrent expenditures	698,148.00
Private Sector	Leganes Premier Land Corp.	Grant	Investment mobilized	2,777,778.00
Private Sector	Leganes Premiere Land Corp.	In-kind	Recurrent expenditures	3,148,148.00
Civil Society Organization	Taguibo Integrated Farmers Association, Inc.	Equity	Investment mobilized	240,740.00
Civil Society Organization	Taguibo Integrated Farmers Association, Inc.	In-kind	Recurrent expenditures	10,796,296.00
GEF Agency	UNIDO	Grant	Investment mobilized	130,000.00
GEF Agency	UNIDO	In-kind	Recurrent expenditures	150,000.00
			Total Co-Financing($)	**52,735,730.00**

Describe how any "Investment Mobilized" was identified

Investment mobilized is primarily a contribution of Hindustan Insecticide Limited (HIL) India, a Central Public Sector Enterprise under the Ministry of Chemicals and Fertilizers and the loan program of the Development Bank of the Philippines. HIL India has provided a co-financing commitment of INR 129 million crore (US$ 15,500,000) covering mainly infrastructures for the production of biopesticides and related programs in the organization. While in the Philippines, the Development Bank of the Philippines (DPB) has an umbrella program for Agricultural Sector (Sustainable Agribusiness Financing Program and Sustainable Waste Management for Enhanced Environmental Protection) where producers/manufacturer of biopesticides could access at cooperative level and farmers cooperatives in managing agrichemicals-related wastes. Other banking institutions, such as the Land Bank of the Philippines, that provide financial services

on sustainable food and agriculture aiming to transform the global food system will be explored during the project implementation. Co-financing in the form of investment has also been committed by beneficiary areas, including Tarlac, Davao Oriental and Iloilo City, on the areas where project interventions will be implemented. All these investments have been mobilized and will serve as strong baseline to the GEF incremental grant.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNIDO	GET	India	Chemicals and Waste	POPs	3,500,000	315,000	3,815,000.00
UNIDO	GET	Philippines	Chemicals and Waste	POPs	3,500,000	315,000	3,815,000.00
			Total Grant Resources($)		**7,000,000.00**	**630,000.00**	**7,630,000.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount ($)

200,000

PPG Agency Fee ($)

18,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)

Total Project Costs($)

Core Indicators

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	2900000.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	2,900,000.00		

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 9 Chemicals of global concern and their waste reduced

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.00	35,600.00	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
DDT		2,700.00		

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.3 Hydrochloroflurocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
	2		

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.7 Highly Hazardous Pesticides eliminated

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
	32,900.00		

Indicator 9.8 Avoided residual plastic waste

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female		322,000		
Male		1,129,000		
Total	0	1451000	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Part II. Project Justification

1a. Project Description

The project structure presented in this document is consistent with that presented in the concept prepared for the child project. The project framework is essentially the same with the main component on Finance and Investment having the main budget allocation. Due to the detailed assessment made during the PPG phase, however, some changes have been incorporated in the present document compared to the original concept. The budgets for the different components have been refined and redistributed to a limited extent but these did not impact the total GEF grant. Some outputs have been reworded and further elaborated.

A) THE GLOBAL ENVIRONMENTAL AND/OR ADAPTATION PROBLEMS, ROOT CAUSES AND BARRIERS THAT NEED TO BE ADDRESSED

1. The use of agrochemicals is still increasing globally. It continues to play an important role in ensuring food supply for a growing population in a changing global climate and declining crop losses due to pests and therefore, provides good economic benefits. The boost in food production enabled by pesticides, however, comes at a significant global cost to the environment and ecosystem including soil fertility, biodiversity conservation, marine resources loss and most persistent pesticides bioaccumulation of toxic chemicals in the food chain affecting the human health and farmer livelihood.

2. Indeed, the view of soil as a meta-organism having an immune systems, which is destroyed not only by wide-spectrum pesticides but also by the monoculture practices is emerging. Understanding of the soil microbial consortia and mechanisms involved in plant disease suppression may help to better manage plants while reducing fertilizer and pesticide inputs. Research also show that intensive monoculture is a major cause of soil erosion, biodiversity and fertility loss (Palmer and Smith, 2013).

3. Pesticides are inherently hazardous, and among them, a number of Highly Hazardous Pesticides (HHPs) and Persistent Organic Pollutants (POPs) cause disproportionate harm to the environment and human health including severe environmental hazards, high acute and chronic toxicity.

4. POP pesticides may bio-accumulate into the food chain and can be transported over large distances through air and water. In 1995. the United Nations Environment Programme (UNEP) expanded its research and investigation on POPs with an initial focus on what became known as the ?Dirty Dozen?. These were a group of 12 highly persistent and toxic chemicals: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzen, mirex, polychlorinated biphenyls, polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans, and toxaphen. Many of the pesticides in this group are no longer used for agricultural purposes but a few ? like DDT continue to be used in developing countries (UNEP, accessed Sept. 2022). Dicofol, also a POP pesticide, has been recently included in Annex A of the Stockolm Convention as a result of the 9th Conference of the Parties held in 2019.

5. The Food and Agriculture Organization (FAO) and World Health Organization (WHO) has adopted the following definition for HHPs, which are pesticides that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems such as WHO or Global Harmonized System (GHS) or their listing in relevant binding international agreements or conventions. In addition, pesticides that appear to cause severe or irreversible harm to health or the environment under conditions of use in a country may be considered to be and treated as highly hazardous. In 2015, SAICM Fourth International Conference of Chemicals Management (ICCM4) adopted a resolution that recognizes HHPs as an issue of international concern and calls for concerted action to address HHPs.

6. According to FAO, at a global level the total pesticide use in agriculture remained stable in 2018 with 4.12 to 4.15 million tons and the worldwide application of pesticides per area of cropland of 2.63 kg/ha. In a regional level, Asia is the top contributor to global pesticides use, accounting for more than 50% of the world total in 2018. The region applied nearly 2.17 Mt of pesticides to cropland during the 2010s at a mean application rate of nearly 3.72 kg/ha (FAOSTAT, 2020).

7. FAO Stat (2020) reported the global pesticide trade, which reached approximately 5.9 million tonnes in 2018, with a value of USD 37.6 billion. Of this total, trade in hazardous pesticides was 78,000t, with a value of USD 357 million. Traded quantities of total pesticides increased three-fold in the 2010s as compared to the 1990s. Conversely, and reflecting international commitments made under the Rotterdam Convention, the global trade of hazardous pesticides decreased substantially during the period 2007?2018. The top five importers of hazardous pesticides in 2018 were Myanmar, Malaysia, the Philippines, Thailand and Costa Rica, with values ranging USD 20?80 million while the top five exporters of hazardous pesticides in 2018 were Thailand, South Africa, the United States of America, Malaysia and Nigeria, with values ranging USD 10?30 million. Of these, Nigeria and Thailand were the only countries to see their exports increase over the period 2007?2018.

8. The root causes hindering the adoption of alternatives to POPs and HHPs have been identified as follows:

? There is currently no allocated funds for the expected low yield farmers since sustainable farming (including biofarming) using biopesticides and IPM is considered a low yield farming, according to the experience of the department of agriculture in the Philippines. Significant investment are missing for R&D for science-based technologies, for field data gathering and for conducting awareness campaigns on the health and ecological benefits of organic farming.

? The lack of awareness on the benefits of biopesticides and the strong lobbying and marketing of the chemical pesticide industry are some of the root causes for the minimal to non-adoption of biopesticides.

? In addition, the complex process of biopesticide registration and accessibility to research laboratories exacerbated the situation.

? In the Philippines, the transition from chemical based to organic farming is a challenge since only 2% of the farming activities in the country utilize organic farming.

9. The main barriers toward the use of biopesticides have been identified as follows:

Type of barrier	Barriers
Institutional and regulatory	Weak policy and regulatory systems are mainly focused on increasing production and policies for registration and management of agrochemicals are done by individual countries, creating regulatory loopholes in the international supply chains.
Technology and practice	Low levels of sustainable financial support for alternatives where majority of farmers remain excluded from the global certification schemes and market premiums for increased compliance to higher production standards on pesticides inputs. Absence of integration of biopesticides with Integrated Pest Management (IPM) practices in the business plan of most of the major international industries, or even their role in the development of more biodiverse agriculture.
Capacity and awareness	Capacity and knowledge to disseminate the effective greener and eco-friendly alternatives at all levels. General awareness on available alternatives remains low among regulators, investors and farmers hindering the market development and accelerated growth of the market share of the alternative products, keeping the current options expensive and labor-intensive. Reluctance to switch to biopesticides, biologicals or biocontrol products; either because these agrichemical industries still want to sell their ?old? portfolio, or they see biopesticides merely as add-ons, not stand alone products, even though biologically-based crop protection is possible as a stand-alone technology. Many case studies have demonstrated their efficiency and cost effectiveness (Jakel, 2004 and Jakel, 2015)
Financial	Limited access to green financing for transitioning from chemical to organic based agriculture

The current project aims to address the root causes and eliminate the barriers identified above.

2) THE BASELINE SCENARIO AND ANY ASSOCIATED BASELINE PROJECTS.

Overview of the agriculture and agrichemical sector situation in India

10. The Indian agriculture sector plays an integral role in the Indian economy and is responsible for the livelihoods of more than half of India?s population. The country is the largest producer of spices, pulses, milk, tea, cashew, jute and the second-largest producer of wheat, rice, fruits and vegetables. Despite the vast scale of Indian agriculture and several efforts by the Government and private institutions, the sector faces challenges like fragmented landholding, low productivity, lack of irrigation facilities and inadequate awareness among stakeholders that limit its potential to grow further.

11. Though globalization has had a significant effect on the growth of India?s agricultural output, it has negatively impacted farmers due to higher input and lower output costs. The scenario of reduction of commercial bank credit to agriculture led to a reduction in agricultural investment. Infrastructure development has also been affected due to lack of public expenditure in the wake of new policies of fiscal compression. Liberalization of open market operations enhanced competition in resource use, and agriculture marketing resulted in farmers adopting distress sale, thereby leading to agriculture becoming a loss-making profession.

12. Since 2007, Indian agriculture sector grew steadily, making a remarkable contribution to the economy due to the introduction of various reforms in the country. Few significant challenges such as small and

fragmented land holdings, lower productivity, lack of infrastructure, etc., are present, which is constraining the potential development of the agriculture sector in India.

13. Agricultural inputs like seeds, fertilizers and agrochemicals play a major role in improving agricultural output. The agrochemicals industry has the potential to play a major role in terms of improving productivity through increased and scientific usage of agrochemicals while meeting the global standards of residue level required for agricultural exports. It can also directly contribute to the country?s economic growth by becoming a global manufacturing and export hub. However, due to the challenges posed by the regulatory and policy landscape governing the Indian agrochemicals industry and the inherent problems related to extension services, poor penetration of technology and inefficient marketing systems are major hinderances in unlocking this growth.

14. As per the Land Use Statistics of 2020, the total geographical area of the country is 328.7 million hectares (ha) , of which 139.35 million ha is the reported net sown area and 170.4 million ha is the gross cropped area with a cropping intensity of 141.60%. The net irrigated area is 71.55 million ha. The average landholdings of Indian farmers stand at 1.08 ha. The farm areas of Europe and the US are approximately 30 and 150 times larger than that of India. Registration of pesticides and biopesticides in India

15. There are 293 active ingredient of pesticides registered in India, resulting in thousands of different pesticide formulation. It is reported that 104 pesticides are still being produced/used in the country despite being prohibited in two or more nations around the world (GoI, 2021). Out of total insecticides used for pest management in India, 50% are diverted to cotton pest management.

16. The most often used insecticides are organophosphates, followed by neonicotinoids and pyrethroids. According to Sucheta Yadav and Subroto Dutta (2019) , cotton is the most pesticide-consuming agri-product (93.27%), followed by vegetables (87.2%), wheat (66.4%), millet (52.6%), and mustard (12.6%).

17. The Insecticide Act (1968) (amended in 2000) is the only legislation under the Indian Government, which governs the import, manufacture, sale, transport, distribution, and use of all types of insecticides, including biopesticides. The Central Insecticide Board and Registration Committee (CIB&RC) also provides an additional framework for this act. In exercise of the powers conferred by Section 36 of the Insecticides Act, 1968 (46 of 1968), the Central Government, after consultation with the CIB made insecticides Rules, 1971, which governs the manufacture, grant of a license, expiry of the license, product labeling, packaging and sale, and use of insecticides. The Registration Committee (RC) grants registrations, only after the data is provided on the efficacy and safety of products to human beings and animals. The rule also assures that the samples of pesticides should be regularly checked for quality purposes. In the case of biopesticides, shelf-life, cross- contamination, moisture content, and packaging are considered.

18. In 2015 the Government also passed a bill known as the Insecticides (Amendment) Bill, 2015. The Bill added a modification in Section 9 of the Insecticide Act (1968), after sub- Section (3C), the sub-sections of nanotechnology-based pesticides were inserted. Based on the guidelines of the Organization for Economic Co-operation and Development (OECD), the CIB has not only streamlined the guidelines

and data requirements for registration but also mentioned minimum infrastructural facilities required for the production of biopesticides.

19. Guidelines/data requirements for minimum infrastructure facilities and the same for the registration of biocontrol products under Sections 9 and 9 (3B) are being governed by RC of CIB. The registration for biopesticides and botanical pesticides introduces some additional complexities that, although intended to protect human health and product quality, have the effect to discourage the manufacturers. For instance, in the case of bacterial and fungal biopesticides, the bio-efficacy data needed to be generated from Indian Council of Agricultural Research (ICAR), Council of Scientific and Industrial Research (CSIR) or Indian Council of Medical Research (ICMR) institutes. For claiming shelf-life, the registrants should provide data of two different agro-climatic locations at ambient temperature along with the meteorological data. The requirement of agro-climatic and meteorological data creates an extra burden on manufacturers and discourages them in expanding their business. For example, microbes isolated from a particular agro-climatic region showing efficient biocontrol activity may or may not show the same results in a different agro-climatic zone. Conventional toxicity tests may also prove challenging or inconsistent due to the high specificity of some biopesticides, which are highly toxic to their biological targets and substantially harmless to any other endpoint. Hence, CIB&RC is also taking into account such and other issues that are directly affecting the manufacturing process of biopesticides.

20. Despite the complex registration, there are currently 970 biopesticide products registered with the CIB&RC, compared to the 293 conventional pesticide registered. Bacterial, fungal, viral, and other (plant-based, pheromones) biopesticides account for 29, 66, 4, and 1% of total biopesticide production, respectively. The main biopesticides manufactured and used in India are Neem-based insecticides, Bacillus thuringensis, NPV, and Trichoderma. As per CIB&RC, Tricoderma, Psedomonas, and NPV-H (nuclear polyhedrosis virus of Helicoverpa armigera) are the most often used biopesticides in the last two years i.e., 2019-20 and 2020-21. However in India, most biopesticides, except some used in agriculture, are employed in public health. It was found that biocontrol is the only technology that can be used to control the widespread resistance of chemical pesticides to pest insects in a safe, cost- effective, and environmentally beneficial manner. Biopesticides were later included in IPM, which had previously relied only on the application of chemical pesticide.

21. Major Players of biopesticides in India are: Bioworks Inc., Sumitomo Chemical India Pvt. Ltd, Koppert Biological Systems India Pvt. Ltd, Nav Agro Pvt. Ltd and Kilpest India Ltd.

Overview of the agriculture and agrichemical sector situation in the Philippines

22. According to the ?2020 Philippines in Figure? by the Philippine Statistics Authority, there are 5,563,138 holdings/farms that covers 7,271,446 ha . The average area of a single holding/farm is at 1.29 ha. The Philippines has a total of 9.7 million agricultural workers or 22.9% of the total workforce in 2019. In which 7.46 million are male and 2.24 million are female. Western Visayas, where one of the project sites will be located, registered the highest number (657,000) of agricultural workers. (source: Philippine Statistics Authority Employment and Wages in Agriculture Sector report)

23. The number of child workers (1,273,000) in agriculture (defined that a child is considered working or economically active if at any time during the reference period he/she is engaged in any economic activity for at least one hour), decreased by 560,000 or 44.4% in 2019. In 2019, the number of children (aged 5 to 17 years old) working in agriculture increased to 122,000 in Northern Mindanao

24. In 2021, the Philippines? Gross Domestic Product is recorded at a 5.7% growth for 2021. The Gross Value 2 in Agriculture, Forestry, and Fishing (AFF) shared 9.6% in the recorded GDP. In relation to this, the value of production in agriculture and fisheries went down by -1.7% in 2021, this was due to the decrease in value of livestock and poultry production. The fisheries sector also recorded a growth value in 2021, while the crops sector grew at a faster rate of 2.2% in the same year.

25. The Fertilizer and Pesticide Authority (FPA) data on pesticides constitutes importation of 412,295 metric tons of pesticides from 2018 to 2020. . These are composed of formulated and technical pesticides, which are further classified into groups. In 2021, the country recorded a total of 68,449,434.58 kg/l of pesticides imported.

26. Insecticides are by far the most used type of pesticide in the Philippines; they represented 56% of the total pesticide trade in the country. The most widely used pesticide types are organophosphates, carbamates and pyrethroids. The three most important crops using pesticides are vegetables, banana and rice. While the largest gross amount of pesticides in the Philippines is used in rice (due to a larger production area), pesticides are used more intensively in vegetables.

27. Filipino farmers rely heavily on the use of pesticides for their pest management. They use pesticides above the recommended dosage. For instance, for rice paddies per cropping season, about 2,600l, 1,300l and 1,300 - 2,600 liters of insecticide, herbicide and fungicide/molluscicide per hectare respectively. The continuous use of harmful pesticides poses an increasing risk in health and environment.

28. According to the list published by the Bureau of Agriculture and Fisheries Standards (BAFS), there are 25 registered organic farms in the Philippines. BAFS also published its list of third-party certified organic operators. There are a total of 87 registered organic farms and companies, which covers 738.47 ha.

Registration of pesticides and biopesticides in the Philippines

29. Regulation of pesticides and biopesticides in general is governed by the FPA in the Philippines. The Pesticide Regulations Division (PRD) of FPA handles the processing of product registration and licensing of pesticides based on the Pesticide Regulatory Policies and Implementing Guidelines (FPA 2020):

30. All applications received shall be screened for completeness by the designated Registration Coordinator within one (1) week. The FPA relies on accredited consultants for carrying out this evaluation/assessment. For proprietary products, simultaneous evaluation of specifications, bioefficacy and residue/fate tests in the environment shall be three (3) months while that of toxicology tests will be

nine (9) months. There is no differentiation in the registration process among chemical pesticides and bio-pesticides.

31. If the evaluators have some questions on the data submitted or require other information on the product, a status report or registration indicating these concerns shall be sent to the applicant, which will have to resubmit this information. For pesticides that have questionable data or issues which the evaluator recommended for further review is referred to Pesticide Policy and Technical Advisory Committee (PPTAC) for resolution (see Figure 1 below).

32. Comparing the registration process for pesticides in both countries, India and the Philippines, there are similar requirements and steps are to be undertaken except for the registration of organic biopesticides where in the Philippines, another bureau under the Department of Agriculture (DoA) is issuing the permit.

33. In the Philippines, the registration of biopesticide is done by the FPA with the exemption of the 100% organic, which is under the mandate of BAFS. The process of registration may take about three (3) months to two years depending on the completeness of the requirements and the identified crop for pesticide application. In addition, there is a limited number of accredited biopesticide certifiers and limited access to pesticide and soil laboratories.

34. There is a need for a clear definition on biopesticide since currently in the FPA manual, this is classified under ?biorational pesticides?. Further criteria are thus needed to demarcate between biopesticide and organic biopesticide considering that FPA and BAFS are independent permit issuers.

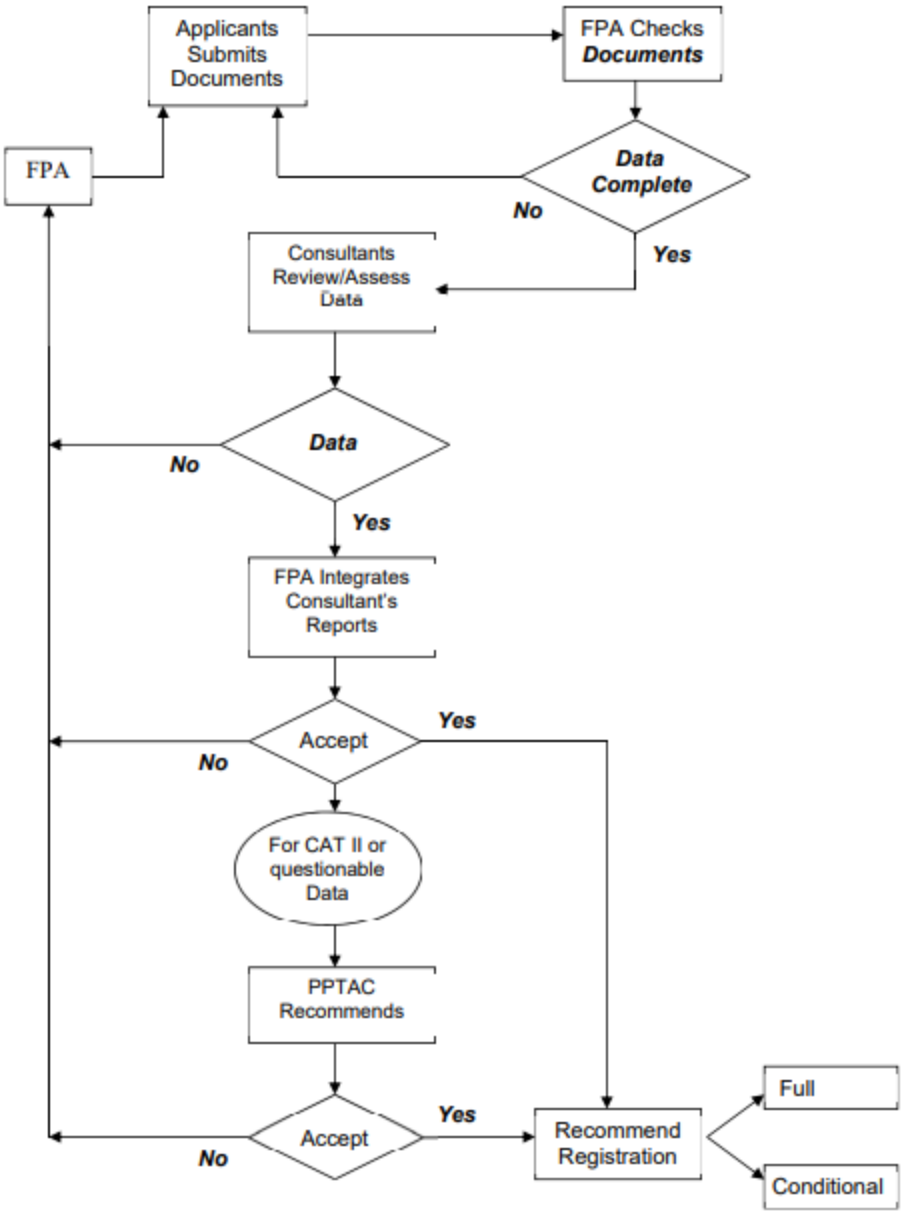


Figure 1. Pesticide product registration process (FPA, 2020).

ASSOCIATED BASELINE PROJECTS

A. India

35. In India, the Directorate of Plant Protection, Quarantine and Storage (DPPQS) under the Ministry of Agriculture and Farmers Welfare (MoA&FW)and the Department of Chemicals and Petrochemicals (DCPC) under the Ministry of Chemicals and Fertilizers (MoCF) maintains the database on import, exports, indigenous manufacturing, crop-wise and state-wise consumption pattern and other related information on different pesticides including the bio-pesticides. The information is collated from different National/State institutions and uploaded on public domains

36. Besides the government database, many industry associations also maintain the database on production and consumption of pesticides (including bio-pesticides) in the country.

37. HIL (India) Limited (A Government of India Entity), with the financial support of GEF/UNIDO, has set up a commercial manufacturing facility for non-POP alternatives to DDT under the project ?Development and Promotion of non-POP alternatives to DDT?. Under this project, three non-POP vector control products are identified for commercialization namely Long Lasting Insecticidal Nets (LLINs), Bt based biopesticides and Neem based botanical pesticides.

38. Some of the financial schemes that support farmers in India include the following:

? Income support to farmers via PM Kisan Yojana: Through Pradhan Mantri Kisan Samman Nidhi Yojana, the Government provides USD 80 per year in 3 equal instalments to the farmers. A total of USD 1.8 trillion have been released so far to more than 117 million families.

? The Paramparagat Krishi Vikas Yojana (PKVY), an initiative to promote organic farming in the country, was launched by the Government in 2015. According to the scheme, farmers will be encouraged to form groups or clusters and take to organic farming methods over large areas in the country. The aim is to form 10,000 clusters over the next three years and bring about half million acres of agricultural area under organic farming. The government also intends to cover the certification costs and promote organic farming through the use of traditional resources. Each farmer enrolling in the scheme will be provided INR 20,000 per acre by the government spread over three years time.

? Pradhan Mantri Fasal Bima Yojana (PMFBY) was launched in 2016 to solve the problems of high premium rates for farmers and reduction in sum insured due to capping. In the past 5 Years of implementation, 290 million farmers have enrolled and over 90 million (Provisional) farmers have received claims.

? Kisan Credit Card Facility (KCC): The benefit of concessional institutional credit through KCC at 4 % interest/annum has also now been extended to Fisheries & Animal Husbandry/Livestock farmers for meeting their short-term working capital needs.

? Natural Farming Bhartiya Prakratik Krishi Paddhati (NF-BPKP) is a chemical free farming system aimed at promoting traditional indigenous practices with exclusion of all purchased synthetic chemical inputs directly or indirectly. National Mission on Natural farming aims at creating institutional capacities for documentation and dissemination of best practices, make practicing farmers as partners in promotion strategy, ensure capacity building and continuous handholding and finally attracting farmers to the natural farming willingly on the merit of the system. The mission objectives includes activities for awareness creation, capacity building, promotion and demonstration of Natural Farming. Various National/State/District/Block/Village and Academic institutions have been identified as the stakeholders in the NF-BPKP. Financial allocation is done at various levels of the programme including Farmers Field Schools (FFS), Farmer Producing Organisation (FPO), Krishi Vigyan Kendras (KVKs), Block level agriculture extension offices, etc. The overall financial outlay of the mission for a period of four years (FY 2022-23 to FY 2025-26) is INR 15840 million (approx. USD 180 million).

? eNational Agriculture Market (eNAM) came into existence as a pan-India electronic trading portal network connecting the existing Agricultural Produce Market Committee (APMC) mandis. The objective is to create a unified national market for agricultural commodities and promote uniformity in agriculture marketing through integration of markets, remove market information asymmetry as well as promote

real-time price discovery. During and after COVID The e-NAM app ? an e-commerce platform ? was expanded to include about 415 more local wholesale markets to the eNAM platforms. Thus, the total number of electronically connected wholesale markets currently stands at 1,000. The trade on the digital portal has already exceeded USD 12 billion. As per the current status, 1,000 APMC markets present in 18 states and three union territories (UTs) are integrated into the e-NAM digital platform. There are more than 20 million farmers, 2,140 FPOs, and 22 million traders registered in the e-NAM portal.

