Concept Note

Strengthening the Resilience of the Most Vulnerable Coastal Communities to Climate Change in the Philippines' Eastern Seaboard

Philippines | United Nations Development Programme (UNDP)

02 May 2017

GREEN CLIMATE FUND

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Concept Note

The Green Climate Fund (GCF) is seeking high-quality projects or programmes.

Accredited entities may choose to submit a concept note, in consultation with the relevant national designated authority, to present the proposed project or programme idea in order to receive early feedback and recommendation.

Project/Programme Title:	Strengthening the Resilience of the Most Vulnerable Coastal Communities to Climate Change in the Philippines' Eastern Seaboard
Country/Region:	Philippines/Asia Pacific
Accredited Entity:	United Nations Development Programme
National Designated Authority:	Philippines' Department of Environment and Natural Resources

Please submit the completed form to fundingproposal@gcfund.org[1]

A. Project / Programme Information	
A.1. Project / programme title	Strengthening the Resilience of the Most Vulnerable Coastal Communities to Climate Change in the Philippines' Eastern Seaboard
A.2. Project or programme	Project
A.3. Country (ies) / region	Philippines/Asia Pacific
A.4. National designated authority(ies)	Philippines' Department of Environment and Natural Resources (DENR)
A.5. Accredited entity	United Nations Development Programme
A.6. Executing entity / beneficiary	Executing Entity: Environmental Research and Development Bureau (ERDB) Beneficiary: Fisherfolk/ Farmers Organizations, LGUs, Academe, Disaster Managers
A.7. Access modality	Direct ☐ International X
A.8. Project size category (total investment, million USD)	Micro (≤10) ☐ Small (10<x≤50) ☐ Medium (50<x≤250) ☒ Large (>250) ☐
A.9. Mitigation / adaptation focus	Mitigation ☐ Adaptation ☐ Cross-cutting ☒
A.10. Public or private	Choose an item.
A.11. Results areas *(mark all that apply)*	*Which of the following targeted results areas does the proposed project/programme address?* Reduced emissions from: ☐ Energy access and power generation (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.) ☐ Low emission transport (E.g. high-speed rail, rapid bus system, etc.) ☐ Buildings, cities, industries and appliances (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.) ☒ Forestry and land use (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.) Increased resilience of: ☒ Most vulnerable people and communities (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.) ☐ Health and well-being, and food and water security (E.g. climate-resilient crops, efficient irrigation systems, etc.) ☐ Infrastructure and built environment (E.g. sea walls, resilient road networks, etc.) ☒ Ecosystems and ecosystem services (E.g. ecosystem conservation and management, ecotourism, etc.)
A.12. Project / programme life span	Six (6) years
A.13. Estimated implementation start and end date	Start: 2017 End: 2022

[1] Please use the following naming convention for the file name: "[CN]-[Agency short name]-[Date]-[Serial number]" (e.g. CN-ABC-20150101-1).

B. Project/Programme Details	
The Fund requires the following preliminary information in order to promptly assess the eligibility of project/programme investment. These requirements may vary depending on the nature of the project/programme.	
B.1. Project / programme description (including objectives)	By virtue of its location in the "Pacific ring of fire" and its being directly in the typhoon path, the Philippines is vulnerable to the impacts of natural hazards.This vulnerability has been aggravated with the onset of climate change. The World Risk Report of 2016 placed the Philippines third among the high disaster risk countries in the world. Its coastal communities, especially in the eastern seaboard fronting the Pacific Ocean, bear the full brunt of an average of 20 typhoons a year, not to mention the chronic impacts of sea level rise. The net effect is a setback to the country's development gains, costing it an average of 0.5% of GDP almost every year. Some extreme weather events like Typhoon Haiyan (Yolanda) caused 3-4% of GDP loss. On top of this is the growing number of casualties because the country's burgeoning population has rapidly occupied dangerous areas like coastlines, waterways and landslide prone locations. Again, Typhoon Haiyan had one of the highest number of casualties at more than 6,000 deaths. The Philippine coasts are considered one of, if not the most, important areas of the country, hosting around 60-70% of the country's local government units. This is not surprising as the Philippines' archipelagic nature, which literally has a topography undulating from the mountain to the sea, does not have a lot of flat inlands where people and economic enterprises can site themselves. Majority of the country's poor (fisherfolks and subsistence farmers) have chosen to settle down in the coasts because of these areas' rich natural resources, providing them food and livelihoods. The total monetary value of the Philippines' coastal and marine ecosystems has been estimated at almost 600B USD in 2007.[2] The Philippines' "blue economy" is an important source of income and resources for the country considering the breadth of its scope- fisheries, commerce, shipping. Philippine coastal and marine ecosystems are considered quite rich and diverse- from its coral reefs, to mangrove forests and seagrass beds with a variety of plant and animal species. The Philippines is considered the epicenter of global marine biodiversity, the sustainability of which is important not only for itself but for the world. The Philippine mangroves are not just important from the economic & scientific but also the human security angle. It is considered the first line of defence during coastal hazard events like storm surges and tsunamis.The annual economic benefits from the country's marine ecosystems has been estimated at PhP 24 billion (Padilla 2008).Net annual benefits from mangroves has been set at PhP 240.5 million. However, the areal extent of the country's mangroves, has drastically decreased due to natural and man made causes. In the 1920s, the Philippines had around 470,000 hectares of mangrove forests, which rapidly reduced to 120,500 ha. by 2000 (Primavera, 2000). Today, the country's mangrove forests stand at around 50% of the original areal extent, which while having recovered, is still far from the ideal original mangrove cover.[3] The rapid degradation of the country's mangroves can be attributed to a variety of causes which include both manmade: (conversion to fishponds and salt beds, reclamation of mangrove areas for airports, piers and housing, pollution from upland and inland activities; and utilization of mangroves for firewood) and natural: (pest and diseases, typhoons and rising sea levels).This degradation had its concomitant impacts in the form(s) of decreased natural hazard mitigation and consequent increase in fatality and economic losses, as well as, increased chronic economic losses for the coastal poor, further degrading their quality of life and increasing their physical insecurities. A variety of initiatives have been undertaken by various stakeholders- national and local governments, civil society and the academe, not only to stem ecosystem (especially mangrove) degradation but also to mitigate natural hazard (including climate) risks. Every disaster, e.g. those brought on by Typhoons Haiyan (2013) and Washi (2012), triggered recovery efforts which also attempted disaster prevention and mitigation experimentation. These efforts yielded valuable lessons on "no regrets" strategies and innovative approaches which could now be put together to slowly but systematically lower the risk that climate change poses to the country's coastal communities.

[2] "Valuing the Blue Economy Using a Philippine Lens" Azanza et al..
[3] Already includes enhancements due to replanting by the Government and other stakeholders.

This proposed Project is, therefore, a consolidation and actual application of the critical elements of a potentially cost effective National Coastal Climate Change Adaptation & Resilience Building Program for the Philippines.

The Project will address the climate change related needs of approximately 51 million people (27M males and 24 M females) within the 28 most climate vulnerable provinces in 8 regions of the Philippines' eastern seaboard. These areas also contain the critically remaining coastal resource base of the country, particularly its mangrove ecosystem, which fuels its agriculture and green industries but are climate vulnerable. Approximately 600,000 fisher folks and and an undetermined number of farmers[4] are dependent on these resources for subsistence and livelihood.

The proposed areas are reflected in Figure 1, attached as **Annex1**, Provinces of the Philippines' Eastern Seaboard.

This Project aims to attain the following goal and objectives:

Goal: Resilient Filipino coastal communities supported by a healthy and resilient economy and ecosystems.

Objectives:

- to enable the most climate vulnerable coastal communities of the Philippines to manage the disaster risks of climate change;
- to increase and improve the stock and quality of the country's coastal resources, especially mangroves, to enable them to withstand the adverse impacts of climate change and sustainably provide optimum ecosystems services for the poor and vulnerable coastal population; and
- to put in place the enabling environment and institutional arrangements for the continued resilience building in the country's coasts.

The Project will comprise the following components with their respective outcomes, outputs and major activities:

Component 1: Managing the Disaster Risks of Climate Change in the Coasts

The Philippines is trying to systematically manage the potential adverse impacts of hydro-meteorological events by undertaking risk assessments and using the results to influence planning, programming and implementation of development to be "risk-based" from national to the local levels. The emerging national consensus is that the country needs to take the probabilistic approach to risk assessment, building up hazard information, exposure data bases of people and their support systems, develop risk assessment tools like hazard and impact models [5]and downscaled climate information, among others.

Results of these disparate and scattered exercises were fed into the recovery processes, e.g. in avoidance interventions like risk based land use planning, disaster risk mitigation through early warning, contingency planning and re-engineering. To address residual risks, the Philippines is re-examining and testing risk sharing/ risk transfer mechanisms such as weather-based index insurance (WIBI).The disaster risk management testing approach has likewise evolved, from single province/LGU application to integrated risk source, e.g. river basin/sub-river basin, bay wide, etc.. Examples of these have been done in Quezon province, site of the first major flash flood disaster in 2004[6], MetroManila because of Typhoon Ketsana (Ondoy) in 2009, Cagayan de Oro due toTyphoon Washi (Sendong) in 2011, Davao Oriental/Compostela Valley due to Typhoon Bopha (Pablo)in 2012; and Leyte/Samar because of Typhoon Haiyan

[4] To be determined during the Funding proposal preparation stage.
[5] The Philippines started the Project NOAH on June 6, 2012 as a "premier disaster science research and development program for the country's disaster prevention and mitigation, initially funded by the national government and bringing together the country's scientists and experts under the leadership of the Department of Science and Technology and the University of the Philippines (UP) system. It has now been continued by the UP system.
[6] Involved three municipalities- Real, Infanta, General Nakar. Quezon province is in the country's eastern seaboard.

(Yolanda) in 2013. However, while these initiatives are many, they have not yet been applied on geographically expansive, contiguous areas nor ecosystems based manner.

This component will, therefore, consolidate, apply and improve probabilistic risk assessment and systematic application of the results to coastal planning, programming & implementation, including in normative regulatory processes through guidelines and protocols, among others. It will also produce more workable models of integrated early warning systems, integrated contingency planning and re-engineering of common coastal infrastructure including settlements.[7] The component's objective is to develop the disaster risk management capability of the most vulnerable communities and other stakeholders in the target areas, including the establishment/ strengthening of institutional systems and mechanisms for implementation of DRM interventions in the country's coasts.

Outcome 1: Most vulnerable communities in the target areas are able to manage the disaster risks of climate influenced natural hazards, from avoidance to mitigation to addressing residual risks.

Outputs:

- Disaster risks of climate influenced natural hazards (storm surge, high winds, debris flow) assessed.
- Disaster/climate risk mitigation framework and implementation plan for target areas formulated and tested.
- Disaster /climate risk management competencies of target population increased.
- Strategies/approaches to address residual disaster risks designed, tested and rolled out.

Key Activities

- Assessment of disaster/climate risks and vulnerabilities of the target areas
- Capacity assessment of the target clientele (poorest & most vulnerable) and other stakeholders
- Formulation & Testing of Operational Disaster/Climate Risk Mitigation Framework and Implementation Plan
- Formulation, testing and roll out of competency development programme for target clientele
- Review and testing of chosen risk sharing/risk transfer schemes in the coastal ecosystem context.

Component 2: Enhancing Mangrove Ecosystems Services for Climate Change Resilience in the Philippine Coasts

Mangroves serve as natural defence against the onslaught of coastal hazard events like storm surge and tsunami. The WAVES Project[8] cited studies showing that mangroves significantly attenuate waves from storm surges. These studies indicate that "wave height can be reduced by 13 to 66 percent over a 100-meter-wide mangrove belt, while wave height can be reduced by 50 to 100 percent over a 500-meter-wide mangrove belt." It concludes that "wave height reduction within a mangrove forest depends on the width of the mangrove forest, tree morphology, water depth and topography." The WAVES report also cited studies that mangroves can reduce the peak levels of flood waters from storm surge by as much as 4 to 48 cm per kilometer of mangroves.Hirashi and Harada (2003), on the other hand, reported that a mangrove stand of 30 trees per 0.01 hectare with a width of 100 m can reduce the destructive force of a tsunami by up to 90%.

Mangroves are also a major source of subsistence and livelihood for Philippine coastal communities.Aside from fishing, these coastal stakeholders undertake mangrove based

[7] Models will be developed where there are none, for those already tested/proven to work, guidelines will be issued and mainstreamed through requlatory processes.
[8] World Bank. Managing Coasts with Natural Solutions: Guidelines for Measuring and Valuing the Coastal Protection Services of Mangroves and Corals. WAVES Technical Report. Jan. 2016. 167pp.

livelihood such as crab culture, shingles making from Nipa, tuba(wine) and vinegar making, handicraft making, fish (e.g. sardines, milkfish) bottling, community-based ecotourism and others.

With the degradation/decimation of mangroves, these traditional livelihood sources also gradually generated diminishing income forcing dependent communities to abandon them altogether, in many instances, catalyzing outward migration which comes with its own socioeconomic problems.

It is interesting to note that contribution from fisheries significantly reduced from an average 3-4 % of GDP in the nineties to less than 2% by 2010. Isolated, disparate experiments on ecosystems regeneration and enhancement, including mangroves, however, are revealing encouraging successful management models which can turn around this trend. It is these and other models that this Project seeks to discover, validate and replicate.

Component 2 will scale up best practices in mangrove rehabilitation and protection in the context of climate change adaptation and resilience building. Lessons learned in suitability assessment, selection of mix of species, planting techniques, and management and maintenance for high survival rates will be replicated and scaled up. Successful schemes of co-management of mangrove forest involving women, IPs and youth will also be applied in the target areas, as will innovative management techniques like provision of alternative livelihoods and new enterprises. At the heart of this undertaking is the integrated strategy involving enhancement of biodiversity of the target areas; the networking and consolidation of the community mangrove stakeholders; and, the continuing education and knowledge learning, across the generations through formal and non-formal means using community resource centers as loci.

Specifically, Component 2 seeks to achieve the following **outcome** and **outputs:**

Outcome: Increased spatial extent of mangrove forests in the eastern seaboard with enhanced biodiversity quality able to mitigate disaster and chronic risks from climate change and sustainably support mangrove based livelihoods and enterprises, as well as, other sociocultural aspirations and endeavors of the poorest and most vulnerable coastal communities.

Outputs:

- Mangrove areas assessed in terms of biodiversity quality, areal extent & climate change vulnerability
- Mangrove ecosystem management models, including innovative strategies such as those using enterprise development, multi-stakeholder engagement with strong socio-cultural underpinnings compiled, assessed and promising cost effective ones tested/replicated.
- Mangrove habitats expanded/enhanced.
- Multi-stakeholder coastal resources implementation/monitoring mechanism(s) assessed and strengthened.

Key Activities:

- Assessment of mangrove areas as to quality, extent & vulnerability to climate change
- Assessment of mangrove ecosystems management models and mangrove based enterprises & testing on upscaled basis in the target coastal provinces.
- Replanting of denuded/degraded mangrove habitats on an expanded and species diversification basis
- Strengthening of multi-stakeholder mangrove implementation and monitoring mechanisms, including community-based knowledge management of natural resources.

