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May 10, 2010

Dear SCCF Council Member:

World Bank as the Implementing Agency for the project entitled: ***Philippines: Climate Change Adaptation Project, Phase I***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with World Bank procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by the SCCF Council in June 2008 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by World Bank satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.TheGEF.org. If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Attachment: Project Document

Copy to: Country Operational Focal Point
GEF Agencies, STAP, Trustee

REQUEST FOR CEO ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project
THE SPECIAL CLIMATE CHANGE FUND (SCCF)[1]

Submission Date: April 8, 2010

PART I: PROJECT INFORMATION

GEFSEC PROJECT ID: 3243
GEF AGENCY PROJECT ID: P101076
COUNTRY(IES): Philippines
PROJECT TITLE: Philippine Climate Change Adaptation Project
GEF AGENCY(IES): World Bank, (select), (select)
OTHER EXECUTING PARTNER(S): Philippine Government
GEF FOCAL AREA: Climate Change

Expected Calendar (mm/dd/yy)	
Milestones	**Dates**
Work Program (for FSP)	4/15/2008
Agency Approval Date	05/27/2010
Implementation Start	07/01/2010
Mid-term Review (if planned)	12/30/2012
Project Closing Date	06/30/2015

A. PROJECT FRAMEWORK

Project Objective: The project is a pilot the development objective of which is to develop and demonstrate approaches that would enable targeted communities to adapt to the potential impacts of climate variability and change. This would be achieved by strengthening existing institutional frameworks for climate change adaptation, and by the demonstration of cost-effective adaptation strategies in agriculture and natural resources management.

Project Components	**Indicate whether Investment, TA, or STA**[b]	**Expected Outcomes**	**Expected Outputs**	**SCCF Financing**[a]		**Co-financing**[a]		**Total ($)** c = a+b
				($) a	%	($) b	%	
1. Strengthening the Enabling Environment for CCA	Technical assistance	Climate risk management is mainstreamed into the work of the DENR and DA. Staff of DENR and DA as well as project stakeholders are trained and better aware of CCA Knowledge management tools on CCA developed	• Approval of adaptation-friendly policies in the agriculture and/or ENRM sectors (such as revised rural infrastructure guidelines, revised extension guidelines, modified training curricula). • DENR and DA regularly use climate screening tool to assess projects in the annual work plan (incorporated in project assessment criteria). • Best-practice manual developed by the project being utilized in the design of other adaptation interventions in the country	590,000	83	120,000	17	710,000
2. Demonstrating CCA Strategies in the Agriculture	Investment	Project stakeholders in the target regions have practical experience of	• Irrigation infrastructure in four PIDP irrigation systems is redesigned/rehabilitated to incorporate CCA parameters	2,944,000	4	49,910,000	96	52,854,000

[1] This template is for the use of SCCF Adaptation projects only. For other SCCF projects under Technology Transfer, Sectors and Economic Diversification windows, other templates will be provided.

and Natural Resources Sectors		how to identify and design CCA measures in agriculture and NRM The use of methodologies such as downscaling techniques and climate scenarios to identify climate risks and design adaptation measures demonstrated. Improved access to risk management instruments such as weather - index based insurance	recommended by PhilCCAP. • Evaluation report issued on the outcome of the weather-index based insurance pilot • At least 25% of farmers surveyed in the targeted areas who receive extension advice apply an element of the new extension packages developed with project support (for example, use weather data and/or climate projections in making farming decisions, use of on-farm rainwater harvesting or other soil moisture management technologies). • Revised management plans for PPLS and SIPLAS incorporates Climate change adaptation activities and are being implemented.					
3. Enhanced Provision of Information for climate risk management		•Increased capacity of PAGASA in applying and disseminating climate risk information •Increased use of models, climate databases and other climate information provided by various end users	•Completion of documented designs for apposite information delivery to users Documented evidence that the information has been delivered and used	1,030,000	73	380,000	27	1,410,000
4. Project Coordination		•Project effectively coordinated with activities regularly monitored and necessary	Review of project progress	410,000	91	40,000	9	450,000

		adjustments made to ensure achievement of project development outcomes.						
5. Project management								
Total project costs				A4,974,000		B50,450,000		55,424,000

[a] List the $ by project components. The percentage is the share of SCCF and Co-financing respectively to the total amount for the component.

[b] TA = Technical Assistance; STA = Scientific & Technical Analysis

B. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT (expand the table line items as necessary)

Name of Co-financier (source)	*Classification*	*Type*	*Project*	*%**
Government of the Philippines	Nat'l Gov't	Grant	B50,450,000	100%
Total Co-financing			B50,450,000	100%

* Percentage of each co-financier's contribution at CEO endorsement to total co-financing.

C. CONFIRMED FINANCING PLAN SUMMARY FOR THE PROJECT ($)

	Project Preparation Amount (a)	**Project (b)**	**Total c = a + b**	**Agency Fee**	***For comparison: SCCF Grant and Co-financing at PIF***
SCCF financing	283,000	A4,974,000	5,257,000	525,700	5,782,700
Co-financing	130,000	B 50,450,000	50,580,000		25,430,000
Total	413,000	55,424,000	55,837,000	525,700	31,212,700

D. FOR MULTI AGENCIES/COUNTRIES (IN $)[1]

GEF Agency	**Country Name**	**(in $)**		
		Project (a)	**Agency Fee (b)[2]**	**Total (c) c=a+b**
(select)				
Total SCCF Resources		0		0

1 No need to provide information for this table if it is a single country and/or single GEF Agency project.

2 Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

E. PROJECT MANAGEMENT BUDGET/COST

Cost Items	***Total Estimated person months***	***SCCF ($)***	***Co-financing ($)***	***Project total ($)***
*Local consultants**	70	**158,350**	**10,000**	**168,350**
*International consultants**				
*Office facilities, equipment, vehicles and communications**		**43,500**	**31,000**	**74,500**
*Travel**				
Total		**201,850**	**41,000**	**242,850**

* Details to be provided in Annex C.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	*Estimated person months*	*SCCF($)*	*Co-financing ($)*	*Project total ($)*
*Local consultants**	136	327,080		327,080
*International consultants**	15	180,000		180,000
Total	151	507,080	0	507,080

* Details to be provided in Annex C.

G. DESCRIBE THE BUDGETED M&E PLAN:

Responsibility for M&E will rest with the Policy and Planning Service Office (PPSO) of DENR, in collaboration with FASPO and the agencies with direct implementation responsibilities. An M&E specialist will be recruited to strengthen this function in the PPSO and to support the executing agencies, many of which do not have sufficient expertise in monitoring and evaluation. As detailed in the results monitoring framework (Annex 3), data will flow from these agencies to PPSO and FASPO, where they will be analyzed and reported. Progress reports on the project will be prepared by the PPSO and FASPO and be reviewed by the PSC. These reports will also be reviewed as part of the World Bank's supervision of the project.

The results monitoring framework, presented in a matrix, provides details of the various data sources and frequency of reporting, and identifies parties responsible for monitoring the performance of the project on a component-by-component, activity-by-activity basis. The framework includes sufficient frequency of monitoring to enable feedback of evaluation results. One of the first activities will be a baseline survey of the awareness and knowledge of climate change among proposed project beneficiaries, and their use (or not) of adaptation technologies. This survey will also measure the use and exchange of scientific climate information by the institutions that would use the information to be provided by PAGASA. Based on the findings and recommendations of periodic evaluations and the formal mid-term review, the project design or implementation arrangements may be adjusted, as needed, to ensure achievement of the targeted outcomes. A formal mid-term review would be conducted at the mid-point of the project and an end of project completion report would also be prepared.

CCA creates new challenges for the identification and measurement of suitable M&E indicators. For example, the uncertainty surrounding climate change impacts and the long-term nature of some effects can make the assessment of impacts difficult. This project is designed to demonstrate how to reduce vulnerability to extreme events, which means that accurate evaluation of the results depends on whether these events occur within the project's life.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE THE PROJECT RATIONALE AND THE EXPECTED MEASURABLE ADAPTATION BENEFITS:

As highlighted in the Philippines Initial Communication to the United Nations Framework Convention on Climate Change (UNFCCC), the country's rural populations are especially vulnerable to climate change impacts because of their direct dependence on agriculture and natural resources. Poor communities are more vulnerable because they have fewer options for coping with major climate change-induced impacts, such as decreased food and water supplies. Thus, climate change impacts can cause serious disruptions to economic development and poverty alleviation, especially in poorer rural areas. The 1982-83 and 1997-98 El Nino events for instance caused a large drop in the volume of agricultural production and contributed to the sharpest falls in GDP in the past decades. Several typhoons (e.g., in 1984, 1988 and 1990) have also caused declines on the order of one percent of GDP and four percent of agricultural production. Global climate change is expected to exacerbate the natural hazards that threaten the Philippines. Projected temperature increases in the Philippines are similar to the global trend; but the impacts are expected to be more severe, with sea level rise, more intense rainfall events (and thus more floods and landslides), longer dry spells, and

stronger monsoon rainfall variability expected to have important implications for water resources, agriculture, forestry, coastal areas, public health, and human settlement. Increasing climatic variability and more frequent extreme weather events will also have serious consequences for the entire nation, as demonstrated by the high costs of recent extreme weather events and related disasters.

To address the pervasive and longer-term impacts of climate change, climate change adaptation (CCA) needs to be mainstreamed into key development processes. While climate change projections for the Philippines still contain some uncertainties, particularly with respect to rainfall in specific areas of the country, there is substantial scope to make investments more robust and more responsive to the changes that have been identified, such as the increasing risk of extreme events. Greater robustness can be realized by, for example: (a) making changes to specific physical investments (including changes in design or selection of sites); (b) making better use of climate risk information (including climate projections and forecasts on various timescales); and (c) awareness-raising and empowerment among stakeholders. The project would focus on developing practical examples and methodologies that demonstrate the benefits of mainstreaming and that would have wide application for local government programs across the Philippines. At the institutional level, the project would strengthen the enabling environment for CCA in the agriculture and natural resource management (NRM) sectors, and support the enhancement and provision of scientific information for climate risk management. It would provide support as well to instigating climate resiliency in irrigation infrastructure and extension services and to the adoption of climate adaptation measures such as rainwater harvesting, weather based crop insurance, new seeds and new technologies. At the operational level, the project would work closely with other interested and committed local governments which have substantial investments underway that are at risk from climate change.

As this project is a pilot the expected outcomes will necessarily be measured by both process and impact indicators. The main adaptation benefits will be to increase communities' adaptive capacity by improving: (a) farm management capability under conditions of climate risk; (b) access to information on weather forecasting and climate patterns; (c) access to risk management options such as weather index insurance; and (d) strengthening ecosystems resiliency. The primary beneficiaries include poor farmers who often suffer climate-related losses, and other vulnerable groups that depend on natural resources for their livelihoods

A. **DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL/REGIONAL PRIORITIES/PLANS:**

The proposed project strongly supports national priorities as articulated in the Mid-Term Philippines Development Plan (MTPDP), the Philippines commitment under the Millennium Development Goals (MDGs), and the Initial National Communication to the UNFCCC. The MTPDP highlights, among other things, the need to reduce poverty in rural communities through agricultural development. The plan recognizes the need to adopt a holistic approach by addressing key vulnerabilities of the crop production system. Some of the most important causes of damage to agricultural productivity are climate-related hazards such as ENSO and tropical cyclones. The MTPDP also aims to enhance the protection of forests and conserve biodiversity—two objectives that, at the same time, support resiliency to climate change. Climate change adaptation is not explicitly mentioned in the Medium-Term Philippine Development Plan (MTPDP) for 2004-2010, but the Plan does emphasize mitigation of natural disasters to prevent the loss of lives and property.

The proposed project is also consistent with the goal of the Country Assistance Strategy (CAS) of supporting the Government's efforts to protect the poor from sudden economic shocks. Specifically, the CAS proposes helping to mitigate disaster and climate-related risks, including by piloting climate change adaptation measures. Economic growth in the Philippines in recent years has not fully translated into poverty reduction. The CAS highlights several contributory factors, including the effects of climate change and natural disasters, which have stretched the coping strategies of the poor, who are least equipped to deal with climate shocks.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH SCCF ELIGIBILITY CRITERIA AND PRIORITIES: The Philippines is eligible for GEF support as a signatory to the UNFCCC, which the Government signed in June 1992

and ratified in August 1994. The proposed project is also consistent with the findings and recommendations of the Philippines Initial National Communication to the Convention submitted in December 1999, and with the guidance for the Special Climate Change Fund (SCCF), including UNFCCC Decision 5/CP.9, which states that addressing the adverse impacts of climate change is the top priority for funding under the SCCF. The proposed project addresses several of the priority areas mentioned in the decision: water resources, land management, agriculture and fragile ecosystems. Furthermore, the project is consistent with the decision's support for (i) "capacity building, including institutional capacity, for preventive measures, planning, preparedness, and management of disasters relating to climate change, including contingency planning, in particular, for droughts and floods in areas prone to extreme weather events"; and (ii) "strengthening existing and, where needed, establishing national and regional centers and information networks for rapid response to extreme weather events." The Philippines' Initial National Communication to the UNFCCC includes a detailed section on adaptation, including in the agriculture sector. Identified measures include rainfall and runoff management, organic farming adjustment of cropping patterns, crop diversification, genetic development of heat-tolerant crops, legislative measures on land use, and strengthening of extension services. The Initial National Communication also addresses climate change impacts on water resources and highlighted the adaptation measures of redesigning water allocation and compensation schemes; enhancing irrigation efficiency; introducing low water-use crops and efficient farming practices; water recycling; improving flood and drought forecasting; restructuring water pricing policies; and promoting awareness about climate change. The sectoral focus of the project is very much in line with the areas emphasized in the Initial National Communication. The project seeks to improve resiliency in the agricultural and natural resources sectors, and to protect associated support infrastructure. The specific adaptation strategies and interventions proposed are also highly consistent with the recommendations contained in the Initial National Communication. The project should help to achieve the goals of increasing the resiliency of poor rural communities to climate change impacts, improving food security, and maintaining the integrity of ecological systems.

C. **OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES**: The project will have close linkages with the World Bank-supported Environment and Natural Resources Management Project (ENRMP), which is also co-financed by the GEF and executed by the DENR; and with the Participatory Irrigation Development Project (PIDP). A number of longer-term initiatives that are aimed to help strengthen CCA capacity in the Philippines, and mainstream climate risk management into key national development processes and vulnerable sectors, are planned or underway, including i) the Hazard Mapping and Assessment for Effective Community-based Disaster Risk Management (READY) Project, which is developing a systematic approach to community-based disaster risk management (DRM), climate risk management and community-based early warning systems, ii) CCA initiatives of the Provincial Government of Albay which has initiated several resolutions in support of CCA mainstreaming through local government action, iii) the Millennium Development Goals Framework (MDG-F) Joint Programme for Strengthening the Philippines' Institutional Capacity to Adapt to Climate Change, which is supported by grant funding from the Government of Spain and from GEF, with UNDP as the Executing Agency, iv) the Adaptation to Climate Change and Conservation of Biodiversity in the Philippines Project (ACCBio), funded by GTZ, with DENR as the Executing Agency, which aims to strenghten national capacity for mainstreaming CCA strategies; and v) the project on Integrating Disaster Risk Reduction and Climate Change Adaptation (DRR/CCA) in Local Development Planning and Decision-making Processes, funded by the UNDP and the AusAid and implemented by the National Economic Development Authority (NEDA), which seeks to integrate disaster risk reduction and climate change adaptation into local decisionmaking and planning processes. Close coordination among these projects has been initiated, and will continue throughout implementation via the coordination role of the National Climate Change Commission (NCCC). A partnership will also be developed with the China: Mainstreaming Climate Change Adaptation Project, which is also GEF supported and one year into implementation, to gain from its experience in implementing similar approaches to those proposed under PhilCCAP. The Asian Development Bank's proposed Philippines Integrated Natural Resources and Environmental Management (INREM) project may use GEF financing to incorporate CCA mechanisms into the project, in which case appropriate coordination arrangements would be established. The PhilCCAP project will also be linked with government initiatives, namely the DENR's Upland Development Program (UDP) which is engaged in activities that address poverty in the uplands while rehabilitating degraded watersheds. If the mainstreaming initiatives under this project are successful, DENR should be empowered to apply some of the knowledge gained to strengthen the resiliency of communities under the UDP and others not covered by the proposed Project.

D. **DESCRIBE ADDITIONAL COST REASONING:** There is currently very limited capacity to integrate climate change into the plans and programs of the Philippine government and it is expected that operational activities by relevant agriculture and natural resource management agencies will be carried out without special attention to climate change. Investments and activities in natural resources management and agriculture development, including irrigation systems, would be planned without consideration upon rising climate risks. Many of these investments might physically be affected by climate change and would not realize their long-term benefits in terms of poverty reduction and economic development and could even contribute to mal-adaptation. With the assistance of the Special Climate Change Fund (SCCF), the additional risks to these specific investments would be substantially reduced by improved planning, taking into account the best climate information and by additional investments to enhance the climate resilience of existing programs. There is substantial scope to make the investments more robust to climate risks through win-win solutions such as increasing the general robustness of physical investments; making better use of climate risk information; introduction of new technologies (such as drought tolerant seed varieties, minimum tillage, and improved soil moisture management); and awareness raising among stakeholders. These developments and investments would serve as pilot cases to application of systematic diagnosis and options analysis for climate risk management, which would include an enhanced institutional framework and planning capacity for climate risk management. These experiences and improvements would enhance the resilience of the agriculture and natural resources sectors as a whole, enabling government programs and investments to deliver their expected benefits in terms of economic development and poverty alleviation. Benefits beyond these sectors may be generated through enhanced interagency coordination and provision of scientific information for climate risk management, which could benefit all climate sensitive programs. With the SCCF, the project would strengthen the climate resilience of programs undertaken by the DENR and DA and of two particular World Bank supported investment projects, the ENRMP and the Participatory Irrigation Development Project (PIDP). The SCCF will incorporate climate resilience into existing protected areas plans; rehabilitate and protect degraded areas including riverine areas; improve forest management and sustainable livelihood and invest in aqua-silviculture and coastal areas in the ENRMP. The inclusion of climate risk management in the PIDP on the other hand will result in improved canal conveyance capacity, construction or improvement of structures for better water level and flow control, and in improved equity in water distribution, drainage water re-use, and conjunctive use of surface and ground water. The additional cost required to implement these changes is 8.36 million of which US$4.94 million is being requested from the SCCF.

E. **INDICATE THE RISK THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED AND OUTLINE RISK MITIGATION MEASURES:** The overall project risks will be moderate. The table below outlines the risks and the mitigation measures.

Risk	Risk Mitigation Measures	Risk Rating
To project development objective		
Failure or delay in establishing the policy and institutional framework for adaptation, leading to difficulties in implementing demonstration measures on the ground.	Activities are well underway to mainstream adaptation at the national level and strengthen the institutional framework through the complementary projects listed in para. 42. The project also includes capacity building for NCCC, to ensure that it is well-equipped to perform its functions, including project oversight.	L
The national and local leadership may not own or mainstream the piloted CCA initiatives and tools.	The project will use existing implementation and decisionmaking mechanisms to help ensure replication and mainstreaming. Moreover, the enactment of the Climate Change Act of 2009, placing the President at head of the NCCC, and the increasing incidence of disasters due to extreme weather events, will ensure	M

	that CCA continues to be a priority in the national and local development agenda across administrations.	
Weaknesses in DENR's capability to effectively manage the program.	DENR's role will be mainly overall coordination; monitoring and implementation will be done through MOAs with the relevant departments and local governments.	M
Failure by the linked ongoing projects to scale up activities supported under this initiative.	The linkage of climate change activities with two ongoing projects ENRMP and PIDP not only leverages co-funding, but encourages scaling up of demonstration activities. Consultations were held during preparation with the relevant government agencies and officials of both projects, and as the IBRD loans represent the counterpart, there are no additional immediate fiscal constraints, which should also foster a quick uptake of activities.	M
To component results		
Institutional considerations: inter/intra institutional dynamics		
Lack of ownership of the expected results at the departmental and local government levels, given the large number of involved agencies.	The project emphasizes implementation of project activities by the departments that already have a mandate for CCA, and by local governments that have an interest in obtaining good results.	M
Inadequate capacity to implement key features of the project.	The DA and some local governments already have experience implementing ongoing Bank and other externally funded projects. Any weaknesses in existing capacity would be addressed through targeted technical assistance and training, especially in procurement and financial management.	M
Weak internal controls/weak or lack of internal audit function in government units.	The Bank is addressing this issue through its Grant for Strengthening the Internal Audit (IA), with the Philippine Anti-Graft Commission as its implementing agency. A Generic Internal Audit Manual (GIAM) aligned with international standards has been developed through the IDF grant. AusAid on the other hand, supported the development of the National Guidelines on Internal Control System (NGICS). Harmonization of GIAM and NGICS is currently being supported by AusAid through the Philippines – Australia Partnership for Economic Governance Reform (PEGR).	S
Overall risk rating		M

F. **EXPLAIN HOW COST-EFFECTIVENESS IS REFLECTED IN THE PROJECT DESIGN:** The project is cost effective as it builds upon existing physical investments and measures that require reasonable incremental costs to strenghten resilience to climate risks, yet are expected to reap disproportionately high economic,

environmental and developmental benefits. The retrofitting, redesign and rehabilitation of irrigation infrastructures for instance is expected to improve agricultural productivity, incomes and food security particularly under increased occurrence and magnitude of climate risks and costs only a fraction of new construction that may not account for climate change. The economic and developmental benefits of improved extension services, increased access to climate information and early warning signals, adoption of new technologies (such as seeds) and of rainwater harvesting technologies far outweigh the costs of their inputs. Similarly, increasing the resilience of protected watershed and coastal areas in Penablanca and Siargao require marginal investments to existing project costs but are expected to provide wide-ranging environmental benefits with likely productivity effects.