? The Prime Minister of India announced an USD 260 billion economic package to negate the impact of the COVID-19 pandemic out of which USD 13 billion was allocated to agriculture and allied sector. The main objective of the fund was to boost the creation of agricultural infrastructure like cold storage chains, post-harvest management and warehouses.

39. The following baseline initiatives are also undertaken in India for capacity building and knowledge dissemination:

? The National Centre for Organic Farming (NCOF) is a nodal organization for promotion of organic farming under Integrated Nutrient Management (INM) Division, Department of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India under Soil Health Management component of National Mission on Sustainable Agriculture (NMSA), came into force in 2004. Out of the 170.4 million ha of agricultural land in India, around 3.5 Million hectares have been converted to organic farming by 2021. Below are the different schemes launched by the MoA&FW for the welfare of farmers and growth of the agriculture sector;

? HIL (India) Ltd. launched a campaign in 2016-17 to impart the training to the farmers on ?Safe & Judicious use of Pesticides and Adoption of Integrated Pest Management Practices and promoting the use of Bio Pesticides?. The broad objective of the programme is to educate farmers on safe and judicious use of Pesticides in crops and creating awareness among farmers towards adoption of Integrated Pest Management (IPM) Practices to minimize pesticides residue in food grains, edible oils, fruits and vegetables and promoting use of safer/greener alternatives. Under this initiative, HIL has trained more than 70,000 farmers through 106 meetings organised across the country (from 2016 to September 2022).

? HIL (India) Ltd., with the financial support from the MoCF is planning to organise another 15 farmers training programmes in different parts of the country thereby training another 6000 farmers. The training programme will be organised in paddy, tea and vegetable crop areas. The budget planned for the activity for the left over period in FY 2022-23 is INR 5.2 million (USD 70,000), and with this the total budget utilised under the farmers training programme during the FY 2022-23 is INR 9.25 million (USD 123,333).

B) Philippines

40. In the Philippines, FPA has no integrated database management system pertaining to pesticide and fertilizer. They are currently using separate Excel sheets for specific data information such as importation, suppliers and distributors, which however do not include data on the consumption and crop usage.

41. The Central Luzon State University (CLSU) have found six plants possessing botanical pesticide or biopesticide properties, which can be an alternative to chemical pesticides. The biopesticides were developed under the Biodiversity Industry Strategic S&T Program (BISP) of the Philippine Council

of Agriculture, Aquatic and Natural Resources Research and Development of the Department of Science and Technology (DOST-PCAARRD). CLSU hopes to address the challenges in biodiversity through the assessment and conservation of critical biological diversity for ecosystem services and development of biodiversity-based products such as biopesticides, nutraceuticals, food, and novel products.

42. JC DOTS Agri Trading Company, organic fertilizer and soil ameliorant producer, established in 2016 with vast experience of testing compost and soil conditioner for soil restoration in areas in Regions 1, 2 and 6 in the Philippines. It uses the Philippine Nuclear Research Institute(PNRI) and Department of Science and Technology (DOST) irradiated carrageenan (AquaOro) for soil ameliorant and spearheaded field testings in several regions in the country. AquaOro is in the process of commercialization.

43. Some of the financing schemes that provide support to farmers include the following.

? The Philippines Partnership for Sustainable Agriculture (PPSA) was formally launched in 2015 by Grow Asia and the DoA in partnership with local and global companies. In 2017, Grow Asia launched its collaboration with the Philippine Business for Social Progress (PBSP), a business-led social development organization committed to poverty reduction. In June 2020, Grow Asia ended the partnership with PBSP to establish PPSA as a legal entity. The collaboration established the PPSA Secretariat, which serves as an in-country coordinating body. It has been providing on-the-ground support to Working Groups in the areas of performance measurement, resource mobilization, research and technical assistance as well as communications.

? The Asian Food and Agriculture Cooperation Initiative (AFACI) created the Asian Network for Sustainable Organic Farming Technology (ANSOFT) project in 2009. ANSOFT looks to promote communication networks in terms of organic technology development, both nationally and internationally. The project produces a database of successful organic farming techniques, pest and soil management, traditional practices and knowledge of natural resources. In 2015, sustainable agriculture in the Philippines was recognized out of 11 participating ANSOFT nations with the ?Outstanding Country? award.

? The Development Bank of the Philippines (DBP) Sustainable Agribusiness Financing Program (SAFP) is the Bank?s umbrella program for the Agricultural Sector. The SAFP aims to promote agribusiness for countryside development and enhance competitiveness and productivity of farmers and fisherfolks in the country by providing financial assistance for agribusiness project

? The DBP Expanded Rice Credit Assistance Under Rice Competitiveness Enhancement Fund (ERCA-RCEF) is a credit facility to support rice farmers, their cooperatives, and for improving the productivity of local rice farmers and increasing their income amidst liberalization of the schulferien rom rice trade policy. Eligible Borrowers are Individual rice farmers, which are listed in the Registry System for Basic Sectors in Agriculture (RSBSA)

? The Pasali Foundation backs Sustainable Agriculture Programs (SAP) that work toward infrastructure support, capacity building, seed banking and agroforestry, as well as addressing issues of land tenure and seeking the interest of microfinancing institutions. The SAP are housed under the larger concept called ?From Brain Drain to Brain Gain?, a strategy to alleviate poverty by investing technologies and skills learned nationally and internationally into local development. The Brain Gain concept focuses on food security, economic sustainability and environmental sustainability through climate change mitigation. (source: pasaliphilippine.org)

? The Philippine Rural Development Project, with World Bank approved financing in 2014, focuses primarily on farming infrastructure that supports sustainable agriculture in the Philippines. The project estimates a direct impact for two (2) million farmers and fisherfolk, and indirect impacts for 22 million citizens in the region. Currently in its fourth year, the project expects to achieve major increases in the household incomes of farmers and fisherfolk, as well as small business incomes and product values. The project also partners with the Global Environment Facility (GEF), whose focus is on the conservation and protection of selected coastal and marine areas in the region .

44. On Capacity building and knowledge dissemination, some of the initiative are the following:
? The Agricultural Training Institute (ATI), created through Executive Order No. 116 on January 30, 1987, is responsible for the training of all agricultural extension workers and their clients, who are mostly farmers and other agricultural workers, ensure that training programs address the real needs of the agricultural sector, and ensure that the research results are then communicated to the farmers through the appropriate training and extension activities .
? There is no evidence of current training program in the Philippines related to the application of bio-pesticides. However, a training on IPM under KASAKALIKASAN, with even inclusion into university level curricula, has been developed and undertaken in 1993 for about 10 yrs . The Philippines? model emphasised human resource development, ecological perspective and participatory training methodologies and was taken as an example in other South East Asian (SEA) countries.

C) THE PROPOSED ALTERNATIVE SCENARIO WITH A DESCRIPTION OF OUTCOMES AND COMPONENTS OF THE PROJECT.

THEORY OF CHANGE of the project

45. **Alignment of the child project with the FARM programme**

The FARM programme?s theory of change proposes a three dimensional approach to address the identified root causes underlying the continued use of POPs and HHP pesticides and low-quality agricultural plastics, and the barriers to achieve the transition to a no/low chemical agriculture as follows:
? Enabling conditions for the sound management of chemicals and waste through policy and enforcement (Component 1 ? Policy and Enforcement)
? Establishing sustainable resources for the transition to low/no-chemical agriculture through finance and investment (Component 2 ? Finance and investment)
? Building capacity and making knowledge accessible through the sound management of chemicals and waste (SMCW) (Component 3 ? Capacity and knowledge)
The present child project follows the same approach as the Programme with the three following components to solve the identified root causes:
? Component 1: Government regulatory capacity (Outcome 1.1 Enabling environment for introduction of crop protection solutions to reduce POPs and HHPs)
? Component 2: Finance and investment (Outcome 2.1. Enhancing finance and investment in development, production and application of biopesticides)

? Component 3: Capacity and knowledge dissemination (Output 3.1. Capacity building and awareness raising in the formulation, production and application of biopesticides with Integrated Pest Management practices)

46. **Project Components, Outcome and Outputs:**

The project outputs are described in detail in the section ?Alternative scenario? of this CEO Endorsement document. In summary, the project will deliver seven (7) project outputs, which will address the issues and challenges depicted above through the proper channelling of resources and technical inputs. The outputs under Component 1 (Government and Regulatory capacity) will address the regulatory issues through the preparation of common guidelines, not requiring a lawmaking effort, which will clarify the registration and import/export modalities. Under Component 2 (Finance and Investment) the project will invest to ensure the demonstration and the scaling up of biopesticide use and manufacturing in India and the Philipines, with the associated phasing out of POPs and HHPs, and will enhance the capacity of farmer to apply to existing financing schemes for financial support for the transition to biopesticide or low-chemical agriculture. Under Component 3 (Capacity and knowledge dissemination) a massive training covering all the lifecycle aspects of selected biopesticides (manufacturing, registration, application) will be carried out, and a digital hub as a repository of knowledge and experiences from project implementation and serve as a hub to introduce the market information on participated pesticide manufacturers and farmers will be established.

47. **Project regionality**

In this FARM child project, the synergy between India and the Philippines is high and will be fully exploited to ensure project success. The Indian industry on biopesticide manufacturing is more advanced than the one in the Philippines, however the market of Indian biopesticides remained, so far, at national level. In the Philippines, there are already plantations of Neem trees, which may be used for the manufacturing of Neem based pesticides. Philippine agro-industry has already developed the capacity to test new products in a range of different crops and climate conditions. The cooperation among the two countries could, from one side, allow Indian manufacturers to extend the range of applications of their biopesticide products, and from the other side, could allow Philippine agriculture to benefit from the use of these low-impact products. The fact that both countries are anglophone, and that their technical regulation on pesticide is written in English will furthermore facilitate the knowledge exchange among them, with specific reference to Train of Trainers events, definition of common guidance on import and export, registration, etc.

48. **Baseline and associated baseline projects**

In both India and the Philippines, there are available financing schemes for farmers but access to these facilities are limited by either the complexity of requirements or lack of awareness on the availability of such funds. Both countries are affected by an extremely small average size of landholdings, which is 1.08 hectares for India and around 1.29 hectares for the Philippines. Small farmers are exposed to high risks of losing their income because of natural events, improper treatment of their crops, climate risks, and at the same time are the ones experiencing the highest challenges to access financial support. Therefore,

the project will develop assistance and strategies to support small farmers in accessing the technological benefits associated with biopesticides, and the financial benefits which may derive from the application to existing support funds.

49. **Challenges**

Regulation on pesticide registration and detailed procedures for the registration of pesticides have been established in the two participating countries. Biopesticides are however a relatively new field, which is not well captured by the existing regulations. First of all, in some cases they cannot easily be identified as a single substance ? like Trichoderma and Bacillus thuringensis as they are living organisms. Their high specificity for target organisms makes the standard toxicity tests for verifying their toxicity on other organisms ? usually required under registration procedures - not directly applicable. The development of more suitable procedures for the registration of biopesticides would therefore have a significant impact in both countries. Similarly, there is the need to harmonize the import and export rules for biopesticide among the two participating countries to ensure a smooth trading of these substances.
In addition to the regulatory issues, in both countries, the limited trust from farmers is a challenge to be addressed to ensure a wider diffusion of biopesticides. Farmers are used to the almost immediate effect associated with chemical pesticides and their low specificity, and expect the same from biopesticides; therefore they need to be trained to the different approach required by the use of biopesticides.

50. **Expected results**

The Global Environment Benefits (GEBs), which may be achieved through the implementation of this project are thoroughly described in Section F (Project?s target contributions to GEF-7 core indicators) and Section 6 (Global Environmental Benefits) of this document. In summary, during project implementation, the production of 1200 tons of DDT and 200 tons of Dicofol will be avoided; 11950 tons of HHP production will be avoided; 1.45 million ha of agricultural land will be treated with biopesticides instead of conventional pesticides; 0.322 million female farmers and 1.129 millions male farmers will benefit from the use of these less harmful substances.

A diagram describing The Theory of Change of the project is reported in the Figure 2 below.

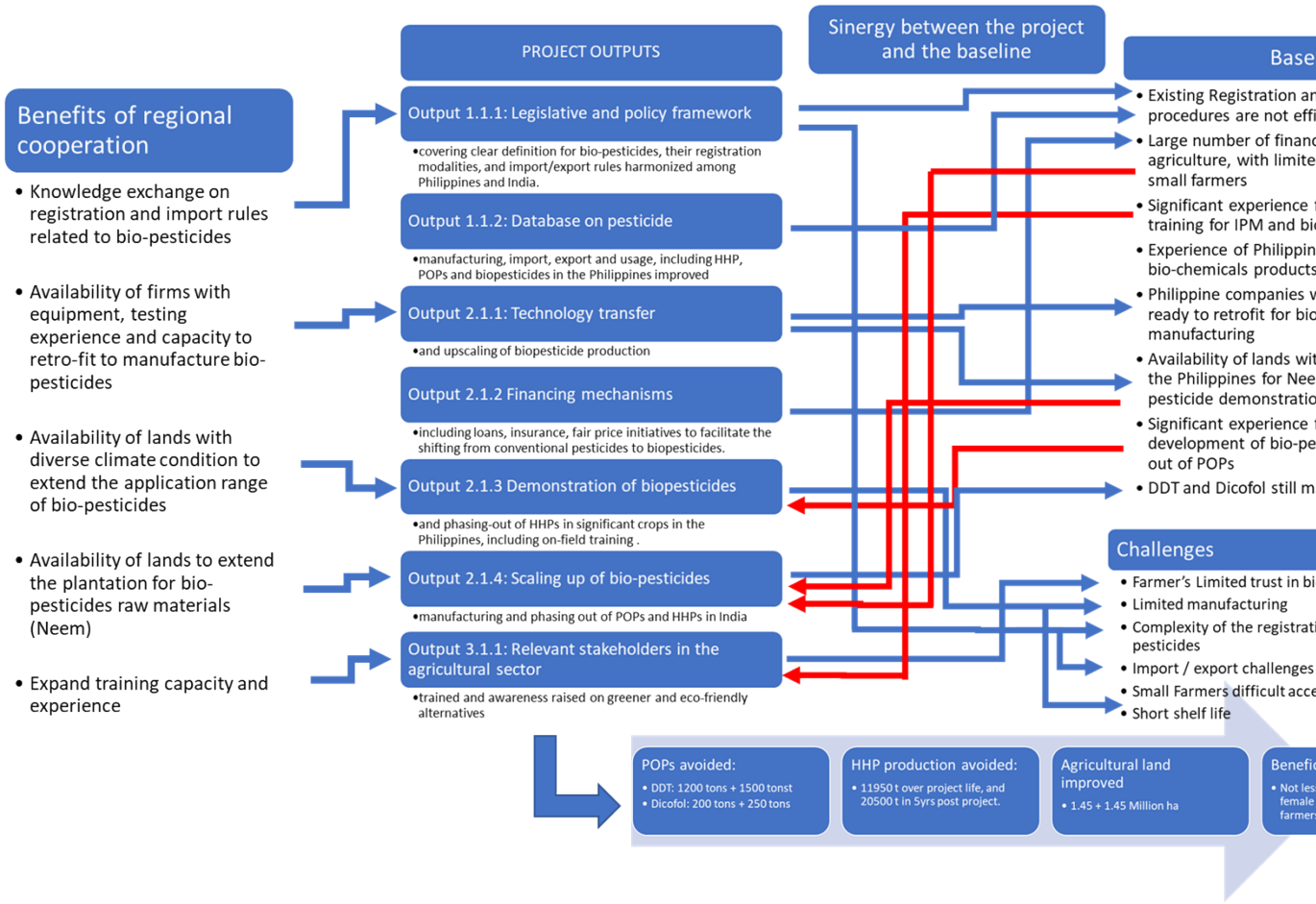


Figure 2. Theory of Change of the child project

51. Project components, outcome, outputs and activities

Component 1: Government regulatory capacity

Outcome 1.1 Enabling environment for introduction of crop protection solutions to reduce POPs and HHPs

Output 1.1.1: Legislative and policy framework covering clear definition for bio-pesticides, their registration modalities, and import/export rules harmonized among Philippines and India.

Under this output, the project intend mainly to developed and share knowledge related to the procedures for registration, import and export of biopesticides in India and the Philippines. This will entail an analysis of the existing registration procedures established in both countries with the perspective of bio-pesticide registration, understand how to overcome the challenges posed by the existing registration procedures that are mostly designed for chemical pesticides, to the registration of biopesticides. Opportunities for an easier registration of biopesticides, on the basis of their low toxicity, high specificity and high biodegradation will be identified and translated into procedures and guidelines. Similarly, an assessment of the import/export procedures, with specific reference to the Harmonized System (HS) codes adopted for biopesticides in both countries. Guidance documents on registration and import/export

rules for biopesticides will be prepared. A consultative workshop to share knowledge with relevant stakeholders on how the current policies could be applied and tailored for a more effective management of biopesticides will be held.

A policy for fair trading of biopesticides will also be established. This will be based on the understanding analysis of the production cost, risk variables, and the establishment of a benchmark based on a fixed margin percentage.

The following activities are therefore envisaged under Output 1.1.1:

- Activity 1.1.1.1: Carry out analysis of the current regulation on pesticide, with specific focus on registration modality
- Activity 1.1.1.2: Prepare a guidance document to streamline the existing registration modality for biopesticides to facilitate cooperation among the two participating countries on the matter.
- Activity 1.1.1.3: Carry out analysis of the current rules for the export/import of biopesticides and identify the most suitable Harmonized System Codes (HSC) for biopesticides
- Activity 1.1.1.4: Hold a consultative workshop with relevant stakeholders (decision makers, technical officers, scientific community, academia, etc.) on policies and procedures on biopesticides.
- Activity 1.1.1.5: Develop fair market policies for biopesticides

Output 1.1.2: Database on pesticide manufacturing, import, export and usage, including HHP, POPs and biopesticides in the Philippines improved

Whilst in India, a detailed database on pesticides is available under the website of Plant Protection, Quarantine and Storage, this information is not fully available in the Philippines, and what is available is dispersed among several sources. A detailed database related to the area under cultivation with pesticide and biopesticides, manufacturing of pesticides and biopesticides, import and export, consumption of pesticides and biopesticides by crops will be developed. Collation of all the available statistics of the import and export, use and manufacturing of pesticide and biopesticides in the Philippines, arranged as a minimum by substance name, crop type and year will be conducted. Consultation with data owners related to the availability of information on import/export, manufacturing and use with indication on how to improve information on pesticides protecting at the same time confidential information. As a result, a database on pesticides and biopesticides will be built, maintained and placed online.

The following activities will be carried out under Output 1.1.2:

- Activity 1.1.2.1: Gather all available statistic data on pesticides and biopesticides import, export production and use by crop and assessment of information gaps in the Philippines
- Activity 1.1.2.2: Consult the main data owners (manufacturers, registries, farmers and farmers associations) on how to improve the information on pesticides)
- Activity 1.1.2.3: Develop the database software and data input.

Component 2: Finance and investment

Outcome 2.1. Enhancing finance and investment in development, production and application of biopesticides

Output 2.1.1: Technology transfer and upscaling of biopesticide production

Under this output, both national technology transfer in India (from identified technology partners to HIL) and international technology transfer (from HIL to selected partners in the Philippine) will be carried out.

Btk based biopesticides: HIL (India) Ltd. shall identify the technology partner (reputed institution) for Btk and technology shall be sourced under the project. Once the provisional registration (under section 9(3B) of Insecticide Act) (minimum period 10-12 months) is received from CIBRC for manufacturing and use under agriculture segment, HIL will start the commercial production. Procurement of equipments for enhancing the capacity of the plant shall be done simultaneously.

Neem based product: Neem based Suspension Concentrate formulation is identified and production shall be scaled up from 300 KL/annum to 600 KL/annum (300 KL under the Project by year 5). Neem based Suspension Concentrate shall be registered under section 9(4) of Insecticides Act 1968, which shall take 8-10 months. The land for setting up of plant has been demarcated.

Trichoderma: Currently, 355 products are available in the Indian market for field applications. Although the number of Trichoderma-based biopesticides in the market is relatively high, until now, only two species are reported with biocontrol activity. In view of the above stated benefits of Trichoderma particularly as biopesticides for agriculture segment, HIL has already applied for the registration with CIB. The technology partner has been identified and technology will be transferred to HIL by Q1 of the project second year and commercial production will start by Q4 of second year from project implementation.

Once the technology transfer has been fully transferred to HIL, and the registration completed, the project will facilitate the export of bio-pesticide to the Philippines as chemicals for ?Experimental Use Permits? following the ?Pesticides Regulatory Policies and implementing Guidelines? to generate the data for the registration of such biopesticides for selected crops in the Philippines. Trial field testing will be carried out on the above quoted guidelines by an accredited laboratory. That would require not less than one year. Once the registration in the Philippines is done, the project will keep facilitating import to the Philippines through knowledge exchange on the issue of import procedures. Under this output the project will also carry out the technical assessment for the possibility of added use of Trichoderma compost fungus activator of UPLB to Trichoderma-based biopesticide as well as the identification of endemic sites for neem.

The following activities will be carried out under this output:

? Activity 2.1.1.1 Select viable techno-commercial technology providers in India on Neem based, Btk and Trichoderma biopesticides

? Activity 2.1.1.2 Draft and sign a Memorandum of Understanding (MOU) for technology transfer from technology providers to HIL

? Activity 2.1.1.3 Generate data for the registration of biopesticides for use in the agriculture sector in India

? Activity 2.1.1.4: Assess the needs of identified biopesticides in the Philippines both by crop and by pests
? Activity 2.1.1.5: Field testing of biopesticides with IPM to generate data for registration on selected crops in the Philippines
? Activity 2.1.1.6: Facilitate the import of the selected biopesticides from India and their registration in the Philippines

Output 2.1.2 Financing mechanisms established including loans, marketing infrastructures and insurance schemes, quality enhancement application and fair price initiatives to facilitate the shifting from conventional pesticides to biopesticides .

The main objective of this output is to inform financial institutions (providers of financial services) and farmers and their associations on the financial benefits associated with the use of biopesticides in place of conventional pesticides. There are several sources of information related to the potential financial effectiveness of biopesticides, however these have to be localized to the specific situation of the targeted agricultural crops in India and the Philippines. Therefore, it is envisaged to carry out a financial analysis of the use of biopesticides together with appropriated IPM in the selected crops, including the financial benefit of reduced risks for workers health, reduced risk of adaptation of pests to the pesticides, as well as reduced costs of the biopesticides formulation compared to the conventional pesticides. This information will be properly disseminated to the financial service providers on one side, and to potential users on the other side. Furthermore, an inventory of the financial opportunities for farmers to obtain support related to the adoption of environment friendly practices in agriculture will be established both in India and in the Philippines. Usually financial supports is accessed by large enterprises, as small landfarm owners very often lack the capacity to file an application for financial support. Simultaneously, the project will work with insurance service providers to develop low-cost insurance products for farmers, which take into account the reduced risks associated with the use of biopesticides compared to the conventional pesticides.

The Government of India has launched various insurance Schemes mainly with the objective to provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases and to encourage the farmers to adopt progressive farming practices, high value in-puts and higher technology in Agriculture.

At present four crop Insurance schemes namely National Agricultural Insurance Scheme (NAIS), Pilot Modified National Agricultural Insurance Scheme (MNAIS), Pilot Weather Based Crop Insurance Scheme (WBCIS) and Pilot Coconut Palm Insurance Scheme (CPIS) are being implemented in India.

To achieve this output, the following activities will be carried out:

? Activity 2.1.2.1. Assess and establish communication strategy on cost effectiveness associated with the use of biopesticides with IPM on selected crops

? Activity 2.1.2.2. Provide support to farmers to access existing financing mechanisms

? Activity 2.1.2.3. Develop insurance schemes to protect participating farmers from unexpected events in the transition phase and beyond.

Output 2.1.3 Demonstration of biopesticides and phasing-out of HHPs in significant crops in the Philippines, including on-field training

In the Philippines, the main focus of this output will be to ensure the field testing of biopesticides with IPM in relevant crops, to generate data for the registration of biopesticides in such crops, and to establish the manufacturing chain for biopesticides. In addition to that, after the registration is completed, Neem will be piloted at larger scale in different crops to startup the marketing stage of the product.

Under this output, the project will provide technical assistance in Region 7 through JC Dots Agri Trading company in the manufacture of neem based bio-pesticide. It is also envisaged that after registration of the neem based product through the facilitation of FPA in the Philippines, JC Dots will in parallel provide the expertise and facilities to undertake field testing of Neem in paddy fields using the neem based biopesticides imported from HIL. HIL will also provide the Neem bio-pesticide to be used for pilot testing in Region 3. This will be carried out by the Department of Agricultural Reform (DAR) in Tarlac in coordination with the Local Governmental Unit (LGU) of the First District of Tarlac, and will cover initially 100ha of paddy field, which will be extended up to 1000 ha over the project period. Furthermore, in Region 6, with the support from the West Visayas State University, 100 ha will be allocated for Neem plantation with possible expansion of up to 200 ha. Neem plantation will also be conducted in Region 11 (Mindanao) for the same area allocation of 100ha. In Region 11 it is also planned to deploy other bio pesticides including Btk and Trichoderma in banana plantation.

The following activities are therefore envisaged under this output:

? Activity 2.1.3.1. Carry out demonstration of selected biopesticides together with appropriate IPM as alternatives to HHPs in the Philippines

? Activity 2.1.3.2: Technology transfer from India to the Philippines including training for production of low-cost neem based biopesticides

? Activity 2.1.3.3: Technology transfer from India to the Philippines including training on formulations of neem based biopesticides

? Activity 2.1.3.4: Technology transfer to the Philippines including training on formulations of Btk and Tricoderma

? Activity 2.1.3.5: Propagate neem trees in selected pilot sites in the Philippines to sustain production of neem based biopesticides

Output 2.1.4: Scaling up of biopesticides manufacturing and phasing out of POPs and HHPs in India

Under this output, HIL (India) Limited, with the financial support of GEF/UNIDO, is setting up a commercial manufacturing facility to replace HHPs and dicofol with three biopesticides, namely Bacillus thuringiensis species kurstaki (Btk), Trichoderma spp, and Neem-based biopesticides.

Btk based biopesticides: Production would commence from Q4 of second year of the project. Proposed quantity under the project is 250 MT/annum by the end of year 5. Once the provisional registration (under section 9(3B) of Insecticide Act) (minimum period 10-12 months) is received from CIBRC for manufacturing and use under agriculture segment, HIL shall start the commercial production. Procurement of equipment for enhancing the capacity of the plant shall be done simultaneously. The planned area coverage for different crops with Btk is approx. 0.65 million hectare during the project period which shall be scaled up to 1.6 1.3 million hectare in +5 year of project period.