Component 3: Establishing an Enabling Environment and Institutional Arrangements for Coastal Resilience

Norms, standards and regulations only work when drawn from actual experience through learning by doing. Component 3 will, therefore, work to institutionalize successful or adjusted models on disaster/climate risk management and resilience building translated into policy

	underpinned by workable institutional arrangements. This could be initially achieved by executive fiats and eventually, legislative action. This component will also endeavor to put in place more sustainable knowledge management/transfer arrangements, ensuring that the information/ knowledge on climate risk threats and opportunities, as well as, the continuing research and development needs on adaptation and resilience building (including complementary GHG mitigation strategies like use of renewable energy) will need mechanisms and protocols to transmit knowledge laterally, top down and bottom up aross sectors, and across generations. Risk information and knowledge, should be systematically transmitted/be made available not only to current but future generations. One of the biggest knowledge gaps which proved fatal was the non-documentation of a storm surge event of the same magnitude and in the same location as that caused by Typhoon Haiyan. Anecdotal information only surfaced when Haiyan already happened. Optimization of adaptation strategies towards resilience building should likewise find "homes" in institutions that could work with stakeholders to continuously improve and innovate on best practices. This component will also work on establishing "twinning arrangements", between and among key academic/research institutions which are considered national "centers of excellence" and local institutions which could act as "anchor institutions" and interlocutors between national institutional experts and local beneficiaries/clientele. Component 3 will work to attain the following outcome and outputs: **Outcome:** Enabling environment for resilience building established. **Outputs:** • Executive/legislative policies addressing gaps in coastal resilience, including disaster/climate risk management identified formulated, consulted and adopted. • Twinning arrangements between national centers of excellence (NCEs) and local anchor resilience institutions (LARIs) established. • Support provided to LARIs on development, testing and roll out of training/R&D programs/academic curricular offerings on resilience development. • Network of knowledge management systems on coastal resilience developed and established. **Key Activities:** • Formulation and adoption of policies strengthening resilience to climate change of coastal communities and other stakeholders • Establishment of partnerships between NCEs and LARIs for more consistent and continuous support to local stakeholders • Establishment of continuous competency development programs and opportunities for local stakeholders, especially the poorest and most vulnerable • Identification and strengthening of local knowledge management mechanisms on resilience building. The Project will also facilitate the take up of renewable energy in the target areas, estimated to mitigate greenhouse gas emissions. This will be in the context of providing energy sources for the enterprises to be supported by this Programme.
B.2. Background information on project/programme sponsor	*Describe project/programme sponsor's operating experience in the host country or other developing countries.* The United Nations Development Programme (UNDP), the Project Sponsor, has been operating in the Philippines since 1977 through a Standard Basic Assistance Agreement (SBAA) with the Philippine Government ratified by the Senate. Since then, it has supported a significant number of projects and programmes in the areas of: environmental management (including climate change and disaster risk management, forests and biodiversity, coastal and marine, freshwater, urban and residuals management, etc.), democratic governance, poverty alleviation and peace building and conflict management. UNDP has been the Philippine Government's partner of choice in accessing and managing grants funding such as from the Global Environment Facility (GEF) and the bilaterals. This support has led to the passage of important legislation (e.g.Climate Change Act, National Disaster Risk Reduction & Management Law, etc.) and policy instruments (e.g. National Climate Change Strategy and Action Plan), institution building (e.g. tools, systems & procedures, mechanisms) and competency

	development at the individual level. The UNDP has not only implemented development support but also provided emergency assistance during disaster situations and building back better afterwards, as well as, provision of small grants to civil society organizations (peoples'organizations) for enterprise development, community level infrastructure (energy systems, evacuation centers, etc..) and environment & natural resources management. Describe financial status and how the project/programme sponsor will support the project/programme in terms of equity, management, operations, production and marketing. The expected markets for the commodities (fisheries, timber products) to be produced by the mangrove communities are initially intended for the domestic market, to ensure domestic self sufficiency in these commodities. They are, however, also targeted for the export market, which promises significant potential income for the community level producers. Markets include European countries, the United States of America, Japan, etc. The detailed historical data and market forecasts will be provided in the detailed proposal. The Project is being proposed against a backdrop of independent, disparate initiatives with their own budgets. The Government itself has incorporated in the current budget funding for related, complementary aspects of the proposal (20 B PhP (435 M USD) for Sustainable Livelihoods; 60.7billion PhP (1.3B USD) for risk resilience; 15 B PhP (326M USD) for climate related interventions in agriculture. It is worth noting, however, that capacity development for the intermediaries and the direct beneficiaries, which is the main strategy for this proposed Programme, is not a prominent cost item of these government budgets. There is also a shortfall in the mangroves expansion budget which is what is proposed in this project. Another 30 million USD worth of CC related projects are being developed by UNDP with the relevant agencies of the Philippine Government as of July 2016, with sure funding from multilateral and bilateral sources, which work on a number of aspects of the thematic issues being proposed under this Project. All of these are grants, the results of which either form important take off points for or will complement some of the major tasks and deliverables under this proposed Project. So the sponsor (UNDP) will not only provide counterpart in cash and in kind but also provide oversight management, augment operations, if needed, through its development support services, and work with the relevant domestic and international entities and channels to facilitate access to markets, especially for the products to be produced by community enterprises and livelihoods.
B.3. Market overview	*Describe the market for the product(s) or services including the historical data and forecasts.* The expected markets for the commodities (fisheries and non-fisheries based, such as for community-based ecotourism use, to be produced primarily by the coastal communities, are initially intended for the domestic market, to ensure domestic self sufficiency in these commodities. They are, however, also targeted for the export market, which promises significant potential income for the community level producers. Markets include European countries (Germany, Denmark, Belgium), the United States of America, Japan, etc. and lately, China and Russia. The detailed historical data and market forecasts will be provided in the detailed proposal. *Provide the key competitors with market shares and customer base (if applicable).* Competitors are established medium and big businesses (domestic and foreign in ASEAN countries like Thailand, Vietnam and other East Asian countries (China) and even cross continent (Peru). *Provide pricing structures, price controls, subsidies available and government involvement (if any).* Pricing structures and other related information being required here will be given in the Proposal proper. The Government does not normally provide nor encourage subsidies but it has a number of technical assistance mechanisms which can be accessed by new or growing enterprises. A number of loan portfolios are also available in the government financing institutions and private banks which can be accessed by prospective entrepreneurs. Details will be provided in the Proposal proper. It must be noted that the Philippines has a vibrant microfinance regime which support the financing needs of micro and small enterprises.

B.4. Regulation, taxation and insurance	*Provide details of government licenses, or permits required for implementing and operating the project/programme, the issuing authority, and the date of issue or expected date of issue.* Normally, Government requires development permits, where relevant (e.g. Prior Informed Consent from the National Commission of the Indigenous Peoples; Environmental Compliance Certificate from the Environmental Management Bureau, Locational Clearance, etc..) However, the Sponsor, i.e. UNDP is able to have them issued on an expedited basis or waived all together, through the signing of the Project Document and/or supplementary instruments as the Letter of Agreement which recognizes, ex ante, that this is a joint endeavour, the outcome of which, the Government has a stake in or needs urgently, such as a policy informed by the experience of the joint undertaking. The main instrument that would be critical to start the Project would be the Project Document which should be signed by the relevant Parties i.e. the Accredited Entity (Sponsor) UNDP, the Department of Environment and Natural Resources (NDA), and the National Economic and Development Authority (NEDA) as the Coordinating Entity on behalf of the Philippine Government and the Main Executing Entity, ERDB. *Describe applicable taxes and foreign exchange regulations.* The Sponsor is tax free for goods and services in the host country. Consultants and project/programme personnel are advised to pay the required taxes because the Sponsor is not a withholding agent. *Provide details on insurance policies related to project/programme.* The Sponsor requires insurance for goods procured under the Project which the Executing Entity is expected to comply with.
B.5. Implementation arrangements	*Describe construction and supervision methodology with key contractual agreements.* The Sponsor will provide oversight to the Executing Entity which will have direct supervision over the contractors. The EE is expected to apply at all times, the standards required by the Sponsor, which, in turn, should be strictly adhered to by the contractors. The Sponsor will ensure that construction tasks are performed by contractors according to international standards. *Describe operational arrangements with key contractual agreements following the completion of construction.* As part of its fiduciary responsibility, the Sponsor ensures that “after sales” service or guarantees are made part of the contracts of the Executing Entity and contractors. *Provide a timetable showing major scheduled achievements and completion for each of the major components of the project/programme.*

Component/Major Activities	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1: Managing Disaster Risk of Climate Change																								
Assess disaster risk of climate influenced natural hazards																								
Formulate and test disaster risk mitigation framework and implementation plan																								
Formulate, test, and roll out of competency development programme for target clientele																								
Review and test chosen risk sharing/risk transfer schemes in the coastal ecosystem context.																								
Component 2: Enhancing Mangrove Ecosystems Services for Climate Change Resilience																								
Assessment of mangrove areas																								
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Component 3: Establish Enabling Environment and Institutional Arrangements for Coastal Resilience																								
Formulate policies strengthening resilience to climate change of coastal communities and other stakeholders																								
Establish partnerships between NCEs and LARIs for more consistent and continuous support to local stakeholders																								
Establish competency development programs																								
Identify and strengthen local knowledge management mechanisms on resilience building.																								

C. Financing / Cost Information

C.1. Description of financial elements of the project / programme

Capacity development of Local Government Units, Community Leaders, Community based Organizations, Nascent Entrepreneurs, Disaster Managers, Academe) and small grants that would catalyse establishment/ strengthening of micro and small enterprises that would enhance the resilience of the country's coastal communities in particular and country and its whole population are normally the cost items that the Government cannot defray but can counterpart in terms of the needed infrastructure, equipment and technical assistance. The GCF support is also expected to defray the cost of piloting the technologies which Government or other partners do not directly support at this time, such as the characterization of coastal climate hazards and the more integrated mitigation approaches.

The grant will also be used to test integrated ecosystem enhancement and management approaches and demonstrate economies of scale from non-conventional, natural resource based and climate friendly enterprises, to provide the national government the solid basis for more comprehensive programs that address climate change impacts in an integrated manner, initially in the coasts of the eastern seaboard and eventually, throughout the whole country.

As in previous experiences, providing opportunity for the conventionally non-bankable potential borrowers from the ranks of the poorest of the poor to showcase their capacity to run small businesses but unable to meet the usual requirements from financial institutions such as collateral assets, will go a long way in directly improving the socioeconomic status and eventually, resilience of poor, vulnerable communities. The Small Grants program of the Sponsor and other bilateral partners are replete with experiences of grantees going on to successful business endeavors, even exporting.

Breakdown of Cost Estimates Analyzed per Major Cost Category (USD) : 1USD = Php 45

Items/Component	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Component 1 - Managing Disaster Risk of Climate Change	2,000,000	2,667,667	3,833,333	3,833,000	3,833,000	3,833,000	20,000,000
Component 2 - Enhancing Mangrove Ecosystems Services for Climate Change Resilience	1,875,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	37,500,000
Component 3 - Establish Enabling Environment and Institutional Environment for Coastal Resilience	1,000,000	2,000,000	3,000,000	3,000,000	3,000,000	3,000,000	15,000,000
SUB TOTAL	4,875,000	11,792,667	13,958,333	13,958,000	13,958,000	13,958,000	72,500,000
Programme Management (5% of SUB TOTAL)	243,750	589,633	697,917	697,900	697,900	697,900	3,625,000
Contingency (3% of SUB TOTAL)	146,250	353,780	418,750	418,740	418,740	418,740	2,175,000
TOTAL DIRECT COSTS (SUB TOTAL + Programme Management and Contingency)	5,265,000	12,736,080	15,075,000	15,074,640	15,074,640	15,074,640	78,300,000

C.2. Project financing information

	Financial Instrument	Amount	Currency	Tenor	Pricing
Total project financing (a) = (b) + (c)		137 M USD	Options		
(b) Requested GCF amount	(i) Senior Loans	.....	Options	( ) years	( ) %
	(ii) Subordinated Loans	.....	Options	( ) years	( ) %
	(iii) Equity	.....	Options		( ) % IRR
	(iv) Guarantees	.....	Options		
	(v) Reimbursable grants *	.....	Options		
	(vi) Grants *	78.3 M USD			

		• *Please provide detailed economic and financial justification in the case of grants.* The Project, while expected to generate cash flow and income stream from the enterprises/livelihoods, is not primarily a revenue/ generating endeavour. The major expense of the Project will be capacity/competency development of the direct beneficiaries and will, therefore, not be directly income generating and would need to be subsidized. It cannot be reimbursable grant either because the beneficiaries cannot front load or advance expenses.				
		Total Requested (i+ii+iii+iv+v+vi)	……	Options		
	(c) Co-financing	**Financial Instrument**	**Amount**	**Currency**	**Name of Institution**	**Seniority**
		GoP budget/grants Options Options Options	58.7 M USD …… …… ……	Options Options Options Options	…… …… …… ……	Options Options Options Options
		Lead financing institution: Department of Environment and Natural Resources				
	(d) Covenants					
	(e) Conditions precedent to disbursement					

D. Expected Performance against Investment Criteria	
Please explain the potential of the Project/Programme to achieve the Fund's six investment criteria as listed below.	
D.1. Climate impact potential *[Potential to achieve the GCF's objectives and results]*	*Specify the climate mitigation and/or adaptation impact. Provide specific values for the below indicators and any other relevant indicators and values, including those from the Fund's Performance Measurement Frameworks.* • Total tonnes of CO_2 eq to be avoided or reduced per annum ➢ Estimated net carbon sequestration per hectare (tCO2 eq/ha) = 485 (emission deducted). Emission associated with mangroves regeneration comes mainly from seedlings production (e.g. emissions caused by fertilizers) and transportation of seedlings to the site (i.e. gasoline) and is estimated at 80tCO2 eq/ha/year. ➢ Mangrove cover will sequester about 21.825 million tons of carbon per year (45,000 ha x 485 tCO2 eq/ha). ➢ Expected lifetime (20 years) emission reductions overtime = 436.5 million tCO_2eq(21.825million tCO2 eq/ha x 20 years) ➢ Estimated cost for reduction $6.20 per ton CO2eq ➢ Estimated value of benefits of carbon sequestration = US$70.40 million over lifetime (436.5million/$6.20) or US$3.5 million per year (US$70.40/20 years).

	Benefits from GCF contribution to carbon dioxide sequestration = US$1.75 million/year ➢ Expected total number of direct and indirect beneficiaries and number of beneficiaries relative to total population (e.g. total lives to be saved from disruption due to climate-related disasters) ➢ 578 LGUs in 28 Provinces, 9,024,000 fisher folks and farmers, 33 Academic institutions as direct beneficiariesl, 51M people as indirect beneficiaries in the Eastern Seaboard vis 100 M total population of the Philippines.
D.2. Paradigm shift potential *[Potential to catalyze impact beyond a one-off project or programme investment]*	*Provide the estimates and details of the below and specify other relevant factors.* • Potential for scaling-up and replication (e.g. multiples of initial impact size) The potential for scaling up and replication extends theoretically to the whole 100 million Filipinos distributed widely throughout the Philippines. Currently, the Project will cover 28 provinces in 8 regions of the country directly involving around 51M coastal population. Potential replication/upscaling will then be to the remaining 10 regions and 53 provinces hosting around 49M of the country's population on disaster/climate risk management. Upscaling potential for the initially 600,000 fisherfolk in the eastern seaboard will be to the remainder of the 1M throughout the country (0.4M). • Potential for knowledge and learning Direct knowledge and learning for approximately 51 M people in the 28 provinces/ 8 regions involved as direct beneficiaries and intermediaries and extension to the remaining 49M population throughout the rest of the Philippines. • Contribution to the creation of an enabling environment Expected to be significant inasmuch as the Project is designed to also produce policies that would roll out the gains and results of the Project to the rest of the concerned population/sectors of the Philippines. Policy, programmatic and implementation gaps are expected to be addressed to implement a seamless climate/disaster risk management and resilience building whole in this geographically contiguous setting and the entire Philippines. • Contribution to the regulatory framework and policies The Project results' contribution to the existing related regulatory framework and policies are expected to be significant as there are, as yet, no national learnings on how integrated adaptation approaches and resiliency building, drawing from conventional responses and new, innovative approaches, could actually be operationally applied in terms of codified protocols, systems and procedures and tools that would form part and parcel of the country's relevant regulatory regimes dealing with the incremental challenges of climate change. A major example of this is the creation of a more realistic regulatory regime for MSMES, especially those dealing with commodity production from the country's natural resource base, to maximize their contribution to national resilience building. Another is how to influence standards for land use and urban planning that formally incorporates risk management, as well as, "low hanging fruit"/ no regrets options of ecosystems (such as mangroves) management and enhancement can contribute to resilience building of the country's resource base, generating well being for the dependent communities in the process.