PART III: INSTITUTIONAL COORDINATION AND SUPPORT

A. PROJECT IMPLEMENTATION ARRANGEMENT: No new institutional structures or arrangements will be established. The project will use existing structures to strengthen the capacity of existing institutions, and to facilitate the scaling up of activities based on best practices and proven benefits. Interagency coordination will be the responsibility of the newly established Climate Change Office (CCO) of DENR, which will also coordinate M&E. The project includes a range of activities that directly involve several national government agencies i.e., the National Commission on Climate Change, DA, NIA, DENR, & PAGASA. There would also be linkages through these agencies to NAMRIA, Manila Observatory, the Regional Meteorological Training Center at the University of the Philippines and to LGUs. The responsibility for promoting and facilitating such linkages, would depend very much on the initiatives of the newly created Climate Change/Adaptation offices of the DA and DENR, under the overall leadership of the NCCC. Primary responsibility for implementing the strengthening the enabling environment for climate change adaptation component would rest with the CCO of the DENR. The demonstration of climate change adaptation strategies in the agriculture and natural resource sectors, namely the integration of climate change adaptation in irrigation infrastructure, the enhancement of crop productivity through improved agronomic practices, weather information & awareness, the piloting of weather index-based crop insurance and the strengthening of climate change management practices for protected areas will be undertaken by the DENR, DA and their agencies.The NIA will assess and monitor the climate risks and the specific design modifications of irrigation infrastructure while the Agricultural Training Institute will be responsible for carrying out improved agronomic practices, weather information and awareness in their extension packages to integrate climate change adaptation. The Climate Change Adaptation office of the Department of Agriculture will evaluate the feasibility of developing a crop insurance scheme for rice and corn as a possible option for mitigating risks to farmers in Regions 2 and 6. The project will also strengthen the climate change management practices for protected areas in Penablanca, Northern Luzon and Siargao, Surigao del Norte.

PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF: The overall project design is consistent with the project concept articulated in the project identification form (PIF). However, there were some changes, which reflect the rapidly changing institutional framework for CCA in the Philippines as well as an effort to simplify the project (fewer activities), strengthen linkages among the components, and make it more cost effective. The following were the other major changes.

The project concept envisaged targeting climate-proofing investments in four ongoing World Bank projects: ENRMP, PIDP, Mindanao Rural Development Project Phase 2 (MRDP2), and the Diversified Farm Income and Market Development Project (DFIMDP). The project eventually focused only on ENRMP and PIDP, due to the fact that one of the sites for the other projects (MRDP2) did not have clear climate risks; and one of the

investment programs (DFIMDP) had been completed and many of its outputs received poor performance evaluations. Moreover, spreading project activities over too many sites would be difficult to manage.

The original project design included a separate component to address DRR/DRM-related issues. Since considerable resources are already being committed to addressing DRR/DRM in the Philippines, and in order to reduce the number of separate activities to be implemented, these considerations have been integrated into other project components and activities.

The original project design included a separate component to mainstream CCA and build institutional capacity at central agencies such as the National Economic Development Authority (NEDA). This component was not needed in its entirety, as these issues are being addressed by ongoing and planned initiatives supported by other donors. For example, modifications to the MTPDP to incorporate greater emphasis on CCA, and other national policy mainstreaming efforts, are being pursued by NEDA under the Spanish-funded MDG-F Joint Programme for Strengthening the Philippines Institutional Capacity to Adapt to Climate Change. Further, establishment of a Climate Change Office within DENR, as the central agency having oversight responsibility for climate change-related activities, and other institutional capacity building, are being supported by the German Technical Cooperation (GTZ). Therefore, the project will fill the remaining gaps and focus its mainstreaming efforts at the sector levels in agriculture and natural resource management.

PART V: AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with SCCF policies and procedures and meets the SCCF criteria for project endorsement.					
Agency Coordinator, Agency name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
Steve Gorman			Jiang RU	202-473-8677	jru@worldbank.org

ANNEX A: PROJECT RESULTS FRAMEWORK

Project Development Objective (PDO)	Project Outcome Indicators	Use of Project Outcome Information
The project is a pilot the development objective of which is to develop and demonstrate approaches that would enable targeted communities to adapt to the potential impacts of climate variability and change.	• 20% of households surveyed in the targeted areas adopt coping strategies, new technologies or improved farming practices to better cope with climate variability and extremes • Among stakeholders surveyed in the targeted areas 35% have participated in or are knowledgeable of activities demonstrated by the project to reduce vulnerability or improve adaptive capacity	Assess the success of the project in demonstrating cost effective adaptation measures to farmers, in increasing awareness on adaptation and on providing guidance on the potential for scaling up these activities
Intermediate Outcomes	**Intermediate Outcome Indicators**	**Use of Intermediate Outcome Monitoring**
Strengthening the enabling environment for climate change adaptation (Component 1)	• Approval of adaptation-friendly policies in the agriculture and/or ENRM sectors (such as revised rural infrastructure guidelines, revised extension guidelines, modified training curricula). • DENR and DA regularly use climate screening tool to assess projects in the annual work plan (incorporated in project assessment criteria). • Best-practice manual developed by the project being utilized in the design of other adaptation interventions in the country	Assess whether DENR and DA management and staff have adopted CCA as part of their regular business and if not redirect the project approach Guide CCA mainstreaming agenda in other sectors
Adaptation measures in agriculture and natural resources management are demonstrated (Component 2)	• Irrigation infrastructure in two PIDP irrigation systems is redesigned/rehabilitated to incorporate CCA parameters recommended by PhilCCAP. • Evaluation report issued on the outcome of the weather-index based insurance pilot • At least 25% of farmers surveyed in the targeted areas who receive extension advice apply an element of the new extension packages developed with project support (for example, use weather data and/or climate projections in making farming decisions, use of on-farm rainwater harvesting or other soil moisture management technologies). • Revised management plans for PPLS and SIPLAS incorporates Climate change adaptation activities and are being implemented.	Assess the appropriateness of the on the ground adaptation measures piloted by the project and the potential for replication and scale up
Enhanced provision of scientific information for climate risk management (Component 3)	• Completion of documented designs for apposite information delivery to users in Components 1 and 2 sub-projects • Documented evidence that the information has been delivered and used throughout all subcomponents of Components 1 and 2 in appropriate ways to add value consistent with the original documented designs or modified according to updated designs	Ensure that services in Component 3 required to implement Components 1 and 2 are being provided
Project effectively coordinated, with activities regularly monitored and necessary adjustments made to ensure achievement of PDO (Component 4)	• Project Steering Committee reviews project progress on a six monthly basis as reported in the minutes	Ensure that project implementation arrangements are working satisfactorily

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, Responses to Comments from the Convention Secretariat made at PIF)

GEF Secretariat:
1. Cost effectiveness of the project has been demonstrated (see F above)

2. Value Added of GEF Involvement: This has been described above in Sections A and D.

3. A detailed matrix is provided on the risks facing the project and the proposed mitigation measures

ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT

Position / Titles	*$/ person week**	*Estimated person weeks***	*Tasks to be performed*
For Project Management	Per month	Per month	
Local			
Project Manager	2405	40	Overall project Coordination.
IEC specialist	2405	15	Lead awareness raising and communications campaigh
Project Monitoring Specialist	2,405	15	Design and provide training on M&E system
International			
Justification for Travel, if any:			
For Technical Assistance			
Local			
Legal	2,405	10	Review legislation for climate change implications
Agriculture Policy	2,405	10	Review agricultural policy for climate risk
NRM	2,405	10	Review NRM policy for climate risk
Climate Information	2,405	8	Provide analytical services for climate data
KM Specialist	2,405	8	Develop KM and Learning Manual and practice
Structural Engineer	2,405	12	Guide redesign of infrastructure for CRM
Hydrologist	2,405	12	Assess water sector impacts and design interventions
Economist	2,405	9	Assess cost benefits of adaptation options
Agriculturalist	2,405	3	Assess agronomic implications
Meteorologist	2,405	4	Set up data collection stations for weather and climate data
Agric Insurance Specialist	2,405	4	Design and supervise pilot activity on insurance
Biodiversity Specialist	2,405	3	Design ecosystem interventions based on climate models
Marine/Coastal Planning	2,405	3	Design coastal and marine interventions based on climate models
Research Institute/Service Provider Support to Component 2.2	2,405	20	Competitive grant to be awarded to develop agronomic packages with CRM
Research Institute/Service Provider Support to Component 2.3	2,405	20	Competitive grant to be awarded to implement the pilot project.
International			
Climate Scientist	12,000	3	Modeling and Scenario work
Adaptation Specialist	12,000	4	Advise on international best practice
Policy	12,000	4	Advice on international best practice on mainstreaming
Decision Support Tools	12,000	4	Develop adaptation decision support tools
Justification for Travel, if any: Some specialists will need to travel to the field for the design of adaptation measures.			

* Provide dollar rate per person weeks or months as applicable; ** Total person weeks/months needed to carry out the tasks.

ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN. The PPG objective has been fully achieved as the grant was used for the detailed preparation o

B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY. There are no concerns that could affect the project design. Risks to the project are described in the matrix refered to above.

C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMTATION STATUS IN THE TABLE BELOW:

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

PPG COMPLETION REPORT

Philippines Climate Change Adaptation Project

TF 090241

Project Preparation Activities Approved				*GEF Amount (US$)*				*Co-Financing*
				Amount Approved	*Amount Spent To-Date*	*Amount Committed*	*Uncommitted Amount*	
1.0	**Consultancy Services**							
	1.1	Technical Assistance for the detailed project design and preparation of the GEF- Project Appraisal Document						
		(i)	Planning Specialist/Team Leader	75,148.00	73,178.73		1,969.27	
		(ii)	Climate Risk Mgt. and Investment Specialist	18,912.42	17,613.06		1,299.36	
		(iii)	NRM Specialist	14,069.93	13,752.09		317.84	
		(iv)	Irrigation Specialist	13,438.49	13,110.55		327.94	
		(v)	Social Safeguards Specialist	20,707.75	17,299.99		3,407.76	
		(vi)	Environmental Management Specialist	10,448.56	9,505.41		943.15	
		(vii)	Climatologist/Meteorologist	8,783.47	8,044.20		739.27	
		(viii)	Agriculture Specialist	13,746.62	13,508.22		238.40	
		(ix)	Agricultural Insurance Expert	6,704.87	6,704.87			
		(x)	GIS Specialist	6,428.66	6,428.66			
		(xi)	Disaster Management Specialist	8,574.69	8,026.16		548.53	
		(xii)	Technical Advisor	7,695.11	7,695.11			
		(xiii)	Finance/Economic Specialist	9,559.44	9,559.44			
		(xiv)	Agricultural Credit Specialist	6,414.21	6,414.21			
			sub total	**220,632.22**	**210,840.70**		**9,791.52**	
2.0	**Stakeholder Consultation Workshops**							
	2.1	First National Stakeholder Consultation Workshop		952.89	952.89			

	2.2	Second National Stakeholder Consultation Workshop	1,001.13	1,001.13			
	2.3	Focus Group Discussion for NDCC	501.00	501.00			
		sub total	**2,455.02**	**2,455.02**			
		GRAND TOTAL	**223,087.24**	**213,295.72**	**223,087.24**	**9,791.52**	

note: ***balance of uncommitted amount represent unutilized reimbursable expenses***

* Uncommitted amount should be returned to the SCCF Trust Fund. Please indicate expected date of refund transaction to Trustee.
NOTE: Total uncommitted amount of $69,704.28 to be refunded to the Trustee (Recipient only requested from the Bank the amount shown in Column 1 above, the balance of the total PPG of $283,000 was never disbursed).

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Report No: 52792-PH

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT FROM THE
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF USD 4.974 MILLION

TO THE

GOVERNMENT OF THE PHILIPPINES

FOR A

PH - CLIMATE CHANGE ADAPTATION PROJECT

March 22, 2010

Social Environment and Rural Sustainable Development Unit
Sustainable Development Department
East Asia and Pacific Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 22, 2010)

Currency Unit	=	Philippines Pesos
P 45.68	=	US$1
US$1	=	P .021

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AAA	Analytical and Advisory Activities
AusAID	Australian Government Overseas Aid Program
ACCBio	Adaptation to Climate Change and Conservation of Biodiversity Project
ADB	Asian Development Bank
BECC	Building Energy Efficiency Codes
BP	Bank Policy
BRT	Bus Rapid Transit
CAS	Country Assistance Strategy
CCA	Climate Change Adaptation
CCC	Climate Change Commission
CCO	Climate Change Office (DENR)
CDM	Clean Development Mechanism
CFAA	Country Financial Accountability Assessment
CH_4	Methane
CNAO	China National Audit Office
CNCCP	China National Climate Change Program
COA	Commission on Audit
CQ	Selection on Consultant Qualifications
CUTPP	China World Bank Urban Transport Partnership Program
DA	Designated Account; Department of Agriculture
DA-ATI	Department of Agriculture - Agricultural Training Institute
DA-BSWM	Department of Agriculture – Bureau of Soil and Water Management
DA-FOS	Department of Agriculture – Field Operations Office
DBM	Department of Budget and Management
DENR	Department of Environment
DENR-EMB	Department of Environment and Natural Resources – Environmental Management Bureau
DENR-FMB	Department of Environment and Natural Resources – Forest Management Bureau
DENR-PAWB	Department of Environment and Natural Resources – Protected Areas and Wildlife Management Bureau
DFIMDP	Diversified Farm Income and Market Development Project
DO	Development Objective
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction

EA	Environmental Assessment
ECAP	Eco-City Advisory Panel
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ENRMP	Environment and Natural Resources Management Project
EPB	Environmental Protection Bureau
ER	Emission Reduction
ESMAP	Energy Sector Management Assistant Program
FAR	Floor Area Ratio
FASPO	Foreign Assisted and Special Projects Office (DENR)
FM	Financial Management
FMM	Financial Management Manager
FMS	Financial Management Specialist
FY	Fiscal Year
GBES	Green Building Evaluation Standard
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIAM	Generic Internal Audit Manual
GPPB –TSO	Government Procurement Policy Board – Technical Support Office
HRBEE	Heat Reform and Building Energy Efficiency Project
IA	Internal Audit
IAS	Internal Audit Service (DENR)
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IDA	International Development Association
IDF	Institutional Development Fund
IEC	Information, Education and Communication
IFR	Interim Financial Report
INREM	Integrated Natural Resources and Environmental Management
IP	Implementation Progress
IPCC	Intergovernmental Panel on Climate Change
IRR	Implementing Rules and Regulations
ISDS	Integrated Safeguards Data Sheet
ITS	Intelligent Transport System
KPI	Key Performance Indicator
LEED	Leadership in Energy and Environmental Design
LOA	Loan Department
LRT	Light Rail Transit
M&E	Monitoring and Evaluation
MAO	Municipal Agriculture Officer
MBD	Model Bidding Documents
MDG-F	Millennium Development Goals Framework
MENRO	Municipal Environment and Natural Resources Officer
MEP	Ministry of Environmental Protection
METT	Management Effectiveness Tool for Protected Areas (World Wildlife Fund)
MHURD	Ministry of Housing Urban and Rural Development
MIS	Management Information System

MOA	Memorandum of Understanding
MOF	Ministry of Finance
MPDO	Municipal Planning and Development Officer
NAMRIA	National Mapping and Resource Information Authority
NCA	Notice of Cash Allocation
NCB	National Competitive Bidding
CCCA	National Conference on Climate Change Adaptation
NEDA	National Economic Development Authority
NGICS	National Guidelines on Internal Control System
NGO	Non-Governmental Organization
NIA	National Irrigation Administration
O&M	Operation and Maintenance
OED	Operations Evaluation Department
OP	Bank Operational Policy
PAD	Project Appraisal Document
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PAP	Project-Affected Persons
PCIC	Philippines Crop Insurance Corporation
PCN	Project Concept Note
PDO	Project Development Objective
PEGR	Philippines-Australia Partnership for Economic Governance Reforms
PhP	Philippine Peso
PIC	Public Information Center
PIF	Project Identification Form (GEF)
PPLS	Peñablanca Protected Landscape and Seascape
PSC	Project Steering Committee
PPSO	Policy and Planning Service Office (DENR)
READY	Hazard Mapping and Assessment for Effective Community-based Disaster Risk Management Project
SCCF	Special Climate Change Fund
SIPLAS	Siargao Protected Landscape and Seascape
SPCMAD	Special Projects Coordination and Management Assistance Division (Department of Agriculture)
SSF	Social Safeguards Framework
STAP	Scientific, Technical and Advisory Panel
UDP	Upland Development Program
UNDP	United Nations Development Programme
UPCA	University of the Philippines College of Public Affairs
V&A	Vulnerability and Adaptation
WA	Withdrawal Application

Vice President:	James W. Adams, EAPVP
Country Director:	Bert Hofman, EACPF
Sector Manager:	Mark Woodward, EASPS

Task Team Leader:	Samuel G. Wedderburn, EASER

PHILIPPINES
PH - CLIMATE CHANGE ADAPTATION

CONTENTS

PAGE

PHILIPPINES

CLIMATE CHANGE ADAPTATION PROGRAM

PROJECT APPRAISAL DOCUMENT

EAST ASIA AND PACIFIC

EASPS

Date: March 22, 2010 Country Director: Bert Hofman Sector Manager/Director: Mark Woodward/John Roome Project ID: P101076 Focal Area: Multi-focal area Environmental Assessment: Partial assessment Lending Instrument: Specific Investment Loan	Team Leader: Samuel G. Wedderburn Sectors: General agriculture, fishing and forestry sector (50%); sub-national government administration (35%); flood protection (15%) Themes: Climate change (50%); other environment and natural resources management (25%); other rural development (25%)

Project Financing Data

[ ] Loan [ ] Credit [X] Grant [ ] Guarantee [ ] Other:

For Loans/Credits/Others:
Total Bank financing (US$m.): 4.97
Proposed terms:

Financing Plan (US$m)

Source	Local	Foreign	Total
Borrower/Recipient	~~5~~40.45~~5.45~~	10~~5~~.0	~~60.45~~50.45
Global Environment Facility (GEF)	4.09	0.88	4.97
Total	~~59.54~~44.54	~~5~~10.88	~~65.42~~55.42

Borrower:
Government of the Philippines

Responsible Agency:
Department of Environment and Natural Resources
Elliptical Rd., Diliman
Philippines
Tel: /Fax: (63-2) 926-8065. osec@denr.gov.ph

Department of Environment and Natural Resources
Ground Floor DENR Main Building
Visayas Avenue, Diliman,
Philippines
Tel: (63-2) 927-6726 Fax: (63-2) 928-9732. usecsering@denr.gov.ph, umts@denr.gov.ph

Estimated disbursements (Bank FY/US$m)									
FY	**2011**	**2012**	**2013**	**2014**	**2015**				
Annual	1000	1300	1300	1000	0.374				
Cumulative	1000	2300	3600	4600	4.974				

Project implementation period: July 1, 2010 - June 30, 2015
Expected effectiveness date: July 1, 2010
Expected closing date: December 30, 2015

Does the project depart from the CAS in content or other significant respects? ***Ref. PAD I.C.***	[ ]Yes [X] No
Does the project require any exceptions from Bank policies? ***Ref. PAD IV.G.*** Have these been approved by Bank management? Is approval for any policy exception sought from the Board?	 [ ]Yes [X] No [ ]Yes [ ] No [ ]Yes [X] No
Does the project include any critical risks rated "substantial" or "high"? ***Ref. PAD III.E.***	[ ]Yes [X] No
Does the project meet the Regional criteria for readiness for implementation? ***Ref. PAD IV.G.***	[X]Yes [ ] No

Project development objective ***Ref. PAD II.C., Technical Annex 3***
The project is a pilot the development objective of which is to develop and demonstrate approaches that would enable targeted communities to adapt to the potential impacts of climate variability and change. This would be achieved by strengthening existing institutional frameworks for climate change adaptation, and by the demonstration of cost-effective adaptation strategies in agriculture and natural resources management.