Neem based product: Under the FARM Child project, Neem based Suspension Concentrate formulation is identified and production shall be scaled up from 300 KL/annum to 600 KL/annum (300 KL under by year 5). Neem based Suspension Concentrate shall be registered under section 9(4) of Insecticides Act 1968, which shall take 8-10 months. The land for setting up of plant has been demarcated. As HIL shall be setting up the Neem based suspension concentrate production facility under the DDT alternative project by Q4 of 2023, same shall be extended under this FARM Child project by Q2 of second year of implementation of the FARM programme. The planned area coverage for different crops with Neem based formulation is pprox.. 0.3 million hectare during the project period, which shall be scaled up to 0.8 0.6 million hectare in +5 year of project period.

Trichoderma: In view of the above stated benefits of Trichoderma, particularly as biopesticides for agriculture segment, HIL applied for the registration with CIB. The technology partner has been identified and technology will be transferred to HIL by Q1 of second year of project and commercial production will start by Q4 of second year from project implementation. Proposed quantity under the project is 200 MT/annum by the year 5. The planned area coverage for different crops with Trichoderma is approx. 0.5 million hectare during the project period, which shall be scaled up to 1.0 million hectare in +5 year of project period.

To achieve this output, the following activities will be carried out:

? Activity 2.1.4.1: Establish the industrial infrastructures to scale up the manufacturing of Btk (up to 250 t/yr) with associated reduction of POPs and HHPs production

? Activity 2.1.4.2: Establish the industrial infrastructures to scale up the manufacturing of Neem (from 300 kL/y to 600 k/y) with associated reduction of POPs and HHP production

? Activity 2.1.4.3: Establish the industrial infrastructures to establish the manufacturing of Trichoderma (up to 200t/y) with associated reduction of POPs and HHP production.

Component 3:Capacity and knowledge dissemination

-

Outcome 3.1. Capacity building and awareness raising in the formulation, production and application of biopesticides, safe chemical alternatives and other biocontrol agents carried out

Output 3.1.1. Relevant stakeholders in the agricultural sector (decision makers, manufacturers in public and private sector, farmers including women, youth and indigenous people, and others trained and awareness raised on greener and eco-friendly alternatives

Through this output, all the relevant trainings to farmers, agriculture workers, formulators, manufacturers, laboratories, academia will be held. The following trainings will be conducted: 1) Training based on a ?Trainers of Trainees? (TOT) model along the supply chain. From year 2 to the end of the project, HIL is planning to undertake 185 training across India wherein emphasis will be given to develop (TOT).

In the Philippines, from year 2 to end of project, at least 2 TOT trainings per year carried out in mixed mode, covering not less than 1000 farmers countrywide. The training content will concern IPM, properties of POPs and HHPs pesticides, the mode of usage of bio-pesticide as green and eco-friendly alternatives, the Environmental Code of Practice along the supply chain for bio-pesticides. Specific training related to registration procedures for bio-pesticides will be carried out for formulators, manufacturers and laboratories. Laboratories will be also trained on the accreditation procedures for carrying out experimental field trials of pesticides. A technology exchange workshop will be also carried out in the Philippines on the aspects related to the manufacturing of Neem, Trichoderma and Btk .

This output therefore envisages to following activities to be carried out:

? Activity 3.1.1.1. Conduct the programme on ?trainers of trainees? and awareness raising for farmers and agricultural workers including women, youth and indigenous people

? Activity 3.1.1.2 Conduct training for formulators, manufacturers and relevant stakeholders (deeision makers) on the registration of biopesticides as well as laboratories on accreditation procedures

? Activity 3.1.1.3. Conduct technology exchange workshops on the manufacturing of biopesticides at regional level

? Activity 3.1.1.4 Conduct training on the environmental code of practices for relevant stakeholders in the biopesticide supply chain

? Activity 3.1.1.5 Participate in other FARM projects? training and awareness raising for knowledge, experience and technology know how sharing

Output 3.1.2: Digital hub established for global exchange and access to best practices, knowledge and experience and promote further business opportunities with international and regional buyers

? Activity 3.1.2.1. Design of the digital hub in coordination with the global exchange platform

? Activity 3.1.2.2. Develop and enter project related content in the digital hub ensuring coordination with the global exchange platform

Component 4: Project Monitoring and Evaluation

Outcome 4.1: Project Monitoring and Evaluation based on lesson learnt ensured

Output 4.1.1. Project Inception and Monitoring carried out

? Activity 4.1.1.1. Hold the Inception workshop and preparation of the inception report

? Activity 4.1.1.2. Prepare and approve Periodic Project reports (PIR, AWP, APR) and risk monitoring

Output 4.1.2 Independent Mid-Term Review and Terminal Evaluation undertaken

•Activity 4.1.2.1 . Conduct Independent Mid-Term review and Terminal Evaluation

Output 4.1.1 and 4.1.2 are described in detail under the M&E section of this document.

A summary of the proposed project interventions in each component is given in **Annex H**.

D) ALIGNMENT WITH GEF FOCAL AREA AND/OR IMPACT PROGRAM STRATEGIES;

52. The project is fully consistent with what is envisaged under the GEF7 Chemical and Waste focal area, with specific reference to CW Program 2 ? Agricultural chemicals program, as follows:

? It address the agricultural chemicals that are listed as persistent organic pollutants under the Stockholm Convention, namely DDT and dicofol;

? It undertakes significant investments to introduce alternatives to POPs chemicals in a sustainable way, over a significant area of farm lands;.

? It will also target the reduction of highly/severely hazardous pesticides that enter the global food supply chain

53. The project is also consistent with what is envisaged under the GEF7 Biodiversity focal area, Objective 1 (Mainstream biodiversity across sectors as well as within production landscapes and marine areas, as it will ensure that around 2.8 million ha will undergo improved management to benefit biodiversity (hectares, non-certified).

E) INCREMENTAL/ADDITIONAL COST REASONING AND EXPECTED CONTRIBUTIONS FROM THE BASELINE, THE GEFTF, LDCF, SCCF, AND CO-FINANCING

54. The following paragraphs details the baseline versus the alternative scenario providing the incremental reasoning of the project:

Component 1: Government regulatory capacity

Baseline:
The participating countries have related baseline legislation and policies in place for the registration of biopesticides and safe chemical substitutes, for example Philippines follows the ASEAN guidelines on Regulation and Use of Biocontrol Agents. Detailed guidance on the Registration of pesticides is available on the FPA website in the Philippine and on the website of the Ministry of Agriculture in India. In both countries the registration procedure for biopesticides is similar, if not identical, to the registration of chemical pesticides. Without the GEF project, which aims at streamlining the procedures for the registration of biopesticides and the the import/export procedures of the two countries, it is very unlikely that the technical capacity and resources to strengthen the development and trading of biopesticide as quality alternatives to HHP within the region will happen.

Alternative scenario.
The child project will tackle and fill gaps identified in the existing policy framework of the participating countries to provide a platform for knowledge exchange for a more effective registration as well import / export procedures, which take into account the low toxicity of bio-pesticides and standardize business models for marketing/trading of alternatives to POPs and HHPs. The knowledge of the interested stakeholders, as well as the institutional capacity of competent authorities in evaluating and approving registered pesticides will be strengthened, thus opening opportunities for biopesticides and less hazardous crop protection agents produced in one country to be used in other countries. Import and export rules will also be assessed and strengthened to ensure the trading of bio-pesticides is not hindered.

Component 2: Finance and Investment

Baseline:

Registration and use of biopesticides. The main biopesticides manufactured and used in India are Neem-based insecticides, Bacillus thuringensis, NPV, and Trichoderma. As per CIBRC, Tricoderma, Psedomonas, and NPV-H (nuclear polyhedrosis virus of Helicoverpa armigera) are the most often used insecticides in biopesticides in the last two years i.e., 2019-20 & 2020-21. However in India, most biopesticides, except some used in agriculture, are employed in public health. Based on the database of FPA, in the Philippines there is a total of 1459 registered pesticides products, out of which 79 are pesticides products based on the Bacillus Thuringiensis, and 10 are pesticides products based on Neem oil. There are a total of 87 registered organic farms and companies, which covers 738.47 ha.

Technical capacity to manufacture and test biopesticides. In India HIL (India) Limited (A Government of India Entity) is setting up a commercial manufacturing facility for non-POP alternatives to DDT under the project ?Development and Promotion of non-POP alternatives to DDT?. Under this project, non-POP vector control products are identified for commercialization including Bt based biopesticides and Neem based botanical pesticides. In the Philippines, currently there are no enterprises with capacity to manufacture biopesticides. JC DOTS Agri Trading Company, is a manufacturer of organic fertilizer and soil ameliorant, established in 2016 with vast experience of testing compost and soil conditioner for soil restoration in areas in Regions 1, 2 and 6 of the Philippines. The technical capacity to manufacture bio pesticide is therefore available mainly in India, whilst in the Philippine the technical capacity to test biopesticides and organic ameliorant is available. Without the project, there would not be the technical and financial support to ensure the scaling up of the HIL facility to manufacture the large amount of biopesticide needed under the project, with the associated reduction of HHP and POPs. Furthermore, there would be no the technology exchange which would allow the transfer of knowledge for biopesticide manufacturing in the Philippines.

Financial schemes. Concerning financial schemes to support farmer in the shifting from chemical pesticides to bio-pesticides: several financial schemes to support farmers in India are in place. The Income support to farmers via PM Kisan Yojana, including the Paramparagat Krishi Vikas Yojana (PKVY), the insurance PMFBY: Pradhan Mantri Fasal Bima Yojana; the Kisan Credi Card Facility, Natural Farming (Bhartiya Prakratik Krishi Paddhati (NF-BPKP), eNAM ? National Agriculture Market (eNAM). In the Philippines, the Philippines Partnership for Sustainable Agriculture (PPSA), the Asian Food and Agriculture Cooperation Initiative, the DBP Sustainable Agribusiness Financing Program (SAFP), the DBP Expanded Rice Credit Assistance Under Rice Competitiveness Enhancement Fund, and others are the main financing support schemes for farmers. Therefore it may be assumed that there is no a lack of financing instruments for farmers in the two countries. Consultation with stakeholders has however revealed that the largest number of applications is filed by large organisations, whilst small farmers in general do not have the capacity to submit an application to receive financial support. Without the project these farmers would not receive the training and technical assistance needed to apply such financing schemes.

Alternative Scenario.

The child project envisages several activities to support the scaling up of biopesticide production, the technology exchange to allow Philippines to benefit from the knowledge on biopesticide manufacturing available in India, the demonstration of biopesticides in both Philippines and India to extend the range of application of biopesticides. Under Output 2.1.1. (Technology Transfer and upscale), both national technology transfer in India (from identified technology partners to HIL) and international technology transfer (from HIL to selected partners in the Philippine) will be carried out. Once the technology transfer has been fully transferred to HIL, and the registration completed, the project will facilitate the export of bio-pesticide to the Philippine as chemicals for ?Experimental Use Permits?. Under ?*Output 2.1.2. 2 Financing mechanisms including loans, insurance, fair price initiatives to facilitate the shifting from conventional pesticides to biopesticides*?, the project intends to inform financial institutions (providers

of financial services) and farmers and their associations on the financial benefits associated with the use of biopesticides in place of conventional pesticides. An inventory of the financial opportunities for farmers to get support related to the adoption of environment friendly practices in agriculture will be established both in India and in the Philippines. Farmers will be provided with support to to access existing financing mechanisms. Output 2.1.3 will ensure the demonstration of bio-pesticides and phasing-out of HHP in significant crops in the Philippine. That will ensure technical assistance to Philippine agri-companies to manufacture, test and apply biopesticides (mostly Neem and Trichoderma) as well as plantation of Neeom trees in several regions of the Philippines. Output 2.1.4 will ensure the scaling-up of biopesticide manufacturing in India, to an amount sufficient to cover 1.45 millions hectares within project life, with the simultaneous phasing out of DDT, Dicofol and HHPs. More specifically:

Production of Btk based biopesticides will reach 250 MT/annum by the end of year 5. Once the provisional registration (under section 9(3B) of Insecticide Act) (minimum period 10-12 months) is received from CIBRC for manufacturing and use under agriculture segment, HIL shall start the commercial production. Procurement of equipments for enhancing the capacity of the plant shall be done simultaneously. The planned area coverage for different crops with Btk is approx. 0.65 million hectare during the project period which shall be scaled up to 1.6 1.3 million hectare in +5 year of project period. The production of Neem based concentrate shall be scaled up from 300 KL/annum to 600 KL/annum (300 KL under FARM Project by year 5). Neem based Suspension Concentrate shall be registered under section 9(4) of Insecticides Act 1968, The planned area coverage for different crops with Neem based formulation is approx. 0.3 million hectare during the project period which shall be scaled up to 0.8 0.6 million hectare in +5 year of project period.

HIL applied for the registration with Central Insecticides Board for Trichoderma. The technology partner has been identified, technology would be transferred to HIL by Q1 of second year of project and commercial production would be started by Q4 of second year from project implementation. Proposed quantity under the project is 200 MT/annum by the year 5. The planned area coverage for different crops with Trichoderma is approx. 0.5 million hectare during the project period which shall be scaled up to 1.0 million hectare in +5 year of project period.

Component 3: Capacity and knowledge dissemination

Baseline.

The participating countries have experience related to Stockholm Convention, however, they are on different level of technical and institutional capacity as well as awareness on risks about POPs and HHPs. Without the GEF project, relevant stakeholders especially smallholder farmers will continue to use the toxic pesticides due to lack of knowledge on the benefits of the alternatives

In India, the National Centre for Organic Farming is a nodal organization for promotion of organic farming. HIL launched a campaign in the year 2016-17 to impart the training to the farmers on ?Safe & Judicious use of Pesticides and Adoption of Integrated Pest Management Practices and promoting the use of Bio Pesticides?. Under this initiative, HIL has trained more than 70,000 farmers through 106 meetings organised across the country (from 2016 to September 2022). HIL, with the financial support from Ministry of Chemicals and Fertilizers, Government of India, is planning to organise another 15 farmers training programmes in different parts of the country thereby training another 6000 farmers. The training programme shall be organised in paddy, tea and vegetable crop areas.

In the Philippines, the Agricultural Training Institute (ATI), created through Executive Order No. 116 on January 30, 1987, is responsible for the training of all agricultural extension workers and their clientele. There however is no evidence of current training program in the Philippines related to the application of biopesticides, however training of IPM, with even inclusion into university level curricula, has been developed and undertaken from 1993 for around 10 yrs (KASAKALIKASAN) The Philippine

model had emphasis on human resource development, ecological perspective and participatory training methodologies and was taken as an example in other SEA countries.

Alternative scenario.

The projects will deliver trainings on the manufacturing, registration, international trading, application of biopesticides to farmers, agriculture workers, formulators, manufacturers, laboratories.

The following trainings will be conducted: 1) Training based on a TOT model along the supply chain. From year 2 to the end of the project HIL is planning to undertake 185 training across the country wherein emphasis will be given to develop Trainers of Trainees (ToT).

In the Philippines, from year 2 to end of project at least 2 TOT trainings per year will be carried out in mixed mode, covering not less than 1000 farmers countrywide. The training content will concern IPM, properties of POPs and HHPs pesticides, the mode of usage of bio-pesticide as green and eco-friendly alternatives, the Environmental Code of Practice along the supply chain for bio-pesticides. Specific training related to registration procedures for bio-pesticides will be carried out for formulators, manufacturers and laboratories. Laboratories will be also trained on the accreditation procedures for carrying out experimental field trials of pesticides. A technology exchange workshop will be also carried out in the Philippines on the aspects related to the manufacturing of Neem, Trichoderma and Btk .Massive action to increase public awareness and and promotion and education (a long-term investment that will support the change) will be undertaken and (2) establishment of a digital hub as repository, information dissemination and global access to knowledge, best practices and experiences from project implementation and the FARM Programme

The project also intends to establish a digital hub for global exchange and access to best practices, knowledge and experience and promote further business opportunities with international and regional buyers

F) GLOBAL ENVIRONMENTAL BENEFITS (GEFTF) AND/OR ADAPTATION BENEFITS (LDCF/SCCF)

55. The primary objective of the project is to gradually phase out the manufacturing of HHP pesticides with bio-pesticides and totally ban the production of POP pesticides. That will impact the agricultural practices in both India and the Philippines, with beneficial effects on the environment and the health of workers in the agricultural sectors.

56. The main global environmental benefits of the project were determined based on the manufacturing plan and POPs and HHPs phase out plan of HIL.

Table 1: HIL bio-pesticide manufacturing plan and POPs and HHP phasing out.

	2022	2023	2024	2025	2026	2027
Production of POPs	Metric Tons					
DDT	556	300	--	--	--	--
Dicofol	150	50	--	--	--	--
Production of HHPs						
Acephate	400	400	200	50	0	0

Monocrotophos	300	300	50	0	0	0
Chlorpyriphos	600	600	450	300	300	250
Malathion	1800	1800	1500	1200	900	750
Mancozeb	2000	2000	1700	1300	1000	700
Pendimethalin	400	400	200	50	0	0
Production of bio-pesticides						
Bacillus thuringiensis var. kurstaki (Btk)	--	--	100	200	200	200
Neem based pesticides	--	--	100	150	200	300
Trichoderma spp.	--	--	--	150	200	200

57. To ensure the achievement of the GEBs targeted under the project, the biopesticide manufacturing plan will be undertaken as follows:

? **Btk:** Production of Btk would commence from Q4 of second year of the project. Proposed quantity under the project is 250 MT/annum by the end of year 5. The planned area of coverage for different crops with Btk is approx. 0.65 million hectare during the project period which shall be doubled in the project replication period of 5 yrs.

? **Neem**: Under the FARM Child project, Neem based Suspension Concentrate formulation is identified as biopesticides and production shall be scaled up from 300 KL/annum to 600 KL/annum (300 KL under the project by year 5). The planned area of coverage for different crops with Neem based formulation is approx. 0.3 million hectare during the project period, which shall be scaled up to 0.6 million hectarein the project replication period of 5 yrs.

? **Trichoderma:** The proposed quantity under the project is 200 MT/annum by the year 5. The planned area of coverage for different crops with Trichoderma is approx. 0.5 million hectare during the project period, which shall be scaled up to 1 million hectare in the project replication period of 5 yrs .

58. In the Philippines, around 12,000 ha will be used for the demonstration of the above bio-pesticides during project implementation.

59. The envisaged scaled up of bio-pesticide production will result in the parallel reduction of the manufacturing of several HHP pesticides and Dicofol. The residual DDT manufacturing will also cease, due to the commitment of the Indian Government and the lack of demand as an intermediate in the manufacturing of Dicofol, which will also cease. It should be noted that the phasing out of DDT is additional to the GEB committed under the GEF project 4612 ?*Development of and Promotion of non-POP alternatives to DDT*?, which has been already achieved in 2021.

60. In Table 1 the HIL bio-pesticide manufacturing plan and the parallel phasing out of POPs and HHL is detailed. Taking the year 2023 as a reference, the reduced or totally avoided manufacturing of POPs and HHP pesticides resulted as follows:

? Avoided manufacturing of DDT: 1200t

? Avoided manufacturing of Dicofol: 200 t

? Avoided manufacturing of HHPs: (Acephate, Monocrotophos, Chlorpyriphos, Malathion, Mancozeb, Pendimethalin): 11950 t

61. As for the replication period of 5 year post project, taking as the reference the year 2023, and assuming that there will be no increase of the manufacturing of POPs and HHP in that period (that is zero production for POPs and an overall amount of 2000t HHP manufacturing against the 2023 baseline of 6100t, the avoided manufacturing would be as follows:

? Avoided manufacturing of DDT: 1500t

? Avoided manufacturing of Dicofol: 250 t

? Avoided manufacturing of HHPs: (Acephate, Monocrotophos, Chlorpyriphos, Malathion, Mancozeb, Pendimethalin): 20500t

62. In the Philippines, importation in 2021 for fungicide and insecticide were 105,498 and 1,244.97 kg/L including Mancozeb, Chlorpyrifos and Malathion. Currently, all POPs pesticides under the Stockholm Convention have been banned in the Philippines. Chlorpyrifos is banned in many countries, including the United States and the European Union. However, in the Philippines it is being used exclusively in banana plantation. FPA plans to phase out Chlorpyrifos in 2027 in recognition of the environmental and health risks associated to its use and in consideration that no alternative pesticide has been identified yet. No phase out plan for Malathion and Mancozeb has been set to date. The availability of alternative safe chemicals and biopesticides will catalyze the phase out.

63. As far as the number of beneficiaries directly impacted by the project, It should be considered that the two participating countries have a similar structure of their agricultural system: The average landholdings of Indian farmers stand at 1.08 ha. In the Philippines, the average area of a single holding/farm is 1.29 ha. The impact on the project on the health of farmers is therefore calculated assuming conservatively that only the owners of farms benefit from the shifting toward bio-pesticides, on a ratio of 1 person / ha. Based on the Indian Census data, the proportion female/male in the agricultural sector is 22 females to 78 males. On this basis, the number of direct beneficiaries of the project, assuming that the entire manufacturing of bio-pesticides will be absorbed by the market, would be, during project life:

- Total area covered by the project: 1.45 million ha in India and 1,200 ha in the Philippines

- Total number of farmers benefitting from the project: 1 person/ha, i.e. 1.451 million people, out of which 322,000 female and 1,129,000 male.

64. The shifting of farming from conventional pesticide to the greener and environmental friendly bio-pesticides will be ensured through a number of measures:

? The delivery of bio-pesticides at a convenient price (thanks to the co-financing of HIL) and the support on the investment on pesticide manufacturing equipment ensured by the GEF;

? Training provided by HIL with financial support from the GEF

? Existing financing support schemes for farmers, including insurance schemes specifically dedicated to sustainable agriculture, in the two countries.

65. The number above includes the beneficiaries of the massive training of farmers that will be undertaken in the 2 countries. It does not however include as beneficiaries, the worker in the pesticide manufacturing industry, which will also benefit from the phasing out of POPs and HHPs envisaged under the project.

H) INNOVATIVENESS, SUSTAINABILITY AND POTENTIAL FOR SCALING UP.

Innovativeness.

66. The project intends to promote and expand the use of biopesticides in India and in the Philippines. Biopesticides are intrinsically innovative, as they are: (i) more specific than broad-range chemical pesticides and therefore, not toxic for other organism, including the ones living and maintaining soil structure; (ii) safe for humans; (iii) Biodegradable and; (iv) manufactured in intrinsically safe plants with reduced risk of chemical accidents. These features make biopesticides the only option to be used in the innovative, science based and participated agroecological approach as recently described by FAO *(FAO 2018b. The 10 elements of Agroecology. Guiding the transition to sustainable food and agricultural systems. Rome, Italy).*

67. Unfortunately, although biopesticides are commercially available since several years (10 years for Trichoderma, around 20 years for Bacillus thuringiensis (Bt) species, and more than 50 years for Neem oils), factors like regulatory complexity, lobbying from the chemical pesticide industry, limited knowledge and trust in bio-pesticides by the farmers who are unwilling to change their practices has prevented biopesticides to prevail over conventional, broad range chemical pesticides.

68. The project will aims to integrate innovative technologies with indigenous pest management practices. These indigenous best practices of pest management in the Philippines can be complemented by the best practices of India and other FARM child projects. Innovations can be demonstrated in terms of translating these practices and technologies such as the preparation and production of Btk and neem suspension concentrate pesticides to be suitable for the local setting. Also, neem suspension concentrate formulation will be newly applied in agriculture at large scale in India. This will be an innovative process scaling up from the lab scale to the commercial level production. The project intends to fully deploy and exploit the innovativeness potential of biopesticides by removing the cultural barriers which prevent their widespread diffusion through training (Output 2.1.3) awareness raising (Output 3.1.1 and 3.1.3), deploying financial instruments (*Output 2.1.2),* testing in a variety of agricultural conditions (Output 2.1.3), removing regulatory complexities in the registration and import/export processes (*Output 1.1.1).* It is to be noted that innovative insurance schemes (output 2.1.2.3) are planned for the project. In India, the farmers participating to the project will benefit from the Pradhan Manstri Bima Yojana (PMFBY), a governmental scheme that will fully protect the ones using biopesticides from any unexpected events that could happen to their cropped areas. Similarly, part of the budget is allocated to insure participating

farmers in the Philippines. These measures are crucial to ensure the engagement of farmers with these new technologies in the long term.

Sustainability.

69. Sustainability has several dimensions. In terms of environmental sustainability, biopesticides can be considered sustainable as they are derived from natural materials such as plants, animals, or microbes and are less toxic to non-target organisms compared to synthetic pesticides. Biopesticides also tend to break down more quickly in the environment, reducing their potential for long-term exposure to non-target organisms and the environment. In addition, some biopesticides can help to conserve biodiversity by reducing the use of broad-spectrum synthetic pesticides that can harm a wide range of organisms, including beneficial insects, pollinators, and other species. Biopesticides can also help to reduce the risk of pesticide resistance developing in target pests, as they tend to act through different mechanisms than synthetic pesticides. Through the increased availability of biopesticides, the project will allow for the replacement and avoided manufacturing of 1200 tons of DDT, 200t of Dicofol and 11,950 t of HHPs.

70. In the Philippines, some Trichoderma and Bt products are currently registered as organic fertilizers . Based on the experience of India, it will be investigated how to register Trichoderma, Btk and neem suspension concentrate as biopesticides. This will pave the way for a wider use of biopesticides. The policy and roadmaps towards organic farming of the Philippines will help in the sustainability aspect of the project while experiences from India will also be shared.

71. The project also intends to increase the commercial sustainability of the use and manufacturing of bio-pesticides by undertaking actions aimed at improving the regulatory framework, disseminating the knowledge, and developing financial incentives. In particular, the project intends to develop knowledge and share practices related to the registration, import and classification of bio-pesticide (Output 1.1.1), to overcome the current difficulties and ensure that the registration procedures of bio-pesticides will at least not penalize such products. A guidance document to streamline the existing registration modality for biopesticides to facilitate the cooperation among the two countries on the matter will be developed. In the medium-long term that will increase the commercial sustainability of biopesticides. At the global level, the knowledge generated under this project will be disseminated through the digital hub developed under output 3.1.2.

72. The increased demand requires a corresponding increase in the production capacity, which is currently limited. For this reason, the project (Output 2.1.1 and Output 2.1.4) will scale up of manufacturing capacity in India by directly increasing the overall production capacity for specific bio-pesticides, reducing at the same time the production of conventional pesticides (POPs and HHP). Through the increased availability of biopesticides, the project will allow for the replacement and avoided manufacturing of 1200 tons of DDT, 200t of Dicofol and 11,950 t of HHPs. Simultaneously (Output 2.1.3). The project will also establish manufacturing capacity in the Philippines by transferring the bio-pesticide manufacturing technology, by carrying out demonstration of selected biopesticides as alternatives to HHP, transferring the technology for the production of Neem, Tricoderma and Btk biopesticides.