D.3. Sustainable development potential *[Potential to provide wider development co-benefits]*	*Provide the estimates of economic, social and environmental co-benefits. Examples include the following:* • Economic co-benefits • Amount of additional income/ revenues generated While the main economic benefits targeted for this primarily climate risk management project is the stemming of the annual losses from disasters, other economic benefits, primarily arising from ecosystems management are expected. These economic co-benefits will be measured primarily by the following indicators: # or % increase over baseline of jobs generated from enterprises created/ strengthened; % increase over baseline of annual income of the direct beneficiaries; % increase over baseline of revenue generation from the enterprises and % increase over baseline contribution to national GDP, among others. A conservative 10% increment in income, revenues and job generation per year[9] is estimated for this Project. • Amount of government's budget deficits reduced The average annual losses from disasters, which have been primarily climate related ones over the past decade, has been set at 0.5% of the country's GDP. These are normally losses which translate to budget deficits as the annual budget is tight with no buffer for losses. This then translate to borrowings to offset the deficit. Onwards, payment for these climate related borrowings add up to the outward flow of foreign currency which go to the automatic debt repayment of the country for debt incurred during the martial law years and estimated to be paid off by 2025. This takes up almost 40 % of the entire budget every year. This is the main economic benefit aimed for by the Project- to come up with a sure fire formula for systematically staving off of economic losses from natural, primarily climate change related disasters. On the other hand, the economic resilience building aspect of the Project is expected to generate and/or grow local coastal resources based enterprises/livelihoods which can immediately provide domestic needs, obviating the need for foreign currency to import goods which could otherwise be produced from these endeavors. The above indicators are initially considered to measure the eventual sustainable contribution of these community based enterprises, estimated to start from year 2, after the organizational rigors of the Project for Year 1. Baselining will be undertaken for the indicators but at this point, an assumption of 30% increase over baseline in jobs, revenue generation and significant contribution to the country's GDP is assumed to start on year 3 onwards. This assumes organizational preparation for new enterprises will take up 2 years, and strengthening of existing ones will start on year 2. • Social co-benefits ➢ Improved access to education ➢ Improved regulation or cultural preservation ➢ Improved health and safety The main social co-benefits would be the improved safety of the coastal population, and with the improvement in the standard risk mitigation actions and protocols, these safety benefits can extend to the entire 100 M national population, noting that the whole country is considered vulnerable to the disaster risks of natural hazards aggravated by climate change. The main

[9] To reckon from the operational stage where jobs, income are streaming in, e.g. 3rd year for new enterprises/livelihoods; 2nd year for existing/strengthened ones.

indicator here is the attainment of the country's national policy of zero casualty during natural hazard events. Other health related co-benefits are expected with the expected improvement of the socioeconomic status of the target poorest and most vulnerable coastal population in terms of reduction in extreme climate events related diseases and improvement in the chronic health situation which come with increased access to health services through insurance.

The co-management approach which would involve coastal communities directly, including the indigenous peoples and through such community enterprises as community based eco-tourism, will contribute to the promotion and strengthening of cultural preservation which is expected to strengthen community values and coherence. With the expected increased improvement in the communities' socioeconomic status, their children's access to quality education, especially at tertiary level will also increase. The Project is expected to be an entry point or locus for the other sectoral agencies e.g. Dept. of Education, Commission on Higher Education and the State Universities and Colleges to come in, in the context of the competency development and knowledge management endeavors. This is also expected to improve access to education, especially in the community level educational activities.

- Environmental co-benefits
  - Improved air quality
  - Improved soil quality
  - Improved biodiversity

  One of the main environmental co-benefits expected to be generated by the project which has implications on the country's over-all sustainability, noting that two thirds of its population are still dependent on natural resources, is the improvement in the environmental services that ecosystems like mangroves can provide through increased biodiversity, increased resources that can be economically benefitted from and improved coastal water quality that could extend to improvement in other ecosystems not covered by the project such as corals and seagrasses. With the contemplated use of renewable energy for coastal enterprises which is expected to displace widespread proliferation of fossil fuel based energy systems, the air quality in the target areas are expected to significantly improve, in addition to increased energy security even in times of climate emergencies.

- Gender-sensitive development impact
  - Proportion of men and women in jobs created 50:50

  The gendered nature of poverty and climate change are closely linked. In the Philippines, Filipino women (along with fisherfolk, farmers, children, people with disabilities, elderly, and IP) are one of the poorest segments of the society. They are highly dependent on climate-change sensitive livelihoods (e.g. agriculture, forest, fishery), which make them disproportionately vulnerable to climate change. Poor women also lack the resources needed to weather strong climactic impact (e.g. better houses, sustainable livelihoods, drought resistant crops). Poor women's reduced adaptive capacity makes them even more vulnerable, forcing them to engage in unsustainable environmental practices (e.g. deforestation) in order to sustain their wellbeing.

  Filipino women to some extent still face a challenge in accessing all levels of policy and decision-making process and this leaves them less able to influence decisions, policies, programmes that impact their lives.

  As such, policies and programming can have an unintended effect of

	increasing gender-based vulnerability. In view this, the following areas for action will be employed for the Project: (1) Consistent integration of gender perspectives throughout the Project implementation, monitoring and evaluation, capacity development, and knowledge management to effectively address women's and men's needs, priorities and interests and ensure women's participation and representation to achieve gender-equitable outcomes. (2) Ensure that adaption efforts in mangrove protection and reforestation address gender-based vulnerability, gender inequality and poverty. Mitigation efforts for this project aim to address gender-specific impacts of climate change, in areas of, *inter-alia*, food security; agriculture and fisheries; biodiversity; water; health; human rights; and peace and security. This means women's capacity gaps and climate change responses will address women's historic and current disadvantages. 3.) Collection and utilization of sex disaggregated data, establishment of gender-sensitive benchmarks and indicators; and the development of practical tools to support increased attention to gender perspective in the environment sector will be encouraged. This will then avoid the under estimation of women's roles and contributions, which may lead to gender-blind climate change policy and programming as this does not take into account the gender differentiated roles of women and men (i.e. their distinct needs, interests, priorities and constraints). 4.) The project will underscore the differential skills and experiences women and men bring to development and environmental sustainability efforts. It will draw on women's experiences, knowledge and skills and support their empowerment so that climate change responses will be more effective. The project's policy and programming will recognize the central role of women in environment and socio-economic development as they are beneficial for family and community well-being and livelihoods and are key elements in promoting the resiliency of economies and communities. 5.) The project will ensure that women will benefit from technological developments related to climate changes and will make full use of their knowledge and expertise, including indigenous knowledge and traditional practices. If new technologies will be introduced, the Project will ensure that women are consulted in such development and ensure that said technologies are user-friendly, affordable, effective and sustainable. Inequalities in access to resources such as credit, extension services, information technology will be taken into account to curb climate change. 6.) The project will ensure that women have equal access to training, credit and skills-development programmes to ensure their contribution in adaption initiatives. It is envisaged that this project will benefit 10% over baseline annually, women and men initially in 28 provinces of the eastern seaboard, including the poorest coastal barangays in them. As the Project will address the linkages between gender and climate change vis-à-vis women and men's social status, poverty, power and access to and control over resources, the Project will be trailblazing in the sense that it will attempt to dissect the perceived inequality situation and how this can be addressed to promote incremental sustainable development.
D.4. Needs of recipient *[Vulnerability to climate change and financing needs of the recipients]*	*Describe the scale and intensity of vulnerability of the country and beneficiary groups and elaborate how the project/programme addresses the issues. Examples of the issues include the following:* • Level of exposure to climate risks for beneficiary country and groups The Philippines is considered to be in the topmost global quartile in terms of vulnerability to climate change, sustaining an average of 0.5% of GDP losses from climate related hazard events/disasters every year. Typhoon Haiyan caused losses in the order of 3-4% of GDP.The provinces in the country's eastern seaboard, numbering 28 are considered to be the most vulnerable to climate change, being in the typhoon path, although uncertainty in the direction of these hazards has increased in recent years, rendering the entire country and its people almost equally vulnerable. The population in the

	country's 1,700 cities and municipalities, almost 80% of which are located in coastal areas, are rapidly becoming extremely vulnerable to the acute (disaster) risks but also to the chronic risks like sea level rise. • Does the country have a fiscal or balance of payment gap that prevents from addressing the needs? The 2016 national budget of the Philippines was 1.6 trillion PhP. The Philippines is spending almost 50% of its national budget to pay off debts incurred during the martial law years without fail as it also has an automatic debt repayment law which constrains the Philippine bureaucracy from programming available national budget (realistically the remaining 50%) to all the country's basic development needs. The GoP officially set the fiscal deficit for 2016 at 2% of GDP. Outstanding debt in 2016 was estimated at 6.4 trillion pesos. In the recent study undertaken by the Philippine Government with the World Bank, the estimated adaptation cost of the country has been initially estimated at between 2-3% of the national budget. The budget deficit, however, is considered to be still manageable in the sense that the economy is still growing. The balance of payments on the trade side is not particularly worrying because the Philippines' oil import bill is not that large. However, it could benefit from a decreased import of commodities/products that the country can easily produce like vegetables and carbohydrate substitutes to staples like rice which the country currently imports. • Does the local capital market lack depth or history? Some experts say that the local capital market lacks depth in the sense that the trading volumes and number and types of traded securities are low relative to the size of the economy. It does not lack for history but is still not mature enough relative to its years. It is changing but not fast enough where it is a major contributor to economic development. It's still too much in thrall to big corporate interests and very vulnerable to abusive speculators. • Needs for strengthening institutions and implementation capacity To implement this proposed Project, capacity development has to happen at various levels involving a variety of sectors and key institutions. A collective national capacity needs to be built to enable the country to address the climate change problem, especially its impacts. This national capacity building process has started at the national government level, with improvements in technical competencies, changes in regulatory regime (e.g. risk based planning required) and extended to the sub-national (regional/provincial) level. However, those at the frontlines (LGUs, community leaders, Community based organizations) have barely been capacitated. Their technical capacity and know-how have to be immediately placed at par with the national actors. Their natural partners too like local academic institutions have to have increased competencies on climate change to be able to effectively support players at the local level.
D.5. Country ownership *[Beneficiary country ownership of project or programme and capacity to implement the proposed activities]*	*Provide details of the below and specify other relevant factors.* • Coherence and alignment with the country's national climate strategy and priorities in mitigation or adaptation The proposed Project is fully aligned with the Philippines' National Climate Change Strategy and National Climate Change Action Plan (NCCAP), as well as the Philippine Development Plan (PDP) and the Sectoral Plans. The National Climate Change Action Plan (NCCAP) rolled-out by the Philippines' Climate Change Commission (CCC) included as one of its strategic priorities, "Ecosystem and Environmental Stability" wherein efforts will be "strengthened in protecting ecosystems, rehabilitating and restoring

ecological services to attain resiliency against climate change impacts."

The PDP 2017-2022 will intensify the implementation of programs to rehabilitate and restore degraded natural resources and protect fragile ecosystems. Simultaneously, the planned rehabilitation efforts are also intended to improve the welfare of resource-dependent communities. Improvement in ecosystem productivity and increased resiliency towards climate change and natural hazards are expected to contribute to the betterment of the coastal communities' socio-economic welfare. The PDP 2017-2022 further intends to adopt interventions following a ridge-to-reef approach and a sustainable area development framework so that the interdependence of the different ecosystems is further enhanced.

The National Disaster Risk Reduction and Management Plan (NDRRMP) 2011 to 2028 provides guidance on how sustainable development can be achieved through inclusive growth while building the adaptive capacities of communities; increasing the resilience of vulnerable sectors; and optimizing disaster mitigation opportunities to promote people's welfare and security towards gender-responsive and rights-based sustainable development. It outlines the activities aimed at strengthening the capacity of the national government and the local government units (LGUs) together with partner stakeholders, to build the disaster resilience of communities and to institutionalize arrangements and measures for reducing disaster risks, including projected climate risks and enhancing disaster preparedness and response
capabilities at all levels.

Brief description of executing entities (e.g. local developers, partners and service providers) along with the roles they will play

The Project will draw from a wide variety of potential executing agencies which can optimally support implementation. The Sponsor has been using this multi-execution modality with the Government for such funding sources as the Global Environment Facility, its own resources and those entrusted to it by bilaterals operating in the Philippines. Government Departments (Ministries) or any of their subsidiary offices can be Executing Agencies. So can a Civil Society Organization or a government financial institution (GFI). The Executing Agency is directly responsible for day to day operations. In turn, the EA can contract a private contractor to discharge tasks for them. The Sponsor (UNDP) has a variety of experiences working with all of these de facto Executing Agencies. The audits and evaluations have, on the average, been generally satisfactory and no incident of significant financial leakage have occurred in the more than 3 decades that the UNDP has been using this modality in the Philippines.

For this particular Project, the contemplated Executing Agencies under the UNDP's National Implementation Modality (NIM) are the Department of Environment's Environmental Research and Development Bureau (ERDB), the Biodiversity Management Bureau (BMB), the Forest Management Bureau (FMB), and the DENR Regional Offices. Other agencies from other Departments (Ministries) like the Bureau Of Fisheries and Aquatic Resources (BFAR) and the Office of Civil Defence (OCD) of the National Disaster Risk Reduction and Management Council (NDRRMC) will also come in based on the leadership needed by the Project in the relevant Components. Highly vulnerable LGUs with denuded mangrove forests will also be involved in the implementation of the Project. The UNDP, DENR and the other Departments cited above and LGUs have the technical and financial management capacity to implement the GCF project because of their previous experience in projects of similar/related nature and scale.

- Stakeholder engagement process and feedback received from civil society organizations and other relevant stakeholders

  Scoping meetings have been undertaken by the Department of Environment and Natural Resources to determine potential scope and content of this

	Project. But long before these series of meetings, content and design of each component have been vetted separately among multi-stakeholders by virtue of their being piloted in various areas of the country, including in the Eastern Seaboard, albeit on limited scale. Extensive consultations will again be conducted when formal detailed Proposal preparation begins. It must be emphasized that country ownership is a major principle that the Sponsor (UNDP) uses as a norm in its engagement with programme countries like the Philippines.
D.6. Effectiveness and efficiency *[Economic and financial soundness and effectiveness of the proposed activities]*	*Provide details of the below and specify other relevant factors (i.e. debt service coverage ratio), if available.* • Estimated cost per t CO2 eq (total investment cost/expected lifetime emission reductions) Not directly applicable but can be calculated and incorporated during the Funding Proposal preparation stage, once use of renewable energy becomes part of the formal design of the Program. • Co-financing ratio (total amount of the Fund's investment as percentage of project) The total grant needed for the Project from the GCF is 78.3 M USD. It is 51% of the total cost. The balance of 58.7 M USD will be provided as co-financing by the Government of the Philippines and other stakeholders of the Project. • Economic and financial rate of return (These information will be provided in the Funding Proposal.) - With the Fund's support - Without the Fund's support

E. Brief Rationale for GCF Involvement and Exit Strategy

Please specify why the GCF contribution is critical for the project/programme.