Global environment objective ***Ref. PAD II.C., Technical Annex 3***
NA

Project description *[one-sentence summary of each component]* ***Ref. PAD II.D., Technical Annex 4***
Component 1. This component supports the integration of climate change adaptation (CCA) into the agriculture and natural resources sectors, and strengthens the capabilities of relevant government agencies.

Component 2. This component helps poor rural communities, which are most at risk of climate change impacts, to adapt to the effects of climate change. It will demonstrate both tangible reductions in climate-related risks, and increased resilience to longer-term climate changes and climate-related disasters.

Component 3. This component improves the access of end users, especially in the agriculture and natural resources sectors, to more reliable scientific information that would enable more rapid and accurate decision making for climate risk management.

Component 4. This component supports the project coordination functions through DENR's Foreign Assisted Projects Office (FASPO).

Which safeguard policies are triggered, if any? ***Ref. PAD IV.F., Technical Annex 10***

A detailed environmental assessment (EA) was conducted for the proposed project as part of project preparation. Through the EA process and the analysis of impacts, it was ascertained that the overall environmental benefits of the project far outweigh any perceived negative environmental impacts, which would be localized and can be readily mitigated through proper planning and mainstreaming of measures into the design of the various interventions. The activities which could have negative environmental impacts fall mostly under Component 2—climate-proofing of irrigation infrastructure; crop diversification as part of the overall adaptation strategy in agriculture; and improving resiliency of the protected area management system.

The social assessment carried out during the project preparation focused on the potential social and economic impacts on target households and communities in areas where climate risk reduction measures in key productive sectors will be piloted. The analysis found that overall, the project—in particular, activities 2.2 and 2.4 under Component 2—is expected to improve income streams and equitable distribution of opportunities among farmers, fishers, indigenous peoples, women, and other vulnerable groups.

The project has been assigned an environmental Category B rating.

Safeguard policies triggered are: Environmental Assessment (OP/BP 4.01); Pest Management (OP 4.09); Indigenous Peoples (OP/BP 4.10)

Significant, non-standard conditions, **if any**, for:
Ref. PAD III.F.
Board presentation: None

Grant effectiveness:

(a) The recipient has finalized and adopted the Operations Manual satisfactory to the Bank and containing a section on Financial Management.

(b) DENR and DA shall submit a time-bound action plan satisfactory to the Bank to resolve the 2008 audit findings of the Commission on Audit (COA).

Covenants applicable to project implementation:

(a) The Recipient shall maintain or cause to maintain a financial management system in accordance with consistently applied accounting standards acceptable to the Bank, in a manner adequate to reflect the operations of, resources, and expenditures related to the Project.

(b) The Recipient shall prepare and furnish to the Bank, not later than 45 days after the end of each calendar quarter, interim financial reports for the Project covering the quarter in form and substance satisfactory to the Bank.

(c) The Recipient shall have its Financial Statements for the Project audited which shall cover the period of one fiscal year. This shall be furnished to the Bank not later than six months after the end of such period.

(d) The Project shall be reviewed by the Internal Audit Service (IAS) of DENR and DA, as applicable, at the end of each calendar semester starting December 31, 2010, and furnish a report to DENR and DA Management and the Bank within 90 days at the end of each semester.

(e) For the duration of the Project, within twelve months from issuance of subsequent external audit reports, complete implementation of recommendations, if any, arising from such subsequent external audits, all in a manner satisfactory to the Bank.

(f) By December 30, 2012 a mid-term review of the project's performance and achievements would be undertaken and the findings of the study discussed with the Bank.

I. STRATEGIC CONTEXT AND RATIONALE

A. Country and sector issues

1. **Background.** The Philippines has one of the highest exposures to natural hazards—including typhoons, floods, landslides, droughts, volcanic eruptions, earthquakes, and tsunamis—of any country in the world. In late September and early October 2009, tropical storm Ondoy, followed closely by typhoon Pepeng, caused massive flooding, landslides, damage to infrastructure, loss of crops, and loss of human life in an area reaching from metropolitan Manila to northern Luzon. These two weather disturbances—the worst on record—disrupted the lives of an estimated 7 million people and caused the death of more than 600; and resulted in infrastructure and agriculture losses of close to PhP30 billion.[1] As recently as September 2006, tropical storm Milenyo caused the death of 184 people, with 47 more missing and 536 injured. Damage to property, including nearly half a million houses, reached PhP 6.428 million. Agriculture suffered the most serious blow, with total damage amounting to PhP 3.96 billion.[2] Not counting these most recent events, natural hazards since 1900 have cost an estimated 50,000 lives and more than US$7 billion in property damage.

2. The country is also periodically affected by the El Niño Southern Oscillation (ENSO) phenomenon, which creates enormous strains on water resources due to low water inflows into major watersheds and reservoirs. During severe El Niño-driven drought, water for agriculture has, at times, been totally cut in favor of domestic and industrial water supply. An estimated US$372 million in agriculture losses during the period 1990-2003 have been attributed to the effects of El Niño.

3. The natural hazards that threaten the Philippines are being exacerbated by climate change. Projected temperature increases in the Philippines are similar to the global trend; but the impacts are expected to be more severe, with sea level rise, more intense rainfall events (and thus more floods and landslides), longer dry spells, and stronger monsoon rainfall variability expected to have important implications for water resources, agriculture, forestry, coastal areas, public health, and human settlement. As demonstrated by the high costs of recent extreme weather events, increasing climatic variability and more frequent extreme events will have serious consequences for the entire nation.

4. **Sector challenges.** As highlighted in the Philippines Initial Communication to the United Nations Framework Convention on Climate Change (UNFCCC) of December 1999, the country's rural populations are especially vulnerable to major climate change impacts because of their direct dependence on agriculture and natural resources. Poor communities are more vulnerable because they have fewer options for coping with such impacts, including decreased food and water supplies, which can cause serious disruptions to economic development and poverty alleviation, especially in poorer rural areas. For instance, the 1982-83 and 1997-98 El Niño events, which caused a large drop in the volume of agricultural production, also contributed to the sharpest falls in GDP in the past decades. Several typhoons (e.g., in 1984, 1988 and 1990)

[1] Philippine Daily Inquirer, October 14, 2009.
[2] NDCC Media Update: Situational Report No. 29, October 14, 2006.

have caused declines on the order of one percent of GDP and four percent of agricultural production.

5. To address these pervasive and longer-term impacts, climate change adaptation (CCA) needs to be mainstreamed into key development processes. The barriers to mainstreaming CCA include: (a) lack of awareness and understanding of climate change generally, and adaptation specifically, among both the public and top-level decision-makers; (b) institutional weaknesses and unclear mandates of various agencies and coordination bodies; (c) inadequate budget allocations and lack of secure financing to effectively and sustainably promote integration of CCA; and (d) a lack of linkage between longer-term adaptation efforts and immediate responses to extreme weather events and natural disasters, in order to address both more effectively.

6. While climate change projections for the Philippines still contain some uncertainties, particularly with respect to rainfall in specific areas of the country, there is substantial scope to make investments more robust and more responsive to the changes that have been identified, such as the increasing risk of extreme events. Greater robustness can be realized by, for example: (a) making changes to specific physical investments (including changes in design or selection of sites); (b) making better use of climate risk information (including climate projections and forecasts on various timescales); and (c) awareness-raising and empowerment among stakeholders.

B. Government strategy

7. Climate change adaptation is not explicitly mentioned in the Medium-Term Philippine Development Plan (MTPDP) for 2004-2010, but the Plan does emphasize the mitigation of natural disasters to prevent the loss of lives and property. As awareness of climate change issues has grown in recent years, largely through the impact of international forums, the Government of the Philippines has undertaken a number of initiatives to demonstrate its commitment to mainstreaming CCA. The Philippine Inter-Agency Committee on Climate Change (IACCC) was established in December 1991, prior to the adoption of the UNFCCC at the Rio Summit in May 1992. More recently, a Presidential Task Force on Climate Change was established by Administrative Order No. 171 in 2007, and a Presidential Adviser on Climate Change was appointed in 2008. The creation of this position was supported by Executive Order No. 774, also in 2008, which required the development of an overarching national framework for climate change, and effectively gave direct responsibility and authority for decisions on climate change-related matters to the Office of the President. In March 2009, a Climate Change Office (CCO) was created in the Department of Environment and Natural Resources (DENR) by Administrative Order 2009-04. Then on October 23, 2009, President Arroyo signed Republic Act 9729 (Climate Change Act of 2009), which created a Climate Change Commission (CCC) mandated to prepare an action plan to mitigate and prepare for the effects of climate change.[3]

[3] The functions of the CCC include: (a) monitoring implementation of the Philippine Clean Air Act of 1999 (RA 8749) to ensure compliance with provisions of the Law; (b) recommending legislation, policies, programs, and budgets on global warming or climate change mitigation and adaptation; (c) disseminating climate change information to the public and to the government; (d) representing the Government of the Philippines in all international and regional meetings, conferences, and conventions concerning climate change; and (e) reviewing international environmental treaties on climate change and making recommendations for ratification and compliance. The IACCC is expected to be dissolved once the Implementing Rules and Regulations for the CCC have been created.

This latter action is also aimed at rationalizing the roles and mandates of various bodies tasked with addressing climate change.

8. A number of longer-term donor-supported initiatives to help strengthen CCA capacity in the Philippines, and to begin mainstreaming climate risk management into key national development processes and vulnerable sectors, are planned or underway. Such broad initiatives (see paragraph 42) have helped to lay the foundation for this GEF-supported project, which will focus on specific on-the-ground adaptation measures. The Philippines also has a number of legislative and executive instruments in place that various institutions could use to make their programs more responsive to climate change.[4]

9. In light of the newness of many of the country's CCA activities and the limited extent to which CCA has been incorporated into government plans and programs, the project would focus on developing practical examples and methodologies that demonstrate the benefits of mainstreaming, and that would have wide application for local government programs across the Philippines. At the institutional level, the project would strengthen the enabling environment for CCA in the agriculture and natural resource management (NRM) sectors, and support the enhancement and provision of scientific information for climate risk management. At the operational level, the project would—building on the initiatives of the Albay Provincial Government[5]—work closely with other committed local governments that have substantial ongoing investments at risk from climate change. In selecting local governments and activities for CCA, the project would partner with ongoing Bank-supported investments, including the Participatory Irrigation Development Project (PIDP) and the Environment and Natural Resources Management Project (ENRMP), which are already providing support for local investments.

C. Eligibility for the Global Environment Facility (GEF) and the Special Climate Change Fund (SCCF)

10. As a signatory to the UNFCCC, which the Government signed in June 1992 and ratified in August 1994, the Philippines is eligible for GEF support. The proposed project is also consistent with the findings and recommendations of the Philippines Initial National Communication to the Convention of December 1999 (see below),[6] and with the guidance for the Special Climate Change Fund (SCCF), including UNFCCC Decision 5/CP.9, which states that addressing the adverse impacts of climate change is the top priority for funding under the SCCF. The proposed project addresses several of the priority areas mentioned in the decision: water resources, land management, agriculture and fragile ecosystems. Further, the project is consistent with the decision's support for (a) "capacity building, including institutional capacity, for preventive measures, planning, preparedness, and management of disasters relating to climate

[4] Example of key legislative or executive instruments through which CCA could be introduced include: (a) the Agriculture and Fisheries Modernization Act (AFMA; Republic Act No. 8435 of 1997), which provides comprehensive direction for modernizing the agriculture sector; (b) the Local Government Code (Republic Act No. 7160 of 1991), which devolves key CCA responsibilities and functions to local governments; (c) the Community-Based Forest Management (CBFM) Program (Executive Order No. 263 of 1995), which promotes the sustainable development of forestland resources in the country through community involvement; and (d) the Water Code of the Philippines (Presidential Decree No.1067 of 1976), which provides for conservation and protection of waters and watersheds and related land resources.

[5] The Albay provincial government is playing a leading role in mainstreaming CCA into local and national development policies.

[6] The Second National Communication is currently under preparation.

change, including contingency planning, in particular, for droughts and floods in areas prone to extreme weather events"; and for (b) "strengthening existing and, where needed, establishing national and regional centers and information networks for rapid response to extreme weather events."

11. The Initial National Communication to the UNFCCC includes a detailed section on adaptation, including in the agriculture sector, which will experience both adverse and beneficial effects of climate change. Although it is recognized that warmer temperatures can lead to enhanced productivity of certain crops, it is expected that this will be offset by proliferation of weeds, pests, and diseases, reduced effectiveness of herbicides and pesticides, reduced soil fertility, erosion, and loss of arable lands in coastal areas due to sea-level rise. Identified measures include rainfall and runoff management, organic farming, adjustment of cropping patterns, crop diversification, genetic development of heat-tolerant crops, legislative measures on land use, and strengthening of extension services.

12. The Initial Communication also addresses climate change impacts on water resources. Identified adaptation measures include redesign of water allocation and compensation schemes; enhancement of irrigation efficiency; introduction of low water-use crops and efficient farming practices; water recycling; improved flood and drought forecasting; restructuring of water pricing policies; and promoting awareness about climate change.

13. The sectoral focus of the project, and the specific adaptation strategies and interventions proposed, are very much in line with the areas emphasized in the Communication. The project seeks to improve resiliency in the agricultural and natural resources sectors, and to protect associated support infrastructure.

14. Through its linkage to ongoing country-driven activities, the proposed project is also consistent with the Government's priorities with respect to poverty reduction and sustainable development, particularly given that the poorest segments of the Philippines' population depend on agriculture and natural resources for their livelihoods. The project should help to increase the resiliency of poor rural communities to climate change impacts, improve food security, and maintain the integrity of ecological systems.

D. Rationale for Bank Involvement

15. **Comparative advantage.** The World Bank has been a long-term partner of the Government of the Philippines in the areas of agriculture and natural resources management—sectors that are critically important for alleviating poverty among those most vulnerable to climate change. In addition, the World Bank has supported the Government's efforts to raise awareness of the importance of natural hazard risk reduction. The impacts of natural hazards will be particularly felt in the agriculture and natural resource sectors, and these impacts will in turn affect the country's strategies for poverty alleviation and economic development. Moreover, the proposed project is consistent with the Bank's Country Assistance Strategy (CAS), which, *inter alia*, aims to help the Government reduce climate-related risks by piloting adaptation measures.

16. The World Bank is an international leader on climate change adaptation, as articulated in "Development and Climate Change: A Strategic Framework for the World Bank Group" and the *World Development Report 2010: Development and Climate Change.* The adaptation dimension

of the climate change agenda, in particular, is directly linked to the World Bank Group's mission of fighting poverty and will grow in importance. The Bank has considerable experience working with developing countries on reconciling development and climate impacts. This experience has influenced the project design and will help to ensure effective implementation.

D. Higher-level objectives to which the project contributes

17. The proposed project is consistent with the CAS goal of supporting the Government's efforts to protect the poor from sudden economic shocks. Specifically, the CAS proposes helping to mitigate disaster and climate-related risks, including by piloting climate change adaptation measures. Economic growth in the Philippines in recent years has not fully translated into poverty reduction. The CAS highlights several contributory factors, including the effects of climate change and natural disasters, which have stretched the coping strategies of the poor, who are least equipped to deal with climate shocks.[7]

18. The proposed project also strongly supports national priorities as articulated in the MTPDP, the Philippines commitment under the Millennium Development Goals (MDGs), and the Initial National Communication to the UNFCCC. The MTPDP highlights the need to reduce poverty in rural communities through agricultural development, which in turn depends on addressing key vulnerabilities of the crop production system. Some of the most important causes of damage to agricultural productivity are climate-related hazards such as ENSO and tropical cyclones. The MTPDP also aims to enhance the protection of forests and conserve biodiversity—two objectives that, at the same time, support resiliency to climate change.

II. PROJECT DESCRIPTION

A. Lending instrument

19. The project is designed as a Specific Investment Loan (SIL) funded through a grant from the GEF under the Special Climate Change Fund (SCCF).

B. Project development objective and key indicators

20. The project is a pilot the development objective of which is to develop and demonstrate approaches that would enable targeted communities to adapt to the potential impacts of climate variability and change. This would be achieved by strengthening existing institutional frameworks for climate change adaptation, and by the demonstration of cost-effective adaptation strategies in agriculture and natural resources management. The project will increase communities' adaptive capacity[8] by improving: (a) farm management capability under conditions of climate risk; (b) access to information on weather forecasting and climate patterns; (c) access to risk management options such as weather index insurance; and (d) strengthening ecosystems.

[7] Other contributory factors include the impact of cumulative inflation on real incomes of households, and insufficient job creation for low-skill workers.

[8] Broadly defined, adaptive capacity is the ability to modify or change behavior so as to cope better with existing or anticipated external stresses (adapted from W. Neil Adger, Nick Brroks, Graham Bentham, Maureen Agnew and Siri Eriksen, "New Indicators of Vulnerability and Adaptive Capacity," Tyndall Centre for Climate Change Research, Technical Report 7, 2004).

The primary beneficiaries include poor farmers who often suffer climate-related losses, and other vulnerable groups that depend on natural resources for their livelihoods.

21. The following key indicators will be used to measure progress towards achieving the objective: (a) 20% of households surveyed in the targeted areas adopt coping strategies, new technologies, or improved farming practices to better cope with climate variability and extremes; and (b) among stakeholders surveyed in the targeted areas 35% have participated in or are knowledgeable about demonstration activities to reduce vulnerability or improve adaptive capacity.

C. Project components

22. The project comprises four components. Component 1: Strengthening the Enabling Environment for CCA; Component 2: Demonstrating CCA Strategies in the Agriculture and Natural Resources Sectors; Component 3: Enhanced Provision of Information for climate risk management; and Component 4: Project Coordination. The project components and subcomponents are summarized below and described in greater detail in Annex 4; detailed cost information is included in Annex 5.

Component 1: Strengthening the Enabling Environment for Climate Change Adaptation
GEF – US$590,000; Co-financing – US$120,000

23. The objective of this component is to support the integration of CCA into the agriculture and natural resources sectors, and to strengthen the capabilities of (a) government agencies that play a role in CCA activities in these sectors; and of (b) the CCC, which is responsible for developing the overall Climate Change Adaptation Framework and guiding its implementation across government institutions. This component will complement and build upon similar CCA projects supported by other donors (see Annex 1). The activities will be flexibly coordinated with the evolving roles of the CCC, DENR's climate change office, and the mandate given to the technical agencies within the Department of Agriculture (DA).

24. Specific activities under this component include: (a) strengthening CCC's role in CCA policy oversight; (b) implementation of the overall CCA framework; (c) creation of an integrated decisionmaking framework for adaptation and sector investments; (d) development and implementation of a project screening tool; (e) capacity building and training for focal agencies responsible for coordinating with other government entities and the private sector; (f) support for CCC efforts in provisioning, interpretation, access to, and dissemination of climate risk information for use within the project; (g) knowledge management and assimilation of best practices; and (h) awareness raising and communication in the project's pilot areas (Component 2).