73. In terms of financial sustainability, biopesticides may be more expensive to produce and formulate compared to synthetic pesticides due to the higher cost of raw materials, and the lower production

volumes compared to synthetic pesticides. However, several biopesticides, including Neem based oils ? which basically requires a process of extraction from seeds, filtering and formulation - and BT spp which is manufactured through fermentation processes, may be manufactured in smaller and simpler plants compared to chemical pesticides, therefore requiring smaller capital investment which could be even afforded by large farmer cooperatives. As biopesticides need smaller quantities compared to synthetic pesticides, this indeed results in a reduction of the overall cost of pest control. Similarly, the project aims to include financial incentives to farmers for the use of biopesticides in the development of appropriate policies on the use of biopesticides. The development and promotion of financial incentives to farmers (including small farmers) in the Philippines will also obviously their commercial sustainability. This will expand the current incentives already existing in the Philippines for the use of organic fertilizers. In India, incentives are already given to farmers for the use of biopesticides. The project will go further by developing and improving financial instruments by working with insurance service providers to develop low-cost insurance products for farmers which take into account the reduced risks associated with the use of biopesticides compared to the conventional pesticides, and assist small farm enterprises in the development and submission financial applications, to access financial services (Output 2.1.2)

74. The national ownership and commitment on a long range with the adoption of practices and technologies by farmers will be increased through training, awareness raising and technology transfer as described in the knowledge management plan. To ensure long-term sustainability, the project also envisages to undertake a massive training on the use of biopesticides (Output 3.1.1). All the relevant trainings to farmers, agriculture workers, formulators, manufacturers, laboratories will be held. Once farmers are trained on the benefits and use of such products and the best practices associated to them, their trust in biopesticides will increase, and thus increasing the future demand of such products.

75. During the project, regional alignment and linkages will be created between India and the Philippines for the use of the three biopesticides. One important step is the registration of Btk, Trichoderma and neem suspension concentrate After the project, each of the two countries could then act as hubs for further dissemination in the south and south-east Asia sub-regions; the legislative and regulatory frameworks that will stimulate change.

76. Once the production capacities of biopesticides products will be enhanced by HIL to fulfil the domestic needs, it is planned to export and market them together with trainings on associated Integrated Pest Management practices in other South-Eastern countries such as Bhutan, Nepal and Sri Lanka. HIL will also provide support to the importing countries to register these bio-pesticides at national level.

77. In terms of knowledge management, all products such as reports, guidelines, project newsletters, video clips, press and social media releases, blogs and testimonies, will be relayed by the digital hub developed and maintained during the project for global exchange and access to best practices. It will also be connected to the global level FARM program and other international platforms supporting sustainable agriculture. These connections will be used to spread success stories from the Child project in India and the Philippines worldwide and learn from similar situations faced by farmers in other countries.

Potential for scaling up.

78. The project, through *Output 2.1.4 (Scaling up of biopesticides manufacturing and phasing out of POPs and HHPs in India*) is already pursuing a significant scaling up of the current manufacturing and use of biopesticides in India, with an incremental manufacturing of Btk up to 700t, with an associated land coverage of 0.65 million ha, 750 t of neem suspension concentrate, with an associated land coverage of 0.3 million h, and 550 t of Trichoderma, with an associated land coverage of 0.5 million ha. Testing for biopesticides in the Philippine, as well as establishing pilots for the manufacturing of Neem under *Output 2.1.3 (Demonstration of biopesticides and phasing-out of HHPs in significant crops in the Philippines, including on-field training)* will pave the way to the replication and scaling up of the manufacturing and use of the biopesticides covered by the project by expanding their range to the specific climatic and agricultural conditions of the Philippines, and developing the data and the procedures for their registration, import and marketing.

79. The inclusion of a pilot bio-pesticide manufacturing in the project sites and the success of the demonstration sites for biopesticides will increase farmer converts or shift from chemical to biopesticides usage thus increasing the demand for biopesticides. The pilot manufacturing facilities can be upgraded to a commercial scale in India. Then there will be a technology transfer in strategic regions in the Philippines with the technical assistance from HIL (India) partners and inputs from the success stories from another Farm Child Projects. Philippine partner cooperatives, with their pilot-scale biopesticides production, may replicate the same set-up in other cooperatives in the region. The capacity building component of the project will ensure that these partner cooperatives will be empowered to produce their own biopesticides by learning the how?s and why?s. This approach aligns with the Philippines Roadmap to Organic Agriculture in accordance with the Republic Act No. 11511 in 2020, amending 10068 or the Organic Act of 2010, and will catalyze the growth of cultivated areas turning to organic farming.

80. The knowledge gained will be uploaded in the digital hub that can be accessed by the stakeholders, including farmers or their cooperatives. The digitization of these information will help in future replication of the project in other areas of the country.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

81. The project sites will be in India and the Philippines, with the following coordinates and reflected in Figure 3.a,b,c:

India (20.5937o N, 78.9629o E)
? Andra Pradesh (15.9129? N, 79.7400? E)
? Kamataka (15.3173? N, 75.7139? E)
? Marashashtra (19.7515? N, 75.7139? E)
? Assam (26.2006? N, 92.9376? E)
? West Bengal (27.0410? N, 88.2663? E)

The Philippines (12.8797o N, 121.7440o E)
? Ramos (15.6732o N, 120.6459o E)
? Paniqui (15.6661o N, 120.5586o E)
? Mayantoc ((15.5632o N, 120.3205o E)
? San Clemente (15.7081o N, 120.3692o E)
? Camiling (15.6872o N, 120.4183o E)
? Anao (15.7435o N, 120.6142o E)
? Moncada (15.7325o N, 120.5727o E)
? San Manuel (15.8291o N, 120.6027o E)
? Santa Ignacia (15.5841o N, 120.4588o E)
? Pura (15.6200o N, 120.6516o E)
? Los Banos, Laguna (14.1600o N, 121.6516o E)
? Lambunao, Iloilo (11.0700o N, 122.4241o E)
? Carmen, Cebu (10.5937o N, 124.0186o E)
? Mati, Davao Oriental (6.9522o N, 126.2173o E)

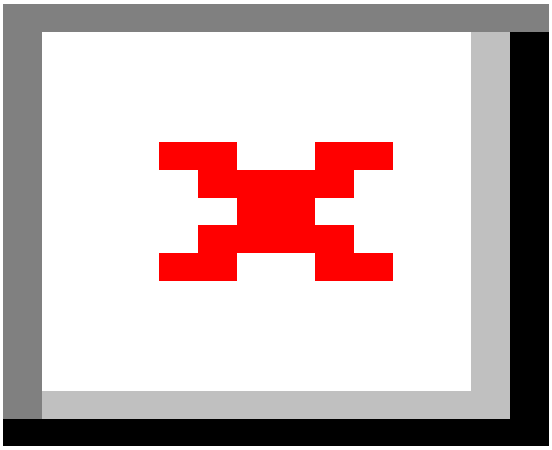


Figure 3 Location of Project Intervention Sites

Figure 3a. Location of Project Sites in India

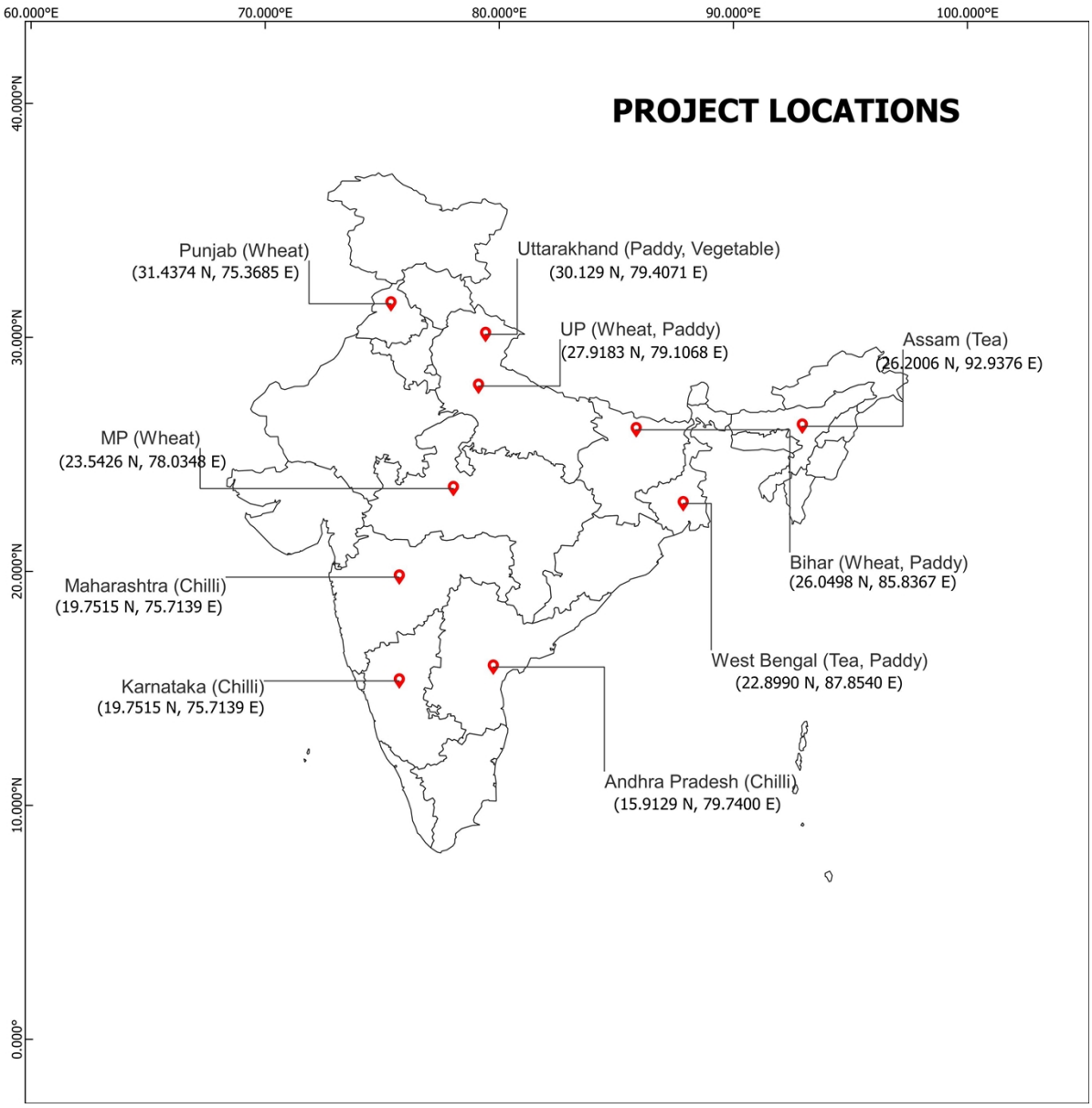
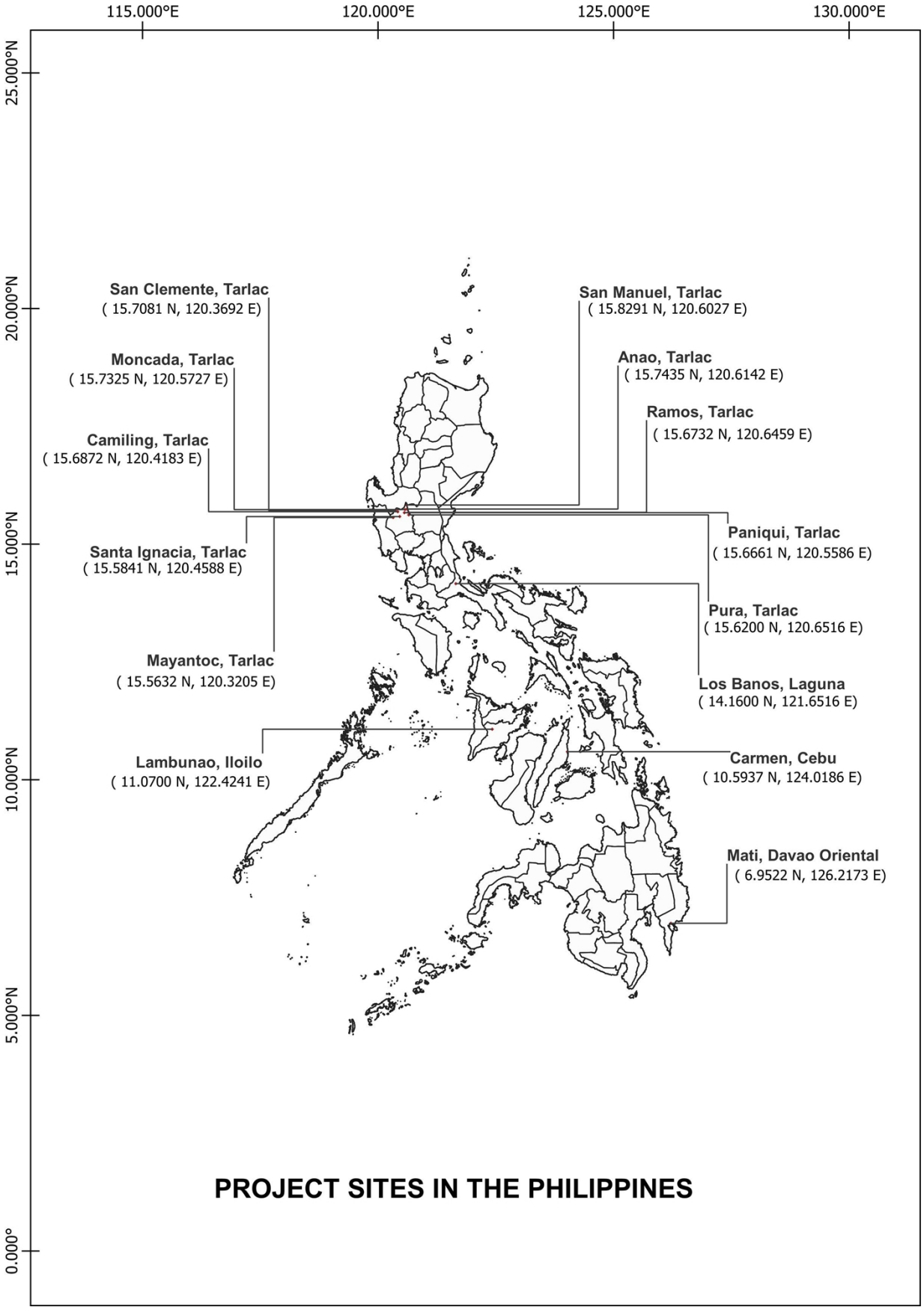


Figure 3.b. Location of Manufacturing locations in India



PROJECT SITES IN THE PHILIPPINES

Figure 3c. Location of Project Sites in the Philippines

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

82. In line with the FARM Programme's objective to catalyze a framework for investment in the agriculture sector, the child project will aim at minimizing the production and use of the most harmful inputs to food production systems and promote eco-friendly biocontrol and less hazardous crop protection agents, considering the current national baselines of participating countries where targeted outcomes are as follows:

? Enabling regulatory framework harmonized and enforced for faster, easier and more effective registration of eco-friendly biocontrol and less hazardous crop protection agents as alternatives to POPs pesticides and HHPs;

? Established clear criteria on investment and targets on crop protection solutions including government subsidies and potential commercial financial funding;

? Strengthened infrastructures for locally suitable types of pesticides, raw material availability and production readiness and technology transfer;

? Increased private and public partnership for sustainable financing and investment promoting circular economy to reduce disposable components in the delivery of biopesticides and/or retrieval and recycling of pesticides containers;

? Skill development, training and massive action on awareness and education of all relevant stakeholders

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities Yes

Private Sector Entities Yes

If none of the above, please explain why:

83. Key project stakeholders have been engaged and consulted during the project development mainly on data validation (survey and face-to-face/online meetings), baseline data gathering, and future

engagement in the project. Relevant ministries have been met and consulted and close collaboration with possible pilot demonstration facility, local government units and agroforestry site visit have been undertaken. The project envisages collaboration with farmers groups, local communities, civil society, and private sector entities on its activities. The participation of indigenous people will be at the project sites in the Philippines, in Region 6 (Western Visayas) and Region 11 (Davao Oriental) belonging to Bukidnon Panay and Mandaya tribes respectively. A detailed description of the stakeholders consulted during the PPG and the project's Stakeholder Engagement Plan (SEP) is provided in **Annex I.**

84. During the PPG preparation, there were two project sites in the Philippines that may possibly involve indigenous peoples (IPs) groups. UNIDO acknowledges that the involvement of Indigenous Peoples group may require specific approval from the indigenous communities involved in the project. Thus, Free Prior and Informed Consent (FPIC) will be observed in the following project sites:

Region 6 (Western Visayas State University, Lambunao Campus), Philippines

The 1,200 hectares allotted for this project do not fall under ancestral domain. However, local partners reported the presence of some Panay-Bukidnon families near the project site. These are culturally indigenous Visayan group of people who reside in the Capiz-Lambunao mountainous areas.

The project local partner, Leganes Premiere Land Corporation, will engage the Panay-Bukidnon farmer families through components 2 and 3 of the project. Engagement such as awareness raising, and capacity building are incorporated in the Stakeholder Engagement Plan. During the implementation of the project and the IP stakeholders identified, FPIC will be secured.

Region 11 (Davao Region), Philippines

It is estimated that 50% of the project site are under ancestral domain and there is an on-going application for Community Based Forest Management. Local partners conducted a series of consultation with the IP groups (Taguibo and Culiahan Peoples Organizations) regarding the project. One of the challenges raised by IP farmers is the boundary dispute since there is no existing cadastral survey existed. The project will be able to provide technical assistance on this aspect (i. e. Lidar equipment for surveying) solve boundary concerns. Neem trees will be planted in these boundaries not only to serve as markers but also to provide future source of raw materials (neem seeds) for biopesticides manufacturing.

A formal project consultation was conducted on November 10, 2022, where IP groups attended. There was a discussion on integrating of neem-based biopesticide in the agroforestry practices of the IPs and the IP representatives indicated their support and commitment to the project. The commitment of support as well as their co-financing counterpart was submitted to UNIDO. It is worthy to mention that the local government (Mayor of Mati City and Governor of Davao Oriental) were engaged during the visits and the role of IPs in this project was highlighted.

Please provide the Stakeholder Engagement Plan or equivalent assessment.

85. The project recognizes the importance of open and transparent engagement with all project stakeholders, based on the recognition that effective stakeholder engagement can enhance the

environmental, social, and economic sustainability of all actions planned under the project, ensure project acceptance and implementation according to quality standards assured by the United Nations Industrial Development Organization (UNIDO) and implementing partners.

Key objectives of stakeholder engagement include:

i) Identify the main stakeholders of the project and their basic roles and responsibilities in relation to the project.

ii) Promote effective and inclusive participation with all parties affected by the project, taking advantage of their experience and skills.

iii) Ensure that project information is disclosed in a timely and understandable manner.

Table 2 below presents the analysis of the affected parties, their influence and potential role in the project.

Table 2 Stakeholders Influence and Role in the Project

Stakeholder	Type of organization	Characteristics	Influence	Component	Role in project
HIL (India) Limited	Government of India enterprise	Central Public Sector Enterprise involved in the manufacturing of all agri inputs i.e. Agrochemicals, Fertilizer and Seeds	High	All Components	Project executing agency
Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India	Ministry of Government of India	Principal instrument of Government for the implementation of all policies relating to chemicals	High	Component-1 & 4	Nodal Ministry of HIL
Directorate of Plant Protection, Quarantine & Storage, Ministry of Agriculture & Farmers Welfare	Ministry of Government of India	Regulatory Authority in the country. Implement policies and guidelines for the manufacture and use of bio pesticides in the country	High	Component-1, 3 & 4	Registration of pesticides
State/ District Agriculture department	State level Department under the Ministry of Agriculture	End users of the bio products	High	Component-1 & 3	End users
National Center for Organic & Natural Farming, Ministry of Agriculture & Farmers Welfare	Ministry of Government of India	Empowering farmers Financial assistance through National Bank for Agriculture and Rural Development (NABARD) for bio-fertilizer & bio-pesticides production unit	High	Component-1, 2 & 3	Empowering farmers
Crop Care Federation of India (CCFI)	Industry association	Industry association	Medium	Component-3	Capacity building and create awareness among farmers and end users
Fertilizer and Pesticide Authority	National Government	Approve polices recommended for the project and any proposals for additional responsivity to the Department of Agriculture of its institutions use of fertilizer and pesticide.	High	All components	Executing Agency
Bureau of Agricultural and Fishery Standards	National Government	In charge of developing and enforcing standards for organic pesticides	High	Component2	Recipient country government
Department of Agriculture		DA has been actively involved in organizing trainings/symposia through its rural field units since 2016 for capacity building and has been implementing its GAD policies	Medium	All components	Recipient country government
Development Bank of the Philippines	Financial institution	Equity's key purpose is to financially empower and elevate communities at grassroots level.	Medium	Component 2	Interested Party
Land Bank of the Philippines	Financial institution	Equity's key purpose is to financially empower and elevate communities at grassroots level.	Medium	Component 2	Interested Party
Taguibo Integrated Farmers Association, Incorporated (TIFA, Inc.) and Culian Peoples Organizations	Peoples organization	Covers about 808 farmer members covering 3,600 ha in Mati Davao	High	Components 2 and 3	Interested Party
Tarlac Farmers' Cooperative	Peoples Organization	Represents the 26 Farmers groups in First District of Tarlac (10 municipalities) with an estimated 50,000 ha	High	Components 2 and 3	Interested Party
JC Dots Agri Trading	Private Sector	Producer of soil ameliorant and organic fertilizer based in Carmen, Cebu with experiences in field testing and research on biopesticides.	High	Components 2 and 3	Interested Party
West Visayas State University through Leganes Premiere Land	Private Sector	Owns 3,600 ha of land that will be developed for sustainable agriculture and forestry	High	Components 2 and 3	Interested Party
UPLB Biotech	Research Institution	Vast research on Trichoderma as compost fungus activator and organic fertilizer (Biospark Trichoderma as commercial product)	High	Components 2 and 3	Interested Party

A detailed Stakeholder Engagement Plan (SEP) is provided in **Annex I.**

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

86. The project will use consultation tools and methods based on the experiences already developed in previous projects by UNIDO and its implementing partners. The project will ensure that these

consultation methods are based on the recommendations and principles indicated in this document. Should additional needs arise from identified gaps or changes in context, the project and this document will be adapted accordingly. Stakeholders and beneficiaries will participate in planned meetings and training workshops throughout the project cycle. Stakeholders at all levels will be able to consult with the project team through regular channels of communication with UNIDO and local technicians. Stakeholder Engagement Plan (**Annex I**) and Communication Plan (**Annex J**) have been drafted to ensure that stakeholders are fully involved and the messaging is appropriate for each set during the project implementation.

The envisaged stakeholder engagement activities are presented in Table 3 below:

Table 3: Stakeholder Engagement Activities

Stakeholder Name	Method of Engagement	Location and Frequency	Resources Required	Budg
National Government	Continued coordination and communication throughout the implementation of the project through project managers in the Philippines and India.	• Steering Committee meetings • Technical Committee Meetings/face-to-face/virtual • Emails • Phone calls • Bilateral meetings of decision makers • Timing: Throughout	Resource required to engage this group in the project implementation through consultative meetings and workshops, project related events, trainings, development of knowledge products and disclosure.	This activity is embed knowledge managem communications to e disclosure and transp USD 2,000.00
Farmers /Distributors	Continued coordination and communication throughout the implementation of the project through project managers	• Technical Committee Meetings • Trainings and workshops • Specific events • Preprogrammed visits • Timing: Throughout the duration of the project	Capacity building, including activities specifically targeting farmers, producer organizations, cooperatives, and companies to contribute to the use and management of safe chemical alternatives such as biopesticides and sustainable agricultural practices including integrated pest management	This activity is embed knowledge managem communications – USD 2,000.00
Financial institutions	Continued coordination and communication throughout the implementation of the project through the project executing entity Philippines and India. Linkage with farmers groups and SMEs	• Technical Committee Meetings • Trainings and workshops • Specific events	Supports the participation of financial institutions in multistakeholder policy dialogue related to agriculture and the environment. Technical cooperation. Work with financial institutions partners to share experiences and to design and deliver solutions to promote the use and management of biopesticides and sustainable waste management.	This activity is embed finance and investme knowledge managem communications dial USD 2,000.00
Manufacturers, importers, formulators, distributors, and users of pesticides	Consultations with national and international consultants in the design phase (PPG), implementation and evaluation	• Technical Committee Meetings • Trainings and workshops • Specific events	Technical cooperation to promote the use and management of low-risk alternatives such as biopesticides and sustainable agriculture. Knowledge and research	This activity is embed knowledge managem communications USD 2,000.00
Women groups	Continued coordination and communication throughout the implementation of the project through project managers and national consultants in the Philippines and India.	• Technical Committee Meetings • Advisory group • Trainings and workshops • Specific events	• Capacity building, including activities specifically targeting women meaningful participation. Supports the participation of financial institutions in multistakeholder policy dialogue • Advocacy and communication • Knowledge and research	Embedded in the Ger Management budgec
Indigenous groups *(Mandaya and Panay Bukidnon)*	Continued coordination and communication throughout the implementation of the project through project managers and national consultants in the Philippines and India.	• Technical Committee Meetings • Advisory group • Trainings and workshops • Specific events	• Capacity development • Meaningful participation • Advocacy and communication • Knowledge and research	USD 5,000.00
Youth groups	Continued coordination and communication throughout the implementation of the project through project managers and national consultants in the Philippines and India.	• Technical Committee Meetings • Advisory group • Trainings and workshops • Specific events	• Capacity development • Meaningful participation • Advocacy and communication • Knowledge and research	USD 2,500.00
Private Sector	Consultations with national and international consultants in the design phase (PPG), implementation and evaluation	• Technical Committee Meetings • Trainings and workshops • Specific events	Supports the participation of the private sector in multistakeholder policy dialogue related to agriculture and the environment. Technical cooperation. Work with financial institutions partners to share experiences and to design and deliver solutions to promote the use and management of low-risk alternatives such as biopesticides and sustainable waste management.	USD 3,000.00
International Organizations	Continued communication throughout the implementation of the project	• Zoom meetings • Specific events	• Information exchange meetings • Digital hub	Embedded in Knowle management budget

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body; No

Executor or co-executor;

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

87. Gender and Development (GAD) considerations is an integral part of the FARM project strategy in consideration of Gender policies of the GEF, UNIDO as well as those of the Governments of the participating countries - India and the Philippines - where gender equality are one of the basic rights in the Constitution of each country.

88. In India, the principle of gender equality is enshrined under the 1950 Constitution of India, in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The constitution grants equality to women and empowers the State to adopt measures of positive discrimination in favor of women. According to Article 39 of the Constitution, the State shall make sure that men and women have an equal right to an adequate livelihood, there is equal pay for men and women, the economic system does not result in the concentration of wealth and the material resources are distributed to serve a common purpose. Under the Constitutional law, women have equal rights as men so as to enable them to take part effectively in the administrative of the country.