The GCF grant is critical for the Project because it will address a critical funding gap for the capacity development process, a major strategy of the Project and other "non-bankable" interventions like revolving funds for ecosystems communities as a sustainable feature of enterprises to be set up or strengthened in the target areas. The GCF grant will also enable the testing and eventual implementation of integrated disaster/climate risk management and ecosystems resilience building approaches which will show results on a wide geographical basis that the national government can upscale throughout the country but does not have the luxury of testing for lack of funds. It can help hasten upscaling of best practices and behavioural transformation as more people and institutions can be involved in this bigger undertaking. Through the GCF support, this will potentially be the biggest undertaking of deliberately mainstreaming gender concerns into climate risk management efforts and ecosystems and vulnerable populations resilience building.

Please explain how the project/programme sustainability will be ensured in the long run, after the project/programme is implemented with support from the GCF and other sources.

Project sustainability will be ensured by mainstreaming of results into the planning, programming and regulatory processes of the Philippines in a "roll out" process and/ or "incorporation as the projects go" which the national government is already practicing in joint endeavors with the Sponsor and other partners. Knowledge management will be with existing knowledge management/knowledge generating sectors & entities like the academe for continuing competency development of the actors. New approaches, products which need to be taken up by the private sector would be developed in conjunction with them , as well as, government sectoral agencies in an integrated fashion, to immediately link community producers and entrepreneurs to markets. Other requirements like continuing financing will be ensured by involving financial institutions directly, to influence lending and lending requirements in a way that they become responsive to prospective clients.

At every opportunity, documentation and transformation into norms and protocols of results, where feasible, will be undertaken to ensure that results are immediately taken up and institutionalized. That is why the involvement of the academe and local knowledge management mechanisms involving the communities themselves is a critical feature of this Project.

F. Risk Analysis

Please describe the financial and operational risks and discuss mitigating measures.

RISK	RATING	MITIGATING MEASURES
Political Risk. Change in political leadership (at the national and local levels) may pose delays in project implementation due to changing priorities and/or uncertainties.	Medium	Constant consultations and advocacy to secure buy in will be endeavored at the highest political leadership, as well as, the lowest stakeholder levels. Ensure the "deepening of the bench" by working with all levels of the government, especially the technical and planning personnel who are less likely to be affected by changes in leadership.
Financial risk Delay in financial releases because of non-compliance with set protocols like reporting	Medium	The Sponsor (UNDP) will strictly apply its NIM procedures in the release of funds where additional release may only be made upon disbursement of 80% of the prior advance. Detailed orientation and training on processes, especially financial system and reporting protocol. Close monitoring of financial performance vis-à-vis operational activities. If necessary, augmentation of existing manpower with project-hired staff.
Institutional/Organizational Risks. Insufficient technical and implementation capacity of key actors may impede timely achievement of outputs due to the rapid turn-over of staff.	Medium	Close monitoring and mitigation of risk with the augmentation of existing manpower with project-hired staff and external experts Detailed orientation and training on processes, especially technical and financial reporting, project management, etc. Mentoring will also be resorted to.
Capacity of Executing Agency to implement and manage the project	Low	Mobilize EA staff who have rich experience in implementing and managing related or similar projects On-the-job training for EA staff on project and financial management.
Weak coordination with LGUs	Medium	Mobilize EA staff who have experience working with LGUs on all aspects under the project-CCA/DRRM; ecosystems management, etc. Provide clear coordination mechanisms and working arrangements between the EA and LGUs
Failure in technology & know how on which form part of the basis and assumptions of the successful implementation of the programme.	Low	Strategic partnerships with the local academe and centers of excellence will be established to provide continuous technical support on all aspects of the initiative- from assessments to operationalization and evaluations. External technical support will also be brought in by the Sponsor when needed.
Unpredictability in climate & environmental conditions may affect the level of success of field level activities.	Medium	Close monitoring of weather updates will be done to ensure that the field activities will be timed in the most suitable weather condition. Similarly, the project will consider technologies that are adjudged to be most climate adaptable and resilient.
Sub-optimum mobilization and engagement of women and vulnerable groups in project implementation and management	Medium	Information, awareness and education campaign for women and vulnerable groups about the project, its importance and their role in making it successful. Properly compensating participants in project implementation and co-management.
Regulatory constraints on local communities to undertake project	Medium	The project will support/catalyze review of regulatory frameworks at national and local levels as well as

activities (e.g., harvesting mangrove project) can demotivate direct beneficiaries.		initiate policy dialogues and consultations between stakeholders and policy-makers to promote appropriate interpretation and application of regulations by authorities.
Lack of clear land and resource tenure, overlapping jurisdictions and conflicting land claims.	Medium	The project will support/catalyze the review of tenure models of relevance to project objectives. Select project sites without these issues, to the extent possible.

Please briefly specify the substantial environmental and social risks that the project/programme may face and the proposed risk mitigating measures.

The environmental and social performance of the Project will be assessed in accordance with GCF's Environmental and Social Safeguards (IFC Performance Standards is currently used by GCF) as well as UNDP's Social and Environmental Standards. The initial categorization for the Project is **Category B** or **Medium Risk** (IFC social and environmental categorization) and **Moderate Risk** (UNDP risk categories). Initial categorization was undertaken during the Scoping Mission conducted on 3-10 March 2017. This categorization will be confirmed during the FS stage using UNDP social and environmental screening procedure as well as the conduct of the appropriate Social and Environmental Assessment that may be applicable.

Overall, the project is projected to have some environmental impacts (but not irreversible adverse ones) and these can be mitigated effectively through appropriate management measures. Potential negative impacts may include disturbance of sediment in case it is necessary to undertake earth works to stabilize certain areas. The earth works will move sediment that, if not properly contained, may enter the marine environment. Note that sediment movement may also expose acid sulfate soils. This will be carefully studied during the FS stage and appropriate mitigating measures included in a sediment/erosion control plan that will be prepared. Note that environmental impacts are anticipated to be predominantly positive in terms of improvement of water quality, coastal protection, and the absorption of greenhouse gas emission. In addition, potential impacts of climate change and natural hazards (e.g., flooding, typhoon/tropical storm) on the project will be recommended for integration into project design during the FS stage.

In terms of social risk, there is the limited possibility that the project may result in the displacement of people's livelihoods if careful planning is not undertaken. During FS stage, careful planning and stakeholder consultations will be undertaken to ensure that any temporary interruption to livelihoods are minimized as well as addressed under applicable government rules and programmes. If necessary, a livelihood restoration plan will be developed in accordance with GCF and UNDP standards.

G. Multi-Stakeholder Engagement

Please specify the plan for multi-stakeholder engagement, and what has been done so far in this regard.

Individual stakeholders have been consulted and some have provided inputs. The proposal has been extensively vetted on a per component basis. The Proposal preparation proper will again provide the opportunity to conduct more detailed consultation on the integrated proposal submitted to the GCF.

H. Status of Project/Programme

1) A pre-feasibility study is expected to be completed at this stage. Please provide the report in section J.

   Relevant documentation are appended in Section J.

2) Please indicate whether a feasibility study and/or environmental and social impact assessment has been conducted for the proposed project/programme: Yes ☐ No ☒
   (*If 'Yes', please provide them in section J.*)

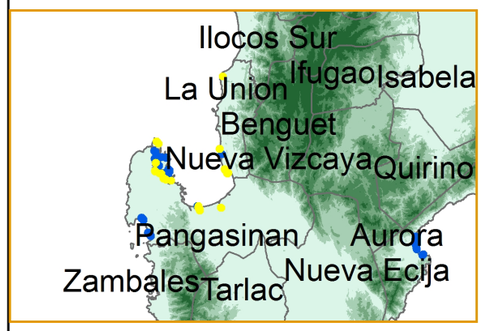
3) Will the proposed project/programme be developed as an extension of a previous project (e.g. subsequent phase), or based on a previous project/programme (e.g. scale up or replication)? Yes ☐ No ☒
   (*If yes, please provide an evaluation report of the previous project in section J, if available.*)

I. Remarks

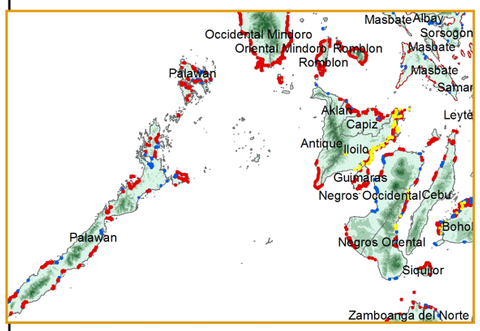
J. Supporting Documents for Concept Note

- ☒ Map indicating the location of the project/programme
- ☐ Financial Model
- ☒ Pre-feasibility Study
- ☐ Feasibility Study (if applicable)
- ☐ Environmental and Social Impact Assessment (if applicable)
- ☐ Evaluation Report (if applicable)

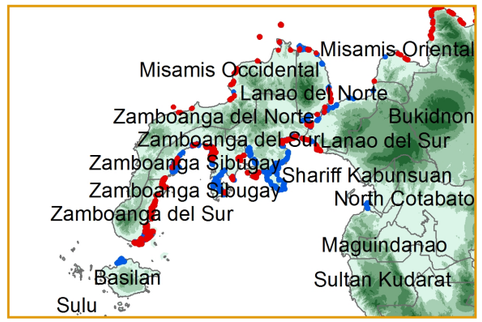
MAP SHOWING THE PROPOSED MANGROVE AREAS FOR ENHANCEMENT AND NEW PLANTATION IN EASTERN AND WESTERN SEABOARDS



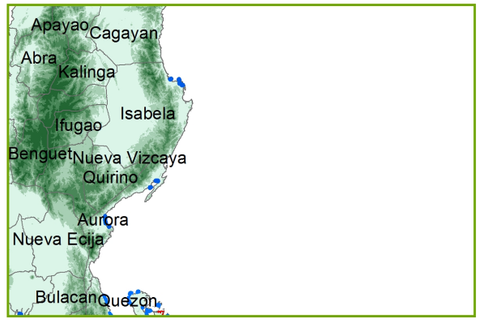
Region 1 (190.17 has)
Region 3 (169.41 has)



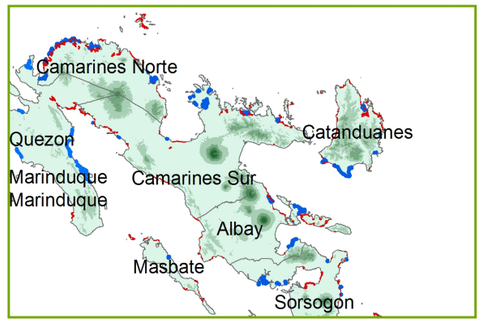
Region 4a (220.04 has)
Region 4b (1,562.25 has)
Region 6 (148.37 has)
Region 7 (1,566.27 has)
Region NIR (1,444.14 has)
Region 4a (186.72 has)
Region 4b (8,037.77 has)
Region 6 (2,480.19 has)
Region 7 (4,992.05 has)
Region NIR (1,221.07 has)



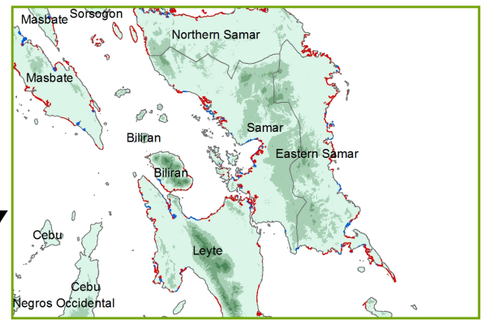
Region 9 (7,000.71 has)
Region 10 (410.25 has)
Region 12 (294.58 has)
Region 9 (5,072.17 has)
Region 10 (377.83 has)



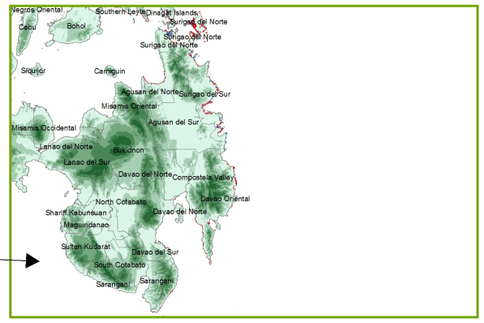
Region 2 (130.11has)
Region 3 (306 has)
Region 4a (4,186.91has)
Region 4a (850 has)



Region 5 (4,215.12 has)
Region 5 (7,891.34 has)



Region 8 (5,789.79 has)
Region 8 (13,633.10 has)



Region 11 (84.55 has)
Region 13 (1,710.53has)
Region 11 (1,768.30 has)
Region 13 (4,452.44 has)

Legend

Elevation (m)

- -197 - 194
- 194- 487
- 487 - 865
- 865 - 1,380
- 1,380 - 2,933

- FMB Mangrove projects proposed for enhancement (29,429.73 has)
- ERDB Mangrove projects proposed for enhancement (50, 904.57 has)
- Validated plantable Area for new mangrove plantation (1,916.17 has)
- Eastern Seaboard
- Western Seaboard

N
W E
S

0 30 60 120 180 240
Kilometers

1:6,154,899

-500000.000000 -100000.000000 300000.000000 700000.000000 1100000.000000 1500000.000000
2100000.000000 1800000.000000 1500000.000000 1200000.000000 900000.000000 600000.000000

CONCEPT NOTE
"NATIONAL CAPACITY DEVELOPMENT FOR MAINSTREAMING DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION INTO PLANNING AND IMPLEMENTATION PROCESSES AT THE LOCAL LEVEL[1]"

1. BACKGROUND:

As a country situated in the "Pacific ring of fire" and directly in the typhoon path, the Philippines is no stranger to natural hazards and their impacts. Over time, the country's adaptive capacity to these hazards has grown but with the advent of climate change, this coping capacity has been rapidly eroded. The net effect is a setback of the country's development gains, costing it an average of 5% of GDP almost every year, especially for the past 5 years. On top of this is the growing number of casualties because the country's burgeoning population has rapidly occupied dangerous areas like coastlines, waterways and landslide prone locations.

The recent spate of yearly natural disasters affecting the Philippines has underscored the urgency of developing the capacities of the Filipino people, especially the most vulnerable, to deal with the potential impacts of natural hazards, especially those influenced by climate change. Capacity gaps span the breadth of national to local stakeholders and across a range of sectors and intervention areas. They can also be characterized as gaps at the institutional, as well as, individual levels. Institutional gaps involve policy, mechanisms, tools, systems and procedures and individual capacity gaps include lack of awareness and competencies. Specifically, the absence of consolidated hazard information, such as multi-hazard maps and exposure data that would enable the country to understand, prepare for and mitigate the impacts of natural hazards, especially those aggravated by climate change, is at the top of the list. Other problems involve the lack of competencies among planners and implementors to use these information in a standard, reproducible risk analysis, the results of which need to be fed into a systematic risk management system, comprising: a.) risk avoidance e.g. relocation, proper land use zoning; b.) mitigation through early warning, contingency planning, re-engineering; c.) addressing residual risks e.g. risk sharing/risk transfer mechanisms.

As a natural disaster-prone country, the Philippines has increasingly undertaken a lot of bold initiatives to address the above capacity gaps which have worked.[2] However, these actions are obviously not enough to address the intensifying impacts of climate change. What is needed is a comprehensive, rapid and almost simultaneous capacity development of stakeholders, from national to sub-national and local levels. The assumption, which is borne out by experience, is that the systematic infusion of capacity development interventions, especially on raising awareness, knowledge and competencies to deal with natural hazards and climate change impacts through long term (e.g. risk based planning) and short to medium term mitigation actions (early warning, contingency planning, re-engineering, insurance schemes) will go a long way in averting significant losses in terms of economic losses and mortalities. All these have to come together in a coherent, integrated framework which ensures adequate and optimum disaster risk management. This framework must comprise standardized, reproducible steps starting with risk analysis[3] and risk evaluation, the results of which should feed to risk management.