Component 2: Demonstrating Climate Change Adaptation Strategies in the Agriculture and Natural Resources Sectors
GEF – US$2.9~~3~~4 million; Co-financing – US$~~59~~49.91~~.91~~ million

25. The objective of this component is to demonstrate methods of adaptation to the impacts of climate change through the implementation of field-level pilot activities designed on the basis of scientific information provided under Component 3. Specific activities include:

26. **Subcomponent 2.1: Climate-proofing irrigation infrastructure.** This activity aims to strengthen the climate resilience of vulnerable irrigation infrastructure developed under the Bank-supported PIDP. The project will assess climate risks to the irrigation infrastructure being developed under the PIDP, which did not take account of climate risks in the original design; and provide guidance on the redesign, retrofitting, or operational modification of that infrastructure. This activity will be closely linked with the National Irrigation Administration's (NIA) plan to incorporate climate risks in the redesign of infrastructure damaged by the typhoons of 2009. NIA has already agreed to implement the recommendations to be made by the project to strengthen the climate resilience of irrigation systems, and would allocate PIDP funds for this purpose. The methodology developed for assessing the climate risks to irrigation infrastructure could also be applied to farm-to-market roads, Small Water Impounding Projects (SWIPS), value chain infrastructure and trading posts.

27. **Subcomponent 2.2: Enhancing delivery and effectiveness of extension services for farm-level climate risk management.** This subcomponent will support the DA in enhancing the content and delivery of extension packages to support the adaptation of agronomic practices and crop varieties to manage climate risk at the farm level. This will be achieved in two ways: (a) by improving farmers' access to weather information and awareness, to support adoption of new agronomic practices, varieties, and/or crops over time; and (b) by further reinforcing the effectiveness of extension services through integration of weather, land, and cadastral information. The activity would include training farmers to use information from early warning systems to alter planting dates and other practices according to seasonal weather forecasts. It would build on the success of the Climate Field School established in Iloilo. This would be supported in Component 3.[9]

28. **Subcomponent 2.3: Pilot-testing the feasibility of weather index-based crop insurance.** This subcomponent supports innovative approaches to expanding the penetration of weather risk management instruments in the agricultural sector. Only a small portion of Philippine farmers are currently protected against weather perils such as droughts, floods, or typhoons, by insurance products provided by the Philippines Crop Insurance Corporation (PCIC). There is no participation of the private sector in agricultural risk management. The high administrative costs associated with the national insurance program are a key reason why more farmers are not covered. This activity seeks to attract private sector players to help develop and adapt weather index-based crop insurance in the Philippine context. Private sector players will participate in a competitive grants program in regions 2 and 6,[10] to demonstrate the feasibility of weather-index based insurance focused on key commodities (corn and maize) and weather perils.

29. **Subcomponent 2.4: Strengthening Climate Change Resilience through Improved Management of Protected Areas.** In light of the additional pressures on ecosystems and

[9] First established in Iloilo in 2007 under a USAID-supported project, the Climate Field School (CFS) is equipped with an agro meteorological station which forecasts weather conditions. Its seasonal climate forecasting helps farmers in field preparation, and in selection of the proper rice seeds and kinds of cash crops they can plant for the particular season. It could also offer training in: (a) documentation and knowledge sharing of indigenous and innovative climate change-adaptive best practices; (b) the use of simple rain gauges and interpretation of weather forecasts for crop cycle decision-making; and (c) disaster preparedness (disaster risk reduction/disaster risk management; DRR/DRM).

[10] The 17 regions in the Philippines are administrative divisions that serve to organize the 80 provinces.

populations from changing climate and weather patterns, this activity will help integrate climate risk concerns into protected areas management. It will introduce integrated watershed management and coastal resource management in (a) the Peñablanca Protected Landscape and Seascape (PPLS) in Northern Luzon, with 25,000 potential direct beneficiaries; and (b) the Siargao Islands Protected Landscape and Seascape (SIPLAS) Protected Area in Surigao del Norte, Mindanao, with 50,000 potential direct beneficiaries.

Component 3: Enhanced provision of scientific Information for climate risk management
GEF – US$1.03 million; Co-financing – US$380,000

30. The objective of this component is to improve the access of end users in the agriculture and natural resources sectors to more reliable scientific information, to enable more rapid and accurate decisionmaking for climate risk management. The component, which would be implemented by Philippines Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), includes the following subcomponents:

31. **Subcomponent 3.1: Strengthening the provision of climate information to guide the design of adaptation actions.** This subcomponent promotes the understanding and use of climate risk information in the design of adaptation activities, by providing the weather and climate information needed to design each intervention under Component 2. The demonstration of this approach will lay the groundwork for scaling up such strategies to other projects and activities. This subcomponent will also assess the need to update risk maps, which, if required, would be coordinated by the Manila Observatory.

32. **Subcomponent 3.2: Strengthening institutional capacity for effective climate risk management.** This subcomponent strengthens the institutional capacity of PAGASA and other organizations to provide climate risk information; and more broadly, to capture and analyze data, including through modeling, to better understand climate change trends over time, and make this information available to policymakers, project managers, and the public. It will also strengthen PAGASA's capacity to support planning under Component 1 (including making advice available to the CCC); and the capacity of intermediaries and end users under Component 2 to effectively utilize this information. It will also support Component 2 activities by enhancing the observation network, including indigenous approaches. Steps will be taken to ensure the sustainability of all capacity building.

Component 4: Project Coordination
GEF – US$410,000; Co-financing – US$40,000

33. Overall coordination of the project would be the responsibility of the Department of Environment (DENR). A Project Coordination Unit within the Foreign Assisted and Special Projects Office (PCU/FASPO) will be responsible for coordinating and liaising with implementing units and regional offices, as well as ensuring submission of required reports to the World Bank. To facilitate project implementation during the first two years, provision has been made for the Grant to support a full-time Project Director and an assistant. The PCU would have a limited role in project implementation, as the agencies with the relevant mandates would implement specific components/activities through Memoranda of Agreement (MOA). Therefore, the PCU's main activity will be monitoring and evaluation (M&E), which is described below in Section IIIC. A Project Steering Committee (PSC) would be jointly led by the designated

undersecretaries in DENR and DA, and comprise representatives of the participating organizations.[11] The committee would meet quarterly.

34. An important feature of project design is the interrelationship of the components. Component 1 contributes to strengthening the national enabling environment for climate change adaptation, and also specifically provides the critical supporting functions and structure needed to enable successful implementation of the project. Component 3 improves the availability of scientific information on climate change which is required for national-level decisionmaking. It also provides the data needed to support the mainstreaming efforts under Component 1; and to fine-tune site selection based on climate risks and design appropriate adaptation interventions under Component 2. The adaptation measures demonstrated under Component 2 are "no regrets"[12] approaches that will emphasize the integration of adaptation with development activities. The sites selected for these demonstrations are in regions 2, 6 and 13, in flooding and drought-prone areas that are considered among the most vulnerable based on existing vulnerability and adaptation (V&A) assessments.

D. Lessons learned and reflected in the project design

35. The project design has incorporated the following key lessons learned from international experience on climate change adaptation: (a) climate change and sea level rise need to be treated as major economic and social risks, not just long-term environmental problems; (b) addressing short-term vulnerabilities is the best strategy to prepare for long-term impacts; therefore, work on disaster risk reduction and on climate change adaptation needs to be closely integrated; (c) in order to effectively coordinate investments across sectoral ministries and influence national development planning, adaptation needs to have an institutional home close to senior decision-makers in the Government; (d) adaptation needs to be integrated into economic planning and the preparation of sectoral plans and budgets; (e) adaptation should preferably focus on no-regrets strategies and seek soft options embedded in sustainable natural resources management; (f) adaptation investments need to be informed by a long-term process that links bottom-up consultation with top-down planning and policy.

36. An emerging lesson from the recently completed Diversified Farm Income and Market Development Project (DFIMDP)[13] is that Bank projects can only facilitate but not be the catalyst for reforms; i.e., the reform process must already be well underway before the Bank project is initiated. Although CCA is not yet well integrated in decisionmaking processes, ownership and reform are underway in the Philippines, through the Government's commitment to disaster risk management, especially in the context of recent extreme weather events. This commitment is

[11] The Department of Agriculture: Bureau of Soil and Water Management (DA-BSWM), DA-Planning, Field Operations Service (DA-FOS), Agricultural Training Institute (DA-ATI), Philippine Crop Insurance Corporation (PCIC); the DENR: (Protected Areas and Wildlife Buerau (DENR-PAWB), Forest Management Bureau (DENR-FMB), Environmental Management Bureau (DENR-EMB); National Irrigation Authority (NIA), National Mapping and Resource Information Authority (NAMRIA), Philippines Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Manila Observatory (MO), National Economic Development Authority (NEDA), Department of Budget and Management (DBM), and a civil society representative.

[12] "No regrets" approaches are measures associated with sound environmental management which contribute to sustainable development and provide benefits irrespective of future climate changes.

[13] The Implementation Completion Report for the project is being prepared and is expected to be finalized in May 2010.

demonstrated by the multitude of planned and ongoing initiatives on climate change, as described in Section ID.

37. Given the importance of *strong participation and ownership of local government*, sites were chosen based on local government's demonstrated interest in or commitment to CCA. The Albay provincial government has been playing a leading role in mainstreaming CCA into local and national development policies, and is implementing a pioneering prototype for local CCA that aims to embed climate-proofing and disaster-proofing as cornerstones of sustainable development. The local government in Iloilo province has also demonstrated strong initiatives and support for CCA-related activities. To strengthen local ownership of the project, implementation arrangements at the local level would be undertaken through a tripartite agreement involving the provincial governors, DENR, and DA.

38. Another key lesson is the *importance of identifying committed local actors* who can motivate their peers. The project will work with farmers and fisherfolk who have been recognized for outstanding achievement in agriculture by the DA and DENR; these farmers and fisherfolk will be involved in conducting workshops, leading on-the-ground piloting activities, training of trainers, and similar functions.

39. The project design also reflects the Bank-supported work on *weather index-based insurance* being carried out in India. This program insured some 560,000 farmers in 2007-08 with low administrative costs, low moral hazard, low adverse selection, and lower premiums for named perils and single perils. Lessons learned from the India experience will inform the design of the project's pilot program for weather index-based crop insurance.

E. Alternatives considered and reasons for rejection

40. The overall project design is consistent with the project concept articulated in the Project Concept Note (PCN) and the GEF project identification form (PIF). However, there were some changes, which reflect the rapidly changing institutional framework as well as an effort to simplify the project, strengthen linkages among the components, and make it more cost effective. The following alternatives were considered:

(a) **Linkage to four World Bank investment projects** in agriculture and natural resources management in the Philippines. The project concept envisaged a focus on climate-proofing investments in four ongoing World Bank projects: ENRMP, PIDP, Mindanao Rural Development Project Phase 2 (MRDP2), and the Diversified Farm Income and Market Development Project (DFIMDP). This alternative was rejected in favor of focusing only on ENRMP and PIDP, due to the fact that one of the sites (MRDP2) did not have clear climate risks; and one of the investment programs (DFIMDP) had been completed and many of its outputs received poor performance evaluations. Moreover, spreading project activities over too many sites would be difficult to manage.

(b) **Focusing on key infrastructure damaged by the recent floods**. Though the project was in preparation long before the recent flood damage, consideration was given to revising the design to focus on flood-affected infrastructure. This approach was rejected for the following reasons: (a) the SCCF requires that projects address one or

more of the following sectors: water resources, land management, agriculture, fragile ecosystems, and/or coastal zone management; (b) based on existing V&A assessments, agriculture, coastal zones, and water resources are the sectors most vulnerable to climate change in the Philippines, and the sectors on which the most vulnerable populations depend; (c) the project, which is intended to demonstrate the implementation of adaptation options, includes making rural infrastructure more resilient to extreme weather events, including flooding; and (d) the project has only limited resources to repair damaged infrastructure.

(c) **Disaster risk reduction/disaster risk management (DRR/DRM) as a separate component**. The original project design included a separate component to address DRR/DRM-related issues. Since considerable resources are already being committed to addressing DRR/DRM in the Philippines, and in order to reduce the number of separate activities to be implemented, these considerations have been integrated into other project components and activities.[14]

(d) **Strong focus on national-level policy and institution building**. The original project design included a separate component to mainstream CCA and build institutional capacity at central agencies such as the National Economic Development Authority (NEDA). This component was not needed, as these issues are being addressed by ongoing and planned initiatives supported by other donors. For example, modifications to the MTPDP to incorporate greater emphasis on CCA, and other national policy mainstreaming efforts, are being pursued by NEDA under the Spanish-funded MDG-F Joint Programme for Strengthening the Philippines Institutional Capacity to Adapt to Climate Change. Further, establishment of a Climate Change Office within DENR, as the central agency having oversight responsibility for climate change-related activities, and other institutional capacity building, are being supported by the German Technical Cooperation (GTZ). Therefore, the project will focus its mainstreaming efforts at the sector and local government levels.

III. IMPLEMENTATION

A. Partnership and coordination arrangements

41. The project will have close linkages with the World Bank-supported ENRMP, which is also co-financed by the GEF and executed by the DENR; and with the PIDP. A number of longer-term initiatives to help strengthen CCA capacity in the Philippines, and to begin mainstreaming climate risk management into key national development processes and vulnerable sectors, are planned or underway (see paragraph 42 below). Close coordination among these projects has been initiated, and will continue throughout implementation via the coordination role of the CCC. A partnership will also be developed with the China: Mainstreaming Climate Change Adaptation Project, which is also GEF supported and one year into implementation, to gain from its experience in implementing similar approaches.

[14] In component 1 through the mainstreaming efforts and development of a screening tool, and in Component 2.1, where the main risk to be mitigated is from flooding.

42. Initiatives complementary to PhilCCAP activities which are planned or underway include:

(a) **Hazard Mapping and Assessment for Effective Community-based Disaster Risk Management (READY) Project**, funded by AusAID and UNDP. This initiative, which involves multiple central and local agencies, is developing a systematic approach to community-based disaster risk management, climate risk management, and community-based early warning systems.

(b) **CCA Initiatives of the Provincial Government of Albay,** which spearheaded the country's first National Conference on Climate Change Adaptation (CCCA) in October 2007. The provincial legislature has passed several resolutions supporting CCA mainstreaming through local government action. Several programs have also been initiated.[15]

(c) **The Millennium Development Goals Framework (MDG-F) Joint Programme for Strengthening the Philippines' Institutional Capacity to Adapt to Climate Change**, supported by grant funding from the Government of Spain and from GEF, with UNDP as the Executing Agency;

(d) **The Adaptation to Climate Change and Conservation of Biodiversity in the Philippines Project (ACCBio),** funded by GTZ, with DENR as the Executing Agency. This recently launched project aims to strengthen national capacity for mainstreaming CCA strategies, and to demonstrate their application to support biodiversity conservation.

(e) **Integrating Disaster Risk Reduction and Climate Change Adaptation (DRR/CCA) in Local Development Planning and Decisionmaking Processes**, funded by the UNDP and AusAid and implemented by NEDA. The initiative, launched in October 2009, seeks to integrate disaster risk reduction and climate change adaptation into local decisionmaking and planning processes.

43. During preparation, consultations were held with two other GEF implementing agencies active in the Philippines—the Asian Development Bank (ADB) and UNDP. While ADB has supported climate change adaptation projects in the Pacific Islands and Central Asia, its activities in the Philippines are still under development. ADB's proposed Philippines Integrated Natural Resources and Environmental Management (INREM) project may use GEF financing to incorporate CCA mechanisms into that project, in which case appropriate coordination arrangements with this project would be established.

44. **Linkage with Government initiatives.** DENR's Upland Development Program (UDP) is engaged in activities to address poverty in the uplands while rehabilitating degraded watersheds. If the mainstreaming initiatives under this project are successful, DENR should be empowered to apply some of the knowledge gained to strengthen the resiliency of communities targeted by UDP and others not covered by the proposed project.

[15] The Albay initiatives include Information, Education and Communication (IEC); Clean-up of Rivers and Creeks to promote environmental conservation; establishment of farm clusters to assist farmers and fisherfolk with their agricultural, food assistance, technological, and training needs; composting to reduce the volume of garbage dumped at landfills; processing of organic fertilizer to reduce methane emissions from agricultural lands; and reforestation activities.

B. Institutional and implementation arrangements

45. New institutional structures or arrangements will be kept to a minimum comprising of the Project Coordination Unit in FASPO and the Project Steering Committee which will be made up almost entirely of staff from the participating organizations. The project will use existing structures to strengthen the capacity of existing institutions, and to facilitate the scaling up of activities based on best practices and proven benefits. Interagency coordination will be the responsibility of the newly established Climate Change Office (CCO) of DENR, which will also coordinate M&E. The activities and expected outcomes of the various agencies would be established at the outset of the project through Memoranda of Understanding with the DENR-CCO.

46. The key project management tasks to be undertaken by the various implementing agencies will include developing MOAs (to be signed at project inception), contracting technical support as needed, monitoring of works, and analysis and dissemination of best practices. Local governments will follow existing implementation procedures as provided in the Operations Manuals developed under the MRDP2, PIDP and ENRMP projects, modified as appropriate for CCA activities. Funding will follow the established procedures for directing funds through the DA and via regional offices, concerned bureaus or attached agencies to local governments. Funding support to DA will be provided directly and will include funds for the activities to be implemented by PAGASA. Accordingly, there will be only two Designated Accounts.

47. At least during the first year, project implementation will be overseen by the project steering committee mentioned in paragraph 33 above. The newly created cabinet-level Climate Change Commission, chaired by the President, is mandated to coordinate, monitor, and evaluate the programs and action plans of the Government relating to climate change. Once it becomes fully operational it is expected that the Commission would assume the role of the project steering committee.

48. At the local level, the project will strengthen the implementation capacity of participating local governments (where this is not being done by other projects), with technical specialists providing on-the-job training at the field level. To facilitate local level implementation in each participating province, one lead office would be selected, such as the office of the Municipal Agriculture Officer (MAO), the Municipal Environment and Natural Resources Officer (MENRO), the Municipal Engineer, or the Municipal Planning and Development Officer (MPDO). These units would be staffed by officers from the local government, DA, and DENR.

49. **Role of NGOs and people's organizations at the local level.** A number of non-governmental organizations (NGOs) and people's organizations (POs) would have key roles in implementing various activities within their areas of expertise. For example, NGOs could implement NRM-related activities and POs could implement agriculture-related activities.

Financial management arrangements

50. The project's financial management functions shall be mainstreamed and thus shall be performed by the existing financial management services at DENR and DA. Quarterly Interim Financial Reports (IFR) shall be prepared by both DENR and DA 45 days after the end of the quarter. DENR's Foreign Assisted and Special Projects Office (FASPO) and DA's Special

Projects Coordination and Management Assistance Division (SPCMAD) shall review all financial reports and withdrawal applications (WA) prior to submission to the Bank. The detailed financial management arrangements, including the funds flow, are outlined in Annex 7. DENR and DA shall each maintain a Designated Account. Funds will flow from the World Bank to the Bureau of the Treasury, Department of Finance. The funds shall then be released/deposited to the Designated Accounts in DENR and DA, as applicable, upon issuance by the Department of Budget and Management (DBM) of the Notice of Cash Allocation (NCA). Upon recommendation from FASPO, funds shall be transferred to DENR regional offices or to line agencies/others (including NGOs/Pos), which will carry out specific project activities as indicated in the work and financial plan. DA will likewise transfer funds to PAGASA and regions/local governments upon recommendation by SPCMAD.

C. Monitoring and evaluation of outcomes/results

51. Responsibility for M&E will rest with the Policy and Planning Service Office (PPSO) of DENR, in collaboration with FASPO and the agencies with direct implementation responsibilities. An M&E specialist will be recruited to strengthen this function in the PPSO and to support the executing agencies, many of which do not have sufficient expertise in monitoring and evaluation. As detailed in the results monitoring framework (Annex 3), data will flow from these agencies to PPSO and FASPO, where they will be analyzed and reported. Progress reports on the project will be prepared by the PPSO and FASPO and be reviewed by the PSC. These reports will also be reviewed as part of the World Bank's supervision of the project. To evaluate aspects of progress under the protected area subcomponent, the World Wildlife Fund's Management Effectiveness Tool for Protected Areas (METT) will be used, with the METT results for 2010 being part of the project's baseline and M&E.

52. The results monitoring framework, presented in a matrix, provides details of the various data sources and frequency of reporting, and identifies parties responsible for monitoring the performance of the project on a component-by-component, activity-by-activity basis. The framework includes sufficient frequency of monitoring to enable feedback of evaluation results. One of the first activities will be a baseline survey of the awareness and knowledge of climate change among proposed project beneficiaries, and their use (or not) of adaptation technologies. This survey will also measure the use and exchange of scientific climate information by the institutions that would use the information to be provided by PAGASA. Based on the findings and recommendations of periodic evaluations and the formal mid-term review, the project design or implementation arrangements may be adjusted, as needed, to ensure achievement of the targeted outcomes. .