89. In 1990, the National Commission for Women was formed to safeguard the rights and legal entitlements of women. In 1993, India ratified the Convention on Elimination of All Forms of Discrimination Against Women (CEDAW) as commitment to secure equal rights of women.

90. The 1987 Constitution of the Republic of the Philippines recognize the fundamental equality between women and men before the law, as well as the protection of working women through safe working conditions. Similarly, the Constitution also prioritizes the needs of women and other underprivileged communities in ensuring their health development. The Magna Carta of Women (Republic Act No. 9710) serves as the nation's comprehensive women?s human rights law, stipulating the rights of every women

to non-discrimination in employment, comprehensive health services, information and education. The Labor Code of the Philippines (Presidential Decree No. 44, as amended by RA 6715) stipulates rights to equal pay and equal access to promotion and training opportunities between genders. These are all the broad legal framework within which the proposed project will be operating. Overall, the Philippines has closed 78.4% of its overall gender gap according to the 2021 WEF-Global Gender Gap Report, achieving the second best performance across the East Asia and Pacific region and 17th position globally.

91. A gender mainstreaming plan to address and mainstream gender issues in all project outcomes/outputs is designed in the project preparatory grant (PPG) phase and will be implemented in the project. The plan is based on the gender analysis conducted through focused group discussions, completion of GM-related questionnaire and secondary data gathering. The GM framework is aligned with the Stakeholder Engagement Plan (SEP) and Knowledge Management (KM), and is reported in Table 4. The list of stakeholders and partners for the implementation of the Gender Mainstreaming Plan are listed in Table 6. A detailed Gender Mainstreaming Plan is provided in **Annex K.**

Table 4. Gender Mainstreaming Plan

Gender Mainstreaming Activities	**Outputs**	**Mid-Progress Indicator**	**Final Indicator**	**Budget Allocation (USD)**
1. Gender and development awareness training workshops for **employees** in the biopesticide manufacturing and farmers	Ten (10) trainings organized with gender parity achieved	All trainings designed and planned, 40% of workshops completed;	All trainings completed; 50% attendants are female	5,000
	Training materials can be summarized and readapted into general GAD training framework for wider dissemination, reaching 5,000 people	Information, Education and Communication (IEC) materials drafted and prepared	IEC materials disseminated to wider audiences (5,000 people)	
2. Gender and development awareness training workshops for **professional managers** in the biopesticide sector	Target of at least 50% reached for the percentage of female managers trained; 5 trainings organized in total	All trainings designed and planned, 40% completed;	All trainings completed; 50% attendants are female	5,000

and farmers cooperatives	Training materials can be summarized and readapted into general GAD training framework for wider dissemination, reaching 5,000 people	IEC materials drafted	IEC materials disseminated to wider audiences (5,000 people)	
3. Dissemination of knowledge and best practices regarding **achieving gender parity** in agrichemicals industries	Information, Education and Communication materials prepared and disseminated to wider audiences, reaching 5,000 people	IEC materials drafted and prepared	IEC materials disseminated to wider audiences (5,000 people)	5,000
	Ten (10) related workshops for knowledge dissemination organized for decision makers, with gender parity achieved among attendants	All trainings designed and planned, 40% completed;	All trainings completed; 50% attendants are female	
*4. Dissemination of knowledge and best practices for biopesticide **production workers** and other stakeholders in the supply chain*	Information, Education and Communication materials prepared and disseminated to wider audiences, reaching 5,000 people	IEC materials drafted and prepared	IEC materials disseminated to wider audiences (5,000 people)	5,000

	Ten (10) related workshops for knowledge dissemination organized for decision makers, with gender parity achieved among attendants	All workshops designed and planned, 40% completed;	All workshops completed; 50% attendants are female	
5. Development of gender-specific guidelines and manuals for handling and managing agrichemicals and biopesticides	5.1. Clear, constructive, and practical guidelines addressing the differed psychological and physiological risks and needs of female and male workers drafted and approved	Stakeholder consultations and initial desk research for the contents; initial drafting of the guidelines	Drafts completed and approved for the guidelines	5,000
6. Provision of different-sized PPEs to biopesticides formulators and other workers and for end users of biopesticides, i.e. farmers in the demonstration sites	Procurement and distribution of close-fitting PPEs to relevant personnel, especially to smaller-sized employees who were previously unable to attain adequate-sized PPEs	Procurement and distribution plan designed and approved	All procured PPEs distributed, with at least 80% of the recipient for smaller-sized PPEs being females	5,000
7. Capacity building workshops and focus groups for **female entrepreneurs**, especially of	7.1. Workshops and focus groups regularly organized (quarterly);	All trainings designed and planned, 40% completed;	All activities organized with gender parity achieved among attendants	5,000

SMEs, in the management of POPs, HHPs and biopesticides	7.2. Outputs summarized and prepared for wider dissemination (200 people)	IEC materials drafted and prepared	IEC materials disseminated to wider audiences (200 people)	
8. Capacity building workshops and focus groups for **heads of cooperative** on safe handling of agrichemicals and biopesticides (Environmental Code of Practice)	Workshops and focus groups regularly organized (semi-annual) with gender parity achieved;	All trainings designed and planned, 40% completed;	All activities organized with gender parity achieved among attendants	10,000
	Outputs summarized and prepared for wider dissemination (2,000 people)	IEC materials drafted and prepared	IEC materials disseminated to wider audiences (2,000 people)	
9. Collection of gender-disaggregated baseline data on the agricultural industry	Wider collection of data based on existing survey formats from this project;	Data collection approach and procedures designed; Surveys distributed	Data collected and cleaned	5,000
	Creation of a GAD database for result monitoring (combined with Activity 11)	Database designed and integrated in the FARM network	Database completed	
10. Stakeholder consultation meetings with groups and organizations on	Meetings with stakeholders completed	All meetings planned and scheduled; 40% completed	All meetings completed	2,500

gender awareness and development, as well as stakeholders working on inclusion and empowerment of marginalized communities	Experiences and lessons summarized and prepared for wider dissemination if applicable	Minutes kept; IEC materials drafted and prepared	Minutes kept; IEC materials disseminated (audience depending upon the nature of meetings)	
11. Development and further refinement of gender indicators to monitor the implementation of the project with relevance to gender mainstreaming	Quantifiable gender indicators developed to report on and comparatively analyze gender mainstreaming (GM) results (combined with Activity 9)	Indicators designed and agreed upon	Data on gender indicators collected and comparatively analyzed to monitor the GM results	2,500
12. Further review of industrial policies and guidelines regarding the management of agrichemicals and its safe alternatives	12.1. Entry points for GM existing policies identified; GM guidelines for agricultural sector developed	Entry points identified	GM guidelines developed and approved	2,000

92. The communication strategy will include activities for disseminating information on environmental and socio-economic risks associated with POPs and HHPs and related issues for the public especially women and youth groups as well as relevant community groups including indigenous groups, etc. The project will also take a concerted effort to target women and children in training and awareness raising campaigns with specific topic on women and youth whose exposure to pesticides will be reflected in the agenda.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women

Does the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

93. Under the FARM Child project, HIL shall associate with private entities engaged in agriculture sector. The objective is to achieve maximum outreach amongst the farming community. HIL has identified entities like Crop Care Federation of India (CCFI), a conglomerate of 50 large Indian corporates manufacturing agrochemicals and engaged in training of farmers on proper use of Agrochemicals. On similar lines, HIL shall rope in Confederation of Indian Industry (CII), which is another renowned industry confederation imparting training to farmers on different aspects related to agricultural inputs and technologies. HIL shall also rope in private entities, cooperatives and NGOs like Farmers Self Help Groups, Farmers Producers Organizations, Indian Farmers Fertilizers Cooperatives Ltd. (IFFCO), Krishak Bharati Cooperative Limited (KRIBHCO), Vivekananda Institute of Biotechnology (VIB) and NGOs like Anugami Lokrajya Mahabhiyan (ANULOM), Chambal Agriculture Marketing Cooperative (CAMCO), Digital Kissan Farming & Organic Producer Company Limited (DKFO), Agriculture Rural Development & Environmental Awareness Foundation (ARDEAF), many others, which are directly linked with farmers in remote locations of the country to take the benefits of the FARM Child Project for maximum coverage.

94. Association of pesticide companies that help improve productivity of Filipino farmers and contribute to Philippine food security in a sustainable way, such as CropLife Philippines is envisaged to be engaged. Crop Protection Association of the Philippines (CPAP) with numerous pest control company members will be part of the awareness and capability raising activities particularly on the Environmental Code of Practice and Safe and Judicious Use of Pesticides. JC DOTS, an Agri Trading Company based in Carmen, Cebu in Region 7 for its Fertilizer and Soil Ameliorant Production facility and soil analysis laboratory with current researches for biopesticide application in Regions 1, 2 and 6 in the Philippines will be engaged in the field testing of Neem biopesticide in rice and for the production of Neem based biopesticide. The PPP venture of West Visayas State University through Leganes Premier Land Corporation will be a demonstration site for agroforestry where 100 ha will be planted with Neem (Azadirachta indica) trees.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

95. The envisaged project risks and associated mitigation measures are presented in Table 5 below:

Table 5. Project risks and associated mitigation countermeasures.

#	Risk Description	Risk Category	Impact (1 to 5) (& Probability (1 to 5)	Risk Treatment / Management Measures
1	Improper HS codes may represent a risk for import, discouraging international trade of the biopesticides	Regulatory	I3 P3	One of the goal of this child project is to reduce the risk of improper classification during import / export. To this end, local expert with extensive knowledge on import / export regulation of chemicals, supported by international experts will be recruited.
2	Fair market policies on biopesticides not supported by manufacturers	Financial	I3 P3	The project will provide sufficient evidence through awareness raising that fair market policies of biopesticides associated with IPM are the proper marketing tool for biopesticides manufacturing will be market winners against conventional pesticides
3	Lack of data related to pesticides and bio-pesticides in the Philippines, or data owners not keen to share information	Technical	I2 P4	The templates for data collection and generation of relevant statistics will be prepared in coordination and agreement with statistic and agriculture authorities, custom authority, farmer associations and other data owners . A fair mechanism for ensuring confidentiality of sensitive information (i.e. commercial) will be put in place, to ensure a successful cooperation with data owners.
4	Challenges in identifying a technology partner for the manufacturing of biopesticides in India	Technical	I4 P1	HIL has already started the identification of suitable technology partners in India. There are many manufacturers in India of the proposed biopesticide products, and an early starting of this activity will ensure MoUs can be achieved without significant delays.
5	Risk: delay of registration due to reiterate requests of data submission.	Regulatory	I4 P2	HIL has a significant experience in the development of registration dossier for pesticides, which will reduce at a minimum the risk of dossier rejection.
6	Risk: Access to financing mechanisms may be cumbersome for small farms. Farmers do not reached by awareness raising campaign related to financing mechanism.	Financial	I3 P3	The project will overcome the current communication obstacles hindering the application to financing schemes, and will practically support the farmers, through training and practical examples, in filing their applications. This will ensure that a large number of farmers will apply to relevant support funds

#	Risk Description	Risk Category	Impact (1 to 5) (& Probability (1 to 5)	Risk Treatment / Management Measures
7	Farmers not interested or not informed on insurance schemes. Insurance providers not willing to develop specialised insurance products for biopesticides.	Financial	I2 P2	Building on the experience already achieved in India on insurance schemes covering biopesticide and IPM will ensure a smooth implementation of this activity
8	Possible development of areas where neem trees are planted	Technical	I3 P3	The project will strictly follow up on the compliance of partners concerning the Philippine law on cutting trees.
9	Setting up and permitting of the manufacturing plants or registration of biopesticides take longer than expected.	Regulatory	I4 P3	Permitting of installation of the new equipment and erection of buildings for the manufacturing of biopesticides will be prioritized soon after the approval of the project. Previous experience of HIL in the setting up and permitting of manufacturing plants as well as the registration of biopesticides reduces the risk that the additional manufacturing capacity is not achieved in time. In the PPG phase, HIL has already provided a detailed plan concerning the envisaged permitting and installation of new plants and the registration of biopesticides.
10	Low participation of farmers, or not enough to cover all the demonstration areas.	Knowledge	I4 P3	The project will carry out a preparatory awareness raising activity on the advantage of biopesticides and IPM over conventional farming to ensure that the demand for training will be high.
11	Training on registration and accreditation not a priority for participants resulting to low interest and difficulty in finding proper trainers.	Knowledge	I2 P2	UNIDO and HIL experience in delivering training in complex matters on chemicals and chemical registration will ensure the success of the training. The training sessions will be planned in advance to ensure participation of the relevant trainees from the private and public sectors.
12	Climate conditions (for instance floods or droughts), or low technical capacity of the trainers and farmers in charge of the demonstration would hinder the complete demonstration of biopesticides.	Climate	I3 P4	A mapping of the areas with highest climate risk has already been developed in the course of project preparation. Additional demonstration fields will be identified for replacement in case of climate issues. The climate risk in agriculture however cannot be completely overcome.

#	Risk Description	Risk Category	Impact (1 to 5) (& Probability (1 to 5)	Risk Treatment / Management Measures
13	Practical barriers and knowledge gaps mean that nonchemical alternatives are not as effective as hazardous chemicals	Technical	I3 P3	Biocontrol options tend to be pest and crop-specific, making it more challenging for farmers to know which product to use. These risks will be mitigated by cooperation with biopesticide manufacturer to predict and address potential problems.
14	Indigenous people, women, and other vulnerable groups are excluded from decision making that may affect them	Social	I2 P2	The development of safeguards instruments including environmental and social risks assessment, stakeholder engagement plan, gender action plan, and IP plan, when applicable, will identify the risks and measures to protect their rights and access to resources
15	Farmers behavioural change is not adequa Te	Knowledge	I3 P3	During its implementation, the programme will be relying on the co-financers to reach out to the farmers. During the development and implementation, awareness raising and training will facilitate the shift toward bio-pesticides
16	Restricted travel	Management	I2 P2	Though most countries have reopened since the COVID-19 pandemic first hit, lockdowns and restricted travel measures continue. Meetings, works hops, and consultations will be held virtually as much as possible.

•

•96. Climate change and agriculture are interrelated changes occurring in the global scale. Some of the effects are changes in temperatures, rainfall and climate extremes; changes in pests and diseases; changes in atmospheric carbon dioxide and ground level zone concentrations; changes in nutritional quality for some foods; and changes in sea level.

•India is vulnerable in varying degrees to natural disasters. Around 59% of the landmass is prone to earthquakes of moderate to very high intensity just like the Philippines. About 12% of India is prone to floods and river erosion while 5,700 km long coastline is prone to cyclones and tsunami. The 68% of India?s cultivable area is vulnerable to droughts while the hilly areas are at risk from landslides and avalanches.

•

•97. As stated by the Second National Communication 2014 to the UNFCCC (NC2), ?The mere location of the Philippines on the tropical rim of the Pacific Ocean and its archipelagic grouping of waterbound islands make it highly vulnerable to the atmospheric disturbances and environmental irregularities resulting from climate change.? The Philippines? ranking on vulnerability to climate change has moved up from No. 12 to No. 3, meaning that it has become more vulnerable compared to other countries. Furthermore, the frequency of tropical cyclones in the Philippines is higher than in any other region of the world, with up to 20 tropical cyclones entering the Philippine Area of Responsibility and up to 9 hitting the land. Based on the latest report from the Philippine Atmospheric, Geophysical and Astronomical Service Administration (PAGASA, 2018), the observed temperature in the Philippines is rising at an average rate of 0.1?C/decade. Assuming the moderate emission scenario, the increase in the mid 21st century can reach 0.9?C to 1.9?C, whilst for the high emission scenario the increase can reach 1.2?C to 2.?3 C. The same source reports an increasing trend in annual and seasonal rainfall. This is also supported by the data from Salvacion et al. (2018) reporting

significant trends in monthly rainfall, with an increase of 0.34 mm/year. Based on the Climate Risk Profile for the Philippines [2018], climate change will impact mostly the agricultural sector, and will negatively affect the availability of water resources and energy, as well as urban infrastructures. Factories and infrastructures located near landslide-prone areas or near coastal areas are obviously also facing significant risks.

98. For the project sites in the Philippines, climate change risk has been identified. Regions 3 (Central Luzon), 4 (Calabarzon), 6 (Western Visayas), 7 (Central Visayas) and 11 (Davao Region) are vulnerable to climate change and Region 8 (Eastern Visayas), are vulnerable to climate impacts including typhoons and flooding. The project sites identified in Regions 6 and 7 (see map on Figure 3.c. and Section 1b), have recorded very low flooding incidence. Mitigation measures including emergency plans will also be developed to ensure that risks due to climate change will be avoided.

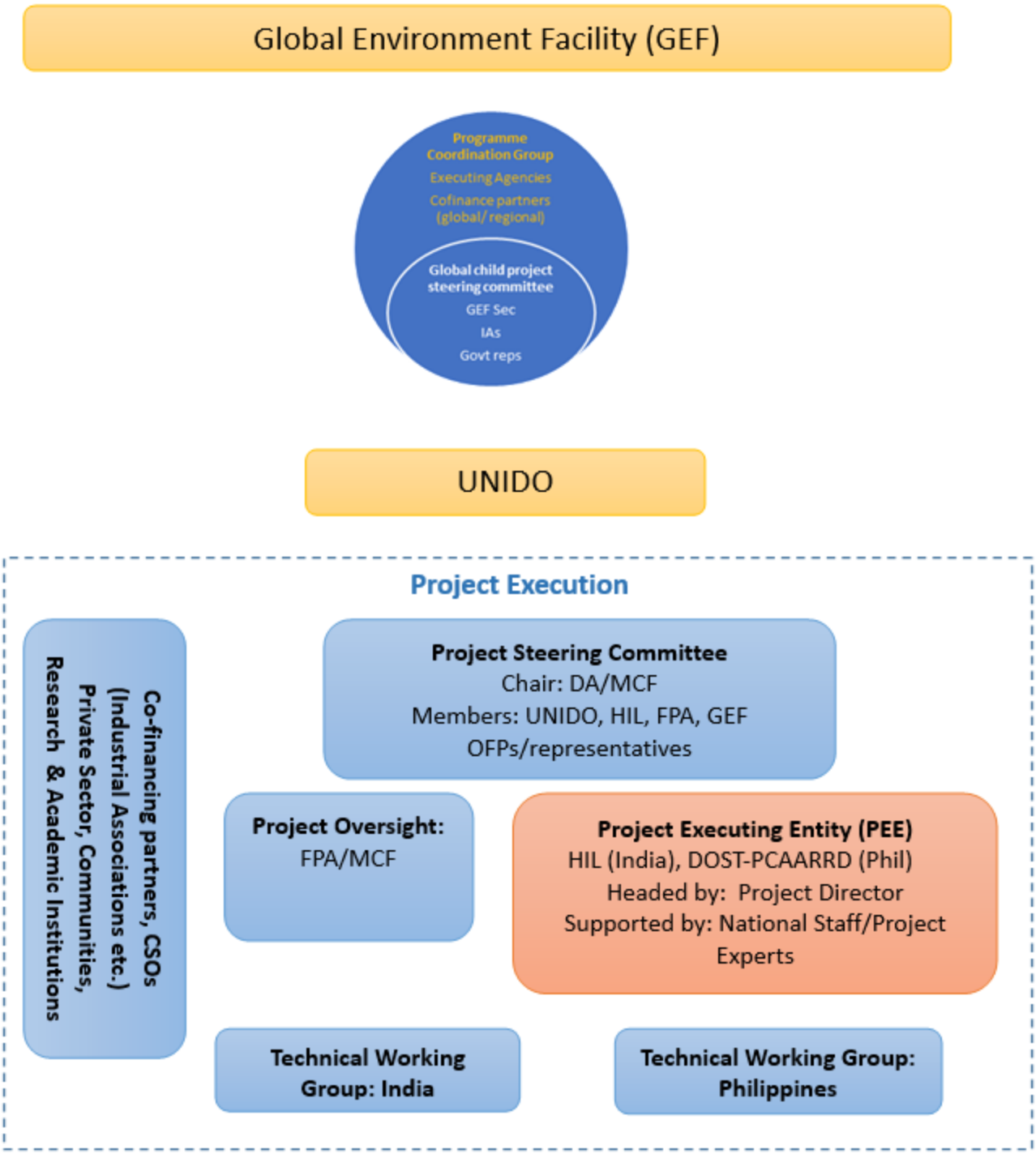
COVID-19 risk

99. Beside the intrinsic and obvious risks associated with the infection with the new coronavirus, the COVID-19 pandemic has been and continues to be a source of risk for the society and the healthcare system in India, the Philippines and worldwide. Although COVID-19 management is in place for India and the Philippines and the risks of transmission is low since majority of the global population are vaccinated, all regulated and prescribed COVID-19 protocols shall be followed in the project. On project management, delays and challenges that maybe posed by COVID-19 related restrictions will be mitigated through the use of various platforms available for coordination to ensure continuance of project activities. Project management, in UNIDO and relevant offices in India and the Philippines, have adapted to the situation and the new modalities for project implementation and execution. Proper measures will always be undertaken to ensure that infection risks to participants will be avoided or reduced to a minimum.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

100. The institutional arrangement and coordination mechanism of the project is provided in Figure 4 below:



The project will be implemented by UNIDO and the Fertilizer and Pesticide Authority under the Department of Agriculture (Philippines) and Ministry of Chemicals and Fertilizer (India) will be the lead agencies supported by HIL India and the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) under the Department of the Science and Technology (DOST) through the Philippine Agriculture and Resources Research Foundation Inc. (PARRFI) as project executing entities (PEE). UNIDO, as GEF implementing Agency for the project, will play a close coordination and liaison role

with the executing partners, and with the GEF Secretariat. It will maintain the overall oversight of the project implementation, manage the overall budget and supervise the execution of the project. A project manager will be appointed in the UNIDO HQ to oversee the implementation of the project and the UNIDO Country Offices in the India and the Philippines may also provide in-country support.

Project Executing Entities

101. Hindustan Insecticides Limited (HIL) will be the project executing entity (PEE) for India. For the Philippines, following the decision by DA-FPA, the selection of the Project Executing Entity was conducted during the PPG in the form of a Call for Expression of Interest for project execution. The Call was responded to by six (6) national entities which were evaluated based on an agreed set of criteria. Two (2) entities were shortlisted for interview and based on further evaluation, the Philippine Agriculture and Resources Research Foundation Inc. under DOST-PCAARRD was recommended as PEE for the Philippines. Both PEEs will be confirmed at project inception subject to the successful completion of the HACT assessments currently being undertaken for both entities.

102. The implementations function of UNIDO and execution functions of the PEEs will be fully regulated through a Project Execution Arrangement (PEA). The Agreement defines the respective responsibilities of the PEE, including but not limited to activities, deliverables, financial, personnel, procurement and asset management components, as well as the reporting schedule and format.

103. The confirmed PEEs will be requested to designate internally, or recruit directly, project management personnel to form a Project Management Unit (PMU) to execute the activities of the national project. The PMU will be responsible for the day-to-day management of the project execution, monitoring and evaluation of project activities as in the agreed project work plan. The PMU will coordinate all project activities being carried out by project experts and partners. The PMU?s responsibilities will include (i) assignment and supervision of project activities; (ii) recruitment of international and national consultants; (iii) coordination with stakeholders, donors, the IA, relevant national agencies and the private sector; (iv) preparation of terms of reference (TORs) for project activities, (v) review of project progress reports submitted by subcontractors and consultants (vi) supervising project procurement and financial resources in accordance with UNIDO procedures, (vii) organizing and convening project coordination stakeholder meetings, and (viii) review of project outputs and other tasks as required by the project and; (ix) prepare required project reports. The PEE is also responsible for the recruitment of experts and facilitation of the conduct of the midterm evaluation of the project and should provide all related information to the evaluation experts for any mid-term review and final evaluations.

104. A Project Steering Committee (PSC) will be established comprising of representatives of relevant agencies from both India and the Philippines. The PSC will act as an advisory mechanism to maximize synergies and ensure the successful design and implementation of the project. The main role of the PSC is to provide operational guidance as well as overall, high-level coordination and project validation forum during the implementation of the project. The PSC will meet regularly and as necessary to track progress and provide opportunities for identifying potential synergies, as well as to increase uptake of lessons. The DA and MCF will act as Chairs of the PSC on a rotationary basis. UNIDO, HIL, FPA and GEF OFPs/representatives are designated members. Other stakeholders maybe invited to the PSC as deemed necessary. The PSC will ensure that any proposed changes or amendments to the project and/or to the annual work plan (AWP) and budgets are done in accordance with the approved project document, the GEF policy C.39/inf 3 and UNIDO rules and regulations

Transfer of assets

105. Full or partial ownership of equipment/assets purchased under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the government counterpart in consultation with the UNIDO Project Manager.

Legal clause

106. The present project is governed by the provisions of the Standard Basic Cooperation Agreement between the Republic of Philippines and UNIDO, signed and entered into force on 26 February 1993.

107. The Government of the Republic of India agrees to apply to the present project, mutatis mutandis, the provisions of the Revised Standard Technical Assistance Agreement concluded between the United Nations and the specialized Agencies and the Government on 31 August 1956 and as amended on 3 October 1963.

Coordination with other GEF initiatives and other similar initiatives

108. UNIDO is currently implementing projects with similar or tangentially relevant objectives as the current proposal. Coordination with these project will be undertaken:
? The GEF-funded project titled ?Development and Promotion of non-POPs alternatives (GEF 4612) is a collaboration between UNIDO and the Ministry of Environment, Forests and Climate Change (MoEFCC) and focuses on the introduction of bio- and botanical pesticides and other locally appropriate cost-effective and sustainable alternatives to DDT as first step for reduction and eventual elimination of dependency on DDT, ensuring food safety, enhancing livelihood and protecting human health and the environment.
? GEF 4385 ?Removal of Technical and Economic Barriers to Initiating the Clean-up Activities for Alpha-HCH, Beta-HCH and Lindane Contaminated Sites at OHIS? while not introducing alternatives to chemical pesticides, elaborates the technical and economic barriers that impeded clean-up of pesticide contaminated sites. The barriers identified clearly illustrate the need to ensure application of more environmentally- and health- friendly alternatives.

109. The project will also seek synergy and coordination with other agencies and entities involved in the implementation of similar GEF projects including Central Asia DDT (GEF ID 9421), Afro II (GEF ID 4668) and African Chemobs (GEF ID 9080). As part of the FARM integrated program, the project will ensure full coordination with other child projects.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

India

110. The Government of India signed the Stockholm Convention on POPs in May 2002 and ratified it on 13th January 2006. India is committed to fulfil its obligations under the Convention and prepared its National Implementation Plan (NIP) in 2011 where priorities and action plan strategies were identified. The NIP implementation has been harmonized with the 5 year planning process in India that seeks to provide guidance for the development of policies and programmes that promote sustainable management of the nation?s resources. The UNIDO FARM Child project is in line with the NIP to phase out POPs such as DDT and dicofol and other hazardous chemical pesticides in the agriculture sector.