Elements of this framework are in various stages of implementation. For risk analysis, characterization of the multi-hazards faced by the Philippines is on-going, translating to multi-hazard maps of 1:50,000 and 1:10,000 scales, respectively. Seventy four (74) of the 81 provinces have multi-hazard maps and profiles and the remaining 7 without these maps are: Davao del Sur, Sulu, Tawi Tawi, Basilan, Lanao del Norte, Maguindanao and Zamboanga

Sibuguey. Of the 1,634 cities and municipalities[4], 45 cities and municipalities spread across Regions 2, 6, 8, 10, 11, 13 and NCR are in various stages of being mapped. The 74 provinces also have risk based Provincial Development Physical Framework Plans (PDPFPs). Early warning systems, both automated and manual have been set up in several areas across the country. They range from simple rain gauges to automatic weather stations. These systems are not composed of equipment alone but an organization of people who can relay critical information about the progression of the hazard. On contingency planning, the new approach which was tested in Metro Manila is integrated planning-organizing cities and municipalities sharing the same risk source (e.g. fault systems, riverine systems, bays) to respond in an integrated manner in case of an emergency or disaster.

While national roll out of capacity development on DRR-CCA mainstreaming, in the context of the above framework is seriously being contemplated by the Philippine Government, to address the urgent need of preparing Filipinos to avoid disasters from natural hazards and climate change, a more consolidated testing of the application needs to be undertaken in a more 'graphic setting" in a contiguous area such as the country's coasts. The LGUs, as the front-liners for actions to avert or mitigate the impact of disasters, together with other local stakeholders, should be the focus of this national capacity development. Relevant executive issuances have been issued to this effect which provide the policy environment to make this happen. These are: 1.) Presidential Administrative Order No.1 Series of 2010, "Directing LGUs, Particularly Provinces to Adopt and Use in their Planning Activities the Guidelines on Mainstreaming DRR in Sub-National Development and Land Use Planning/Physical Planning"; and 2.) HLURB Board Resolution No.915 issued on Feb.24, 2014 or "Supplemental Guidelines on Mainstreaming DRR-CCA in Comprehensive Land Use Plans (CLUPs)". The 74 PDPFPs cited above were produced by the concerned provinces using the Guidelines prescribed under AO 1, Series of 2010. At least six (6) cities and 22 municipalities produced risk based CLUPs pursuant to the HLURB Supplemental Guidelines. The mainstreaming task is, therefore, still huge noting that the cities involved represent only 4% of the country's 144 cities and the municipalities concerned comprise only 1.5% of the total.

This proposal, therefore, details the support needed for this national rollout process, even as developmental work on this framework is still in progress and some aspects of it, like impact modelling under the risk analysis process, are still being developed and tested. However, what should really be rolled out are low hanging fruits such as hazard and exposure data compilation, generating a common understanding and the required competencies to enable standardized analysis and management responses of the disaster risks from natural hazards and climate change. Within the latter (management processes) tested methods such as risk-based planning and programming; mitigation actions like early warning and contingency planning, can already be replicated with confidence all over the country.

2. GOAL:

This proposed project will support the national programme which has the goal of resilience building by significantly reducing mortalities and economic losses from natural hazards and climate risks through disaster avoidance and mitigation.

2.1 SPECIFIC OBJECTIVES:

2.1.1 To increase the capacities of local government units to lead local stakeholders in averting losses from natural hazards and climate change through an appropriate enabling environment;

2.1.2 To increase the capacities of critical local partners such as local academic institutions and civil society organizations to consistently support local risk management actions; and

2.1.3 To increase the capacities of communities to avoid or mitigate the impact of natural hazards and climate change.

3. OUTCOME:

This programme aims to support the government to achieve the outcome, **"Increased capacities of LGUs and other local stakeholders on DRR-CCA mainstreaming in planning, programming, regulatory and other implementation processes for avoided/reduced losses from natural hazards and climate change impacts."**

4. COMPONENTS, OUTPUTS, ACTIVITIES:

Component A: RISK ANALYSIS OF ALL CITIES AND MUNICIPALITIES[5] OF THE PHILIPPINES

A quantifiable, objective risk assessment that characterizes the hazards and exposed elements and brings them together in impact scenarios, can be the only logical basis of rational, systematic, consistent and reproducible risk management actions. Noting the increased uncertainty as to which locality will be affected, given the experiences of places like Davao Oriental and other places recently hit by typhoons, adjudged to be not or less vulnerable compared to those located in the Eastern Seaboard, all cities and municipalities need to be all equally prepared for the disaster impacts of natural hazards and climate change. This component will, therefore, already roll out this risk assessment process as the first step (hazard characterization & vulnerability analysis). For example, the delineation of the possible physical extent of multi-hazards, as does the construction of the exposure data base such as ClimEx.db[6], take time but needs to be done anyway. The mapping approach of the Government is well set and can be applied broadly. Capacities of anchor academic institutions[7] need to be developed at the same time as or even ahead of the first batch of the LGU trainees in this roll out process. This is part of the sustainability strategy which would ensure that future human resources and research needs of LGUs pertaining to coping/adaptation strategies and resilience building to natural hazards and climate change impacts are met and addressed in a predictable manner.

Output 1. ***Climate/disaster risk and vulnerability assessment(s) produced as a basis for "climate/disaster proofing" future development, urgent mitigation actions & addressing residual risks in the target areas.***

This output will produce risk and vulnerability profiles of target cities and municipalities of the country. The probabilistic risk assessment approach which allows incorporation of future climate scenarios and use of dynamic impact models will be applied.[8] This output will specifically produce 1:10,000 scale climate adjusted multi-hazard maps for use by the LGUs in their risk based Comprehensive Land Use Plans (CLUPs), Comprehensive Development Plans (CDPs) and other local plan(s) (e.g. contingency & investment plans) preparation. The climate adjusted multi-hazard maps are expected to be refined and upgraded to risk maps as the tools like impact models are refined[9]. Available climate change/ natural hazard impact models[10], e.g. flood, storm surge, etc. will be used in the risk assessment process but will have to be adjusted individually for each risk source in the target areas. This output will also produce an exposure database[11] for each LGU, which can be used for the risk (vulnerability) analysis and mitigation and plan enhancement purposes. This undertaking will specifically assist ALL target LGUs in characterizing and mapping their inherent hazards, with the

support of risk management agencies and 'ANCHOR' academic institutions.[12] The climate exposure database tool, ClimEx.db, which was developed under Project Climate Twin Phoenix[13] will help define the vulnerability of the exposed population, structures and economic activities in the areas most likely to be affected by the hazards, and the extent of risks in terms of damage and losses should hazard events happen in the future. The ClimEx.db is seen as complementing the ecological profiles produced by LGUs for use in their comprehensive land use planning. ClimEx.db may be upgraded, to build into the system the administrative maps of the LGUs, thus, allowing for faster processing of data.

Component B: MITIGATION

Output 2. ***Priority disaster mitigating measures such as community-based and managed early warning systems (CBMEWS), integrated contingency plans, re-engineering of vulnerable infrastructure and other resilience building interventions[14] developed and implemented.***

This output will focus on developing systems and protocols for early warning, development & operationalization of the integrated contingency plan(s)[15] and application of re-engineering standards, especially for critical public infrastructure (e.g. evacuation centers) which may now be the norm for vulnerable countries like the Philippines. This output will also facilitate the take up of risk reducing/mitigating interventions like ecosystems enhancement through practices like mangrove re-planting, upland reforestation, etc.. Using the hazard maps and the exposure data gathered under Output 1, this output will support LGUs to produce LGU-specific and inter-LGU integrated contingency plans, community/barangay-based and managed early warning systems (CBMEWS) for critical hazards with improved local weather and hazard advisories, coupled with functional coordination mechanisms for disaster preparedness and response. Integrated CBMEWS for cities and municipalities with common risk source(s) will be developed and operationalized. The early warning system(s) to be chosen will be least cost and simple, not requiring sophisticated, costly instrumentation, but duly tested and proven to function effectively. The LGU(s) will have overall accountability for the CBMEWS while operation and maintenance will be the responsibility of the host community/barangay. The maintenance plans for the CBMEWS will be drawn up by LGUs with technical assistance from the relevant risk management agencies (e.g. PAGASA, PHIVOLCS, MGB). The CBMEWS will be established and tested in strategic areas around the risk source. Intensive Information, Education and Communications (IEC) campaigns, including drills and rapid assessments of the integrity/adaptive capacity of structures to the hazards of concern will also be undertaken under this output. Likewise, partnerships with Civil Society Organizations, such as the DRRNET Philippines, shall be facilitated, to enable preparation and participation of communities to progress faster. Using the results of the climate/disaster risk and vulnerability assessment, mitigation measures will be identified to manage inherent risks from natural hazards. In particular, new engineering standards[16] formulated based on the country's experiences from recent disaster situations like Typhoon Haiyan, will be communicated and applied. A menu of re-engineering options for LGUs will be developed and offered as basis for an anticipatory strategy to address the vulnerability of local infrastructure. Re-engineering standards for critical facilities will be applied immediately such as in the construction of, at least, 1 inter-LGU evacuation center.

Component C: COMPETENCY DEVELOPMENT

Output 3: ***Competencies of local governments and critical partners[17] improved to deal with the disaster risks of multi-hazards, including those from climate change and general level of awareness and competencies of vulnerable communities and other local stakeholders increased to deal with disaster and climate change risks.***

This output will focus on developing the competencies of LGU planners and other concerned stakeholders like the academe, civil society organizations and the business sector, among others, on mainstreaming disaster risk reduction/climate change adaptation in all relevant

planning, programming, regulatory and implementation spheres and processes at the local level in a "learning by doing approach." The major indicator(s) for Output 3 will be compliance with competency standards to be set by the national government[18] and the risk based CLUPs and CDPs to be produced by all target LGUs, as well as, contingency plans that work and regulatory processes that are able to impose risk based regulations such as zoning ordinances. Among the knowledge and skills that will be developed are: (a) basic knowledge on linkages of climate, disasters and development, disaster risk and climate change vulnerability assessment; b.) skills on geo-referenced ecological and risk profiling of the municipalities; (c) skills on the preparation or updating of climate adjusted multi-hazard maps; (d) skills to undertake climate and disaster risk assessments; (e) climate and disaster risk-sensitive land use and sectoral development planning; (f) skills on developing & implementing priority mitigation measures such as integrated contingency planning, community based and managed early warning system(s), re-engineering of infrastructure and settlements[19] for sustainability, and (g) knowledge management. This output will not only raise the general level of awareness of the affected communities/barangays but will also endeavor to develop their skills to use the empirical information produced in Output 1, such that they become active and competent participants in the over-all disaster risk management of their localities. In the process, civil society partners and community leaders and vulnerable sectors, particularly women and youth groups, will be trained to participate at the planning and execution levels of DRRM and CCA plans, programmes and projects. Community level monitoring of local environmental indicators will be developed on which these groups will be trained.

Component D: DRR and CCA MAINSTREAMING IN PLANNING, PROGRAMMING, REGULATORY AND IMPLEMENTATION PROCESSES

Output 4. ***DRR/CCA mainstreamed into land use, development plans and investment programs at the national and local level.***

Under this output, all target LGUs will be provided technical assistance in formulating/updating their respective plans (CLUPs, CDPs, LDIPs, AIPs) utilizing the methodology prescribed in HLURB's Supplemental Guidelines on Mainstreaming Climate and Disaster Risks in the CLUPs, which was produced under Project Climate Twin Phoenix. The provinces' DRR/CCA-Enhanced Provincial Development and Physical Framework Plans (PDPFP) [20]will provide the broader perspective for the climate and disaster risk-sensitive CLUPs of the LGUs. Relevant consultative mechanisms and approving bodies such as the Sangguniang Bayan, Regional and Provincial Development Councils will be duly capacitated and their protocols updated.

Component E: ADDRESSING RESIDUAL RISKS

Output 5: ***Risk sharing/transfer mechanisms applied.***

Recognizing that there is no such thing as "zero risk" especially in such a vulnerable country as the Philippines and that no amount of disaster risk reduction/ climate change adaptation will eliminate the possibility of disasters, **Output 5** will enable and facilitate the take up of risk sharing/transfer mechanisms (e.g. weather based/multi-peril insurance) for the poorest and most vulnerable, especially those who are dependent on natural resources in the study area such as the fisher-folk and small farmers.

Component F: KNOWLEDGE MANAGEMENT

Output 6: ***Knowledge management on disaster risk reduction and management and climate change adaptation developed and implemented.***

At the heart of a vibrant and sustainable initiative on whatever concern is a continuing information and knowledge exchange among stakeholders and their access to evolving information and knowledge. It is important to have a system of managing relevant

information and knowledge on DRR CCA which are pre-existing, generated during and continue to be generated after the roll out endeavor. The LGUs and other local actors must have access to a mechanism which will enable them to access and share critical information and knowledge. DRR-CCA management is an evolving concern, hence "operational" knowledge is still scanty. However, knowledge can accumulate very fast and for optimum utility, must be disseminated or accessed in a timely manner. A knowledge management system which can serve this roll out process, as well as, continue to assist DRR-CCA stakeholders in a continuous manner over the long term, must be set up. A KM system will be designed and established for this purpose. A national focal institution will be chosen for the lead coordination role, as well as, KM entities, which, all together, will make up the "core" of a national KM network. These KM entities will "anchor" the KM hub per region, which in, turn, will comprise KM related institutions. This system will have the capability of eliciting DRR-CCA information and knowledge bottom up from the communities and the capacity to channel information and knowledge from the international to local levels.

5. IMPLEMENTATION ARRANGEMENTS AND TIMETABLE:

Implementation of this programme will take off from on-going and past initiatives on DRR-CCA implemented by the Philippine Government through the Climate Change Commission[21], the National Disaster Risk Reduction and Management Council (NDRRMC) through the Office of Civil Defense[22], and, the National Economic & Development Authority[23]. First phase of the programme will be implemented over a period of 5 years. This initial phase will prioritize Climate/Disaster Risk Assessment and Exposure Database establishment toward completion of DRRCCA-enhanced CLUPs and CDPs; setting up of vital DRRCCA measures - CBMEWS, ICP and Coordination Mechanisms; and C/DRM Competency Development of Critical Partners (e.g. anchor academic institutions) who will train LGUs and other key stakeholders in target areas. The selection of target LGUs at city/municipality level should consider contiguous areas sharing the same risk sources within a river basin or coastal area. The indicative schedule is provided in **Annex A.**

During programme implementation, close coordination with key agencies (e.g., Climate Change Commission, NDRRMC, DILG, DOST, HLURB) will be undertaken. Also, civil society organizations, the private sector and development partners will be invited to participate/contribute to the implementation. National and local educational institutions will also be tapped for the capacity building activities and research needs of the Project.

6. BUDGET:

The estimated budget needed for the initial phase of this support programme for the first 300 LGUs (city/municipality level), covering Components A-D is PhP 9.411 Billion or USD 200.24 Million. The breakdown is provided in **Annex A.** The estimate is based on the per unit cost of expenditure items, per experience of GoP implemented projects such as the Twin Phoenix and ReBUILD which used the methodologies and framework proposed in this undertaking.

For Component E, the application of risk transfer/ sharing mechanisms through the provision of non-life micro-insurance products for the low-income sector on a national scale, at least PhP 103.9 Billion or 2.36 Billion USD, equivalent to 1 year worth of premiums will be required initially (**Annex B**). This will require work on a national policy and institutional arrangements to enable coverage of the most vulnerable population on a sustainable basis.[24]

For Component F, the establishment of a KM system and network comprising a central station, 17 regional hubs and 81 local KM centers (for each province) is estimated to entail PhP 1.18 Billion or USD 24.8 Million at the outset, with an expected annual operational cost of PhP 651 Million or USD 14.8 Million (**Annex B**).