53. CCA creates new challenges for the identification and measurement of suitable M&E indicators. For example, the uncertainty surrounding climate change impacts and the long-term nature of some effects can make the assessment of impacts difficult. This project is designed to demonstrate how to reduce vulnerability to extreme events, which means that accurate evaluation of the results depends on whether these events occur within the project's life.

D. Sustainability and replicability

54. There are a number of complementary high-level initiatives underway, particularly aimed at mainstreaming CCA in national policy and planning processes, which should increase the

sustainability of project outcomes. These include revision of the Medium-Term Development Plan to include CCA, which is a critical first step in setting the stage to integrate CCA into sector planning, including through activities under Component 1 of this project. The projects listed in Section IIIA, "Partnership and Coordination Arrangements," all aim at strengthening the enabling environment for managing climate risks, which should provide the longer-term institutional context for continuing many of the project activities. The recent establishment of a Climate Change Office within DENR, for example, will lend strong support to the project and other CCA initiatives. In addition, the Philippines' Second National Communication to the UNFCC, currently being drafted, is expected to provide the main inputs for formulating a national climate change strategy.

55. Several other key factors integral to the project design will contribute to its sustainability and replicability. First, the project will implement practical demonstrations of CCA interventions. This approach will allow for the piloting of several different types of innovative solutions to climate change-related problems, the most effective of which will be selected for replication.

56. Another key element of the project's sustainability is the focus on local actions, since local communities are most susceptible to climate change impacts and are most motivated to improve their resilience to these impacts. By building capacity at the local level, and by implementing demonstrating projects within local communities and through local governments, it is expected that there will be strong uptake of the methodologies promoted by the project and that the activities will be sustained once local communities clearly experience benefits.

57. In addition, the project's use of existing implementation and coordination mechanisms at the national, regional, and local levels will help to ensure that its approaches are mainstreamed into decisionmaking processes and instruments for planning, budgeting, programming, and land use. Since the project will pilot climate-proofing of Bank-funded projects implemented by DA and DENR, it will also help to establish Bank mechanisms and protocols for CCA in all future Bank projects.

58. Finally, the project is committed to capturing and disseminating results, so that lessons learned will be readily available to other practitioners. The dedicated knowledge and learning activity under Component 1 will include the creation of a publicly accessible database and a project website, as well as workshops, seminars, and conferences to share critical knowledge with key decisionmakers, community members, and other stakeholders. These activities will encourage replication and help to ensure the sustainability of project results.

E. Critical risks and possible controversial aspects

59. Overall project risks will be moderate, as shown in the table below.

Risk	Risk Mitigation Measures	Risk Rating
To project development objective		

Failure or delay in establishing the policy and institutional framework for adaptation, leading to difficulties in implementing demonstration measures on the ground.	Activities are well underway to mainstream adaptation at the national level and strengthen the institutional framework through the complementary projects listed in para. 42. The project also includes capacity building for CCC, to ensure that it is well-equipped to perform its functions, including project oversight.	L
The national and local leadership may not own or mainstream the piloted CCA initiatives and tools.	The project will use existing implementation and decisionmaking mechanisms to help ensure replication and mainstreaming. Moreover, the enactment of the Climate Change Act of 2009, placing the President at head of the CCC, and the increasing incidence of disasters due to extreme weather events, will ensure that CCA continues to be a priority in the national and local development agenda across administrations.	M
Weaknesses in DENR's capability to effectively manage the program.	DENR's role will be mainly overall coordination; monitoring and implementation will be done through MOAs with the relevant departments and local governments.	M
Failure by the linked ongoing projects to scale up activities supported under this initiative.	The linkage of climate change activities with two ongoing projects ENRMP and PIDP not only leverages co-funding, but encourages scaling up of demonstration activities. Consultations were held during preparation with the relevant government agencies and officials of both projects, and as the IBRD loans represent the counterpart, there are no additional immediate fiscal constraints, which should also foster a quick uptake of activities.	M
To component results		
Institutional considerations: inter/intra institutional dynamics		
Lack of ownership of the expected results at the departmental and local government levels, given the large number of involved agencies.	The project emphasizes implementation of project activities by the departments that already have a mandate for CCA, and by local governments that have an interest in obtaining good results.	M
Inadequate capacity to implement key features of the project.	The DA and some local governments already have experience implementing ongoing Bank and other externally funded projects. Any weaknesses in existing capacity would be addressed through targeted technical assistance and training, especially in procurement and financial management.	M
Weak internal controls/weak or lack of internal audit function in government units.	The Bank is addressing this issue through its Grant for Strengthening the Internal Audit (IA), with the Philippine Anti-Graft Commission as its implementing agency. A Generic Internal Audit Manual (GIAM) aligned with international standards has been developed through the IDF grant. AusAid on the other hand, supported the development of the National Guidelines on Internal Control System	S

	(NGICS). Harmonization of GIAM and NGICS is currently being supported by AusAid through the Philippines – Australia Partnership for Economic Governance Reform (PEGR).	
Overall risk rating		M

Risk ratings: L = low; M = moderate; S = substantial.

F. Grant conditions and covenants

60. The following are the conditions of Grant effectiveness:

(a) The recipient has finalized and adopted the Operations Manual satisfactory to the Bank and containing a section on Financial Management to be used by DENR, DA, and PAGASA for the overall implementation of the project.[16]

(b) DENR and DA shall submit a time-bound action plan satisfactory to the Bank to resolve the 2008 audit findings of the Commission on Audit (COA).

(c) The recipient has established a Project Steering Committee in a manner acceptable to the Bank.

61. Dated Covenants and conditions applicable to project implementation are:

(g) The Recipient shall maintain or cause to maintain a financial management system in accordance with consistently applied accounting standards acceptable to the Bank, in a manner adequate to reflect the operations of, resources, and expenditures related to the Project.

(h) The Recipient shall prepare and furnish to the Bank, not later than 60 days after the end of each calendar quarter, interim financial reports for the Project covering the quarter in form and substance satisfactory to the Bank.

(i) The Recipient shall have its Financial Statements for the Project audited which shall cover the period of one fiscal year. This shall be furnished to the Bank not later than six months after the end of such period.

(j) The Project shall be reviewed by the Internal Audit Service (IAS) of DENR and DA, as applicable, at the end of each calendar semester starting December 31, 2010, and furnish a report to DENR and DA Management and the Bank within 90 days at the end of each semester.

(k) For the duration of the Project, within twelve months from issuance of subsequent external audit reports, complete implementation of recommendations, if any, arising from such subsequent external audits, all in a manner satisfactory to the Bank.

(l) By December 30, 2012, a mid-term review of the project's performance and achievements would be undertaken and the findings of the study discussed with the Bank.

[16] LGUs will follow the Operations Manuals already developed for ENRMP and PIDP for local level activities.

IV. APPRAISAL SUMMARY

A. Economic and financial analysis

62. While GEF-supported projects do not have to be justified through a full economic analysis, there are also many complexities in undertaking an economic evaluation of climate change adaptation projects, not least of which is the information required from climate models. For GEF, climate change adaptation projects require an Additional Cost Analysis, and this is presented in Annex 15. During project implementation, assessment of the economic impact and cost-benefit analyses would be part of the selection criteria for proposed adaptation measures. Models which take account of future climate impact would be analyzed to show the benefits from implementing adaptation measures and the possible economic losses that could occur if such actions were not taken. An overview of the approach to be used to undertake these assessments is presented in Annex 9.

B. Technical

63. The design of the project has incorporated available information on risks and vulnerabilities. For example, the Manila Observatory has developed a preliminary series of risk maps and rankings to streamline the identification of climate and geophysical hotspots in the country, and these have been used in identifying the targeted project areas. Data analysis will be fine tuned during project implementation, through the use of downscaled climate models, to help in the selection and design of appropriate adaptation measures. The project design—a combination of bottom-up (demand-driven) and top-down (technical experts') inputs—reflects both international experience in CCA and lessons learned from many years of development activities in the Philippines. The design also incorporates two key principles: (a) none of the activities is stand alone; all are part of a fully integrated package closely linked with other activities; and (b) a strong enabling environment for CCA needs to be established before on-the-ground measures can be effectively implemented; hence the project's linkage to the other donor-supported programs aimed at mainstreaming CCA into national development processes. The interrelationships of the components are an essential feature of the project design. The mainstreaming activities in Component 1 will require information on climate risks provided under Component 3, in order to apply a climate lens to sector plans and in the design and use of the screening tool. Similarly, the interventions under Component 2 cannot be designed without the data from Component 3.

64. The interventions will be simple and in line with the "no regrets" principle. For example, given the flooding from the recent typhoons, hazard risk maps will be integrated into land use planning. Further, some infrastructure damaged by the flooding, such as irrigation systems, will be rebuilt to withstand future extreme events. The potential impact of climate change notwithstanding, NRM interventions are urgent given the threats nationwide to ecosystem integrity.

C. Fiduciary

65. Based on the recently completed financial assessment, the financial management (FM) systems in DENR and DA need to be improved in the areas of fund management, inventory management and control, reconciliation of asset physical existence against recorded accountabilities, reconciliation of general and subsidiary ledgers, accounts payable and accounts receivable management, and the internal audit function, among others. The Bank's previous experience with DENR on compliance with audit report requirements has been moderately satisfactory, due to some delays in audit report submission. The DA's compliance with audit report submission requirements has been satisfactory in the ongoing MRDP-2; however, it was moderately unsatisfactory in the recently closed project DFIMDP due to various financial management issues, including delays in the submission of financial monitoring and audit reports.

66. In view of the FM assessment results, the proposed measures to address these deficiencies (see details in Annex 7) are expected to reduce the risk to a manageable level. In compliance with Bank requirements, the project will prepare quarterly Interim Financial Reports and will disburse through Designated Accounts to be maintained at DENR and DA.

D. Procurement

67. Procurement for the proposed project will be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits," dated May 2004 and revised October 2006; "Guidelines: Selection and Employment of Consultants by World Bank Borrowers," dated May 2004 and revised October 2006; and the provisions stipulated in the Legal Agreement. While the new Philippine Procurement Law (RA 9184) is in reasonable harmony with the Guidelines at the non-competitive bidding (NCB) level, the Procurement Schedule of the Grant Agreement will include an annex detailing procedures under the Procurement Law that are not acceptable to the Bank. Other than that, NCB procurement will be carried out in accordance with the Law. The various items under different expenditure categories for the first 18 months are described below and summarized in the attached Procurement Plan (Annex 8). For each contract to be financed by the Grant, the Plan indicates the different procurement methods, estimated costs, prior review requirements, and timeframe that are have been agreed between the recipient and the Bank task team. The Procurement Plan will be a rolling plan that will be updated at least annually or as required to reflect actual project implementation needs and improvements in the institutional capacity of the implementing units.

E. Social

68. A social assessment carried out during preparation analyzed the project's potential impacts on the social and economic circumstances of households and communities in the demonstration areas. The assessment found that overall, the project is expected to improve income streams and equitable distribution of opportunities among farmers, fishers, indigenous peoples, women, landless tenants, informal upland settlers, out-of-work youth, and other vulnerable groups. Activities 2.2 and 2.4 under Component 2 are particularly focused on the project's social dimensions (see Annex 10 for more details).

69. The project will be guided by principles of participation, transparency, accountability, and inclusive governance. Should there be adverse impacts the host projects' (PIDP and ENRMP) Indigenous Peoples Policy Frameworks shall also be used to aver these impacts (if any

occurs) and more particularly, to ensure the IPs participation during project implementation and also maximize benefits they may get from the project

70. The participation of different stakeholders is a core aspect of the project. Stakeholders at all levels—heads of national government departments and technical staff; representatives of local governments, NGOs, academia, people's organizations, and other donor-funded CCA initiatives; as well as farmers and other beneficiaries at the grass-roots level—were consulted during project preparation. The consultations included (a) one-on-one and small group meetings to discuss targeted issues; (b) group meetings and focus group discussions at all levels; and (c) hosting of two stakeholder workshops, and participation by team members in several other relevant workshops and seminars. The project design benefited from the identification by beneficiaries of their areas of vulnerability to climate change, and their suggestions for strengthening their adaptive mechanisms. Broad participation is also expected to foster ownership of the project among the key agencies involved in implementation.

71. Appropriate institutional arrangements and mechanisms have been built into the project design to ensure ongoing participation of local communities during implementation. Communities in the pilot areas will be made aware of the issues and invited to take part in decisionmaking.

72. An integrated and participatory c*ommunication and awareness-raising strategy* will facilitate communication with and feedback from stakeholders during implementation. It will be based on the following key principles: (a) provision of timely information to all stakeholders; (b) promotion of dialogue among all stakeholders; (c) responsiveness to stakeholder concerns; and (d) resolution of conflicts using a win-win approach.

73. Accountability in the use of available resources and in the responsiveness to stakeholder concerns will be ensured through community-based and third-party monitoring. Each Local Council (LC) shall undertake the M&E work using participatory rapid appraisal tools and techniques to elicit active involvement and support of key stakeholders, not only in monitoring progress and performance of the project activities, but also in incorporating the results and lessons learned into their respective plans, policies, and functions. Moreover, an independent institution (academic or research organization, NGO, or independent consulting firm) will be engaged by the CCO to evaluate the implementation of the proposed activities in each selected pilot area. This external evaluation will involve household surveys and focus group discussions with selected representatives of beneficiary groups. All details pertaining to the social aspects of the project are described in more detail in Annex 10.

F. Environment

74. A detailed environmental assessment (EA) was conducted as part of project preparation. Through the EA process and the analysis of impacts, it was ascertained that the overall environmental benefits far outweigh the envisaged minor negative environmental impacts of the project, which can be readily mitigated through proper activity design and good housekeeping measures during construction. The expected environmental impacts relate to climate-proofing of irrigation systems originally constructed under PIDP (subcomponent 2.1), and the implementation of agro-forestry and alternative livelihoods as a climate risk management strategy (subcomponent 2.4). Possible impacts associated with construction or improvement of

irrigation systems include localized erosion resulting from cut-and-fill, and resultant sedimentation; modification of natural drainage ways; oil and grease spills; dust and noise pollution; and damage to vegetation through clearing.

75. The environment impacts of each irrigation system were originally assessed prior to appraisal of PIDP, through the preparation of Environmental Management Plans (EMPs) and Initial Environmental Examination (IEE) reports, which were reviewed and cleared by the Bank. This project provides supplemental environmental measures to address the impacts of additional activities not included in the earlier assessments. The supplemental measures also include mitigating impacts from alternative livelihood activities.

G. Governance and corruption

76. Despite the strong presence of civil society in the country, an open media, and highly capable individuals working in public administration, perceptions of corruption remain an important barrier to good governance. Governance and corruption issues are not expected to be significant for this project; nevertheless, the potential for these risks will be mitigated through: (a) *civil society participation* to increase transparency—an integrated and participatory communication and awareness-raising strategy will be prepared to facilitate greater civil society participation and reduce the tolerance for corruption (see paragraph 72); (b) *public sector management* to enhance transparency and accountability in procurement and financial management; the mitigation measures proposed in Annex 7 will reduce risks to a negligible level, including by strengthening internal controls in DENR and DA; (c) more frequent *procurement reviews*, based on data being monitored by the Government Procurement Policy Board's Technical Support Office (GPPB-TSO); and (d) *community-based approaches* to decrease incentives for corruption; and community-based and third party monitoring (see paragraph 73).

Safeguard Policies Triggered	Yes	No
Environmental Assessment (OP/BP 4.01)	**X**	
Natural Habitats (OP/BP 4.04)		**X**
Forests (OP/BP 4.36)		**X**
Pest Management (OP 4.09)	**X**	

H. Safeguard policies

Physical Cultural Resources (OP/BP 4.11)		**X**
Indigenous Peoples (OP/BP 4.10)	**X**	
Involuntary Resettlement (OP/BP 4.12)		**X**
Safety of Dams (OP/BP 4.37)		**X**
Projects on International Waterways (OP/BP 7.50)		**X**
Projects in Disputed Areas (OP/BP 7.60)		**X**

Annex 1: Country and Sector Background

PHILIPPINES: CLIMATE CHANGE ADAPTATION

Background

1. The Philippines is highly vulnerable to current climate risks and future climate change. On average, 20 tropical cyclones enter the Philippine area of responsibility each year, with 8 or 9 crossing at least part of the country. The country is also periodically affected by the El Niño-Southern Oscillation (ENSO) phenomenon, which causes prolonged wet and dry seasons and in 1982-1983, 1992-1993, and 1997-1998 contributed to a contraction in GDP and a dramatic drop in agricultural production (Philippines Initial National Communication, 1999). From 1990 to 2003, the estimated damage due to ENSO-related drought was more than US$370 million. Several measures to minimize the effects of ENSO are now being implemented, including an early warning and forecasting system that enables government agencies to mobilize resources and farmers to plan ahead.

2. Recent studies have shown that water resources, natural ecosystems and local communities are highly vulnerable to climate change. The amount of seasonal water supply from watersheds could change, leading to flooding in the rainy season and water deficit in the dry season (Cruz et al., 2006). In addition, forest ecosystems could change, leading to the loss of current forest types (Lasco et al., 2007). The poorest of the poor are expected to bear the brunt of these impacts (Pulhin et al., 2007).

3. The Government is increasingly recognizing that the most effective way to reduce climate change impacts on the poor is by incorporating CCA measures into sustainable sector development and poverty reduction strategies.

KEY CLIMATE RISKS IN TARGET SECTORS

4. **Agriculture Sector.** The Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (Easterling et al., 2007) warns of the adverse impacts of climate change, including accelerating cycles of flood and drought, on food security. Smallholder and subsistence farmers at low latitudes are especially vulnerable and could suffer complex, localized impacts. The Initial Philippines National Communication indicated that changes in temperature and rainfall patterns could have detrimental effects on agricultural crop production, although some simulations for rice production during the dry and transition seasons show that a warmer climate might allow a third rice crop in relatively cooler regions.

5. A recent study evaluating the effect of climate change (i.e., temperature increase and doubling of atmospheric carbon dioxide concentration) on rice and corn productivity in selected locations in the Philippines (Lansigan and Salvacion, 2006) found that both rice and corn yields tend to decrease, and that rice is more sensitive than corn. Most recently, a World Bank and the ProVention Consortium[17] assessment of climate risk for rice production showed that the total average annual loss (AAL) in rice production due to drought, flood, and typhoons is about 98,029 MT, resulting in a loss of PHP 1,084 million. Drought losses account for 12 percent of the total AAL; floods account for 77 percent, and typhoons for 11 percent.

[17] Mainstreaming Climate Risk Management in the Agricultural Sector in the Philippines (in Draft), World Bank

NATURAL RESOURCES SECTOR

6. The IPCC Fourth Assessment Report warned that forests are highly vulnerable to climate change in the long term, and more immediately if climate-induced disturbances (drought, insects, fire) cross critical thresholds (Fischlin et al., 2007). It also warned that climate change is expected to have severe impact on global biodiversity (Fischlin et al., 2007). Approximately 20 to 30 percent of the plant and animal species assessed so far are at increasingly high risk of extinction if global mean temperatures rise 2 to 3°C above preindustrial levels. Current conservation practices are not prepared to adapt to this level of change, and effective adaptation responses are likely to be costly to implement.

Table 1.1 Adaptation Options for Forest Lands in the Pantabangan-Carranglan Watershed ***Source:*** **Lasco et al. (2007).**

Land Use	Adaptation Options
Tree plantation	Adjust silvicultural treatment schedules Plant species that can adjust to variable climate situations Proper timing of tree planting projects or activities Implement proper silvicultural practices Construction of fire lines Controlled burning Supplemental watering
Natural forest	Safety net measures for farmers by local and national government Cancellation of logging permits (total logging ban)
Grasslands	Reforestation- adaptation of contour farming combined with organic farming Promote community-based forest management Increase fund for forest protection, regeneration from national government Increase linkages of local governments, central agencies, and NGOs Introduction of drainage measures Controlled burning Introduction of drought resistant species Intensive information dissemination campaign among stakeholders

7. Philippine forests form one of the world's biodiversity "hot spots" (McNeely et al., 1990), with as many as 13,000 species of plants, comprising 5 percent of the world's total plant species (DENR/UNEP 1997). Only one study has investigated the potential impacts of climate change on the country's forest ecosystems (Lasco et al., 2007). It found that increases in precipitation (25, 50, and 100 percent) and temperatures would result in a re-distribution of forest types, with dry forests vulnerable to being totally lost even with a 25% increase in precipitation. On the positive side, there will be a significant increase in rain forest types as precipitation increases. The study also assessed potential adaptation strategies, including mainstreaming climate change in forest policies and programs. At present, the country has no active CCA initiative for forest ecosystems, although although forestry is included in the current formulation of

the Philippine Strategy for Climate Change Adaptation Project assisted by GTZ. The Initial National Communication also contains adaptation options for watershed management that partly apply to forests.