111. The project is also in line with the objective of the Integrated Pest Management (IPM) programme that the Plant Protection and Plant Quarantine under the National Mission on Agricultural Extension and Technology (NMAET) aiming to strengthen and modernize pest management approach in India.

112. Under the National Mission for Sustainable Agriculture (NMSA) and National Action Plan on Climate Change of the Ministry of Agriculture, several methods have been mentioned in the plan that reiterate efficient, safe and environmentally sound methods of pest management by incentivizing research, commercial production and marketing of biopesticides and other biocontrol measures in agriculture use. NMSA address the issue of increase in pesticide consumption in India and the problem with its injudicious use like development of resistant strains in insects and plant pathogens, resurgence of pest species, direct exposure to the applicator, destruction of parasites, predators and toher beneficial organisms, accumulatin of pesticide residues in agricultural commodities, water, air and soil, etc. The project is in line with NMSA plan where the consumption of highly hazardous pesticides in the agriculture sector will be reduced through switching to bio and botanical pesticides and IPM methods.

Philippines:

113. The project is relevant to the action plans stipulated in the 2014 updated National Implementation Plans of the Philippines with regard the minimization of unintentionally-produced POPs in the uncontrolled burning of wastes, of which the health care waste sector is a contributor. It NIP stipulates the following priorities: adoption of BAT technologies, adoption of BEPs in relevant sectors, strengthening of national technical capability to manage uPOPs issues and strengthening of regulatory and analytical capacities

114. The Philippine Development Plan, 2017 ? 2022, recognizes the critical role the environment and natural resources (ENR) sector plays in the country?s development. According to the national plan, it is crucial that environmental health is improved to support the accelerated economic growth, strengthen resilience against the impact of climate change and disasters (natural and human induced),and improve the welfare of the poor and marginalized members of society. Further, strategic efforts toward protecting both human health and the environment are prioritized, recognizing that these are areas of concern that are not necessarily mutually exclusive.

115. Country Programming Framework (CPF) 2018-2024 of UN FAO and the Philippine Government defines the technical cooperation priorities for the period 2018-2024 of the partnership between the Food and Agriculture Organization of the United Nations (FAO) and the Government of the Philippines. The document is anchored in the priorities and development thrusts enunciated in the Philippine Development Plan (PDP) 2017-2022 which focus on: (i) accelerating human capital development, specifically the outcome on improved nutrition for all; (ii) expanding economic opportunities in agriculture, fisheries, and forestry (AFF); (iii) ensuring ecological integrity, clean and healthy environment; (iv) reducing vulnerability of individuals and families; and (v) attaining just and lasting peace.

116. Philippine Action Plan for Family Farming (2019 ? 2028. Among the pillars of the plan that align with the project are the following:

Land Productivity: Land productivity and diversity of production are often relatively higher on family farms than on factory or corporate or industrial farms due to lower transaction costs associated with hiring a family instead of hired labor, and better knowledge on specific farm landscape characteristics due to a

stronger connection with the territory (FAO and OECD, 2012; Larson, D.F. et al, 2012; Wiggins, S., 2009; Lipton, M., 2006; Sen, A., 1996).

Social Equity and Community Well-being: Family farming contributes to addressing key challenges related to agrarian reform, poverty, and employment. Indeed, in communities dominated by family farming, better opportunities for civic and social engagement, stronger attachment to local culture and landscapes, and higher Commercial Farms 20% Family-managed Farms 80% 6 level of trust within communities have been observed (Pretty, J. and Bharucha, Z.P., 2014; Donham, K. et al, 2007; Lyson, T. et al, 2001;Jackson-Smith, D. and Gillesspie, G., 2005).

Environmental Sustainability and Climate Change Response: Due to their higher attachment to local communities and landscapes compared to factory or corporate or industrial farms, family farmers have stronger interest and care for the environment upon which they rely on for their agricultural production and livelihoods. Moreover, family farmers tend to be more receptive towards the adoption of sustainable approaches that are based on their knowledge of local ecosystems, agro-ecology, and organic agriculture.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

117. The project also aims to use available global and regional knowledge channels including the BRS Secretariat, BRS regional centers, the GEF and UNIDO websites, to disseminate project outputs. With the prominence of virtual platforms for information sharing, this would further facilitate reaching out to a wider global audience. The KM approach is best illustrated in Figure 5 below.

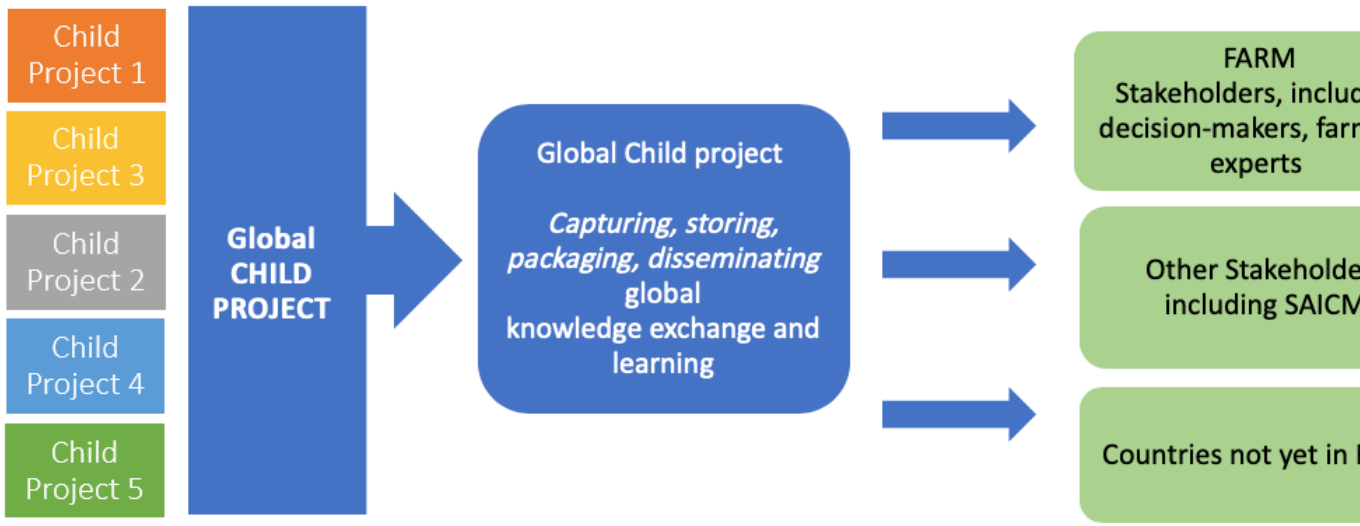


Figure 5: The FARM knowledge management approach. Farm Child Project 1, 2, 3 represents the implementing agencies, one of which is UNIDO.

118. The flow of information from the FARM Child projects to the global community of stakeholders is reflected on Figure 5 extracted from the global FARM project. Each child project focuses more specifically on a particular country within the pink circle, which are India and the Philippines for UNIDO FARM Child project. Each one integrates guidelines and views linked to the Global Environmental Benefits (GEBs: international agreements and 2030 Agenda). Each child project will also incorporate the indicators and recommendations developed by GEF SEC, ADB, UNEP, UNDP, UNIDO, FAO, UNEPFI, private sector partners and governments and some knowledge exchange will be made both ways between these institutions and each FARM child project through the Project knowledge partners (GGKP). Relevant KM outputs including knowledge, lessons learned, Projects Progress and Country focused learning products will then be organised and split into ?The Green Forum?, ?Trainings and Courses? and ? working meetings? on the Farm Knowledge Platform hosted by the GPP of the GGKP and disseminated to all project stakeholders at National and international levels. In parallel, relevant KM products will also be shared to the GEF Secretariat and GEF Agencies engaged in the FARM project that will ensure that results and recommendations are integrated into the data of the GEF council, GEF partnership and other agencies to support the transition towards less toxic agricultural practices.

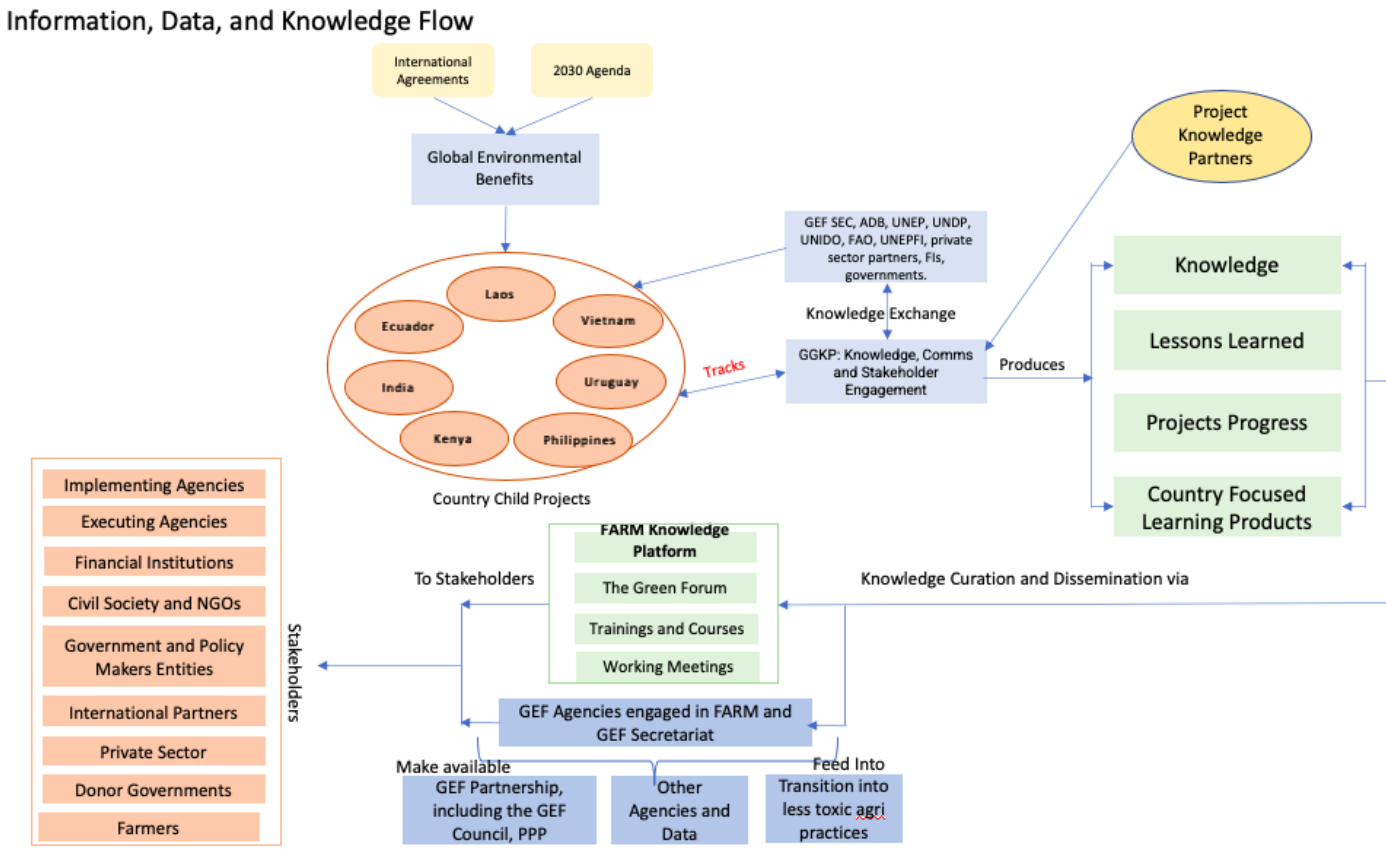


Figure 6 Diagram Information Data and Knowledge Flows in the FARM project from the regional FARM child projects to the global community (source: FARM project)

Details on the Knowledge Management (KM) infrastructure and approach of the project is provided in **Annex L.**

119. The KM approach is complemented by the communication plan (Annex J), and is strongly linked to the stakeholder engagement and gender management plans (Annexes I and K). The knowledge products generated in UNIDO child project will be disseminated according to the communication plan that integrates and addresses stakeholders concerns, priorities and knowledge and capacity building needs.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

120. Monitoring and evaluation (M&E) of project development is a key element of the project design and will be performed at project outcome, project output and project activity levels as well as at functional and management levels. The main purpose of the M&E program will be to measure and document implementation progress towards outcomes and objectives according to verifiable indicators and related means of verification. Evaluation of performances will assist in monitoring effectiveness and results, identifying underperforming activities and suggesting remediating actions, monitoring project risks and flagging project risks early on, refining further work in order to ensure a coherent, coordinated and timely achievement of project objectives in accordance with the project results framework. At the same time, it will support the communication and coordination mechanism of the project network, the compilation of lesson learned from the project and the dissemination to the primary stakeholders as well as the international community of the knowledge and experience acquired during the project lifetime. The M&E activities with corresponding budget are provided in Table 6 below:

Table 6: Monitoring and evaluation budget

M&E activity	Responsible Parties	Indicative costs to be charged to the Project budget (USD)		Timeframe
		GEF grant	Co-financing	
Design and implementation of M&E system	PMUs in consultation with other project partners	5,000	50,000	Inception Phase
Monitoring indicators and project progress	PMUs, local and international consultants as needed	15,000	150,000	Regularly, with an annual review prior to the finalization of APR/PIR
Visits to demo sites to monitor progress and assess delivery of services	PMU, lead agencies	70,000	1,537,682	As required, minimum once a year.

Coordination with the Global Programme	PMU, UNIDO, lead agencies	65,000	1,258,104	
Monitoring of Gender Action Plan, ESMP and SEP	PMU in consultation with other project partners	40,000	500,000	Regularly, with an annual review prior to the finalization of APR/PIR
Independent mid-term evaluation (external) and management response	UNIDO, PSC, PMU, relevant stakeholders, independent external evaluators.	60,000	300,000	Midpoint of project implementation
Independent final evaluation (external) and management response	UNIDO, PSC, PMU, relevant stakeholders, independent external evaluators.	70,000	300,000	At least two months before end of project
Total indicative cost		**320,000**	**4,095,786**	

121. According to the Monitoring and Evaluation policy of the GEF and UNIDO, follow-up studies including Country Portfolio Evaluations and Thematic Evaluations can be initiated and conducted. All project partners and contractors are obliged to (i) make available studies, reports and other documentation related to the project and (ii) facilitate interviews with staff involved in the project activities.

122. The project results will be monitored annually and evaluated periodically during project implementation as part of the planning processes undertaken by the project team in accordance with established GEF and UNIDO monitoring and evaluation procedures. The evidence of outputs such as the number of participants in training activities, the release of reports and manuals, site visits at demonstration facilities, etc. will confirm the congruence of outcomes and objectives.

123. Day to day monitoring of project execution progress will be performed by the PEE according to the work plan and identified indicators reported in the project's Annual Work Plan. The Project Team will inform UNIDO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely manner

124. Annual monitoring and evaluation will occur through PSC meetings which will take place once a year, at a minimum. The first such meeting will be held within twelve months of the start of full project implementation. The final evaluation will be performed at the end of project life and will consider the implementation of the project as a whole, paying attention to whether the project has achieved its stated objectives and contributed to the global environmental objective.

125. In addition to the M&E requirements for each child project as per the usual requirements of the Implementing Agency, the FARM Programme also has programmatic monitoring and evaluation requirements as set out by the GEF Policy on Monitoring (ME/PL/03). The Lead Agency (UNEP) and Global

Coordination Child Project reports annually to the GEF Secretariat on program-level results. GGKP will prepare a FARM Annual Progress Report documenting progress towards program level outcomes, major milestones achieved in the FARM program and FARM engagement in regional or global fora. This report will be based on information provided by the child projects. The programmatic M&E system is designed to fulfil the following requirements:

•i) To promote accountability by tracking progress towards achieving
•ii) The Global Environmental Benefits (Core Indicators)
•ii) The sum of progress towards child project outputs and outcomes as described in the child projects? results frameworks (FARM Common Indicators)
•iv) To promote learning through knowledge generation and sharing program experience and best practices with internal and external stakeholders.

126. GGKP will develop program dashboard to allow stakeholders and interested individuals to see progress against the results consolidated from all child projects. The set of FARM Common Indicators will supplement the GEF Core Indicators and provide more granular detail on the progress and learning of the child projects. These Programme Indicators will be developed during the first year of implementation but be strongly based on the child projects? logframe.

127. The joint planning, monitoring and evaluation cycle will use existing plans and reports produced by the child projects wherever possible to minimize additional reporting burden.

128. Each child project prepares and copies their annual work plan to GGKP in December/January. This will be consolidated by GGKP into the draft FARM global workplan focusing on shared, cross cutting activities such as communication, knowledge management, global, stakeholder engagement etc. GGKP, in its global coordination role will establish regular and informal contact between technical experts in the different child projects, on four cross cutting aspects - Knowledge Management, Communication, Stakeholder engagement and Gender. They will coordinate regular (quarterly) thematic working group meetings for the different cross cutting themes to maximize learning and establish an active and connected FARM Community of Practice These will be virtual meetings, combined with interactive online functions like the GGKP Green Forum or SAICM Communities of Practice.

129. In addition to the periodic reporting, the FARM programme will also organize regular events for information sharing and coordination.

•i) Annual FARM Coordination Meeting of the Programme Coordination Group (Implementing and Executing Agencies of the child projects, takes place in Feb-March each year). This meeting will review progress, review workplans from the child projects, and provide coordination between projects.
•
•ii)Bi-annual FARM Partners Forum. This meeting provides the opportunity for a wider group of stakeholders (e.g. child projects Executing Agencies and delivery partners) to share lessons, knowledge and communications, in order to inform annual planning for the next year. Child projects will fund the participation of their key representatives at the Forum, while the global child project will also include budget to invite non-FARM participating countries on a regional rotation (Date: October)

130. GGKP, in its global coordination role will establish regular and informal contact between technical experts in the different child projects, on four cross cutting aspects - Knowledge Management, Communication, Stakeholder engagement and Gender. They will coordinate regular (quarterly) thematic working group meetings for the different cross cutting themes to maximize learning and establish an active and connected FARM Community of Practice.

131. At implementation midterm, and as child projects conduct their separate midterm reviews (MTR), the Implementing Agencies will share the reports with the Lead Agency. UNEP will compile a summary of lessons learnt and recommendations for corrective actions to present and discuss at the Programme Coordination Group.

132. Following the independent Terminal Evaluation (TE) of each child project, the Lead Agency will also conduct a Programmatic Terminal evaluation in accordance with GEF evaluation guidelines (REF). The TE of FARM program will be carried out by the UNEP Evaluation Office. The TE of FARM will provide an independent assessment of project performance (relevance, effectiveness, and efficiency) and determine the likelihood of impact and sustainability.

Project Management Activities

Inception Phase

133. An Inception Workshop (IW) will be held within the first 3 months of project start. The IW aims to introduce, finalize and approve the implementation structure of the project, define the exact role, function and responsibility of the project team (government counterparts, UNIDO, PSC, PMU, co-financing partners, project execution partners, relevant stakeholders, etc.), and plan the first year Annual Work Plan (AWP) including appropriate indicators and related means of measuring performance. This would require a review of the indicators, targets and their means of verification reported in the project results framework, and recheck assumptions and risks. A detailed schedule of project review meetings and related M&E requirements and reporting activities, including the scheduling of the mid-term and final evaluation, will also be developed during the IW. Subsequent meetings of the PSC will be planned and scheduled, too. The first PSC meeting should be held within the first 12 months following the IW. During the IW, the project related administrative and financial requirements and procedures will be reviewed and agreed. The IW will also provide the opportunity to discuss and agree on the strategy for the dissemination of project results and other strategies related to the project such as the gender and the socioeconomic strategies. As an overall objective, the meeting will provide an opportunity to all partners to better understand and assimilate the goals and objectives of the project and take ownership of the project. The PEE will draft the Inception Report within a month from the meeting. The draft will be circulated for comments by project partners.

Annual monitoring and evaluation

134. An annual meeting for the review of project progress and the planning of activities for the coming year will be organized by the PMU with the participation of executing partners before the annual meeting of the Project Steering Committee (PSC). Input to the annual Project Implementation Report (PIR) will be provided by the PEE, UNIDO and all project partners. The PEE will ensure that all relevant input will be provided timely and well in advance of the submission deadline.

Periodic monitoring

135. Day to day monitoring of project activities will be the responsibility of the PEEs while periodic monitoring will be performed through site visits at the project demonstration facilities by UNIDO, the PEE and other relevant stakeholders. These site visits will be aimed at assessing project progress based on the agreed schedule in the project's Inception Report/Annual Work Plan. A Field Visit Report will be prepared by the PMU. Terminal Project Workshop . During the last three months, the project management units of the PEEs will prepare the Project Terminal Report (PTR), which will be the last PIR. It will be a comprehensive report summarizing the results achieved, areas where results may not have been achieved and lessons learned. The Project Terminal Report and the final evaluation (FE) report will form the final project documentation package to be discussed with the PSC during the

Terminal Project Workshop

136. The Terminal Project Workshop (TPW) will be held in the last month of project implementation. The TPW will be aimed at assessing the implementation of the project as a whole and if it has achieved its stated objectives and contributed to the broader environmental objective. Particular focus will be given to lesson learned and opportunity for sustainability and replicability of the project?s results. Reportorial Requirements 198. Regular reporting of the achievement of the project objectives and activities forms part of the monitoring and evaluation process. During project lifetime, the project team in conjunction with the PSC members and guided by UNIDO will prepare and submit the following reports:

Inception Report (IR)

137. A Project Inception Report (IR) will be prepared at the beginning of project implementation by the PEEs immediately following the Project Inception Workshops (PIW). It will include: (i) a description of the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project-related partners; (ii) finalization of project design and approval of the overall work-plan, including related Monitoring and Evaluation activities; (iii) a timeframe of project review meetings for PSC and others project's decision-making structures and/or coordination mechanisms; (iv) a detailed Annual Work Plan (AWP) for the activities of the first year of the project; (v) a fine-tuning of verifiable indicators and corresponding means of verification to effectively measure project performance during the targeted 12-month timeframe of the AWP; (vi) Terms of Reference (TOR) for effective coordination of the activities and for sub-contractual services and project consultants; (vii) a detailed project budget for the first year of implementation, prepared on the basis of the AWP. When finalized, the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries.

Project Implementation Report (PIR)

138. The Project Implementation Report (PIR) is an annual management and monitoring process. It is an essential monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project will be under implementation for a year, the project team shall complete the PIR. The annual PIR is the main tool used by the GEF for monitoring its portfolio and reviews financial status, procurement data, impact achievement and progress in implementation. Final PIR will be submitted to GEF as per standard procedures.

Project Terminal Report

139. The Project Terminal Report (PTR) will be the definitive statement of the Project?s achievements. This comprehensive report will be the overall evaluation of the project and will summarize all activities, outputs and outcomes of the Project, objectives met (or not met), structures and systems implemented, etc., paying particular attention to whether the project has achieved its immediate objectives and contributed to the global environmental objective. It will also serve as a source of lessons learned and will lays out recommendations for follow-up activities that may need to be taken to ensure sustainability and replicability of the Project?s activities. The project team will prepare the PTR during the last three months of the project lifetime. It shall be prepared in draft sufficiently in advance to allow review and technical clearance prior to the final PSC meeting.

Thematic Reports

140. As and when called for by UNIDO, the project team will prepare specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNIDO and will clearly state the issue or activities that need to be reported on. These reports will be used as a form of lessons learned exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered.

Technical Reports

141. Technical Reports are detailed, comprehensive documents covering specific areas of research within the framework of the overall project. The key areas where Technical Reports are expected to be prepared during the course of the Project will be individuated during the Project Inception Workshop and during annual PSC meetings. Technical Reports may also be prepared by external consultants and will be used as working documents for the Project implementation as well as to disseminate relevant information at local, national and international levels.

Project Publications

142. Project Publications in the form of articles in academic and peer-reviewed journals, multimedia publications, informational texts or other forms of distribution, will represent a method for a widely dissemination of relevant results and achievements of the Project. Publications can be based on Technical Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if Technical Reports merit formal publication, and will also (in consultation with UNIDO, the governments and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Publications setting out methodologies adopted in this project, achieved

results and lessons learnt will be distributed to the industry, governments, Parties to the Convention. Any publication will observe UNIDO and GEF advocacy guidelines.

143. News, articles, and other inputs to social media cards/postings and the Philippine ISID website in relation to the project accomplishments for coordinated UN-wide communication should also be delivered as required

Other Required Reports/Publications

144. The PEE is also expected to provide other reports, articles or publications, not identified above, as requested by the donor, the national government and UNIDO. Independent Evaluations The project will be subjected to two independent external evaluations managed by UNIDO: a Mid-term Review and a Final Evaluation.

Midterm Review

145. The mid-term review (MTR) will be undertaken at mid-term (between the second and third year of project implementation) by an independent consultant to review the progress of each project activity and assess effectiveness of implementation according to the project?s indicators presented in the Project Results Framework. The The Terms of Reference for this mid-term evaluation will be prepared in accordance with the generic TORs developed by the UNIDO Independent Evaluation Division.

146. The MTR will review the effectiveness, efficacy and timeless of project execution, evaluate the effectiveness of the Partnership composition and of the interaction between partners, identify potential issues which could prevent optimal development of the project. This assessment will be extended to the administrative aspects and will also consider the provision of financial resources and co-financing provided by the project partners. The MTR findings could propose recommendations and remedial actions to be incorporated as improvement in the implementation strategy and execution for the remainder of the project?s duration, if necessary. This evaluation will also highlight initial technical achievements, achievement of GEBs and lessons learned derived from project implementation.

Final Evaluation

147. The final evaluation (FE) is under the responsibility of UNIDO and will, ideally, begin three months before the completion of the project and after the end of the main planned project activities. This will allow the independent consultant to carry out the evaluation when major activities are already completed but with the project team still in charge. The final evaluation will focus on the same issues as the mid-term evaluation. However, since all the planned project activities set out in the Project Results Framework will be completed at the start of the evaluation, a greater focus on identifying and extracting project impacts including the contribution in building local capacity, the achievement of global environmental goals, lesson learned, sustainability and replicability of project results will be assessed. This evaluation will be performed on the basis of the delivery of the project?s results as initially planned, eventually as corrected after the mid-term evaluation, if any such correction took place. The FE will also provide recommendations on how to disseminate products and outputs of the project most efficiently within and outside the country. The Terms

of Reference for this evaluation will be prepared by UNIDO in accordance with the generic TORs developed by its Independent Evaluation Division.

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

148. One of the most important economic benefit brought by the project concerns the lower cost of biopesticides in comparison to conventional pesticides. The costs of developing a biopesticide are significantly lower than those of a conventional chemical pesticide, which will encourage companies to develop a wide range of products. Furthermore, the treatment cost with biopesticides is smaller than the cost of their chemical competitors: at the same time, biopesticides, if properly used, appears to be more effective, resulting in higher yield rate.