Annex A

#	Rollout Components				Amount (PhP 47: USD1)		
					PhP	USD	Remarks
A.	**Risk Analysis of Cities and Municipalities**						
1	**C/DR Assessment and Exposure Database Establishment**	**Y1**	**Y3**	**Y4**			
1.1	Climate/Disaster Exposure Database established				2,550,000.00	54,255.32	per LGU
1.2	Climate-adjusted hazard maps produced[25] (assumption: spatial scope of 5 contiguous LGUs in 1 province sharing a common risk source/(sub) riverbasin or coastal/baywide approach; Flood, SS, SW and RIL hazards; downscaled CC projections; GIS specialist)				40,050,000.00	852,127.66	Lump sum cost per 5 LGUs in 1 province
1.3	Climate/Disaster Risk and Vulnerability Assessment & Sectoral VA Assessments completed (assumption: no development of new tools/methodology – PCTP/ReBUILD models/outputs utilized)				3,800,000.00	80,851.06	per LGU
	Sub-Total 1a - per LGU				**6,350,000.00**	**135,106.38**	
	Sub-Total 1b - multihazard mapping per 5 LGUs in 1 province				**40,050,000.00**	**852,127.66**	
B.	**Mitigation**						
2	**Priority DRRCCA measures - CBMEWS, ICP and Coordination Mechanisms Establishment**						
2.1	Community based and managed early warning systems (low-cost)[26]				740,000.00	15,744.68	per LGU
2.2	Inter-agency/Multi-sectoral coordination mechanisms for disaster preparedness and response designed				1,000,000.00	21,276.60	per LGU
2.3	Integrated Contingency Plan(s) developed and tested; plans for ICP updating instituted				1,000,000.00	21,276.60	per LGU
2.4	Protocols for drills updated and conduct of drills undertaken				860,000.00	18,297.87	per LGU
2.5	1 model inter-LGU multipurpose evacuation center constructed (assumption: to serve 5 contiguous LGUs in 1 province, land acquisition c/o Government)				30,000,000.00	638,297.87	1 center
	Sub-Total 2a - per LGU				**3,600,000.00**	**76,595.74**	
	Sub-Total 2b – 1 model inter-LGU multipurpose evacuation center[27]				**30,000,000.00**	**638,297.87**	
C.	**Competency Development of LGUs and critical partners**						

#	Rollout Components	Amount (PhP 47: USD1)		
		PhP	USD	Remarks
3	**C/DRM Competency Development**			
3.1	Capacity assessment of LGUs and critical partners	100,000.00	2,127.66	per LGU
3.2	C/DRM competency development programme formulated and Trainings of Trainers conducted for lead academic partners (assumption: 1 lead academic institution to be selected per 5 contiguous LGUs in 1 province)	1,250,000.00	26,595.74	Lump sum cost for 1 academe serving 5 LGUs in 1 province
3.3	C/DRM competency development programme implemented for LGUs and critical partners	1,500,000.00	31,914.89	per LGU
3.4	Awareness of general population of selected stakeholders within and surrounding the selected river basins raised	1,500,000.00	31,914.89	per LGU
	Sub-Total 3a - per LGU	**3,100,000.00**	**65,957.45**	
	Sub-Total 3b – C/DRM CD programme formulation and ToT for 1 academic institution covering 5 contiguous LGUs/province	**1,500,000.00**	**31,914.89**	
D.	**DRRCCA Mainstreaming in Planning , Programming, Regulatory and Implementation Processes**			
4.	**DRRCCA mainstreamed in CLUPs and CDPs**			
4.1	DRR/CCA-enhanced CLUPs produced (assumption: estimated cost of Land Use Specialist shared by 5 contiguous LGUs)	2,310,000.00	49,148.94	per LGU
4.2	DRR/CCA-enhanced CDPs produced (assumption: estimated cost of Land Use Specialist shared by 5 contiguous LGUs)	2,310,000.00	49,148.94	per LGU
	Sub-Total 4 – per LGU	**4,620,000.00**	**98,297.87**	
	Sub-Total of Outputs 1a, 2a, 3a and 4 per LGU	**17,670,000.00**	**375,957.45**	
	Sub-Total of Outputs 1a, 2a, 3a and 4 for 5 contiguous LGUs/ province	**88,350,000.00**	**1,879,787.23**	
	Sub-Total 1b and 3b - multihazard mapping per province	**41,550,000.00**	**884,042.55**	

#	Rollout Components	Amount (PhP 47: USD1)		
		PhP	USD	Remarks
	Project Management (regional level) at 15%	**19,485,000.00**	**414,574.47**	
	TOTAL per province, covering 5 LGUs with PM Cost	**149,385,000.00**	**3,178,404.26**	
	UNDP GMS Cost at 5%	**7,469,250.00**	**158,920.21**	
	TOTAL	**156,854,250.00**	**3,337,324.47**	
	Estimated average cost per LGU	**31,370,850.00**	**635,680.85**	
	Estimated TOTAL for 300 LGUs	**9,411,255,000**	**(200,239,468)** ***Rounded off to USD 200 M***	

Annex B

For the Risk Sharing/Risk Transfer Mechanisms:

Poverty incidence among Filipinos in the first semester of 2014 was estimated at 25.8 percent[28] (or about 25.8 Million Filipinos[29]), according to the latest release of the National Statistical Coordination Board. This sizable segment of the population is most vulnerable to unforeseen and unfortunate events such as death, illness, injury, and loss of property, situations that are further aggravated by disaster risks from natural hazards. Risk protection is thus a recognized need especially for the low-income and informal sectors.

According to the Insurance Commission, about 25 million people are now covered by life insurance[30]. The penetration rate of life insurance marked sustained increase for the past five years as shown below.

Year	% of population with life insurance	Year	Penetration Rate (%)
2013	25.00	2013	1.89
2012	24.25	2012	1.45
2011	18.29	2011	1.20
2010	16.33	2010	1.09
2009	14.08	2009	1.02

This was attributed to the increase in total premium income generated by the insurance industry, with higher sales of variable life products. However, at 1.89%, this is still low compared to the regional average penetration rate of 4.2% among ASEAN countries[31]. The average amount of insurance spent by each person in the Philippines is estimated at PhP 1,592 (36 USD) in 2012. Of this amount, about 82% was spent on life insurance and only about 18% for nonlife insurance. The total amount spent on insurance was only 1.2% of per capita income[32].

While total sum insured for life is about 35% of GDP, only 24.43% of the population is covered with life insurance[33]. Together with the information that the increase in premium income during the year came mostly from variable insurance premiums, this seemingly indicates that those who are insured have relatively large amount of insurance cover and that they mostly must have come from the higher-income sector.[34]

Following the definition of microinsurance as an insurance activity for the low-income sector, the Insurance Commission issued the Regulation for the Provision of Microinsurance Products and Services through Memorandum Circular 01-2010, which sets the limit of premium cost of microinsurance products (should not exceed 5% of current daily minimum wage for nonagricultural workers in Metro Manila) and the maximum amount of benefits (not more than 500 times of said daily minimum wage).[35]

This translates to:

a.) Maximum cost of premium on a daily basis:
PhP 481.00[36] x 0.05 = PhP 24.05 / day or approximately a monthly rate of PhP 481 (11 USD) at 20 days/month for each insured person

b.) Maximum amount of benefits:
PhP 481.00 x 500 = PhP 240,500 (5,466 USD) for each insured person, assumed coverage of 500 days or 16.5 months

As of July 2012, about 7.8 million have been reportedly insured, including dependents, under various microinsurance products, which include (i) life insurance such as term life and voluntary group life insurance; and (ii) nonlife insurance that adopts the nonlife prototype policy contract, which is a first-loss insurance (financial assistance) covering any of such identified perils as fire, flood, typhoon, accidental death, lightning, etc. Nonlife product is also referred as *bahay, buhay, kabuhayan* product[37].

With these information, and assuming that 7.8 million of the 25.8 million[38] poor Filipinos are insured, the remaining 18 million poor Filipinos need to be targeted. Roughly, this will require at least **PhP 103.9 Billion or 2.36 Billion USD,** equivalent to 1 year worth of premiums to cover 18 million of the poorest and most vulnerable**.** Detailed studies on the risk transfer/sharing mechanisms for the benefit of the underserved sector will need to be undertaken to ensure their access to and genuine coverage from a varied array of needs-based microinsurance products over the long term.

For the DRRCCA KM System Establishment:

	Initial Infrastructure & KM tools	Annual Operation & Maintenance
National KM Center (1)	30,000,000	12,000,000
Regional KM Hubs for 17 Regions	340,000,000	153,000,000
Local KM Centers (81 provinces)	810,000,000	486,000,000
Total (PhP)	**1,180,000,000**	**651,000,000**
Total (USD)	**26,818,182**	**14,795,455**

1 A national programme that would "roll out" tested components of the DRR-CCA mainstreaming process being used in various projects currently being implemented by the national government through the Climate Change Commission, OCD on behalf of NDRRMC and the UNDP with some bilateral partners, e.g. Governments of Australia, New Zealand.

2 Examples of these are initiatives like the Climate Twin Phoenix project which have produced innovations in the risk assessment process among which is Climex d.b. , a real time database of people and support systems critical for planning, early warning and evacuation actions.

3 Being tested is the probabilistic approach which takes into consideration future climate information in scenario building .

4 Source: National Coordinating Statistical Board (NCSB) December, 2013.

5 Will exclude those already subjected to this process under projects implemented by the CCC or complying with the Supplemental Guidelines on DRR-CCA issued by the HLURB.

6 The Climate Exposure or Climex database is a population cum support systems database, taking off from the Government's Community Based Monitoring System (CBMS) but disaggregated in a manner that would enable targeting of the most vulnerable (children, pregnant women, elderly) in disaster situations for more effective evacuation.

7 Academic institutions which can provide technical support to LGUs on a continuing basis in the form of technical advisory, training & other competency development work, and, research & development services, among others.

8 Sectoral impact models are currently in various stages (final, under development, under refinement).

[9] The probabilistic approach will be used, incorporating or factoring the downscaled climate scenarios produced by the Philippine Atmospheric, Geophysical & Astronomical Services Administration (PAGASA) of the Department of Science & Technology.

[10] Produced by DOST with academic institutions like the University of the Philippines

[11] Climex db

[12] Local academic institutions which will support the target LGUs in capacity development and research needs on DRR-CCA; normally centers of excellence on issue(s) being addressed.

[13] This is a risk management project implemented in Typhoons Sendong, Pablo and Haiyan affected areas in the course of their recovery and re-development, implemented by the Climate Change Commission with other risk management agencies, under the guidance of UNDP and with financial support from the Australian Government.

[14] e.g. Ecosystems enhancement/rehabilitation such as mangroves re-planting.

[15] Enabling the LGUs around a common risk source, e.g. riverine flooding, coastal storm surge, to plan in an integrated fashion.

[16] Being developed in risk management projects like Climate Twin Phoenix-RAPID

[17] Local academic institutions which can also act as "anchor" or centers of excellence on DRR-CCA related researches and capacity development.

[18] Competency standards that will be set by the concerned oversight agencies/mechanisms such as the Office of Civil Defence on behalf of the NDRRMC and the Climate Change Commission.

[19] Will focus on setting applicable standards.

[20] Produced for 74 provinces under the NEDA implemented, UNDP managed Integrating DRRCCA Project with financial support from the Governments of Australia and New Zealand and the UN MDGF DRR-CCA project funded by Spain

[21] Twin Phoenix/ReBUILD

[22] "DRR/ CCA Standardization Project"; GMMA READY

[23] "Integrating DRR-CCA in Local Development Planning"

[24] Economic upliftment is projected to be an important strategy for vulnerability reduction and developing resilience, enabling vulnerable communities to be socioeconomically independent, able to afford risk management measures like insurance.

[25] Second level iteration with the climate change projections incorporated into the risk analysis

[26] If more advanced or state of the art technology such as an automated flood forecasting and early warning system is preferred, a full telemetered network to support existing government hydromet stations is estimated at 270,000 USD.

[27] To be excluded from the total estimate of the initial phase

[28] http://www.nscb.gov.ph/pressreleases/2015/PSA-20150306-SS2-01_poverty.asp#sthash.CWZGCTGI.dpuf

[29] http://www.rappler.com/nation/64465-100-millionth-filipino-born

[30] http://www.asiainsurancereview.com/Magazine/ReadMagazineArticle?aid=35421

[31] http://www.manilatimes.net/insurers-face-largely-untapped-integrated-asean-market/98327/ dated May 21, 2014.

[32] http://www.insurance.gov.ph/_@dmin/upload/reports/AR2012.pdf

[33] http://www.insurance.gov.ph/_@dmin/upload/reports/AR2012.pdf

[34] http://adb.org/sites/default/files/pub/2013/assessment-microinsurance-service-for-poor.pdf

[35] https://a2ii.org/fileadmin/data_storage/documents/internal_documents/Case_Study_Philippines_on_Microinsurance_market_development_FINAL.pdf, Page 7

[36] http://www.nwpc.dole.gov.ph/pages/statistics/latest_wo.html Summary of Latest Wage Orders and Implementing Rules Issued by The Regional Boards (As of 20 March 2015)

[37] http://adb.org/sites/default/files/pub/2013/assessment-microinsurance-service-for-poor.pdf

[38] http://www.nscb.gov.ph/pressreleases/2015/PSA-20150306-SS2-01_poverty.asp#sthash.CWZGCTGI.dpuf

CONCEPT NOTE
"SUSTAINABLE USE AND MANAGEMENT OF BIODIVERSITY RESOURCES FOR ECONOMIC DEVELOPMENT"

I. Situational Analysis

The Philippines has high biodiversity, being among the mega-diverse countries of the world. It has prolific and highly diverse marine and coastal resources which makes it the third highest in marine biodiversity in the world. For example, it hosts a total of 464 reef-building coral species or nearly half of all known coral species. The country also has 1700 reef species and 9% of the total known global coral reef area at 25,060 sq. km. For mangroves, the Philippines had half a million hectares at the turn of the century, which rapidly declined to 120,000 ha by the early to mid 2000.

The Philippines is home to an estimated 53,500+ species of plants and animals. Recent reviews have recognized 105 species of amphibians (79% endemic) and 264 reptiles (68% endemic), while recent summaries of birds have recognized 593 species (32% endemic). Mammal diversity is currently estimated at 175 native terrestrial mammals (65% endemic). Total country estimates include as many as 15,000+ plants (and their relatives) and 38,000+ animals (vertebrates and invertebrates). These numbers are considered conservative considering that recent studies have shown that terrestrial biodiversity of the Philippines is substantially under estimated. The Philippines has among the highest rates of species discovery in the world (sixteen new species of mammals have been discovered in the last ten years alone). New species are being discovered at a remarkable rate and this pattern shows no sign of slowing. Current taxonomic estimates show that the Philippines has the highest level of endemism in the Indo-Malayan Realm on a per unit-area basis and the highest concentration of biodiversity on earth.

This rich variety of genes, species, biological communities and life-sustaining biological and chemical processes have been the source of food, wood, fibers, energy, raw materials, industrial chemicals and medicines which pour hundreds of billions of dollars into the world economy each year. In fact, the Philippine marine fisheries produced a total fisheries volume of 5 million metric tons in 2009 valued at PhP 215.58 billion. The Bureau of Fisheries and Aquatic Resources (BFAR) estimates the fishing industry's contribution to the country's GDP at 2.2% (PhP 170.3 billion) and 4.4% (PhP63.2 billion) at current and constant prices, respectively. It must be noted that marine organisms are the source of 60% of new anti-cancer agents currently on trial. Aside from this, they also hold potential for possible central nervous system, anti-microbial drugs and enzymes for cellulosic biofuels production. Philippine waters are estimated to harbor an estimated 10,000 species or approximately one fifth of all known species. The country's marine waters are also widely regarded by marine biologists as the epicenter of marine biodiversity. These marine resources host a wealth of potential pharmaceutical benefits which can be economically valuable to the country. Data shows that global sales of pharmaceuticals are estimated to be US$300 billion annually, of which the component derived from genetic resources accounts for between US$75billion and US$150billion[i]. In the US alone in the 1980s, it was estimated that the pharmaceutical opportunity loss from every plant species lost is around US$6 billion annually[ii]. Pharmaceutical companies are highly dependent on biodiversity particularly on plant species to ensure sustainable growth of their businesses. For instance, Unilever is amongst the world's largest users of agricultural raw materials such as tea, vegetables and vegetable oils[iii].