8. At the community level, farmers in watershed areas have been adapting to weather variability and extremes. The range of adaptation options identified by participants could provide solid building blocks for future climate change adaptation. Table 1.1 shows the recommended adaptation options of farmers and various stakeholders to climate variability and extremes.

9. **Infrastructure Sector.** There is limited information on the impacts of climate change on irrigation facilities and other infrastructure. Among the potential adaptation measures identified in the Initial National Communication are construction of new infrastructure and modification of existing physical infrastructure.

LEGAL BASIS FOR CLIMATE CHANGE ADAPTATION

10. A wide range of national laws, decrees, and similar instruments have implications for CCA in the Philippines. Some are well-constructed for promoting effective CCA, while others have features that are counter-adaptive. A summary of key laws, highlighting features that may support or conflict with the mainstreaming of CCA, is presented in Table 1.2.

Table 1.2: Implications for CCA Mainstreaming and Climate Change Risk Reduction of Selected Legal Instruments and Other Initiatives in the Philippines

Title of Instrument and Date	Includes explicit mention of CC?	Positive Aspects Supportive of CCA Mainstreaming and CC Risk Reduction	Negative Aspects that Could Hinder CCA Mainstreaming and Increase CC Risks
The Revised Forestry Code of the Philippines—Presidential Decree 705 (1975)	no	Institutes integrated system for forest land classification and management; promotes sustainable forestry through selective logging and logging bans	Incomplete classification of lands leads to de facto open access and depletion of resources; marginalized poor communities lack clear tenure rights, leading to increased vulnerability; limited integration of Forest Land Use Plans within CLUPs
The Water Code of the Philippines—Presidential Decree No.1067 (1976)	no	Indirectly, provisions of the decree address the possible impacts of climate variability on water resources and on the communities dependent on these resources	--
Philippine Environment Code—Presidential Decree No. 1152 (1977)	no	Establishes specific environmental and natural resource management policies and prescribes environment quality standards; promotes environmental protection which indirectly enhances resilience to climate risks	No explicit linkages to climate change
Establishment of the Environmental Impact	no	Pursues comprehensive and integrated environmental protection supporting socioeconomic development; the Environmental	Currently, climate change is not explicitly included in the guidelines

Title of Instrument and Date	Includes explicit mention of CC?	Positive Aspects Supportive of CCA Mainstreaming and CC Risk Reduction	Negative Aspects that Could Hinder CCA Mainstreaming and Increase CC Risks
Statement System of the Philippines—Presidential Decree No. 1586 (1978)		Impact Assessment (EIA) system provides a good platform for the inclusion of assessing climate risks to projects	
Comprehensive Agrarian Reform Program (CARP)—Republic Act No. 6657 (1988)	no	Has as its principal intent equitable land ownership for poor rural farmers	Due to lax enforcement, law is subject to manipulations that can perpetuate poverty and vulnerability of rural communities
Local Government Code—Republic Act No. 7160 (1991)	no	Transfers authority and responsibility for many natural resources- and environmental management-related functions from the central to the local government level, giving greater control to local stakeholders; CLUPs to be prepared for basis of future land use planning	LGUs inadequately prepared to assume and execute many devolved functions
National Integrated Protected Areas System (NIPAS) Act—Republic Act No. 7586 (1992)	no	Incorporates measures for protecting biodiversity and natural resources that are inherently complementary to and beneficial for CCA; fosters greater role for NGOs to advocate for community interests	Involvement of poorly prepared or unqualified NGOs can jeopardize effective participation of communities in management of protected areas, thus increasing their vulnerability
The Community-Based Forest Management (CBFM) Program—Executive Order No. 263 (1995)	no	Intent is to promote ecological stability and provide tenure and livelihood opportunities to local communities	Conflicts exist between the CBFM Program and other DENR programs that aim to promote commoditization of forest products, which could lead to Increasing vulnerability for forest-dependent communities
Philippine Mining—Republic Act No. 7942 (1995)	no	Prevents mining in protected areas	Biased towards commercial and industrial exploitation of mineral resources, which removes control of resources from local communities
Indigenous People's Rights Act—Republic Act No. 8371 (1997)	no	IPs and ICCs are given responsibility to maintain ecological balance and rights to maintain and sustainably use resources on their ancestral lands; affords protection against deforestation and other adverse impacts through outside influences	--
Agriculture and Fisheries Modernization Act (AFMA)—Republic Act No. 8435 (1997)	yes	Includes provisions for addressing climate change and ensuring environmental quality	Promotes intensification of agriculture and aquaculture which can reduce sustainability and put pressure on coastal habitats and watersheds, leading to increased flooding, erosion and other impacts
Biofuels Act—	**yes**	Mitigates climate change through use	Poses possible threats to food security

Title of Instrument and Date	Includes explicit mention of CC?	Positive Aspects Supportive of CCA Mainstreaming and CC Risk Reduction	Negative Aspects that Could Hinder CCA Mainstreaming and Increase CC Risks
Republic Act No. 9367 (2006)		of alternative fuels that can reduce GHG emissions; provides mechanism for improved energy security; increases rural employment	by diverting food crops for other uses and converting agricultural lands for other uses; introducing non-native species for fuel production threatens ecological integrity and biodiversity
Creation of the Presidential Task Force on Climate Change (PTFCC)—Administrative Order No. 171 (2007)	**yes**	Establishes the PTFCCC, tasked to address the issue of climate change, mitigate its impact, and lead in adapting to these impacts; intended to enhance institutions' capacity nationwide to address climate change	Possible ambiguities and redundancies in respective mandates of IACCC and PTFCC

DEVELOPMENT POLICIES AND LAND

11. Policymakers are focused primarily on responding to the destruction brought about by climate hazards, and have paid insufficient attention to CCA as a high priority issue in the context of national development plans. This section reviews five key policy and planning instruments, and evaluates to what extent CCA is taken into account.

12. **Medium Term Philippine Development Plan (MTPDP) 2004-2010.** The Medium Term Philippine Development Plan (MTPDP) 2004-2010, prepared by the National Economic Development Authority (NEDA), is the primary document guiding national development programs in the country. The plan is cross sectoral and comprehensive, but mentions climate change only once, in the context of the Clean Development Mechanism (CDM).

13. The MTPDP includes no measures specifically intended to strengthen the agriculture sector's hazard resilience. The plan does not explicitly recognize the linkage of most large-scale disasters to climatic events, but does implicitly cover CCA by addressing related disaster risk management issues. This has resulted in some steps being taken on the ground to reduce vulnerability of the sector to natural hazards. These activities need to be more explicitly recognized in the policy framework, gaps in risk reduction activities need to be analyzed, and further steps identified to enhance the resilience of the sector. Disaster risk reduction and management could provide a tangible entry point for mainstreaming CCA into national planning processes.

14. **Progress on Millennium Development Goals.** The Philippines' 2003 status report on progress toward the Millennium Development Goals (MDGs) contains no reference to CCA, or even to climate variability and extremes. It does note that the trend of increasing CO_2 emissions will be addressed by the Clean Air Act.

15. **Philippines Agenda 21.** The Philippines Agenda 21 (PA 21), completed in September 1996, serves as the country's blueprint for sustainable development. Climate change is mentioned only once in the document, in the context of freshwater ecosystems. While 153

sustainable development indicators (SDI) are identified in PA 21, covering economic, socio-cultural, ecological/environmental, and political/institutional factors, only four are related to climate change mitigation: emission of greenhouse gases (GHGs), emission of nitrogen oxides, emission of sulfur oxides, and per capita consumption of fossil fuel for motor vehicle transport. None of the SDIs addresses climate change adaptation.

16. **National Framework for Physical Planning.** The National Framework for Physical Planning (NFPP) 2001-2030 provides the analytical parameters for the planned allocation, use, and management of the country's land and other physical resources at the national and sub-national levels. The document makes no mention of climate change or climate-related impacts on land resources, land uses, infrastructure, or related assets. The plan does call attention to the need to strengthen disaster assessment and planning, risk management, and emergency preparedness.

17. **Middle-Term Public Investment Program (MTPIP).** The 2005-2010 Medium Term Public Investment Program (MTPIP) translates the policies and goals of the MTPDP into a priority set of programs and projects (PAPs), and provides the functional linkage between the MTPDP and budgetary appropriation. Some sections of the MTPIP have clear relevance to CCA initiatives that might be carried out under the project, especially with reference to agribusiness and environment and natural resources. In the agribusiness section, crop diversification as a possible strategy to boost production is mentioned briefly, but the emphasis on increasing the area of land under cultivation and intensifying production is potentially counter-adaptive, since it could result in further loss of natural forest lands or other adverse impacts in watershed areas. On the other hand, net improvements in food security that might result from such activities would help to reduce vulnerability to climate change impacts.

18. In the environment and natural resource sectors, the MTPIP focuses on the provision of water, which accounts for 58 percent of the sector budget allocation. The remaining 42 percent of the budget is allocated to the reforestation of critical watersheds, land management interventions, mitigation of natural disasters, reduction of air pollution, and improvement in waste management. The MTPIP proposes to mitigate natural disaster impacts primarily through the rehabilitation and construction of flood control structures. Such structures would need to be designed, built, and operated without creating other unintended adverse impacts, such as smothering coral reefs with high-silt floodwaters.

19. **Geo-hazard Mapping.** The Government has begun to implement geohazard mapping to identify those areas most vulnerable to landslides. So far, mapping of vulnerable areas in 27 provinces along the eastern seaboard has been completed.

CONFORMITY WITH INTERNATIONAL AGREEMENTS

20. United Nations Framework Convention on Climate Change. The Philippines signed the UNFCCC in June 1992 and ratified it in August 1994. The country's Initial National Communication to the UNFCCC includes a detailed section on adaptation, with a sector-by-sector description of existing conditions, key issues, and areas of vulnerability.

21. The Philippines signed the Kyoto Protocol in April 1998 and ratified it in November 2003 in order to participate in the Clean Development Mechanism (CDM). These initiatives, which include both mitigation and adaptation benefits, are a critical part of the Philippines'

overall strategy for addressing climate change. The conservation of natural forests contributes to global capacity for sequestration of atmospheric carbon (a mitigation benefit), while helping to maintain natural biodiversity and watershed functionality, which can improve resiliency (an adaptation benefit) in the face of climate change impacts

22. Institutions. The institutional landscape for climate change adaptation in the Philippines is in flux given the recent signing of the Climate Change Act of 2009 (R.A.9729) into law on October 23, 2009. A Cabinet-level Climate Change Commission, chaired by the President, is now mandated to coordinate, monitor and evaluate the programs and action plans of the government relating to climate change. To support the Commission, a Climate Change Office and a Panel of Technical Experts were, likewise, created by the Act to provide technical secretariat and expert assistance, respectively. Once formally established, these bodies will supersede existing inter-agency/ coordination bodies, such as the Presidential Task Force on Climate Change (PTFCC) as well as the Inter-Agency Committee on Climate Change (IACCC). The Implementing Rules and Regulations (IRR) for the Act, which will also provide the details on the ensuing institutional arrangements, have, however, just been crafted and signed by the President in January 2010. Moreover, this IRR was reportedly desoigned in a generic manner in order not to tie the hands of the Commission too tightly in determining its own structures and composition. Thus, until the Commission meets to provide more details to the organizational arrangements, the existing inter-agency coordination mechanisms, particularly the IACCC which operates on a technical level, will most likely continue to provide technical oversight and coordination in the.

23. **Inter-Agency Committee on Climate Change (IACCC).** The IACCC, established in December 1991, is co-chaired by the Secretaries of the Department of Environment and Natural Resources (DENR) and the Department of Science and Technology (DOST), and includes representatives from about 15 government agencies and NGOs. It is mandated to coordinate various climate change-related activities, propose climate change policies, and prepare the Philippine positions to the UNFCCC negotiations. The Secretariat is based at the Environment Management Bureau (EMB) of DENR. With the creation of the Climate Change Commission, it is expected that the IACCC will be formally dissolved once the IRR for the Commission have been created.

24. **Advisory Council on Climate Change.** The Advisory Council on Climate Change (ACCC), established in September 2007, is chaired by the Secretary of DENR and includes scientists and policy specialists recognized as experts on climate change. It has not been very active, and once the overall institutional arrangements for CCA become clearer, it seems unlikely that this body will have a major role to play.

25. **Presidential Task Force on Climate Change (PTFCC).** The Presidential Task Force on Climate Change (PTFCC), created in February 2007, includes the Secretary of Energy as Chair; the Secretary of Environment and Natural Resources as Vice-Chair, and the Secretaries of Science and Technology, Agriculture, and Interior and Local Government, with two represen*tatives from the private sector/civil society. Th*e PTFCC will conduct rapid assessments of the impact of climate change on water, agriculture, coastal areas, and terrestrial and marine ecosystems. It will also ensure strict compliance with air emission standards and act with urgency to combat deforestation and environmental degradation, as well as apprehend violators. The task force has drafted a Philippine Climate Change Response Action Plan (PCCRAP). A

recent Executive Order calls for the reorganization of the PTFCC, with the President as the Chair and 18 sectoral task groups, each with its own ambitious performance targets. Support for these task groups has not yet been budgeted.

26. **Presidential Advisor on Climate Change (PACC)** The former Secretary of the Environment and Natural Resources was appointed as presidential adviser on global warming and climate change in August 2008 and is now Chairman of the CCC. His priorities include more grassroots participation in reducing emissions of carbon dioxide and other greenhouse gases (GHGs); and climate risk insurance to reduce the financial risks and impacts of climate change.

27. **Philippine Climate Change Commission.** The Philippine Climate Change Commission, created by Republic Act 9729 (Climate change Act of 2009) would: (i) monitor implementation of the Philippine Clean Air Act of 1999; (ii) recommend legislation, policies, programs, and budgets on global warming or climate change mitigation and adaptation; (iii) disseminate climate change information to the public; (iv) represent the Government in all international and regional meetings and conventions concerning climate change; and (v) review international environmental treaties on climate change and make recommendations for ratification and compliance. The commission would be under the administrative supervision of DENR, and act in coordination with DOST for technical cooperation. It would have 11 voting and 9 non-voting members representing "the social, environmental, cultural, and economic diversity of the State."

28. **DENR's Climate Change Office.** In asserting its role as the lead agency for climate change-related matters, DENR recently created a Climate Change Office (CCO) within the agency to effectively handle the responsibilities of the IACCC Secretariat. The GTZ-funded ACCBio project is assisting with its operationalization, and would provide full-time technical consultants to work alongside government counterparts in setting up and staffing the office.

29. **Philippine Council for Sustainable Development.** The Philippine Council for Sustainable Development (PCSD), created in September 1992, provides the principal structure for inter-agency coordination and policy formulation with respect to the major international environmental conventions under the United Nations Conference on Environment and Development (UNCED—the "Rio Summit"). However, responsibility for inter-agency coordination on climate change-related issues, and especially, representation to the UNFCCC, is assigned to the IACCC.

30. **National Disaster Coordinating Council.** The National Disaster Coordinating Council (NDCC), established in 1978, is the highest-level coordinator of disaster management activities in the country, and allocates resources to support the local DCCs. Its mandated responsibilities have important implications for CCA, since in the Philippines, most disasters are the result of weather- and climate-related phenomena.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies

PHILIPPINES: CLIMATE CHANGE ADAPTATION

Project Title	Funding Agency	Implementing Agency	Objectives	Inclusion of Climate Change
1. Criteria And Indicators for Sustainable Management of Natural tropical Forests	ITTO, World Bank, JBIC	DENR	• Assess sustainable forest management in the Philippines through the use of criteria and measurable indicators. • Help forest managers by implementing techniques that are in line with sustainable forest management.	• The project did not include climate- related indicators. • Sustainable forest management could incorporate global impacts such a GHG emissions during forest cutting.
2. Metro Manila Air Quality Improvement Sector Development Program (1999-2007)	ADB	DENR	• Mitigate air pollution both from mobile and stationary sources • Improve fuel quality. • Strengthen ambient air quality monitoring evaluation and reporting. • Reduce vehicle emissions.	• This project did not touch on climate risks. However, it directly addressed climate change mitigation by controlling emissions.
3. Proposed Loan and Administration of Grant from GEF: Integrated Coastal Resources Management Project (2007-2013)	ADB, GEF	DENR	• Enhance coastal resources and increase income of local people while sustainably managing resources.	• The project identified climate change as one of the possible risks to the project, without further elaboration.
4. National Program Support to Environment and Natural Resources Management (2007-2012)	GEF	DENR	• Assist DENR to efficiently allocate its limited budget in implementing projects related to sustainable natural resources management • Attain enhanced ecosystem benefits	• This project considers both mitigation and adaptation. • Part of the livelihoods option was carbon finance. • Rationalization of ENR plans and policies on biodiversity conservation included climate change considerations. • Geohazard assessment includes climate risk information. • Use of indigenous species in reforestation (rainforestation) to minimize climate change impacts. • Establishment of agroforestry farms to adapt existing vegetation to climate change.
5. Forestry Sector Project (1993-2003)	JBIC	DENR	• Address the root causes of forest degradation; i.e., poverty and insecurity of land tenure	• Climate change was not directly addressed. • Site development plans revised in response to ENSO event. • Establishment of multi-purpose dams adjacent to critical watersheds to counteract effects of natural disasters.

6. Cordillera Highland Agricultural Resource Management Project (1997-2003)	ADB and IFAD	DA	• Promote sustainable resource management practices. • Protect the environment and mitigate adverse developmental impacts. • Strengthen existing institutions. • Involve project beneficiaries in planning and implementation. • Improve beneficiaries' access to formal and non-formal credit.	• Project had no explicit climate change considerations, although various components could enhance farmers' resilience to climate risk.
7. Mindanao Rural Development Program-Adaptable Program Loan 1 (2000-2012)	World Bank	DA	• Increase the productivity and income of small and landless farmers. • Enhance income and food security in targeted rural communities.	• This project has no explicit climate risk considerations, although the net effect will be more resilient farmers.
8. Central Cordillera Agricultural Program (1996-2000)	European Union (EU)	DA	• Promote self-sustaining improvements in living conditions in the Central Cordillera.	• The project did not explicitly considered climate change in its design and outputs. • Project interventions could enhance the resilience of small farmers to climate risks.
9. Caraballo And Southern Cordillera Rural Development Program (1992-1996)	European Union (EU)	DA	• Sustainably increase incomes in target communities.	• The project did not explicitly considered climate change in its design and outputs. • Project interventions could enhance the resilience of small farmers to climate risks.
10. Catanduanes Agricultural Support Program (1994-2003)	European Union (EU)	DA	• Alleviate poverty in Catanduanes • Assist rural communities in sustainably increasing output from farming and fishing.	• The project did not consider climate change in its design and implementation. • Project interventions could enhance the resilience of small farmers to climate risks through the development of small business and agricultural enterprises.
11. Mindanao Rural Development Program 2 (1999-2012)	World Bank	DA	• Implementation and refinement of institutional, financial and community-based planning and management systems. • Strengthening of decentralized agricultural service system through capacity building of agencies/organizations and participating communities on agri-fisheries	• The project does not explicitly include any climate change considerations. • Project outputs could lead to more resilient farming and fishing communities through increased farm income and more robust institutions.

			development planning, implementation, M&E, and O&M, • Take into consideration communities' priorities for sustainable rural development and agricultural productivity. • Institutionalize community-based mechanisms for restoring and conserving both coastal and terrestrial ecosystems.	
12. Diversified Farm Income and Market Development Project (2004-2009)	World Bank	DA	• Reverse the declining competitiveness of Philippine commodities in domestic and foreign markets. • Greater diversification and profitability of farm enterprises. • Increased flow of private investments into market-oriented enterprises.	• The project document did not explicitly recognize climate change as a factor. • Project components could lead to more adaptive farming communities through increased income and livelihoods.
13. Water Resources Development Project (1996-2005)	DANIDA and World Bank	NIA	• Develop an appropriate policy and institutional framework to improve water resources planning. • Initiate an integrated and comprehensive approach to watershed management to sustain water resources. • Improve irrigation services by accelerating management turn-over of irrigation systems to water users. • Improve environment in irrigated areas.	• The project did not explicitly included climate change or climate risk. • Project components for soil erosion control could be adaptive to climate change.
14. Malitubog – Maridagao Irrigation Project (1990-2003)	JBIC	NIA	• Increase agricultural production while attaining self-sufficiency in rice and balanced regional development. • Intensive drive to enhance living standards of farmers in the area.	• Climate change was not considered in the project. • Changing rainfall pattern could affect the sustainability of irrigation infrastructure.
15. Participatory Irrigation Development Project (2009-2013)	World Bank	NIA	• Improve O&M and routine rehabilitation of irrigation systems. • Improve the operational efficiency of existing NISs, and narrow the gap between the service areas and the irrigated areas.	• The project does not consider climate change in irrigation development.
16. Hazard Mapping and	AusAID/UNDP	UNDP (in partnership with	• Address the problem of disaster risk management at	• Project developed in response to the threat of La Niña as

Assessment for Effective Community-based Disaster Risk Management (READY Project)		PHIVOLCS, PAGASA, MGB, NAMRIA, OCD, LGUs and SMART Telecommunications)	the local level through community-based early warning systems in the most vulnerable municipalities. • Hazard mapping funded by UNDP for 27 provinces and by Government for 16 provinces (43 out of 81 provinces earmarked for mapping).	manifested in the St. Bernard landslide of February 2006.