149. In addition to reduced direct costs, there are however a number of other benefits like:
? Reduced risk of pests and diseases developing resistance to biopesticides, compared to conventional pesticides. The high specificity of biopesticides prevents useful organisms and microorganisms to be impacted, hence reducing the negative impact on biodiversity. This translates in a direct economic benefits not only for the manufacturers of biopesticides, but also for the farmers.
? The limited (if any) toxicity of biopesticides on humans, translates in reduced risks associated with the treatment of crops. Obviously, to fully benefit from biopesticide peculiarities there is the need of intensive training for farmers to fully understand the differences between chemical and biological pesticides.
? Biopesticides are biodegradable: this means that there is no risk of soil contamination associated with stockpiles of biopesticides.

150. The only increased costs associated with the use of biopesticides appear related to the reduced shelf life of these substances compared to conventional pesticides.

151. The project will also bring economic and social benefits by facilitating the access of farmers (including small farm holders) to agro-financial tools. This will be undertaken under Output 2.1.2 of the project.

152. Reduced manufacturing and application risks of biopesticides, associated with a massive training and facilitation to access existing support fund, will ultimately result in the complete phase out of HHPs and POPs pesticides.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

The table below provides the identified risks and mitigating measures to be undertaken. Detailed assessment are provided in **Annex M.** The PEEs are responsible in ensuring that the identified risks are taken into consideration and that the proposed mitigating measures are implemented. New risks and appropriate mitigating measures also need to be recorded and implemented, respectively.

Identified Risks	E&S risks	Mitigating measures	Technical details of the mitigation, technology, process, equipment, design, and operating procedures [1][1]	Location	Timeline including frequency start and end date	Responsibility	Cost of mitigation (USD)
Risks Identified during the Project Screening and Verified during project inception							

Exposure of workers in manufacturing of biopesticides and applicators/ famers	Exposure of workers manufacturing of biopesticides due to improper PPEs or lack of PPEs	Provision of PPEs	Defined PPEs production workers	Manufacturing facilities and pilot scale laboratory	Daily for disposable PPEs and weekly for reusable PPEs or whenever necessary i.e. worn out or punctured	Pollution Control Officer and Safety Officer	15 USD per pax
		Proper labeling of biopesticides using GHS labels	Implementation of the GHS labelling	Production area	Replacement of labels if unreadable or torn; placement of labels if newly purchased or formulated		1 USD per label
		Proper handling of raw materials	Implement safe work practices in compliance with DOLE OSH regulations	Production area	Daily through safety and environmental inspection		600 USD per month
			Environmental Code of Practice Training	Training area	Quarterly and all newly hired employees	Subject Matter Expert	10 USD per pax
	Exposure of farmers during formulation and application of biopesticides	Provision of PPEs	Defined PPEs particularly for dusts and mists	Farming area	Replacement of respirator canister every 3 months or whenever necessary	Designated Pollution Control Officer and Safety Officer	15 USD per set; 5 USD for the filter cartridge

		Provision of labels	Implementation of the GHS labelling	For biopesticides or agrichemicals container	Replacement of labels if unreadable or torn; placement of labels if newly purchased or formulated	of Farmers? group	1 USD per label; 100 labels per year for 5 years
		Proper handling biopesticides and agrichemicals	Environmental Code of Practice Training and yearly refresher training	Face to face or online venue	Annually	Subject Matter Expert	10 USD per pax
Environmental contamination due to the different project activities	Contamination of nearby body of water due to the generation of wastewater from synthetic chemical production in India	Conduct of baseline water quality analysis and monitoring activities	Conduct regular sampling and analysis of ambient water quality based on DAO 2016-08 standards Results shall be made available and reported	Surface water	Prior to project implementation and annually thereafter	Synthetic pesticides production	200 USD per sampling activity
		Provision of wastewater treatment facility	Concrete flooring with environment friendly impermeable layer and employ the most suitable treatment technology	Wastewater treatment facility	During the initial phase of project implementation	Manufacturing plant	1,000 USD/month for the operating cost

	Contamination of ground and surface water from improper disposal of neem seed cake[2][2]	Use of Neem seed cake as biofertilizer	Provision of compost pits or storage containers to facilitate collection of Neem seed cake	Conduct fertilizer test for the cake	After the first production of neem oil in the project	Pilot scale manufacturing facility	10 USD per sample
	GHG emission during the distribution of biopesticides	Clustering of demonstration sites Assessment of strategic locations for pilot scale production facilities	Clustered applicators/farmers group identifying the suitable location by using linear programming or similar tools to reduce unproductive distribution distance	Storage facility and demonstration sites	During the project implementation	Distributor or supplier of biopesticide[3][3]	USD 2,000 per SME hired
	Spills/accidents during the production, storage, and transport of agrichemicals/biopesticides	Trained personnel on emergency preparedness and chemical spill response Provision of spill kits	Attendance on the Code of Practice, emergency preparedness and response Training, provision of Spill kits, and conduct of regular drills	Manufacturing Facilities and Transport vehicle	During the initial phase of project implementation	Workers at the manufacturing sites and distribution personnel	USD 10 per trainee USD 100 per set of spill kit
	Resource depletion	Use of recyclable and reusable PPEs	Provision of recyclable/reusable PPEs	Manufacturing Plants; farming areas	Throughout the project implementation	Pollution Control Officer in close coordination with procurement focal person	10 USD/pax

		Neem Trees	Continuous planting of Neem Trees as source of raw materials and replacement for cut trees	Areas where Neem trees are planted	Throughout the project implementation	Focal person for the identified areas for agroforestry	1,100 USD/ha
Damage due to climate-change related events	Damage to manufacturing plants and pilot facilities	Structural design incorporating climate change related design constants	Use the National Building Code, or equivalent, design parameters	Manufacturing facilities for retrofitting/upgrade	During the project implementation	Engineering contractors	2,000 USD per year
	Damage to crops due to extreme temperature, drought, or typhoon	Purchase of insurance for crops	Securing crop insurance covering climate related phenomena or Acts of God	Farming areas or demonstration sites, i.e. rice paddies	All phases of the project implementation	Farmers? group	1,000 USD per year

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Annex M Environment and Social Management Plan	**CEO Endorsement ESS**	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

The project results framework is also provided as **Annex A** in the attached documents:

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
To establish sustainable financing, investment and incentive mechanisms in the formulations, production and application of eco-friendly crop protection solutions for reduction of persistent organic pollutants (POPs) and highly hazardous pesticides (HHPs) enhancing livelihood, food safety and protection to human health and the environment	Amount of POPs and HHP pesticides avoided Area of landscapes under improved practices (excluding protected areas) (Hectares) Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment	DDT: 556 t/yr (baseline yr 2022) Production will be reduced down to 300t/yr in 2023 Dicofol: 150 t/year (baseline yr 2022) Production will be reduced down to 50t/yr in 2023 Currently around 14 million ha are cultivated using biopesticides or IPM practices in India HHPs: 11950t (Acephate, Monocrotophos, Chlorpyriphos, Malathion, Mancozeb, Pendimethalin)	DDT avoided: 1200t over project life and 1500t in 5 yrs post project, considering 2023 as the baseline year Dicofol avoided: 200 t over project life and 250t in 5 yrs post project, considering 2023 as the baseline year. HHP production avoided: 11950t over project life, and 20500t in 5 yrs post project, considering 2023 as the baseline year. Agricultural land treated with biopesticides instead of POPs/HHPs: Btk: 0.65 million ha Neem: 0.3 million ha Trichoderma: 0.5 million ha Beneficiaries Not less than 0.32 million female and 1.13 million	See below	See below

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
			male farmers, not including production workers of chemical pesticides, handlers and packagers, and the public at large prevented from exposure to toxic POP or HHP pesticides (based on Indian Agricultural Census) and the assumption of 1 farmer x ha).		
Expected Outcome/Output/Activity	**Indicators**	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
Component 1: Government regulatory capacity -					
Outcome 1.1: Enabling environment for introduction of crop protection solutions to reduce POPs and HHPs					
Output 1.1.1: Legislative and policy framework covering clear definition for biopesticides, their registration modalities, and import/export rules harmonized among India and the Philippines					

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 1.1.1.1 Carry out analysis of the current regulation on pesticide, with specific focus on registration modality	Assessment report on pesticide registration for each country	A registration regulation for pesticides with detailed procedures in place in the 2 countries, however, the registration procedure in India is too cumbersome for biopesticides and discourages the registration of biopesticides at national level. In the Philippines, under FPA there is no distinction between biopesticides and conventional pesticides, therefore some provisions may not be suitable for biopesticides	After one year: Initial consultation carried out and consultation plan and methodology prepared. Within 2 years from project start: An analysis report drafted for the 2 countries with indication on how to improve registration of biopesticides.	Meeting minutes Consultation plan and report Draft and final analysis report.	Assumption: Local expert with extensive knowledge of the pesticide regulation supported by international experts will ensure the quality of deliverables under this activity
Activity 1.1.1.2. Prepare a guidance document to streamline the existing registration modality for biopesticides to facilitate cooperation among the two countries on the matter	Guidance document for biopesticide registration in the 2 countries	Currently, no guidance document for harmonised registration of biopesticides available in the 2 countries, which may hinder commercial exchange among them	After one year: Initial consultation carried out. Consult ation plan and methodology prepared. Within 2 years: a guidance document for harmonised registration in India and the Philippines prepared and disseminated.	Meeting minutes Consultation plan and report Draft and final guidance document on harmonised registration.	Assumption: T he involvement of key experts on pesticide and biopesticide management in the 2 countries will ensure high quality and smooth preparation of the expected deliverables.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 1.1.1.3. Carry out analysis of the current rules for the export / import of biopesticides and identify the most suitable Harmonized System (HS) codes for biopesticides	Analysis report on import / export rules and HS codes in the 2 countries	Considering the regulatory issues on registration, the likelihood to import biopesticides with improper HS codes is high. This represent a risk for the manufacturer importer as well as for the government of both countries as the result is discouraging the international trade of such products	After one year: initial consultation carried out. Consultation plan and methodology prepared After 2 years: An analysis report drafted for the 2 countries with indications on how to improve import / export of biopesticides and the most suitable HS codes identified	Meeting minutes Consultation plan and report Draft and final analysis report on import / export rules for biopesticides in the 2 countries	Risks: Improper HS codes may represent a risk for import, discouraging international trade of the biopesticides Assumptions: local expert with extensive knowledge on import / export regulation of chemicals, supported by international experts will ensure the quality of deliverables under this activity.
Activity 1.1.1.4. Hold a consultative workshop with relevant stakeholders (decision makers, technical officers, scientific community, academia, etc.) on policies and procedures on biopesticides	Number of people (male/female) attending the consultative workshop.	Several workshops have been carried out by FPA in the Philippines but none on the specific aspect related to the registration of biopesticides In both the websites of Indian Ministry of Agriculture and Philippine FPA guidance documents relevant to the registration procedures are available	One consultative workshop carried out at the end of the second year	Workshop materials and minutes Attendance sheet	Assumption: Policymakers, stakeholders, scientific community, academia, others expressed a significant interest in the workshop to achieve up-to-date information on all technical and regulatory aspects of biopesticides in Asia. The expected participation is high.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 1.1.1.5: Develop fair market policies for biopesticides	Fair-price packages for biopesticides and IPM	In the Philippines, the price of pesticides is mainly regulated by market forces, and there are no subsidizing policies for purchasing pesticides or biopesticides In India HIL has acted as a ?price regulator? by establishing a benchmark for their pesticidal product and a price fluctuation within a prefixed range	End of year one: market price analysis carried out for biopesticides End of year 2: fair price packages including technical assistance for biopesticides agreed with manufacturers and importers	Meeting minutes Market price analysis for biopesticides (technical report) Draft and final Report on fair price packages	Risk: Fair market policies on biopesticides not supported by manufacturers Assumption: Project will provide sufficient evidence through awareness raising that fair market policies of biopesticides associated with IPM are the proper marketing tool for biopesticides manufacturing that will be market winners against conventional pesticides.
Output 1.1.2: Database on pesticide manufacturing, import, export and usage, including HHP, POPs and biopesticides in the Philippines improved					
Activity 1.1.2.1. Gather all available statistic data on pesticides and biopesticides import/export production and use by crop and assess information gaps in the Philippines	Data base on available source related to pesticide and biopesticide statistics	Limited availability of Agri-statistics in the Philippines as data related to pesticides are aggregated at higher level and do not allow any analysis related to the potential and effectiveness of such products	At mid-term: Collation of all available statistics of the import / export, use and manufacturing of pesticide and biopesticides in the Philippines, arranged as a minimum by product name, crop type and year.	Technical report related to existing statistic sources for pesticides and biopesticides	Assumption: If existing data are lacking, especially the use of biopesticides, templates for data collection and generation of relevant statistics in coordination with statistic and agriculture authorities, custom authority, farmer associations and

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 1.1.2.2. Consult the main data owners (manufacturers, registries, farmers and farmers associations) on how to improve the information on pesticides	Consultation report with data owners to improve information on pesticide and biopesticides	The registration authority, the custom authority, the importers and the manufacturers are the main data owners. Large part of the available data is however either protected due to commercial sensitivity, scattered among several data bases and formatted following different logics. A process of gathering and harmonisation of information is highly needed.	At mid term: A consultation report with data owners related to the availability of information on import/export, manufacturing and use of pesticides and biopesticides with indication on how to improve information on pesticides protecting at the same time confidential information.	Meeting minutes Consultation plan and reports Report on improvement of information related to pesticides and biopesticides	other data owners will be generated during project life. It is also assumed that if a fair mechanism for ensuring confidentiality of sensitive information (i.e. commercial) is in place, the cooperation with data owners will be successful. If data are available, the role of the project will be to consolidate such data and establish a consistent template.
Activity 1.1.2.3. Develop the database software and enter data	Database containing searchable information on pesticides and biopesticides in the Philippines	Scattered data bases are available. There is however a need of harmonisation of data and more complete collection on available information related to the results of the support programs on biopesticides and organic agriculture	End of year 2: database designed and partially filled out End of year 4: database established and maintained	Data base on pesticides and biopesticide operational in the Philippines	Assumption: Good cooperation established with FPA as national implementing agency will ensure that the survey related to biopesticide trade, manufacturing and use will be successful.
Component 2: Finance and investment					
Outcome 2.1. Enhancing finance and investment in development, production and application of biopesticides					
Output 2.1.1: Technology transfer and upscaling of biopesticide production					

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 2.1.1.1 Select viable techno-commercial technology providers in India on eco-friendly and safer biopesticides such as Neem, Btk and Trichoderma as alternatives to HHP	Report on the identification of technologies for biopesticide manufacturing	**Neem:** HIL is in the process of setting up production of 5 Neem based formulation products for public health segment under UNIDO?s DDT alternative project. Neem formulations are under process of registration. **Btk**: One of the elite institutions of Indian Council of Agricultural Research has developed the technology using local strain **Trichoderma:** Technology partner has been identified	Technology identified within 1st project year	Meeting minutes Report on identification of technologies	Risk: Challenges in identifying a technology partner Assumption: As there are many manufacturers in India of the proposed products, it is assumed that the identification of the technology partner can be easily accomplished and signature of MoUs can be achieved without significant delays.
Activity 2.1.1.2 Draft and sign a Memorandum of Understanding (MOU) for technology transfer from technology providers to HIL	MOU signed with technology providers		MOU with technology provider preferably along with the dossier for registration signed within 15 months from project start	Meeting minutes Signed MOUs with technology providers for the identified biopesticides	
Activity 2.1.1.3 Generate data for the registration of biopesticides for use in the agriculture sector in India	Registration dossiers	Registration dossier is underway for Neem and Trichoderma	Data are available to file application for registration of biopesticides for agriculture use within 18 months from project start	Registration dossiers	Risk: delay of registration due to reiterate requests of data submission. Assumption: HIL has a significant experience in the development of registration dossier for pesticides, which will reduce at a minimum the risk of dossier rejection.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 2.1.1.4: Assess the needs of selected biopesticides in the Philippines both by crop and by pests	Assessment report	During 2016-2018, testing of neem based biopesticides carried out by Taguibo and Culiat in Mindanao under their Agroforesty programme and this experience can be useful in the assessment needs and adoption of biopesticides to be developed under the project	Assessment report to be developed within the 1st project year	Survey reports, Meeting minutes Draft and final assessment report	Assumption: Biopesticides currently produced in the Philippines will be tested on crops which proved effective, in India to enhance the probability of success.
Activity 2.1.1.5: Field testing of biopesticides to generate data for registration on selected crops in the Philippines	Data generation report	The Bio-Diversity Industry Strategy Programme in the Philippines had carried out research and field testing of neem based biopesticide. New testing, however, has to be carried out for the specific needs of the project. There are no data generated / available for Btk and Tricoderma	Field testing will start in the 2nd year and to be completed in the 3rd year on 6 experimental plots in the Philippines	Field testing reports	
Activity 2.1.1.6: Facilitate the import of the selected biopesticides from India and their registration in the Philippines	Volume of biopesticides imported in the Philippines	No import of biopesticides in the Philippines	By the end of 2nd year, import of the biopesticides in the Philippines and registration obtained	Importation and registration documents of biopesticides	Assumption: At this stage, only limited amount of biopesticides need to be imported to the Philippines. These chemicals will need to undergo a facilitated registration as for ?Experimental field testing? to generate data for full registration.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Output 2.1.2 Financing mechanisms established including loans, marketing infrastructure and insurance schemes, quality enhancement application and fair price initiatives to facilitate the shifting from conventional pesticides to biopesticides					
Activity 2.1.2.1. Assess and establish communication strategy on cost effectiveness associated with the use of biopesticides on selected crops	Number of farmers informed on the cost of bio pesticides and IPM approaches in comparison to conventional practices	There are many evidences that biopesticides have lower direct and indirect costs, as well reduced risk for the workers and the crops compared to conventional pesticides. This information has to be arranged for the relevant crops in India and the Philippines and properly communicated to farmers and relevant authorities. In India, HIL included ?Cost reduction by adopting Integrated Pest Management Practices.? in their training courses.	Mid term: Updated assessment of cost effectiveness of IPM and biopesticides approaches End of project: a report on cost saving adopting IPM and biopesticide approaches by crop completed and disseminated.	Meeting minutes Interim and final technical reports (Cost assessment report for IPM and biopesticide)	Assumption: M any research reports and experiences from similar projects have led to the conclusion that IPM and biopesticides can significantly reduce direct and indirect cost associated to farming. The project, through the engagement of international and national experts on the field, will collate this information for the relevant crops and make it understandable and communicable to the farmers and their associations.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 2.1.2.2. Provide support to farmers to access existing financing mechanisms	Number of farmers informed or assisted concerning existing financing programs for biopesticides, IPM or organic agriculture	There are several financial schemes to support agriculture in both India and the Philippines, as documented in the baseline	End of year 1: An inventory report on the financing programs for biopesticides, IPM or organic agriculture developed and shared on the web and through Agri extensions. From year 2 until project end: at least one million farmers directly or indirectly informed and assisted on the financial opportunity to implement IPM and use of biopesticides	Inventory report on financial opportunities for farmers to implement IPM, organic agriculture and the use of biopesticides. Awareness raising materials published on websites and broadcasted Report on the awareness raising activities related to financial opportunities.	Risk: Access to financing mechanisms may be cumbersome for small farms. Farmers do not reached by awareness raising campaign related to financing mechanism. Assumption: The project will overcome the current communication obstacles hindering the application to financing schemes, and will practically support the farmers, through training and practical examples, in filing their applications. This will ensure that a large number of farmers will apply to relevant support funds.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 2.1.2.3. Develop insurance schemes to protect participating farmers from unexpected events in the transition phase and beyond	An insurance scheme specifically developed to support farmers in the adoption of biopesticides and IPM	The Philippines has launched its first public?private partnership on crop insurance with support from the Asian Development Bank. In India, the government has launched various insurance schemes for farmers to support them in the event of failure of any notified crop as a result of natural calamities, pest diseases. This is to encourage farmers to adopt progressive farming practices, high value inputs and higher technology in agriculture	Mid term: consultation on agri-insurance companies related to the risk and benefit of organic agriculture, IPM and biopesticides completed. End of project: an insurance package specifically tailored to the needs of farmers adopting biopesticides, IPM or organic agriculture placed on the market in both India and the Philippines	Meeting and consultation minutes. Draft proposal on insurance schemes for sustainable agriculture	Risk: Farmers not interested or not informed on insurance schemes. Insurance providers not willing to develop specialised insurance products for biopesticides. Assumptions: Building on the experience already achieved in India on insurance schemes covering biopesticide and IPM will ensure a smooth implementation of this activity
Output 2.1.3 Demonstration of biopesticides and phasing-out of HHPs in significant crops in the Philippines, including on-field training					

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 2.1.3.1. Carry out demonstration of selected biopesticide as alternatives to HHPs in the Philippines	Area (ha) where biopesticides have been demonstrated in the Philippines.	In the Philippines, Neem based pesticides (neem oil) are registered as pesticides for sugar cane while Tricoderma is registered as compost fungus activator / organic fertilizer.	End of year 1: biopesticides demonstration plan developed for selected crops in the Philippines. End of year 3: first year demonstration on the use of biopesticides covering at least 100 ha. End of year 4: second year demonstration covering up to 100 ha. End of year 5: third year demonstration covering up to 1000 ha.	Meeting minutes Demonstration plan by crop Result of demonstration plans (including crop yields for demonstration and reference plot, crop management cost by plot) Mission and site visit reports	Risk: Climate conditions (for instance floods or droughts), or low technical capacity of the trainers and farmers in charge of the demonstration would hinder the complete demonstration of biopesticides. Importing and registration issues. Assumptions: Additional demonstration fields will be identified for replacement in case of climate issues. The climate risk in agriculture however cannot be completely overcome. Farmers and trainers thoroughly trained the years before launching of the demonstration in the field, so that their capacity will be up to the required standards. The required amount for testing on 10,000 ha may be easily procured with project resources from

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
					local manufacturers or import
Activity 2.1.3.2 Technology transfer from India to the Philippines including training for production of low-cost neem based biopesticides	Number of farmers from project sites trained and capacity built on production of low-cost neem based biopesticides	No low-cost technology available for resource poor farmers in the Philippines	At the end of 1st year, farmers from project sites will be provided with standardized procedure for production of low-cost neem based biopesticides	Adoption of the low-cost technology by resource poor farmers	Assumption: In terest of farmers to produce their own biopesticides
Activity 2.1.3.3: Technology transfer from India to the Philippines including training on formulations of neem based biopesticides	Manufacturers on commercial production of neem based biopesticides	Trial production of neem based biopesticides is being done in the Philippines but no commercial production yet	After the 3rd year, at least one manufacturer in the Philippines adopting the low-cost technology on production of neem based biopesticides from India	Infrastructure in place to upscale production into commercial	Assumption: In terest of enterprises to embark on commercial production of low-cost neem based biopesticides
Activity 2.1.3.4 Technology transfer including training on formulations of Btk and Tricoderma to the Philippines	Manufacturers of Btk and Tricoderma	In India, HIL is in the process to acquire the technology for several biopesticides including Bti, Btk, Pseudomonas, Thricoderma, Neem, with commercialization expected in the 2nd project year. In the Philippines, JC DOT is ready to start the field testing of Neem and retrofit for its production.	After the 3rd year, at least one to two manufacturer s in the Philippines adopting the formulation technology from India on Btk and Tricoderma	Infrastructure s in place to upscale production into commercial	Assumption: In terest of private sector to embark on commercial production of Btk and Tricoderma

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 2.1.3.5. Propagate neem trees in selected pilot sites in the Philippines to sustain production of neem based biopesticides in the Philippines	Number of neem trees planted	Endemic neem trees available in some sites in the Philippines but will not sustain application of neem-based pesticides	At the end of the project, 50,000 neems trees planted	Records of neem tree plantations	Risk: Possible development of areas where neem trees are planted Assumptions: Ensure that the Philippine law on cutting trees is enforced
Output 2.1.4: Scaling up of biopesticides manufacturing and phasing out of POPs and HHPs in India					
Activity 2.1.4.1. Establish the industrial infrastructures to scale up the manufacturing of Btk (up to 250 t/y) with associated reduction of POPs and HHP production Activity 2.1.4.2. Establish the industrial infrastructures to scale up the manufacturing of Neem (from 300 kL/y to 600 k/y) with associated reduction of POPs and HHP production Activity 2.1.4.3. Establish the industrial infrastructures to establish the manufacturing of Trichoderma (up to 200t/y) with associated reduction of POPs and HHP production	Quantity of registered biopesticides manufactured and placed on the market Quantity of POPs and HHP phased out and avoided	India is the 4th country in the world as manufacturer of pesticides. Biopesticide consumption account for around 9% of the overall consumption worldwide. The current manufacturing capacity however would not be sufficient to cover the project needs, and therefore need to be increased. Registration dossier is underway for Neem while for Btk and Trichoderma	Total POPs avoided during project life: DDT: 1200t Dicofol: 200t Total HHP avoided during project life: -11950t Total manufacturing during project lifetime: Btk: 700t Neem: 750t Tricoderma: 550 t	Meeting minutes Site surveys Biopesticide Plants layout, process workflow and detailed design. License to build and manufacture Biopesticide registration certificates	Risks: setting up and permitting of the manufacturing plants or registration of biopesticides take longer than expected. Assumption: Previous experience of HIL in the setting up and permitting of manufacturing plants as well as the registration of biopesticides reduces the risk that the additional manufacturing capacity is not achieved in time. In the PPG phase, HIL has already provided a detailed plan concerning the envisaged permitting and installation of new plants and the registration of biopesticides.
Component 3: Capacity and knowledge dissemination					