Unfortunately, the Philippines, despite its rich biodiversity, remains a striving economy in the region. Poverty incidence among Filipinos was recorded at 27.9% in 2012.Based on the 2009 official poverty statistics for the basic sectors, fishermen posted the highest poverty incidence for nine basic sectors in the Philippines at 41.4%, the same level in 2006, followed

by farmers and children at poverty incidences of 36.7% from 37.2% in 2006 and 35.1% from 32.7% in 2006, respectively[iv].

Worse, the country is also experiencing continuous biodiversity loss due to a number of reasons. In fact, the Philippines is also known to be a biodiversity hotspot, where there is increasing degradation of habitats and forest land conversion in unprecedented manner. Between 1990 and 2010, Philippines lost an average of 547.5 sq. km or 0.83 percent per year of forest area[v].

The most common approach in addressing biodiversity loss is establishing protected areas with different degree of restrictiveness on the access and use of resources. These restrictions often raise the fundamental issue of protecting biodiversity i.e. that human use of biodiversity resources use for livelihood is considered incompatible to biodiversity protection. But this is where the nexus of biodiversity and poverty comes in. The poor, who largely depend on biodiversity for their subsistence needs, suffer first and most severely from biodiversity degradation as well as the strict protection of resources.

Through the years, it has been learned that biodiversity conservation will only be successful if the people depending on it also benefit to sustain a living. There have been many attempts in the past to diversify sources of livelihoods to the point of diverting them from their main sources of income. However, experience will also show that these alternative livelihoods have not been sustainable for the reason that capacities and skills were not inherently present. Community members tend to return to their main sources of income where they have gained capacities and specialization over the long years. Similarly, the lack of access to financing and market-linkage have made these initiatives unsustainable and unviable as businesses. Hence, this proposal aims to demonstrate that ENR-based livelihoods can be sustained and that biodiversity resources can offer greater incentives to those communities dependent on it by sustainably utilizing the resources through enterprise development.

The Philippine Government, with UNDP and other partners, has tried modeling biodiversity-friendly enterprise/business in upland terrestrial protected area settings through the UNDP-GEF supported project, the Biodiversity Partnerships Project. However, the potentials of biodiversity in other ecosystems are yet to be explored and/or scaled-up. Likewise, convergence and institutionalization of support to BD-friendly MSMEs by relevant government institutions from product identification, development, promotions and marketing have yet to be showcased. UNDP and the Philippine Government is now testing similar approaches in selected marine key biodiversity areas (MKBAs) in the country. Two decades before these and even now, UNDP has and is implementing the Small Grants Programme (1994 to date) and independently testing incremental integrated approaches to biodiversity conservation using such innovative approaches as alternative livelihoods and sustainable enterprise development.

II. An Economic Approach to Sustainable Biodiversity Management

Through this proposal, the Philippine Government seeks to capitalize on the country's natural resources for the economic benefit of its people. It seeks to address poverty directly while safeguarding and enhancing its natural resource base through an initiative that will put together the successful elements of its experiences as identified above**.** Specifically, it will undertake a national project with the following objective and components:

Over-all objective: To address and reduce the threat to degradation of biodiversity and the environment, in a manner, whereby poverty of the people is correspondingly reduced or alleviated.

Component 1: Policy Development to support investments and increase financing support to biodiversity-friendly enterprises

Given the significance of biodiversity not only to the environment but also to the economy, it is important to increase investments aimed at enhancing its economic value and benefits while at the same time managing it in a sustainable manner. Hence, policy supporting the establishment of biodiversity-friendly enterprises will prove the point that protecting or managing biodiversity resources can contribute in creating wealth for poverty reduction and trade-offs can be minimized if not eliminated.

This proposal will support in initiating or scaling-up community-based and biodiversity-friendly micro, small and medium enterprises (MSMEs). However, just like any regular MSMEs, the success of community-based and BD-friendly enterprises must be given sufficient support in terms of development, promotion and marketing.

Since 1990s, the Philippine Government has intensified its support to MSMEs due to its recognition of the sub-sector's productive characteristics in significantly contributing to the country's economic growth. Several policies have been passed to address the challenges and difficulties faced by MSMEs such as the Magna Carta for Micro and Small Enterprises (RA9501) which consolidated all government programs for the promotion and development of SMEs into a unified institutional framework. It paved the way for the creation of Small and Medium Enterprise Development Council and the Small Business Corporation. Both mechanisms look into providing incentives and financing for SMEs. The SBC is considered as the National Government's largest provider of SME financing.

With a comprehensive policy framework in place to provide financing, MSMEs are still faced with the problem of access to funding. Although the Magna Carta for Micro and Small Enterprises (RA 9501) has required lending institutions to set aside at least 8% of their total loan portfolios for micro and small enterprises, accessing it has been a challenge. Assessments and studies for MSMEs have showed that despite the availability of funds for lending, MSMEs are still unable to access these. Banks are still wary of MSME lending because of the lack of credit information that would establish the credit worthiness of the borrower entity. Likewise, too many small loans would entail high operational costs for the banks. They are also concerned about the bankability of MSMEs and the high risks involved in MSME lending given that many MSMEs have limited management and financial capability.[vi]MSMEs are also constrained by the fact that most of these lending facilities require collateral that they have difficulty complying with.

Likewise, there are no incentives given to SMEs that use raw materials that can encourage biodiversity conservation and/or environmental sustainability. The UNDP-GEF BPP Project has been working with the DTI Bureau of Investment to include BD-friendly enterprises in the Investment Priority Plan. SMEs in the IPP will be accorded with several tax incentives. However, most of the SMEs in the IPP are those involved in manufacturing, services, agribusiness, and infrastructure[vii] with export potential. There are no current incentives accorded starting entrepreneurs especially those community-based enterprises with minimal capital.

Under this component, the project will explore to simplify lending requirements and processes which can cater to small and community-based and biodiversity-friendly enterprises. MSMEs that promote/ contribute/ complement/ enhance biodiversity conservation or environmental sustainability will be a condition to access financing. A credit registry or credit information database can be established to provide information on the creditworthiness of MSMEs. A guarantee system by LGUs can be explored to replace the collateral system.

Component 2: Biodiversity Friendly Enterprise Development and Promotion

a. Value Chain Analysis

Venturing into an enterprise entails analysis of the value chain. This is to determine where in the value chain the community or PO can benefit from. Value chain analysis often starts with linear mapping of activities from the initial inputs of suppliers at the very beginning of the production process to the final consumption of products and services taking into account the key players in each activity of the chain.

In the context of biodiversity-friendly enterprise development and systematizing the management of a biodiversity-friendly businesses, it is important to consider the important elements of shared economic, social and environmental values that will impact on the evolution of the value chain.

This proposal aims to connect the BD-friendly enterprises and businesses and local or urban markets in a mutually beneficial way and creates the foundation for sustainable livelihoods/business for all key players in the chain. It is also hoped that activities in the chain that negatively and positively affecting biodiversity will be identified so that corresponding actions are taken to ensure the sustainable use of biodiversity resources.

b. Product development/transformation

Community-based enterprises in different ecosystem types will be developed and pilot-tested. In each ecosystem, there are potential livelihood initiatives that when scaled up can be promising enterprises for the communities. Below are the few examples which can be scaled-up and supported as a community-based enterprises:

1.Mangrove Eco-tourism and Mangrove-based products

A model for this is the Aklan (Buswang) Eco-tourism project implemented by the Kalibo Save the Mangrove Association (Kasama) in Buswang, Kalibo Bakhawan (Mangrove) Eco-Park in the province of Aklan. The project started in 1989 with a 0 plantation mudflat and went on to become the best mangrove area in Asia according to National Geographic. It grew from a 50-hectare area to 200 hectares which currently hosts more than a million trees of 90 species and numerous bird and other mammal species. Income for the community has been significantly increasing, doubling from a quarter of a million pesos in 2013 to 2015 and breaching a million pesos by 2015. Ecotourism is simply one of the livelihood sources of the community, the others being fishing, mud crab fattening, fish and prawn culture, green charcoal making, etc..

Other mangrove derived products from barks, leaf shoots and roots of the mangrove trees like tannin for dyes, leather preservatives and furniture stains can be explored for enterprise development. As can be leaves which can be used for livestock food, as "green manure" in fishponds, and as tea and tobacco.Still other enterprises that can be pursued are: fish processing, fish drying, fish canning, seaweed farming, etc.

These enterprises should be within the over-all ICM framework and plan to ensure sustainable harvesting of fish and other marine resources.

2.. Agro-biodiversity

- Coffee and Cacao Production

In 1800s, the Philippines was one of the top exporters of coffee in the world. However, due to coffee rust and infestation, coffee production waned drastically and was not able to recover. Today, the Philippines produces 30,000 metric tons of coffee a year or 30 million kilos of coffee and ranks 110th in the world in terms of output, but it consume almost 100,000 metric tons a year. It is estimated that around 300,000 Filipinos depend on the coffee industry. The national average yield is 400 kg/ha, a very low production compared to leading coffee producing countries such as Brazil where production is at 2,000 kg/ha. Average coffee production is at 485 kg/ha of green beans. This, according to experts, is much lower than the ideal production of 1,500 kg/ha. While most of the coffee farms are situated in Mindanao, the most productive area is in Cavite, in terms of volume and quality, averaging 840 kg/ha, according to statistics from Nestle Philippines. However, from 1987 to 1996, the total hectarage planted to coffee decreased, from 149,657 hectares to 138,830 or an average of 1% reduction per year[viii].

Similarly, cacao production in the country is not enough. According to statistics, the country's supply reached a deficit of 44,349 metric tons a year (2005) against local consumption. Production was then nearly 5000 metric tons in 2005. Local consumption then reached nearly 50,000 metric tons[ix]. There is indeed a large demand for local production of cocoa beans.

The demand for cacao and coffee is huge that this can be an opportunity to develop these as enterprises. The National Greening Program of DENR has coffee and cacao have been named as reforestation species by the DENR and encouraged to be intercropped to indigenous and native species in forest areas.

Community-based coffee and cacao enterprises will be encouraged to give more income to coffee and cacao farmers. This is by providing them the technology to add value to coffee and cacao beans such as roasting and processing machines and equipment.

c. Natural and Organic Agriculture

According to a study conducted by the scientists from University of Oxford, organic farms support, on the average, 34% more plant, insect and animal species than conventional farms.[x]

The project will support development of farms and the necessary applicable technologies which can be replicated. The project will also work on the certification of these farms.

d. Non-timber Forest Products

Non-timber forest products have long been an important component in the livelihood strategies of forest-dwelling people. They include fruits and nuts, vegetables, fish and game, medicinal plants, resins, essences and a range of barks and fibres such as bamboo, rattans, and a host of other palms and grasses. In the Philippines, NTFP such as abaca, ticog, buri, pandan, rattan are still those that can be explored and enhanced through product development.

The potential of these NTFPs as raw materials for enterprises are high. In fact, Abaca or Manila Hemp supplies about 85.0 percent of the total world abaca requirement. Other handicraft materials which have market potential are tikog, bamboo, pandan, rattan, etc.

2. Technology Transfer and Marketing

Crucial to any enterprises to prosper is the linkage to sustainable and viable market. Livelihood attempts in the past were assessed to be very limited to developing products with

no assurance of feasible market, hence became unsustainable. Hence, this proposal will assist in the development and application of technologies to enhance and add value to the products.

The project will closely coordinate with relevant government agencies such as the Department of Science and Technology, Department of Agriculture, DTI, etc for the technology and product development as well as support in the marketing and promotions.

The distribution and marketing of the products can be done through a consolidator for enterprises in the rural areas with small production capacity, or directly to the targeted buyer/s either as a supplier of semi-processed products or a subcontractor for finished products. Other potential buyers are the exporters, cooperatives, department stores, supermarkets and food retail outlets, souvenir shops, and local and foreign buyers of green and certified products (with eco-labels). To expand its market linkages, enterprises can also join local, provincial, regional and national, and international trade fairs through the support of the LGUs and the DTI.

In the context of biodiversity conservation and the sustainability of the enterprise, branding a product and highlighting its unique selling proposition as “biodiversity-friendly” adds premium value and supports the global trend on “green” products.

Component 3: Capacity Building for BD-friendly MSMEs

Just like any MSMEs, BD-friendly entrepreneurs must be capacitated in terms of enhancing or diversifying their products, running the business and managing finances. In many initiatives in the past, sustaining a livelihood or a business by a PO has always been a challenge. This is because running a business is not an inherent skill to the organization and its leaders. Guidance from business experts should be a continuing initiative until the PO has imbedded in its day to day operation the business mind set. Continuing capacity building will be pursued under this component. It is a process of strengthening the skills and abilities of organizations, groups or institutions to perform their core functions in a sustainable manner over a period of time. It may also require developing or improving conditions that will allow the enterprise to build on its existing knowledge and skills and be empowered to engage in the continuous process of learning and adapting to the necessary changes to build their capacities.

Capacity building encompasses both organizational and functional levels of an enterprise. It will look into the ability and skills of the key leaders to plan, manage, organize, budget, monitor and evaluate the business. It will focus on the process of running a business and how to improve and make it sustainable over a period of time.

For those enterprises needing technical assistance to improve or enhance their production capacity, product collections , and market access for their products, the capacity building interventions may include: Skills Training (e.g., basket weaving, carving, food processing, furniture-making, handicrafts-making), Product Development and transformation (e.g., agro-biodiversity, non-timber forest products, fisheries and marine-based products, mangrove-based products, and other raw materials for pharmaceuticals, personal care products and essences), Technology-transfer training (e.g., raw materials treatment, processing and manipulation, finishing techniques, food packaging, design and fabrication of simple and low-cost tools and equipment), and Training on sustainable production of Organic Food and Natural products leading to organic certification.

There are several government agencies providing capacity building trainings and tools and equipment to enhance the production capacity and productivity of micro, small and medium

enterprises. These are the DA, DOST, DOLE, DTI-Design Center of the Philippines, DTI – Cottage Industry Technology Center (CITC), TESDA, among others.

Under this component, capacity building in setting-up a livelihood/production fund will be explored. This fund can be used by the organization in rehabilitating/restoring/planting production materials (eg. abaca, reforestation with intercropping of cacao and coffee, mangrove management, etc.). A system of fund generation, access, usage and monitoring will be developed. This is to ensure that the fund will revolve sustainably to support the continuous business operation of the organization.

This is the macro framework for improving economic resiliency which is being proposed for application to the coastal sites (especially mangrove areas in the Eastern Seaboard) in the proposed GCF proposal of the Philippines.