Annex 3: Results Framework and Monitoring

PHILIPPINES: CLIMATE CHANGE ADAPTATION
Results Framework

Project Development Objective (PDO)	Project Outcome Indicators	Use of Project Outcome Information
The project is a pilot the development objective of which is to develop and demonstrate approaches that would enable targeted communities to adapt to the potential impacts of climate variability and change.	• 20% of households surveyed in the targeted areas adopt coping strategies, new technologies or improved farming practices to better cope with climate variability and extremes • Among stakeholders surveyed in the targeted areas 35% have participated in or are knowledgeable of activities demonstrated by the project to reduce vulnerability or improve adaptive capacity	Assess the success of the project in demonstrating cost effective adaptation measures to farmers, in increasing awareness on adaptation and on providing guidance on the potential for scaling up these activities
Intermediate Outcomes	**Intermediate Outcome Indicators**	**Use of Intermediate Outcome Monitoring**
Strengthening the enabling environment for climate change adaptation (Component 1)	• Approval of adaptation-friendly policies in the agriculture and/or ENRM sectors (such as revised rural infrastructure guidelines, revised extension guidelines, modified training curricula). • DENR and DA regularly use climate screening tool to assess projects in the annual work plan (incorporated in project assessment criteria). • Best-practice manual developed by the project being utilized in the design of other adaptation interventions in the country	Assess whether DENR and DA management and staff have adopted CCA as part of their regular business and if not redirect the project approach Guide CCA mainstreaming agenda in other sectors
Adaptation measures in agriculture and natural resources management are demonstrated (Component 2)	• Irrigation infrastructure in two PIDP irrigation systems is redesigned/rehabilitated to incorporate CCA parameters recommended by PhilCCAP. • Evaluation report issued on the outcome of the weather-index based insurance pilot • At least 25% of farmers surveyed in the targeted areas who receive extension advice apply an element of the new extension packages developed with project support (for example, use weather data and/or climate projections in making farming decisions, use of on-farm rainwater harvesting or other soil moisture management technologies). • Revised management plans for PPLS and SIPLAS incorporates Climate change adaptation activities and are being implemented.	Assess the appropriateness of the on the ground adaptation measures piloted by the project and the potential for replication and scale up
Enhanced provision of scientific information for climate risk management (Component 3)	• Completion of documented designs for apposite information delivery to users in Components 1 and 2 sub-projects • Documented evidence that the information has been delivered and used throughout all subcomponents of Components 1 and 2 in appropriate ways to add value consistent with the original documented designs or modified according to updated designs	Ensure that services in Component 3 required to implement Components 1 and 2 are being provided
Project effectively coordinated, with activities	• Project Steering Committee reviews project progress on a six	Ensure that project implementation arrangements

regularly monitored and necessary adjustments made to ensure achievement of PDO (Component 4)	monthly basis as reported in the minutes	are working satisfactorily

Arrangements for Results Monitoring

		Data Collection and Reporting							
Project Outcome Indicators	**Baseline**	**YR1 2010**	**YR2 2011**	**YR3 2012**	**YR4 2013**	**YR5 2014**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Per cent of households surveyed in the targeted areas adopt coping strategies, new technologies or improved farming practices to better cope with climate variability and extremes increased (attributed to the project's influence)	<1%			10%		20%	Twice	Sample survey	DENR's PPSO
Per cent of stakeholders surveyed in the targeted areas who have participated in or are knowledgeable of activities demonstrated by the project to reduce vulnerability or improve adaptive capacity	0			15%		35%	Twice	Sample survey	DENR's PPSO
Intermediate Outcome Indicators									
Component 1: Approval of adaptation-friendly policies in the agriculture and/or ENRM sectors (such as revised rural infrastructure guidelines, revised extension guidelines, modified training curricula).	Policies do not take account of climate change adaptation	Training and awareness raising activities for DENR and DA staff	Approval of an adaptation friendly policy in DENR or DA	Approval of an adaptation friendly policy in DENR or DA	Approval of an adaptation friendly policy in DENR or DA		Annual	DENR, DA Reports Progress Reports, MTR, ICR	DENR, DA

		Data Collection and Reporting							
Project Outcome Indicators	**Baseline**	**YR1 2010**	**YR2 2011**	**YR3 2012**	**YR4 2013**	**YR5 2014**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
DENR and DA regularly use climate screening tool to assess projects in the annual work plan (incorporated in project assessment criteria).	No screening tool available	Training in use of tool completed	Tool applied to 20% of projects	Tool applied to 30% of projects	Tool applied to 50% of projects	Tool applied to 50% of projects	Annual	DENR, DA Reports Progress Reports, MTR, ICR	DENR's PPSO and DA CC Focal Point
Best-practice manual developed by the project being utilized in the design of other adaptation interventions in the country	No manual available		Manual distributed and evidence documented of best practices developed by the project being used elsewhere.	Manual distributed and evidence documented of best practices developed by the project being used elsewhere.	Manual distributed and evidence documented of best practices developed by the project being used elsewhere.	Manual distributed and evidence documented of best practices developed by the project being used elsewhere.	Annual	DENR, DA Reports Progress Reports, MTR, ICR	DENR's PPSO
Component 2: Irrigation infrastructure in PIDP target area is redesigned/rehabilitated to incorporate CCA parameters recommended by PhilCCAP.	None	**Studies conducted**	PIDP subcomponent redesigned/ rehabilitated in one irrigation system	Expansion to other areas	Expansion to other areas	4 irrigation systems redesigned based on project recommendations	Twice	NIA progress report	NIA
Evaluation report issued on the outcome of the weather-index based insurance pilot	None	Pilot Implemented	Pilot Implemented	Draft report issued	Final report issued		Annual	DA Reports	DA

		Data Collection and Reporting							
Project Outcome Indicators	**Baseline**	**YR1 2010**	**YR2 2011**	**YR3 2012**	**YR4 2013**	**YR5 2014**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
At least 25% of farmers surveyed in the targeted areas who receive extension advice apply an element of the new extension packages developed with project support (for example, use weather data and/or climate projections in making farming decisions, use of on-farm rainwater harvesting or other soil moisture management technologies)	none			10%		25%	Twice	Sample survey	ATI
Climate change adaptation activities of the revised management plan for SIPLAS implemented.	None	V&A activities	Plan reformulated	Plan Implementation	Plan Implementation	Plan Implementation	annual	DENR/PAWB Reports	DENR/PAWB
Component 3: Completion of documented designs for apposite information delivery to users in Components 1 and 2 sub-projects	None	Climate models and other analytical work documented	Climate models and other analytical work documented	Climate models and other analytical work documented	Climate models and other analytical work documented	Climate models and other analytical work documented	Annual	PAGASA progress reports	PAGASA

		Data Collection and Reporting							
Project Outcome Indicators	**Baseline**	**YR1 2010**	**YR2 2011**	**YR3 2012**	**YR4 2013**	**YR5 2014**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Documented evidence that the information has been delivered and used throughout all subcomponents of Components 1 and 2 in appropriate ways to add value consistent with the original documented designs or modified according to updated designs	None	CR recommendations incorporated into subcomponent design	CR recommendations incorporated into subcomponent design	CR recommendations incorporated into subcomponent design	CR recommendations incorporated into subcomponent design	CR recommendations incorporated into subcomponent design	Annual	DENR, DA reports	DENR PPSO
Component 4: Project M&E framework operational and indicators regularly updated	None	Baseline survey results documented	Indicators updated	Indicators updated and MTR prepared	Indicators updated	Indicators updated and ICR prepared	Annual	Project progress reports	DENR's PPSO

Annex 4: Detailed project description

PHILIPPINES: CLIMATE CHANGE ADAPTATION

1. The project will comprise of four main components: a) Component 1: Strengthening the Enabling Environment for Climate Change Adaptation; b) Component 2: Demonstrating Climate Change Adaptation Strategies in the Agriculture and Natural Resources Sectors; c) Component 3: Enhanced Provision of Scientific Information for Climate Risk Management; and d) Component 4: Project Coordination. The components and their subcomponents are described below.

<u>Component 1</u>: Strengthening the Enabling Environment for Climate Change Adaptation
GEF – US$590,000; Co-financing – US$120,000

2 The objective of this component is to strengthen the capabilities of government agencies that play a role in CCA activities in the natural resources and agriculture sectors. The targeted entities are (i) the Climate Change Commission (CCC), which is responsible for developing the overall Climate Change Adaptation Framework, and for guiding its implementation across government institutions; (ii) the climate change office of the DENR; and (iii) technical bureaus of the DA. The component is implemented by DENR's climate change office. The work is to be carried out by consultants who bring international experience on policy design and institutional coordination for CCA.

3. The specific activities supported by this component include: (a) strengthening CCC's role in adaptation policy oversight; (b) implementation of the overall climate change adaptation framework; (c) the establishment of an integrated decisionmaking framework for adaptation and sector investments; (d) development and implementation of a project screening tool; (e) capacity building and training to focal agencies and their efforts to coordinate with other government entities and the private sector; (f) facilitation by CCC of the provisioning, interpretation, access and dissemination of climate risks information for use within the project; (g) knowledge management and assimilation of best practices; and (h) awareness raising and communication in the project's pilot areas (component 2).

4. **Adaptation Policy Oversight.** A core responsibility of the newly created CCC is to provide CCA policy oversight. This requires the CCC office and staff to be built-up and the fostering of working and communication relationships with Government Departments, namely the DENR and DA. A combination of international and national consultants are to support CCC policy oversight role by providing international experience in policy design and institutional coordination, legal advice and review of pertinent laws and regulations, synthesis and review of ongoing government and donor-funded activities, as well as training. This may also include participation in international and regional capacity building events organized by UNFCCC.

5. **Implementation of CCA Framework.** At project appraisal a national climate change framework was being finalized and the project would support its implementation. This entails communication of its strategic objectives to relevant government entities at both the national and local government level; consultations with stakeholders; provision of policy advice; review of budgetary processes; and coordination across sectors and departments.

6. **Integrated Decisionmaking Framework.** Adaptation to climate change requires decisionmaking processes that cut across sectors to assure that new investments in one sector don't create vulnerabilities in other sectors (e.g. the downstream effects of hydraulic infrastructure) and are robust under future climate (e.g. water allocation in a more variable seasonal climate). It is the collective exploration of investment, development and climate scenarios that leads to more resilient infrastructure, land use plans, and agricultural management practices. The project supports the establishment of an integrated decisionmaking framework that convenes experts from technical departments and sectors, climate and vulnerability experts, and decisionmaking to explore and ultimately decide on robust decisions that are appropriate given the expected impacts of climate change. This would be accomplished through the organizations of a sustained stakeholder process with regular workshop, establishment of networks and interagency coordination, as well as modeling and scenario analysis.

7. **Project Screening Tool.** Part of the establishment of a decisionmaking framework is the development of a project screening methodology. In this methodology the pertinent climate risks and existing vulnerabilities are assessed to indicate the kind of actions that would be necessary to reduce climate risks. This methodology would develop a catalogue of criteria and data to assess the climate-sensitivity of a project, and is supported by basic software and database development to support such decision. The work at the national level performed by DENR, DA and the CCC complements the activities supported by other projects at the local level (e.g. ACCBio supported by GTZ).

8. **Capacity Building and Training.** CCA is a new challenge for many countries around the world, and the Philippines is no exception. There is thus a need to build capacity and provide training not only to those departments and sectors that are most directly affected, such as DENR and DA, but also other departments whose policies may need to be adjusted in response to climate change.

9. **Climate Services.** Informed decision and planning for CCA requires reliable, timely, transparent, and readily available information. This not only includes the collection and dissemination hydrometeorological data, as done by PAGASA, but also the development of a broader climate service that supports the appropriate use and interpretation of such information by decision-makers, and the tailoring to specific problems. With the assistance of consultant experts, the DENR CCO and CCC would establish processes through the provisioning of climate and weather risk data (component 3) is enhanced by the necessary customization and interpretation for the activities undertaken in the this project and eventually beyond.

Knowledge Management. This activity is designed as an iterative and ongoing process. It will document and disseminate good practices and lessons learnt during project implementation. It both complements and, over time, help to refine the "screening criteria" described above, while providing guidelines, options and a source of training material to help internalize/ institutionalize provision for climate change adaptation as a standard way of doing business. Activities would include (i) Drawing together relevant experience already available from the Philippines and elsewhere in a "CCA Manual of Best Practices and Experiences" which would be updated in the last year of the project; (ii) Review the project's activities, including interviews with beneficiaries and stakeholders and document lessons learned; (iii) periodically present the findings at

multi-stakeholder workshops, to include key decision-makers responsible for mainstreaming CCA in their specific sectors. Study tours to project sites may be organized in conjunction with the workshops; and (iv) disseminate outcomes of the research and workshop proceedings to proponents of other CCA projects.

P**ublic Awareness and Communication**: Given the limited knowledge of climate change adaptation among policy makers, government officials and the public in general, a major public awareness effort would be undertaken by this project. Various media and forums would be utilized to improve awareness of these issues at national and sub-national levels. An important element of this strategy will be the provision of specific information about the project.

Component 2: Demonstrating Climate Change Adaptation Strategies in the Agriculture and Natural Resources Sectors GEF – US$2.44 million ~~US$59.91 million;~~ Co-financing – US$49.91 million; ~~US$2.44 million~~

10. Under this component, support will be provided to a number of demonstrative interventions that reflect the anticipated climate risk, adaptation deficit and farmer's priorities. The objective of this core component is to help poor rural communities that are most at risk from climate change impacts to adapt to the effects of climate change. The focus will be on piloting adaptive mechanisms that can be integrated into agricultural and natural resources management practices; and on protecting the infrastructure that supports activities in these sectors (especially irrigation) by climate-proofing ongoing investment activities. The design and implementation of the component will be closely linked with Component 3 where the information on climate risks would be provided. This component will finance the following activities:

11. **Subcomponent 2.1: Climate-Proofing Agricultural Infrastructure.** Existing climate variability as seen in the high incidence of extreme weather events, including typhoons and super-typhoons, has increased the risk of seasonal damage to basic agriculture infrastructure such as irrigation systems. It is anticipated that future climate change could exacerbate these risks and also contribute to longer periods of drought which would also pose additional challenges for the existing infrastructure. Typically, engineering designs for existing irrigation systems use standardized design criteria without regard to changing climatic conditions, including the increased duration and intensity of rainfall seen in recent years. As a result, existing and proposed investments could be highly vulnerable to the effects of climate change. This activity will involve the development of recommendations to strengthen the climate resilience of vulnerable irrigation infrastructure developed under the Bank-supported PIDP. To minimize the exposure of these investments to serious climate risks, the project will provide guidance on the redesign, retro-fitting, or operational modification of irrigation structures being developed under the PIDP. Some of this infrastructure was damaged during the typhoons in 2009. NIA has agreed to implement the recommendations to be made by the design teams supported by PhilCCAP. Climate risks also affect SWIPs, farm to market roads and trading posts. Recommendations developed under the project could also be applied to these (see paragraph 15 below).

12. The activity will be undertaken in the following sites: (i) Region 6, province of Iloilo, in municipalities within the influence area of Jalaur River Irrigation System: Dumangas, Downstream municipality, Pototan, Midstream municipality; and Janiauy, Upstream municipality; and (ii) Region 2, province of Cagayan, within influence areas of the Pinacanawan River Irrigation Systems: Municipalities of Penablanca and Tuguegarao East. These areas have experienced significant impacts from typhoons and super-typhoons in recent years, which in most cases are preceded by prolonged rainfall, causing seasonal damage to irrigation and other agricultural structures such as farm to market roads and trading posts. Typhoon Frank, affected large areas of Iloilo province in Panay Island in July, 2008 and Typhoon Emong making landfall in Region 2 in Northern Luzon in the first quarter of 2009, were early typhoons that created widespread damage

13. The project would focus on assessing the climate risks to the irrigation systems and identifying the parameters which could be used by the PIDP's technical team to redesign appropriate structures, reassess irrigation water management practices and implement the measures. A small team of consultants comprising an engineer, hydrologist and an agricultural economist would undertake the analysis, with assistance from the climate change specialists employed under Component 3. The work would integrate climatological, hydrological, and economic analyses through the development of appropriate models and studies. The objective would be to identify the most cost-effective adaptation measures for each area based on various climate change scenarios reflecting for example, different surface and ground water regimes and under varying conditions of flood and drought, as predicted by the climate models. The approach used would build on the experience of the China Mainstreaming Climate Change Adaptation Project. The following is the type of information to be provided under Component 3 which would be used in the assessment of climate risks (similarly for the other activities):

(a) Downscaled information (20 x 20 km resolution) on climate to reveal spatial variation in anticipated climate changes and correspondingly the nature of desirable interventions;

(b) Information on rainfall patterns and amounts (including forecasting agro-meteorological data)

(c) Maps of spatial domains where different water management regimes are needed.

14. In this way, the analyses would assess the climate change impact and identify the appropriate adaptation options in each area which would be selected based on technical and cost-benefit criteria. Consultations with community members and LGUs will also be conducted to validate the social acceptability of recommended adaptation measures. The actual redesign of infrastructure, implementation of works and adaptations in on-farm water management would be carried out by the PIDP implementation teams.

15. The methodology developed under this subcomponent could also be applied to farm to market roads, Small Water Impounding Systems (SWIPS), value chain infrastructure and trading posts. Provision has been made in the project budget to extend the work to these activities pending assessment of progress made at mid-term.

16. **Subcomponent 2.2: Enhancing delivery and effectiveness of extension services for farm-level climate risk management**. This subcomponent will focus on enhancing DA's

ability to provide extension services to farmers by elaborating more localized climate and weather information services. It would also support the introduction of new approaches in crop management, including precision agriculture[18]. It would also support the introduction of new approaches to support farmers in managing their crops in an environment characterized by increased climatic risks. The following activities will characterize the implementation of this subcomponent: (i) a gap analysis and investment plan to strengthen DA's climate information services for local early warning systems and for adaptation to climate variability; (ii) development, field testing, and dissemination of innovative climate information and services to improve the array of support tools provided by extension services to famers affected by climate change; and (iii) capacity building for staff and farmers in these approaches and development of effective and efficient modalities for delivering innovative extension services to farmers, with a particular focus on small farms.

17. The rationale of a gap analysis of climate information services is based on the appreciation of the limitations inherent to the weather and climate forecast generated by PAGASA, which is not well suited for more location-specific applications. In this regard, this activity would complement the proposals discussed under component 3 of the project. The Bureau of Soil and Water Management (BSWM) is currently planning to expand its stock of agro-meteorological stations in highly vulnerable areas, which it would use as a tool for climate change adaptation and in the development of local early warning systems. At this stage the BSWM would need to develop a plan for future investments in the sector in order to optimize the area coverage. The gap assessment would support that planning and would produce recommendations on amount, specification and location of the equipment that would be required to cover the gap, and which could be supported by PhilCCAP. A key aspect that the assessment would address is the coordination of the meteorological data generated by the BSWM with that provided by the PAGASA.