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Outcome 3.1: Capacity building and awareness raising in the formulation, production and application of biopesticides, safe chemical alternatives and other biocontrol agents carried out					
Output 3.1.1: Relevant stakeholders in the agricultural sector (decision makers, manufacturers i public and private sector, farmers including women and youth, and others trained and awareness raised on greener and eco-friendly alternatives					
Activity 3.1.1.1. Conduct the programme on ?Trainers of trainees (TOT)? and awareness raising for farmers and agriculture workers	Number of trainers trained on IPM and biopesticides disaggregated by gender	IPM training carried out from 1993 to 2003 under the KASAKALIKASAN programme of the Philippines. Massive trainings have already been implemented by HIL on several aspects related to the judicious use of pesticides and IPM in India (covering around 70,000 farmers). However, no structured training has been conducted on biopesticides.	The Philippines: End of year 1: training materials for demonstration sites developed and published. From year 2 to end of project: at least 2 TOT per year carried out in mixed mode, covering not less than 1000 farmers countrywide. India: End of year 1: training materials for farmers developed and published. From year 2 to end of project: 185 training conducted across the country wherein emphasis will be given to develop TOT	Training materials Training reports with attendance sheets	Risk: low participation of farmers, or not enough to cover all the demonstration areas. Assumptions: project partners have long experience in training farmers. Previous awareness raising on the advantage of biopesticides and IPM over conventional farming will ensure that the demand for training will be high.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 3.1.1.2 Conduct training for formulators, manufacturers and relevant stakeholders (decision makers) on the registration of biopesticides as well as laboratories on accreditation procedures	Number of people trained in the private and public sectors, disaggregated by gender Number of accredited laboratories	No training has been carried out for the registration of biopesticides or certification of laboratories to test biopesticides in the Philippines The extensive training carried out in India along the supply chain covered also the registration aspects of pesticides.	End of project: Training programme for the private and public sectors developed, two training workshop delivered.	Training materials Training reports with attendance sheets	Risk: Not a priority for participants resulting to low interest and difficulty in finding proper trainers. Assumption: UNIDO and HIL experience in delivering training in complex matters on chemicals and chemical registration will ensure the success of the training. The training sessions will be planned in advance to ensure participation of the relevant trainees from the private and public sectors.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 3.1.1.3. Conduct technology exchange workshops on the manufacturing of biopesticide at regional level	Number of people from the relevant manufacturing sector attending the workshops, disaggregated by gender	No technology exchange initiatives conducted on the manufacturing of biopesticides so far	One technology exchange workshop with the participation of at least 20 pesticide manufacturing enterprises from India and the Philippines	Meeting minutes Workshop materials Workshop reports with attendance sheets	Risk: Technology exchange workshop not participated by key enterprises, or exchanged information too generic. Assumption: T echnology exchange workshop will be the result of the collaboration established in the course of the project among Indian (basically HIL) and Philippine manufacturers. It is for the interest of both countries to have an opportunity to exchange information.
Activity 3.1.1.4 Conduct training on the environmental code of practices for relevant stakeholders in the biopesticide supply chain	Number of farmers, distributors and retailers trained on the environmental code of practices	No training on the environmental code of practices conducted so far	End of year 1: training material prepared From year 2 to end of project: 20 training in TOT mode conducted on environmental code of practice	Meeting minutes. Training materials Training reports with attendance sheets	Assumption: HIL has already conducted numerous training on this topic in India. Philippine trainers will exchange information with HIL on the setting up of this training in the Philippines.
Activity 3.1.1.5 Participate in other FARM projects? training and awareness raising for knowledge, experience and know how sharing	Number of training / awareness raising campaign from other FARM projects	Experience of HIL in conducting numerous training on the issue and IPM	From year 3 to end of project depending on the time schedule of other FARM project	Attendance sheets	Assumption: C ollaboration with other FARM projects is of importance

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Output 3.1.2: Digital hub established for global exchange and access to best practices, knowledge and experience and promote further business opportunities with international and regional buyers					
Activity 3.1.2.1. Design of the digital hub			Project mid term: design of the digital hub content completed.		Assumption: The digital hub maintained by a pool of experts in the field of sustainable agriculture will be a key tool for the knowledge management of the project with a very wide audience.
Activity 3.1.2.2. Develop and enter project related content in the digital hub	Data related to the project on the digital hub	N/A	End of project: all project-relevant data entered in the digital hub.	Meeting minutes. Technical report: digital hub content	
Component 4: Monitoring and Evaluation					
Outcome 4.1: Project Monitoring and Evaluation based on lesson learnt ensured					
Output 4.1.1. Project Inception and Monitoring carried out					
Activity 4.1.1.1. Hold the Inception workshop and preparation of the inception report	Number of workshops held; number of participants disaggregated by gender	N/A	At project inception: inception workshop held with the goal to achieve gender parity among attendants.	Inception report Inception workshop minutes	Assumption: Project staff and evaluation experts are acknowledgeable in the preparation of all the project-related monitoring, evaluation and planning activities. Risks: no significant risks envisaged for this activity. Effort should be paid to ensure proper gender balance in project management activities
Activity 4.1.1.2. Prepare and approve Periodic Project reports (PIR, AWP, APR) and risk monitoring	Project monitoring and planning documentations.	N/A	Yearly: project reports and workplans as from monitoring procedures established. Visits to project sites	Meeting minutes. PIR, APR, AWP, QPR, QWP Report of visits to project sites	
Output 4.1.2 Independent Mid-Term Review and Terminal Evaluation undertaken					

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Activity 4.1.2.1. Conduct Independent Mid-Term review and Terminal Evaluation	Mid-Term Review (MTR) and Terminal Evaluation (TE) reports	N/A	At Mid-Term: Project MTR carried out. At project end: Project TE carried out	MTR report TE report	

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

A. Responses to GEF Council Comments

Comment	Response
Norway and Denmark	
Limited presence and capacity of UNEP in Viet Nam and challenges to regional back-up	ADB is the implementing agency in Viet Nam and has a significant presence and experience in country. UNEP brings globally recognised expertise in environmental issues and has a lot of experience of coordinating GEF Programmes and bringing in expertise as required.
ADB?s role as implementing agency as usually perceived as investor / donor.	Please refer to Annex B in the ADB project document for response.
It is essential to coordinate with other pesticide projects by FAO AusAid etc. in Viet Nam	Please refer to Annex B in the ADB project document for response.
Sustainability needs to be more clearly spelled out with stronger ownership of government, local authorities that goes beyond the project?s life.	The project has been designed with the relevant government ministries and will be implemented jointly with the government. Operational departments within the ministries will be the primary beneficiaries of the project.
Private sector?s role and investment mobilisation in green agricultural production to be improved.	The global child project has included a private sector engagement strategy covering the role of private finance in reorienting investments to reducing and managing pesticides and agriplastics.
Implementation capacity, cross-agency cooperation gaps should be assessed and addressed properly.	The global child project will facilitate harmonised coordination across agencies through annual Programme Coordinating Group (PCG) as well as regular IA coordination meetings. This and streamlined programmatic reporting procedures will facilitate implementation for the coordinated approach.

STAP review on inclusion of fertilizers.	The FARM programme is addressing two product lines, pesticides and agricultural plastics which require different approaches. Adding fertilizer, another product line, to the programme would add further complexity and make it more difficult to achieve impact.
United Kingdom	
A transition to a low chemical agriculture makes sense, however unless the areas targeted are biodiversity hotspots, a transition to a ?no-chemical? agriculture does not make sense.	The concern has been noted and the programme objective clarified. The project will reduce the sale and use of Highly Hazardous Pesticides and promote the transition to low-chemical agriculture. The wording reflects this aim.
UNDP projects	
Projects to be circulated to Council 4 weeks prior to CEO Endorsement	This timeline had been noted.

B. Responses to STAP Reviews

Project Element	Comments	Response
Outcomes	Yes ?clear metrics of GEB calculations for pesticide reduction benefits and methods are provided though it would be helpful to have some footnoting and backup of how they were calculated	At the PFD stage the detailed field surveys and other data was not available to back up the calculations. These will be gathered during PPG and provide the full calculation justification in the CEO Endorsement Request stage. Calculation methodology has been documented and a common approach for CI?s 4, 5,9, 10 & 11 have been agreed by the EA?s in FARM
Alternative Scenario	Theory of change document is provided in congruence with suggested STAP guidelines. A problem analysis diagram is also provided before the TOC, which is helpful. The theory of change can be further improved by including underlying assumptions leading to expected outcomes and impacts.	Noted. The full theory of change from the PFD was further refined by each child project in a participatory manner during PPG. Agencies and executing partners were encouraged to include assumptions. ToC?s have been revised to include key assumptions.

Risks	Risk management table is also included Climate risk screening provided. More detailed climate risk assessment is encouraged. Given that this is an agricultural project seeking to promote new practices that can be susceptible to climate change impacts, we encourage the proponent to conduct a more detailed climate risk assessment following STAP guidance on climate risk screening (https://stapgef.org/resources/advisory-documents/stap-guidance-climate-risk-screening and https://stapgef.org/resources/advisory-documents/stap-chairs-report-gef-agency-retreat-1-april-2020).	This comment had been noted. The detailed climate risk screening and assessment was part of the PPG phase, and the Agencies followed the recommended guidance to ensure a consistent approach. The UNEP/FAO child project underwent the mandatory FAO risk certification for Environmental and Social risks and the action was classified as low risk. FAO follows the Framework for Environmental and Social Management (2022). Programmes and projects should meet the requirements of the 9 Environmental and Social Standards (ESS) of which ESS 3 is on Climate Change and Disaster Risk Reduction. For UNDP Projects, a comprehensive and thorough risk analysis was carried out during the PPG phase, considering all the risk categories following the ?UNDP Enterprise Risk Management (ERM) Policy?. These categories include Climate Risk screening. The UNIDO Child Project has considered climate risks in its risk analysis. It developed the mandatory Environmental and Social Management Plan (ESMP) where associated climate risks are also taken into consideration. The ESMP will be submitted as part of the CEO Endorsement package. Please refer to Annex B in the ADB project document for the corresponding response.

	The project's title as "Agrochemical" reductions is perhaps more expansive than the core operational work presented. The term "agrochemical" encompasses fertilizers as well. However, the project is largely focused on pesticides, and there is only a passing reference to fertilizers. Perhaps the proponent may consider incorporating fertilizer management into the activities as this is a significant aspect of agroecology, which the project seeks to promote. More so, incorporating fertilizer management could deliver further GEBs related to international waters (reduced pollution and hypoxia) and land degradation (landscapes under sustainable land management in production systems). Fertilizer usage presents a separate set of ecological challenges which are more linked to energy delivery and eutrophication. Future projects in fertilizer usage reduction could also consider climate change mitigation benefits since the Haber process for nitrate production is one of the most carbon-intensive industrial processes. Refer to: Rosa, L., Rulli, M. C., Ali, S., Chiarelli, D. D., Dell?Angelo, J., Mueller, N. D., Scheidel, A., Siciliano, G., & D?Odorico, P. (2021). Energy implications of the 21st-century agrarian transition. Nature Communications, 12(1), 2319. https://doi.org/10.1038/s41467-021-22581-7	The FARM Programme is working to reduce pollution from two different types of agricultural inputs, pesticides and agricultural plastics. Each require a different technical approach and are the mandates of different ministries. Pesticides generally fall under the mandate of the Ministry of Agriculture; Agricultural plastics are seen as a waste issue that falls under the Ministry of the Environment. Adding a third agricultural input, fertilizers, would add further complexity that would impede the Programmes ability to make an impact on the existing target products, pesticides and plastics. FARM would propose addressing the environmental impact of fertilizer use in a separate but related project.
	The PIF cited an alarming fact that a significant proportion of development disbursement and climate finance earmarked for agriculture supports projects focused on conventional agriculture. However, the project activities related to this issue mainly focus on addressing the public sector (government subsidies), private sector (chemical industry Extended Producer Responsibility, commodity certification schemes),and the financial sector (investment, banking, and insurance). We think some form of activities directly focused on addressing this concern should be included in this project. This could be stakeholder meetings to address this concern, awareness-raising campaigns, knowledge creation and dissemination efforts.	During the PPG the global child project incorporated explicit activities on influencing public finance, including via engagement with the academic networks that produced the source report. These activities include both analysis and stakeholder engagement. In the global child project, the issue of financialization of food will be addressed through Component 2.2 with a focus on financial-sector policies that modify the structure of incentives and impose quantity constraints for the financing of certain practices.

	We commend the proponent for including agricultural plastics (mulch film, hothouse film, seed trays, irrigation drip tape, etc.) in the project, as this is an aspect that is largely less studied or addressed but with significant impact on soil quality, food quality and safety(Steinmetz et al., 2016. Plastic mulching in agriculture. Trading short-term agronomic benefits for long-term soil degradation? https://doi.org/10.1016/j.scitotenv.2016.01.153; Grossman 2015:https://ensia.com/features/the-biggest-source-of-plastic-trash-youve-never-heard-of/; Browne, https://www.bbc.com/future/bespoke/follow-the-food/why-foods-plastic-problem-is-bigger-than-we-realise.html We would like to refer the proponent to articles related to alternatives to agricultural plastics -University of Minnesota Extension, 2021. Exploring alternatives to plastic mulch.https://blog-fruit-vegetable-ipm.extension.umn.edu/2021/01/exploring-alternatives-to-plastic-mulch.html Miles et al., 2015. Alternatives to Plastic Mulch in Vegetable Production Systems Alternatives_to_Plastic_Mulch_in_ _in_Vegetable_Production_System	The additional references are noted with thanks. They were further reviewed during PPG Component 3 of the UNEP/FAO child will develop knowledge transfer tools on alternatives and the sustainable use and management of agricultural plastic products.

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

A summary of the PPG utilization is provided below:

PPG Grant Approved at PIF: **USD 200,000**

Project Preparation Activities Implemented	*GETF/LDCF/SCCF/CBIT Amount ($)*		
	Budgeted Amount	*Amount Spent To date*	*Amount Committed*
Meetings and workshops (inception meeting, focus group discussions, coordination meeting, consultative workshops, validation workshops)	50,000	38,423.35	11,576.65
Baseline data collection and analysis (visit to facilities, exchange visit, preliminary analysis and experts? mission)	80,000	54,470.26	25529.74

Selection and assessment of PEEs	10,000	6,500.00	3,500.00
Preparation of environmental and social management framework, stakeholder engagement plan and gender study	30,000	14,894.052	15105.048
Development of the logical framework and project document	40,000	18,617.565	21382.435
Total	**200,000**	**132,905.23**	**77,093.87**

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

The project sites will be in India and the Philippines, with the following coordinates and reflected in Figure 3.a,b,c:

India (20.5937o N, 78.9629o E)

? Andra Pradesh (15.9129? N, 79.7400? E)

? Kamataka (15.3173? N, 75.7139? E)

? Marashashtra (19.7515? N, 75.7139? E)

? Assam (26.2006? N, 92.9376? E)

? West Bengal (27.0410? N, 88.2663? E)

The Philippines (12.8797o N, 121.7440o E)

? Ramos (15.6732o N, 120.6459o E)

? Paniqui (15.6661o N, 120.5586o E)

? Mayantoc ((15.5632o N, 120.3205o E)

? San Clemente (15.7081o N, 120.3692o E)

? Camiling (15.6872o N, 120.4183o E)

? Anao (15.7435o N, 120.6142o E)

? Moncada (15.7325o N, 120.5727o E)

? San Manuel (15.8291o N, 120.6027o E)

? Santa Ignacia (15.5841o N, 120.4588o E)

? Pura (15.6200o N, 120.6516o E)

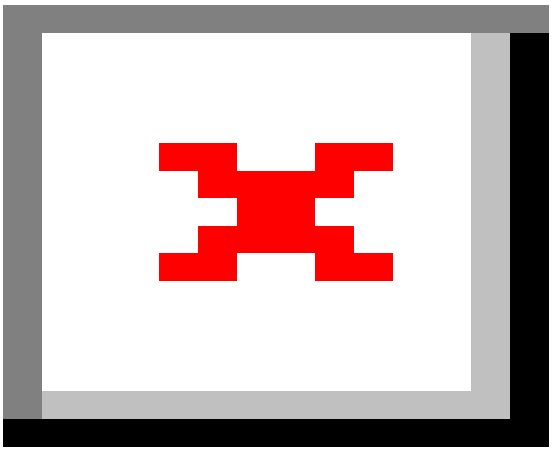
? Los Banos, Laguna (14.1600o N, 121.6516o E)

? Lambunao, Iloilo (11.0700o N, 122.4241o E)

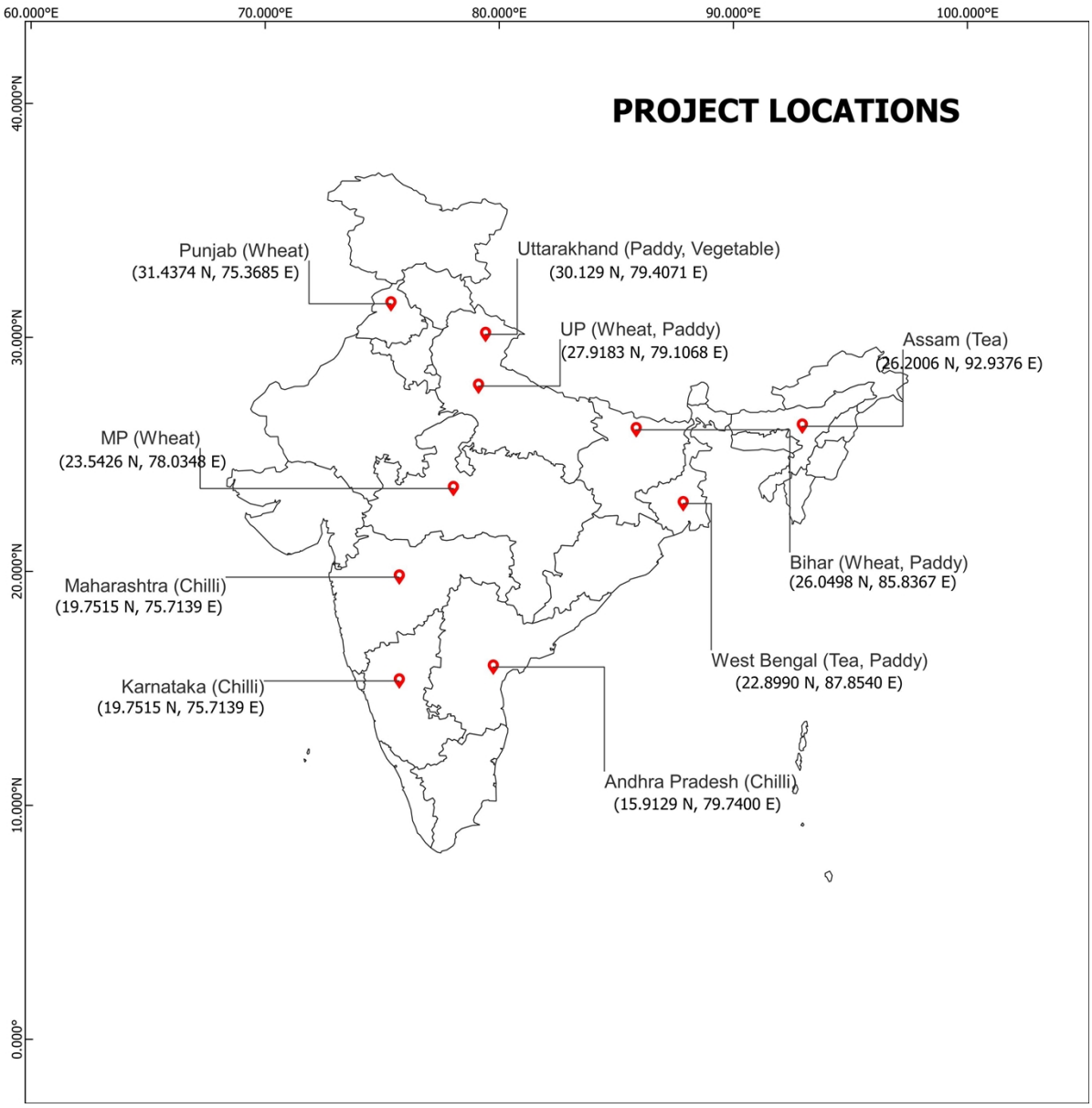
? Carmen, Cebu (10.5937o N, 124.0186o E)

? Mati, Davao Oriental (6.9522o N, 126.2173o E)

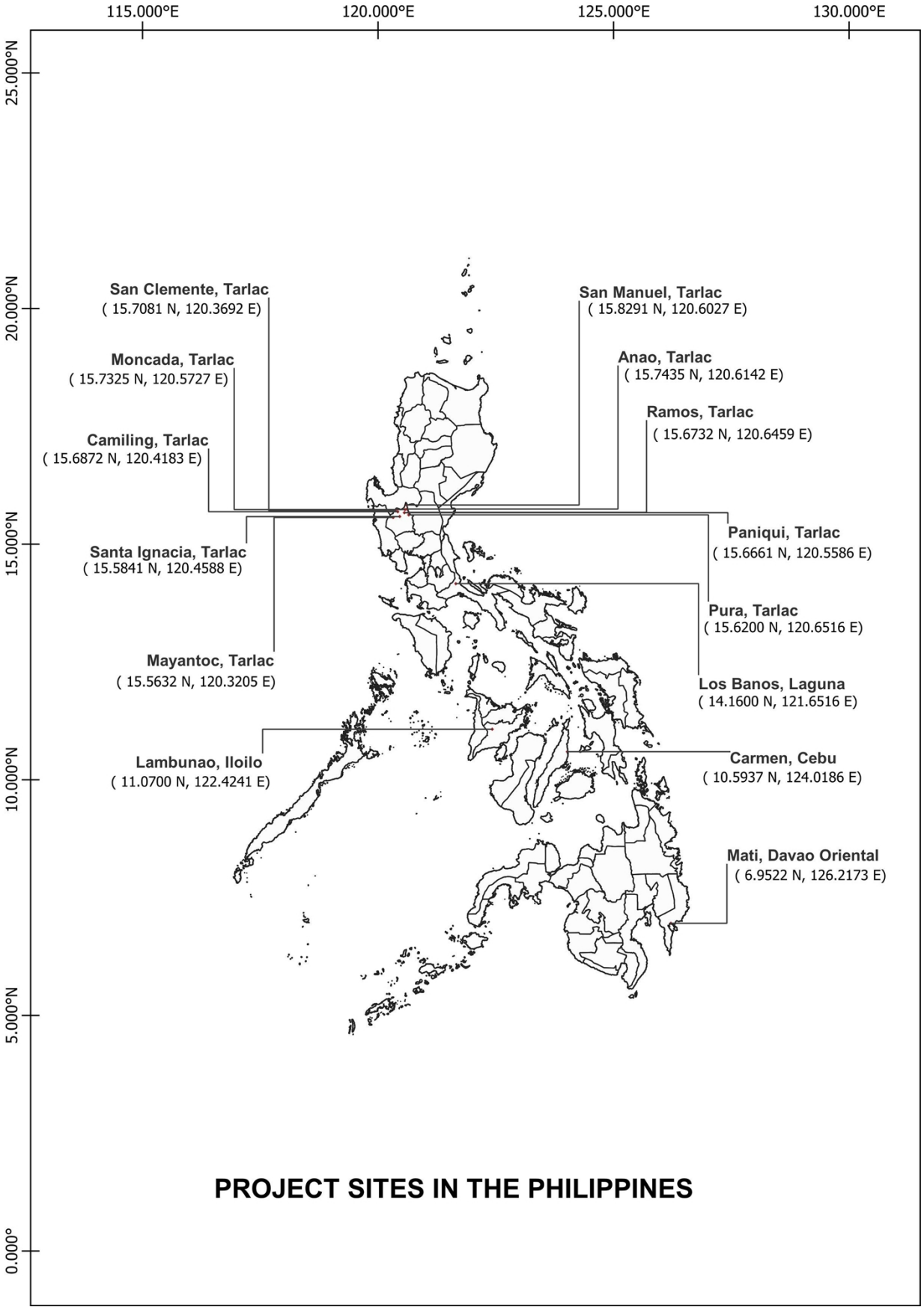
A. Project sites in India and the Philippines



B. Project Sites in India



C. Project Sites in the Philippines



PROJECT SITES IN THE PHILIPPINES

ANNEX E: Project Budget Table

Please attach a project budget table.

The summary of the project budget table is given below. Detailed Project Budget Table containing relevant elements is provided as **Annex E.**

Year	Detailed Description	PC1	PC2	PC3	Subtotal	M&E	PMC	Total GEF	Responsible Entity
Year 1	Local Consultants	0	39,500	0	39,500	37,200	66,600	143,300	PEE except evaluation which is UNIDO
	International Consultants	0	13,200	0	13,200	6,000	0	19,200	
	Contractual services - companies	0	0	0	0	0	0	0	
	Travel	0	5,200	0	5,200	15,850	0	21,050	
	Sundries	0	0	0	0	0	0	0	
	Office Supplies	0	0	0	0	2,600	0	2,600	
	Training and workshops	0	6,900	0	6,900	9,750	0	16,650	
	TOTAL YEAR 1 BY COMPONENT	**0**	**64,800**	**0**	**64,800**	**71,400**	**66,600**	**202,800**	
Year 2	Local Consultants	57,020	138,840	55,900	251,760	32,800	66,600	351,160	PEE except evaluation which is UNIDO
	International Consultants	31,800	108,150	29,550	169,500	2,400	0	171,900	
	Contractual services - companies	17,500	1,076,835	116,525	1,210,860	0	0	1,210,860	
	Travel	10,595	39,835	24,225	74,655	3,600	0	78,255	
	Sundries	0	0	0	0	0	0	0	
	Office Supplies	0	0	0	0	1,600	0	1,600	
	Training and workshops	19,870	37,030	13,800	70,700	0	0	70,700	
	TOTAL YEAR 2 BY COMPONENT	**136,785**	**1,400,690**	**240,000**	**1,777,475**	**40,400**	**66,600**	**1,884,475**	
Year 3	Local Consultants	40,820	113,500	60,900	215,220	46,800	66,600	328,620	PEE except evaluation which is UNIDO
	International Consultants	12,000	101,250	32,550	145,800	22,800	0	168,600	

	Contractual services - companies	30,550	1,175,365	116,525	1,322,440	0	0	1,322,440	
	Travel	5,240	41,375	36,475	83,090	10,400	0	93,490	
	Sundries	0	0	0	0	0	0	0	
	Office Supplies	0	0	0	0	1,600	0	1,600	
	Training and workshops	5,520	35,420	23,550	64,490	2,300	0	66,790	
	TOTAL YEAR 3 BY COMPONENT	**94,130**	**1,466,910**	**270,000**	**1,831,040**	**83,900**	**66,600**	**1,981,540**	
Year 4	Local Consultants	35,960	20,660	61,900	118,520	32,800	66,600	217,920	PEE except evaluation which is UNIDO
	International Consultants	11,400	12,150	28,050	51,600	2,400	0	54,000	
	Contractual services - companies	13,050	1,040,265	130,525	1,183,840	0	0	1,183,840	
	Travel	3,615	14,365	24,225	42,205	3,600	0	45,805	
	Sundries	0	0	0	0	0	0	0	
	Office Supplies	0	0	10,000	10,000	1,600	0	11,600	
	Training and workshops	5,060	4,370	13,800	23,230	0	0	23,230	
	TOTAL YEAR 4 BY COMPONENT	**69,085**	**1,091,810**	**268,500**	**1,429,395**	**40,400**	**66,600**	**1,536,395**	
Year 5	Local Consultants	0	13,900	61,900	75,800	46,800	66,600	189,200	PEE except evaluation which is UNIDO
	International Consultants	0	7,050	28,050	35,100	22,800	0	57,900	
	Contractual services - companies	0	941,735	130,525	1,072,260	0	0	1,072,260	
	Travel	0	9,425	24,225	33,650	10,400	0	44,050	
	Sundries	0	0	0	0	0	0	0	
	Office Supplies	0	0	10,000	10,000	1,600	0	11,600	
	Training and workshops	0	3,680	13,800	17,480	2,300	0	19,780	
	TOTAL YEAR 5 BY COMPONENT	**0**	**975,790**	**268,500**	**1,244,290**	**83,900**	**66,600**	**1,394,790**	
PROJECT TOTAL	**PROJECT TOTAL BY COMPONENT**	**300,000**	**5,000,000**	**1,047,000**	**6,347,000**	**320,000**	**333,000**	**7,000,000**	

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

N/A

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

N/A

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

N/A