A. Potential Sites:

- Marine Key Biodiversity Areas in Eastern Seaboard provinces, including those comprising Panay Island

- Key Terrestrial Biodiversity Areas

    - Upper Sierra Madre
    - Lower Sierra Madre
    - Samar Lowland tropical forests
    - Leyte Mt. Nacolod
    - Central Panay Mountains

III. Proposed Budget and Timetable

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
Output 1: Policy development to support investments and increase financing support to biodiversity-friendly enterprises									
Improving enabling environment to promote viable BD-friendly MSMEs (access to financing, access to resources, value-adding support, green and socially responsible purchasing, etc)	Policy Specialist x 3 pax - (P25k/day x 45 days/yr 0; and 90 days/yr from y1 to y3)	Consultant	3,375,000	6,750,000	6,750,000	6,750,000		23,625,000	513,586.96
	Consultant for Sustainable BD-friendly Enterprise Development Guidelines/Protocols for 5 Ecosystem	Consultant	9,000,000	18,000,000	18,000,000	18,000,000		63,000,000	1,369,565.22

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
	Types (at P20k/day x 45 days at yr 0 and 90 days/yr fr yr 1-3 at 10 pax)								
	Consultations/ FGDs/ Workshops at 5 workshops / year (50 pax @ 25,000/pax)	Learning Cost	6,250,000	6,250,000	6,250,000	6,250,000		25,000,000	543,478.26
	Facilitator - P15,000/day x 3 days/training	Consultant	225,000	225,000	225,000	225,000		900,000	19,565.22
	Documentor - P10,000/day x 3 days/training	Consultant	150,000	150,000	150,000	150,000		600,000	13,043.48
	Supplies	Supplies	90,000	120,000	120,000	120,000		450,000	9,782.61
	Travel at 10 travel/year x 10 pax x 25,000/pax	Travel	2,500,000	2,500,000	2,500,000	2,500,000		10,000,000	217,391.30
credit registry / credit information database establishment	Credit Systems Analyst - P20000/day x 30 days/yr0 and 90 days/years 1-3	Consultant	600,000	1,800,000	1,800,000	1,800,000		6,000,000	130,434.78
	Information systems, database and security specialist: P35000/day for 120 days x 3 pax	Consultant	3,150,000	3,150,000	3,150,000	3,150,000		12,600,000	273,913.04
	Consultations/ FGDs/Workshops at 3 workshops / year (50 pax @P50k/pax)	Learning Cost	3,750,000	3,750,000	3,750,000	3,750,000		15,000,000	326,086.96
	IT Equipment and software	Equipment and furniture, lump sum cost		10,000,000				10,000,000	217,391.30
LGU guarantee system demonstration in 5 ecosystem types	Guarantee Systems Specialist (P25000/day x 30 days/yr 0 and 90 days/yrs 1-3)	Consultant	750,000	2,250,000	2,250,000	2,250,000		7,500,000	163,043.48
	Local Governance Specialist (P25000/day x 30 days/yr 0 and 90 days/yrs 1-3)	Consultant	750,000	2,250,000	2,250,000	2,250,000		7,500,000	163,043.48
	Consultations/ FGDs/Workshops at 3 workshops / year (50 pax @P50k/pax)	Learning Cost	3,750,000	3,750,000	3,750,000	3,750,000		15,000,000	326,086.96

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
	Travel at 10 travel/year x 7 pax x 25,000/pax	Travel	1,750,000	1,750,000	1,750,000	1,750,000		7,000,000	152,173.91
	Production of Policy, Technical and Other Reports	Editing, Layouting, Printing		200,000	200,000	200,000	200,000	800,000	17,391.30
		Subtotal	36,090,000	62,895,000	52,895,000	52,895,000	200,000	204,975,000	4,455,978
Output 2: Biodiversity-friendly Enterprise Development and Promotion									
a. Value Chain Analysis									
	Value Chain Analyst - P35000/day for 30 days at yr 0 and 90 days/yr from yr1-3 x 5 pax	Consultant	5,250,000	15,750,000	15,750,000	15,750,000		52,500,000	1,141,304.35
	Consultations/ FGDs/Workshops at 5 workshops / year (50 pax @ 25,000/pax)	Learning Cost	6,250,000	6,250,000	6,250,000	6,250,000		25,000,000	543,478.26
	Travel at 10 travel/year x 10 pax x 25,000/pax	Travel	2,500,000	2,500,000	2,500,000	2,500,000		10,000,000	217,391.30
b. Product Development and Transformation									
Development and piloting of community-based BD-friendly enterprises for different ecosystem types (e.g. agro-biodiversity; natural and organic agriculture; non-timber forest products; fisheries and marine-based products; mangrove-based products)	Capacity Assessment for 5 ecosystem types	Contractual service	6,000,000					6,000,000	130,434.78
	Feasibility Studies for 5 ecosystem types x 15pax (P25k/day x 30 days/yr 0 and 45 days/yr1)	Consultant	11,250,000	16,875,000				28,125,000	611,413.04
	Consolidation of Best Practices for 5 ecosystem types x 5 pax - (P20k/day x 45	Consultant	4,500,000	9,000,000	9,000,000			22,500,000	489,130.43

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
	days/yr 0; and 90 days/yr from y1 to y2)								
	Sustainable Enterprise Development Specialist for 5 ecosystem types x 5 pax - (P35k/day x 45 days/yr 0; and 90 days/yr from y1 to y3)	Consultant	7,875,000	15,750,000	15,750,000	15,750,000		55,125,000	1,198,369.57
	Social mobilization specialist (P20k/day x 160 days)	Consultant	800,000	800,000	800,000	800,000		3,200,000	69,565.22
	2 community coordinators per municipality at P40,000 per coordinator	Service Contract	9,600,000	19,200,000	19,200,000	19,200,000		67,200,000	1,460,869.57
	Skills Training (various) at 1.5M per ecosystem type		7,500,000	7,500,000	7,500,000	7,500,000		30,000,000	652,173.91
	Mentoring workshops/seminars on establishing and sustaining enterprises at 5 workshops / year (50 pax @ 25,000/pax)	Learning Cost		6,250,000	6,250,000	6,250,000		18,750,000	407,608.70
	Supplies	Supplies	90,000	120,000	120,000	120,000		450,000	9,782.61
	Travel at 10 travel/year x 10 pax x 25,000/pax	Travel	2,500,000	2,500,000	2,500,000	2,500,000		10,000,000	217,391.30
	10 Exchange visits to model sustainable enterprises in Luzon, Visayas and Mindanao at 50 pax/exchange visit at P25k/pax	Learning Cost		12,500,000	12,500,000			25,000,000	543,478.26
	Certification assistance (green labeling, organic, etc)				5,000,000	5,000,000		10,000,000	217,391.30
	Production of Policy, Technical and Other Reports	Editing, Layouting, Printing	200,000	200,000	200,000	200,000	200,000	1,000,000	21,739.13
c. Technology Transfer and Marketing									
Development and application of technologies	Technology Needs Assessment for 5 Ecosystem	Contractual service	12,500,000					12,500,000	271,739.13

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
to enhance and add value to products and enterprise systems	types								
	Innovation Labs for 5 Ecosystem types at 5.5M per ecosystem type	Gramt		27,500,000				27,500,000	597,826.09
	Value-adding technologies and equipment	Equipment		50,000,000	50,000,000	50,000,000		150,000,000	3,260,869.57
	Consultations/ FGDs/Workshops at 3 workshops / year (50 pax @P50k/pax)	Learning Cost	3,750,000	3,750,000	3,750,000	3,750,000		15,000,000	326,086.96
Marketing and promotions assistance	Private Sector Specialist - P35000/day for 30 days at yr 0 and 90 days/yr from yr1-3 x 5 pax	Consultant	5,250,000	15,750,000	15,750,000	15,750,000		52,500,000	1,141,304.35
	Various training (packaging, marketing, financial management, export processing, etc.) at 2.15M per ecosystem type	Learning Cost		10,750,000	10,750,000	10,750,000		32,250,000	701,086.96
	Marketing - trade fairs, business fora	Learning Cost		6,350,000	6,350,000	6,350,000		19,050,000	414,130.43
	Supplies	Supplies	90,000	120,000	120,000	120,000		450,000	9,782.61
	Travel at 10 travel/year x 5 pax x 25,000/pax	Travel	1,250,000	1,250,000	1,250,000	1,250,000		5,000,000	108,695.65
	Production of Technical and Other Reports	Editing, Layouting, Printing	200,000	200,000	200,000	200,000	200,000	1,000,000	21,739.13
		Subtotal	87,355,000	230,865,000	191,490,000	169,990,000	400,000	680,100,000	14,784,783
Output 3: Capacity Building for BD-friendly MSMEs									
Organizational and functional level capacity development	Capacity Assessment and devt of competency devt prog at P35000/day for 45 days for 5 pax	Contractual service	7,875,000					7,875,000	171,196
	Module Development: Multi specialist team (7 pax at P35k/day x 45 days)	Consultant	11,025,000					11,025,000	239,674

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
Conduct of training of trainors (ToT) for enterprise/business development service providers; at least 12 trainings/yr	12 ToTs at 50 pax/ToT @ 10,000/pax	Learning Cost		6,000,000	6,000,000			12,000,000	260,869.57
	Facilitator - P15,000/day x 3 days/training	Consultant - Facilitator		540,000	540,000			1,080,000	23,478.26
	Documentor - P10,000/day x 3 days/training	Consultant - Documentor		360,000	360,000			720,000	15,652.17
	Travel at P10,000/roundtrip x50 pax x 12 ToTs	Travel		6,000,000	6,000,000			12,000,000	260,869.57
	Consultant for the training (5 ecosystem types) x 5 pax (P20k/day for 60 days/yr)	Consultant		6,000,000	6,000,000			12,000,000	260,869.57
	Consultant for the training on Climate Change (P20k/day for 60 days/yr)	Consultant		1,200,000	1,200,000			2,400,000	52,173.91
	Travel of trainors - P10000/roundtrip x 10 pax x 12 ToT/yr	Travel		1,200,000	1,200,000			2,400,000	52,173.91
	Supplies - P200 x 50 pax x 12 ToT/yr	Supplies		120,000	120,000			240,000	5,217.39
Setting up of Cooperatives and Enterprise Revolving Fund	Cooperative Specialist - P30000/day for 120 days x 3 pax	Consultant	2,700,000	2,700,000	2,700,000	2,700,000		10,800,000	234,782.61
	Mentoring workshops/seminars on establishing and sustaining cooperatives at 5 workshops / year (50 pax @ 25,000/pax)	Learning Cost		6,250,000	6,250,000	6,250,000		18,750,000	407,608.70
	Trust Fund for Cooperatives	Trust Fund		50,000,000				50,000,000	1,086,956.52
	Production of Technical and Other Reports	Editing, Layouting, Printing	200,000	200,000	200,000	200,000	200,000	1,000,000	21,739.13
		Subtotal	21,800,000	80,570,000	30,570,000	9,150,000	200,000	142,290,000	3,093,260.87
Output 4: Awareness Raising/Advocacy									

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
Development of an Information, Education and Communications (IEC) plan	IEC Specialist (P20k/day x 30 days for yr0; P20k/day x 60 days/year fr yrs 1-3)	Consultant	600,000	1,200,000	1,200,000	1,200,000		4,200,000	91,304.35
	Travel at 6 travel/year x 3 pax x 25,000/pax	Travel		450,000	450,000	450,000		1,350,000	29,347.83
	IEC Activities (5 ecosystem types) at P3M each	Contractual service		15,000,000	15,000,000			30,000,000	652,173.91
	Production and Printing of IEC collaterals (P3M for each for 5 ecosystem types)	Printing		15,000,000	15,000,000			30,000,000	652,173.91
	AVP Production	Production		2,000,000	2,000,000			4,000,000	86,956.52
	Communications	Communication	90,000	120,000	120,000	120,000	30,000	480,000	10,434.78
	Production of Technical and Other Reports	Editing, Layouting, Printing		200,000	200,000	200,000	200,000	800,000	17,391.30
		Subtotal	690,000	33,970,000	33,970,000	1,970,000	230,000	70,830,000	1,539,782.61
Project Management (Regional Level, organized according to island grouping)									
Regional Coordinator	P75,000 per month for 48 months	Service Contract	2,250,000	2,925,000	2,925,000	2,925,000	900,000	11,925,000	259,239.13
Technical Officer (2 pax)	P35,000 per month for 48 months	Service Contract	2,100,000	2,730,000	2,730,000	2,730,000	840,000	11,130,000	241,956.52
Monitoring and Evaluation Officer	P35,000 per month for 48 months	Service Contract	1,050,000	1,365,000	1,365,000	1,365,000	420,000	5,565,000	120,978.26
Finance Officer	P35,000 per month for 48 months	Service Contract	1,050,000	1,365,000	1,365,000	1,365,000	420,000	5,565,000	120,978.26
Admin & Finance Assistant	P25,000 per month for 48 months	Service Contract	750,000	975,000	975,000	975,000	300,000	3,975,000	86,413.04
Regional Workshops	P300,000 per workshop x 3 workshops/year	Learning Cost	900,000	900,000	900,000	900,000		3,600,000	78,260.87
Meeting Costs	P15,000 per month for 48 months	Meetings	405,000	540,000	540,000	540,000	135,000	2,160,000	46,956.52
Travel	P12000/trip x 6 visits x 20 sites x 6 pax	Travel	648,000	864,000	864,000	864,000	216,000	3,456,000	75,130.43
Supplies	P10,000 per month for 48 months	Supplies	270,000	360,000	360,000	360,000	90,000	1,440,000	31,304.35
Communication	P5,000 per month for 48 months	Communication	135,000	180,000	180,000	180,000	45,000	720,000	15,652.17
Equipment and Furniture	Various office equipment and furniture	Equipment and furniture,	1,300,000					1,300,000	28,260.87

Key Activities per Output	Budget Assumptions	Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5	PHP total	USD total at 1 USD: 46 PhP
		lump sum cost							
Rental of office/PMU regional	P15,000 per month for 48 months	Lease	405,000	405,000	405,000	405,000	405,000	2,025,000	44,021.74
Report Generation	Technical and Other Reports	Editing, Layouting, Printing	100,000	150,000	150,000	150,000	250,000	800,000	17,391.30
Third party audit	twice over 4 years	Contractual service			1,000,000		1,000,000	2,000,000	43,478.26
Miscellaneous			73,875	98,500	98,500	98,500	24,625	394,000	8,565.22
		Subtotal	11,436,875	12,857,500	13,857,500	12,857,500	5,045,625	56,055,000	1,218,586.96
		Programmable Total	157,371,875	421,157,500	322,782,500	246,862,500	6,075,625	1,154,250,000	25,092,391
Management Fee (5%)								60,750,000	1,320,652
		Grand Total						**1,215,000,000**	**26,413,043**

IV. Implementation / Management Arrangements

Implementation of this programme will take off from on-going and past initiatives related to the implementation of the National Climate Change Action Plan (NCCAP). The Resiliency and Sustainability Foundation, Inc. (RSFI), a non-government organization dedicated to supporting the poorest and most vulnerable of Philippine Society to cope with the impacts of climate change, will lead over-all management and day to day implementation of the project. The RSFI will work closely with the relevant government agencies such as the Climate Change Commission(CCC) as the oversight agency for climate change matters as well as the lead national agency/s (e.g., DENR, DA, DTI) with varying mandates on biodiversity conservation (including access to and management of biodiversity-rich resources) and sustainable enterprise development. Also, civil society organizations, the private sector and development partners will be invited to participate/contribute to the implementation.

Partnership with Local Government Units will be forged for the actual implementation at the city/municipality and with barangay chairpersons who will be directly accountable at the barangay level. Constituents will be organized in manageable groups for the actual work. National and local educational institutions will also be tapped for the capacity building activities and research needs of the Project.

[i] The Economist, 1998, Chapter 3 as cited in Kate et al, 1999, The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing

[ii] Pearce D., et al, The Economic Value of Biodiversity, 1994, Earthscan Publications Limited

[iii] http://www.unilever.com/sustainable-living-2014/reducing-environmental-impact/sustainable-sourcing/protecting-biodiversity/
[iv] Philippine Statistics Authority
[v] 3rd NBSAP 2014
[vi] Aldaba, R. SME's Access to Finance: Philippines, PIDS Discussion Paper Series No. 2012-05
[vii] http://news.pia.gov.ph/index.php?article=2131391354235#sthash.gEeYonyI.dpuf
[viii] http://www.bar.gov.ph
[ix] http://www.bar.gov.ph
[x] http://www.ox.ac.uk/media/news_stories/2014/140204.html