18. The second activity will be organized into three steps. The first step will focus on the development and field testing of **decision support systems** for farmers based on appropriate weather and climate information and other relevant agro-ecological information. This will require a combination of research, experimentation, and field trials. This activity will be led by the Agricultural Training Institute (ATI). In carrying out this activity cognizance should be taken of similar ongoing work, for example, the University of the Philippines Los Banos College of Public Affairs, which is presently undertaking similar activities in Regions 4a, 4b and 5, together and the International Rice Research Institute, which has successfully piloted this approach in other contexts. These results could then be further developed to support applications of cutting-edge techniques (such as precision agriculture, which the BSWM intends to introduce to the Philippines on a systematic scale). The research would focus on how the information generated under Component 3 and DA's internal weather forecast services can be combined with soil quality information provided by remote sensing systems (satellite or aerial) and other spatial information in order to produce recommendations to farmers on the timing and type of input applications. The agronomic models generated would take into account the variability of fields in terms of soil conditions and of other conditioning factors and the uncertainties related to weather

[18] Precision agriculture is defined as a set of technologies that combines sensors, information systems, enhanced machinery and informed management to optimize production by accounting for variability and uncertainties within agricultural systems.

and climate-related variables. Additional innovative agronomic practices would focus on better soil and water management measures to adjust to different water availability regimes and/or more widespread use of drought-tolerant species being developed by IRRI.

19. As a second step, the activity will support **capacity building** of extension workers and farmers in selected areas in regions 2 and 6. The crops that would be targeted at this stage would include rice, corn, and/or sugarcane in areas where small farms are prevalent. All of these crops are important from the point of view of poverty reduction, including sugarcane in view of the implementation of the Comprehensive Agrarian Reform Law in sugarcane areas[19]. The goal of this subcomponent therefore, would be to enhance current extension methodology and packages by adding the dimension of climate change adaptation and by strengthening the information base. Capacity building will take place by relying on programs and activities currently adopted by the DA, such as the Farmers Field Schools, or through the Climate Field Schools that would be supported under component 3 of the project.

20. The third step of this activity consists in developing forms and mechanisms for the **dissemination to the farm level** of the information produced by the agronomic models developed as a result of the previous two steps. The key challenge in the Philippines consists in the great number of producers that would need to be reached given the small size of farms and, consequently, the high transaction costs that could potentially be faced. The project will study how existing and on-going programs within the DA, such as the Farmers Registry that is currently being implemented by the DA, can be used to facilitate the relay of the agronomic information to farmers, mainly through the use of digital cadastral maps that would allow to match spatially-generated information with the names and contacts of the interested farmers[20].

21. Subcomponent 2.3: Pilot-Test the Feasibility of Weather Index-Based Crop Insurance. This subcomponent supports innovative approaches to expand the penetration to weather risk management instruments available to farmers. At present there is limited adoption of long-standing multiperil crop insurance offered by the Philippines Crop Insurance Corporation (PCIC), and limited agricultural insurance provision by private sector insurers. The high

[19] As a result of the implementation of the Comprehensive Agrarian Reform Program (CARP), large sugarcane farms are being redistributed to their workers, resulting in the emergence of a large number of small sugarcane farms. These farms have been recognized as the most vulnerable in terms of their ability to maintain yields at the pre land reform level. The importance of ensuring that appropriate extension and other support services are delivered to these farms is recognized as one of the challenges in the current implementation of the CARP.

[20] The FR is being implemented as a separate activity within the DA in order to improve the cost-effectiveness of the interventions carried out by the DA and is envisioned to collect information on key farm-level socio characteristics and spatial location through geo-referenced data. While improving DA's capacity to target its support services at the farm level, the FR will also open the possibility of linking farm and farmers characteristics to cadastral, soil, and geo-hazard maps. Combined with weather information, this set of spatial and socio-economic information will allow the DA to enhance the precision of its extension services to the community and, in time, down to the farm level. Thus, innovations on how to deliver weather related information to the farm level through current methodologies and packages will be further enhanced with research on how ICT, land information systems and agricultural technologies can be combined in order to increase farm productivity and sustainability under climate change.

administrative costs associated with operating a national insurance program are a key reason why there is no higher coverage of farmers at this time.

22. Weather-index insurance has been piloted in several countries –these experiences provide valuable guidance on how to design, implement, and market alternative and complementary insurance products in the agricultural sector. A main challenge lies in how successful pilot schemes can be scaled-up. Involvement of the private sector has been shown to be a key element in developing, marketing and scaling-up alternative risk management instruments, such as weather-based insurance. There are advantages being experienced in the application of weather index-based insurance in India and other countries. Some of these are: low administrative costs, low moral hazard, low adverse selection and lesser premium cost for named-perils/single peril. In addition, lower premiums may result as farmers will have the option to choose only the type of weather insurance that will suit their farm area/investment so that they can save on premium cost for perils within their control (e.g., pests and diseases) or which are not applicable to their farms (e.g., drought peril for farmers located in irrigated areas). If the premium cost for weather index-based insurance products will prove to be much less than the premium cost for multi-peril insurance products, this could encourage greater participation by farmers, reduce the subsidy costs to the government and eventually lead to withdrawal of the subsidy.

23. This component thus seeks to attract private sector players to help develop and adapt weather index based insurance to the Philippine context in the pilot sites in region 2 and 6. Pilot testing will be undertaken in rainfed areas near the watershed and within the potential service area of irrigation system. Private sector players may participate through a competitive grants program to demonstrate the feasibility of weather-index based insurance in the agricultural sector with particular focus key commodities (corn and maize) and pertinent weather perils in the Philippines. Particular focus will be on the scalability of the piloted approaches, e.g. through the use of privately operated weather observations (on cell phone towers) to augment the coverage provided by the PAGASA's and DA's observational network, the use of satellite data (as recently tested for Typhoon risk in the Philippines), and the development of a country-wide farmers registry (component 2.2).

24. The specific activities supported by this component include (1) the technical design of an appropriate index, which requires close collaboration of insurance, agronomic, and climate experts; (2) development of a weather information stream to support operational monitoring (cross-reference with technical assistance proposals under Component 3); (3) training and capacity building for farmers and local financial institutions; (4) development of insurance contracts and the organizational structure to operate a micro-insurance program; and (5) monitoring and evaluation of pilot activities. The activities are closely coordinated with PCIC, the insurance regulators, technical agencies in DA, and PAGASA. The pilot would be implemented by the DA through a competitive grant scheme.

The subcomponent will have two distinct phases. During phase 1 the focus is on the technical and operational design of the insurance. This requires (a) parties actively involved, through formal staff time provision, in supporting the project's operational team; and (b) a larger number of parties for which consultation will be required from time to time, and those parties with potential future linkages and interests in the insurance program. The formation of a steering

committee with wide representation of interested organizations and operational team, which will report to the steering committee, are important arrangement for phase 1. The operational team should be small and consist of dynamic individuals, in order to ensure that the project activities can be pursued effectively and not become overly burdened by number and size of agencies involved. Key organizations for Phase 1 may include PCIC, PAGASA, Universities (Isabella State University, West Visayas State University, UPLB) and IRRI/PhilRice among others. Many other organizations will need to be consulted and involved from time to time, including the private insurance sector, the insurance regulator, and technical agencies as identified by the PhilCCAP1 consultant.

Phase 2 inputs are directed towards education, extension, demand testing, monitoring and evaluation. In phase 2, over a two year period and covering two crop seasons per year, the insurance product(s) designed in Phase 1 will be implemented. The composition of the operational team may be adjusted in Phase 2, to reflect the activities. Key activities include the marketing and underwriting of the insurance product, and claims settlement. During this period, some modifications to product may be undertaken, as a result of pilot experience and feedback. At the end of the phase, decisions will be taken concerning the three year test period, to determine next steps for expansion of the area, and requirements for scaling up. Further, it is expected that the introduction of the pilot test will focus attention on the existing PCIC products, and the potential opportunities for market segmentation between PCIC and the private sector. A private sector NGO is already experimenting on typhoon index insurance with a private insurer, and is expected to expand into other products. Parallel initiatives in market development should be encouraged by the pilot, and technical collaboration to further the market should be enhanced by maximizing the collaborative efforts in technical matters in the proposed pilot phases.
Weather index-based insurance will not have universal application to all crops and perils, and it is intended that this pilot activity will also lead to a review of the existing products of PCIC, to the "crowding-in" of the private insurance and NGO sector, and to diversification of agricultural insurance market providers and product range. The potential market for crop insurance is considerable. Rice is planted/harvested in irrigated and rainfed areas (2.92 million and 1.36 million hectares respectively in 2007). Of this area, only 61,727 hectares (irrigated) were covered by insurance. Corn is planted in the rainfed areas (2.65 million hectares in 2007: white 1.47 million and yellow – 1.18 million). Of this area, only 7,416 hectares were covered by insurance. For high-value crops, the total area planted/harvested in 2007 reached 5,719,000 hectares, these crops are planted/harvested largely in rainfed areas. Of this area, only 893 hectares were covered by insurance.

25. **Subcomponent 2.4: Strengthening Climate Change Resilience through Improved Management of Protected Areas.** This activity will help improve the resilience of human populations and ecosystems in the Peñablanca Protected Landscape and Seascape (PPLS) in Northern Luzon and the Siargao Islands Protected Landscape and Seascape (SIPLAS) Protected Area in Surigao del Norte, Mindanao, both of which are suffering from deforestation, loss of vegetation, soil loss, diminished biodiversity values, and degradation of watersheds, mangroves, and coral reefs. With the increasing temperature trends that are predicted by climate change models, further impacts may be expected in these areas. Higher temperatures will enable the expansion of agricultural activities into more remote higher-elevation watershed areas, possibly affecting the PPLS. Such expansion could result in further land clearing, destruction of pristine

forested areas, and loss of habitat and biodiversity. In Siargao, increases in sea surface temperature, accelerated sea level rise and ocean acidification are climate threats that may affect the protected areas´ (PA) biodiversity adversely. These would affect overall resiliency, water balance, and ecological functioning within the protected area, making local residents in these areas still more vulnerable to the impacts of climate change.

To date, no organized research has been conducted to determine the potential impacts of climate change upon the biodiversity resources in the Philippines. As part of the revision and updating of the existing Management Plans for PPLA and SIPLAS, which were formulated before climate change emerged as an issue of concern, a vulnerability study will be conducted to determine the following, relative to expected climate change trends: (i) changes in seasonality, spatial coverage, and population dynamics of key biodiversity due to such factors as rising temperature (e.g., resulting in spatial or temporal changes in pollination, fruiting, seed dispersal, territories, mating seasons, emergence from dormancy, etc.); (ii) changing vulnerability of selected endemic species to pests and diseases; (iii) increased occurrence of invasive species; and (iv) changes in the extent or quality of critical habitat (e.g., forested lands, wetlands, coral reefs), as a result of climate change.

26. An expected outcome of the study would be a set of recommendations for adaptive measures that could be utilized to preserve existing natural resources/biodiversity resources. For example, this might include such measures as: (i) assisted natural regeneration and enrichment planting to restore habitat; (ii) integrated pest management or use of biological controls to combat pests, diseases, or invasive species; (iii) watershed/coastal resource management and water conservation programs to preserve vulnerable water resources and coral reefs; or (iv) in situ or ex situ breeding programs to increase populations of threatened species. These recommendations will then be incorporated into the revised management plans.In both PAs there is a need to further strengthen monitoring and enforcement systems, and the projects will assist in strengthening and expanding participatory monitoring systems with local volunteers. Financing of more adequate patrol and monitoring equipment including a patrol boat (SIPLAS) will also be provided.

27. **Peñablanca Protected Landscape and Seascape.** Activities will involve upper watershed management and improved biodiversity conservation, to help resource users' transition to more sustainable livelihoods based on agro-forestry while strengthening the PAs role in conserving remaining biodiversity. These activities will complement ongoing initiatives such as the DENR Upland Development Program and a joint forest conservation project implemented in the PA by the private sector (Toyota Foundation), Conservation International and the DENR Region 2. It will contribute to increased resiliency of agriculture-based livelihoods and increased CCA of communities within and surrounding the PA. It will entail:

(a) conduct of a brief vulnerability assessment of PPLS to climate change. The assessment would include species vulnerability;

(b) the incorporation of inputs on climate information and predictions derived out of Component 3 ;

(c) formulation of an adaptation plan based on results of the vulnerability assessment and revise the PA management plan accordingly;

(d) assessment and improvement of the PAs existing M&E system to become a more effective feedback mechanism for adaptive PA management and biodiversity conservation;

(e) review of successes and failures of past initiatives involving agro-forestry in the PA and correction for weaknesses in implementing new initiatives;

(f) establishment of nurseries emphasizing use of indigenous species to provide stock material for the agro-forestry enterprises;

(g) conduct of trainings on climate information, watershed rehabilitation and protection, and on livelihood-related agro-forestry activities; and

(h) identification of revenue-generating measures including provision of marketing support for agro-forestry products to augment local incomes and sustainable financing options for the PAMB to support implementation of the PPLS management plan.

28. Siargao Islands Protected Landscape and Seascape. Facilitate revision of the Siargao Islands Protected Landscape and Seascape (SIPLAS) Management Plan in order to mainstream CCA considerations into the planning process for this small island ecosystem. Key features of a revised SIPLAS management plan would include:

(a) Detailed mapping indicating community-accepted strict protection zones and multiple use zones, and entry of zones into a GIS management database.

(b) Incorporation of a "ridge to reef" planning concept to:

i. harmonize other land use and coastal/marine resource use plans, e.g. CLUP, FLUP, watershed management plans, fishery development and municipality MPA plans, AFMA, and other ENR plans with the PA plan, using the enhanced PA management plan and revised management zones as the basis of the hierarchy for land use and resource uses in the island ecosystem;

ii. incorporate strategies to address foreshore area management, taking into account climate related risks in allowing further development in foreshore areas;

iii. conserve rare and threatened flora and fauna and determine allowable resource uses taking PA zones into account; and

iv. map out realistic strategies in addressing livelihood needs of local residents, especially those that may be displaced due to PA zoning or rise in sea-levels.

(c) Harmonization of local tourism activities with protected area conservation activities:

i. conduct a vulnerability assessment to determine tourism-related impacts caused by climate change;

ii. incorporate inputs on climate information and predictions derived out of Component 3; and

iii. identify CC adaptation plans to address tourism-related impacts of climate change.

(d) Identification of strategies and activities that have co-benefits for both mitigation and adaptation, such as beach forest and mangrove reforestation and establishment/expansion of municipal Marine Protected Areas (MPA) in appropriate areas using appropriate technologies and inputs:

i. establishment of a multi-species beach forest and mangrove nursery to produce climate-resilient propagation material;

ii. demonstration trials introducing best practices from other GEF-funded project on reseeding of invertebrate and fish species, and similar mechanisms to rehabilitate damaged reefs;

iii. training of stakeholders in effective mangrove and coral reef management;

iv. development of mangrove and coral reef-related ecotourism programs and promote sustainable harvesting of mangrove products;

v. conduct of awareness-raising and community organizing to promote strengthened monitoring and enforcement within the MPAs by local communities; and

vi. development of appropriate incentive and disincentive schemes for volunteer Bantay Dagat teams and local residents in managing the marine MPAs.

(e) Mechanisms for resolving user conflicts and disputes:

i. identify institutional gaps in efficient implementation of the SIPLAS management plan;

ii. identify weaknesses in the enforcement chain of implementing SIPLAS ENR laws, rules and regulations;

iii. formulate strategies, incentives/disincentives and appropriate ordinances in addressing institutional gaps and enforcement;

iv. increase the involvement of non-government stakeholders, particularly the private tourism sector, in decisionmaking, implementation, monitoring and enforcement process in implementing the management plan;

v. formulate an action and business development plan for implementation of the revised plan, including the identification of revenue-generating measures and sustainable financing options for the PAMB in implementing the plan; and

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(f) Pilot-implementation of the revised management plan: Implement activities identified for the first two years to demonstrate feasibility of the revised SIPLAS management plan, with a focus on CCA including beach forest and mangrove reforestation, establishment/expansion of municipal Marine Protected Areas (MPA), provision of incentives for volunteer Bantay Dagat teams, and capacity-

building for, and marketing of identified livelihood alternatives for climate change affected communities.

<u>Component 3:</u> Enhanced Provision of Scientific Information for Climate Risk Management
GEF – US$1.03 million; Co-financing – US$380,000

29. The objective of this component is to improve the access of end users, especially in the agriculture and natural resources sectors, to more reliable scientific information that would enable more rapid and accurate decisionmaking for climate risk management. More specifically, it would provide data support for the mainstreaming activities in Component 1 and the adaptation interventions to be carried out at the local level under Component 2, by improving mechanisms for data gathering, integration, dissemination and interpretation; and through general strengthening of the institutions having responsibilities in this area—including the Philippines Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA) and the Manila Observatory. Consultants will be engaged to advise on the detailed structures and the facilitation of Component 3 in relation to Components 1 and 2 and an expert international institute identified to ensure activities parallel the international state-of-the-art. The Consultants will be tasked with design that considers the sustainability of all activities and ensures legacy of PhilCCAP.

30. **Subcomponent 3.1: Strengthening the Provision of Climate Information to Guide the Design of Adaptation Actions.** This subcomponent will promote the preparation and use of climate risk information in the design of adaptation measures. It will involve the provision of weather and climate information needed to support the integration of climate risk into sector planning processes and for the specific requirements of each adaptation intervention in Component 2. The first step will be to review and agree with appropriate team members the data requirements of all actions under Components 1 and 2. Once done, a data provision plan will be prepared that covers requirements and schedule, delivery methodologies, success measures, plus any new facilities, including observing platforms, required. In the meantime work will begin to provide background climatological information appropriate to all aspects of this project; initial examination of requirements of Components 1 and 2 indicates a universal need for these data. Data to be generated will include: (a) historical time series; (b) downscaled forecasts and outlooks; and (c) downscaled climate scenarios. As it is unlikely that sufficient in situ data will be available for full calibration of any downscaling approach there will be the need to produce synthesized data series using whatever data may be available; all synthesized data series will be validated against in situ data wherever possible. All uncertainties in the climatological information will be documented fully. Appropriate forecasts will be used to build comparisons with indigenous knowledge projections within Component 2.2.

31. Three climate time scales will be used to support projects: (i) 30-year historical (to provide the recent climate background), (ii) forecasts and outlooks on all appropriate time scales, including seasonal out to at least six months (to support projects handling current climate variability); and (iii) climate projections as 30-year averages through the 21st Century, the latter based on applicable climate change scenarios (to support climate change preparatory projects). Downscaling of data series to finest reasonable resolution will be used as appropriate.

Climate/weather-related hazards to be considered include: heavy rainfall events and droughts, high and low temperatures, tropical cyclone tracks and associated weather, and El Niño-La Niña-related impacts.

32. PAGASA would be mainly responsible for the provision and analysis of climate data though climate and geophysical inputs would also be provided by the Manila Observatory and the University of the Philippines. Consultants would be hired to assess the data and capacity building needs (see also paragraphs 33, and 34) and how to strengthen PAGASA's access to climate data from local, satellite and other sources. They would also make recommendations on strengthening the processes of dissemination of data to end users and of obtaining feedback from these users. Support would also be provided within the limitations of the project budget or alternative funding obtained for upgrading regional/local equipment and facilities needed to improve in situ data collection, with priority to be given to Regions 2 and 6 in the first instance, to supply the data needs for the interventions in Component 2.

33. Hazard mapping in support of Component 1 and, in particular, Component 2 activities will be reviewed in terms of project priorities as part of the consultancy work mentioned in paragraph 21 and if undertaken will be coordinated through the Manila Observatory. In this case the work will build upon the Observatory's on-going efforts to facilitate the establishment of a Disaster Risk Consortium for the Bicol Region and will focus on Regions 2 and 6. A mapping requirements plan will be developed, that plan to include phenological aspects. Base mapping will be supplied by NAMRIA while other organisations, such as PAGASA, PhilVOLCS, MGB, EMB, etc, will contribute data either available already or produced under this project. The risk maps will be maintained through the project in terms of occurrences and of new data availability.

34. Specific activities under this subcomponent would include:

(a) Generation of weather/climate time series, synthetic as necessary but in situ-based whenever feasible, to support specific Component 2 interventions and the management actions of Component 1, developing a capability to produce equivalent series on a national basis; crop weather indices will be derived to support the insurance aspects of Component 2;

(b) Generation of forecasts, downscaled as required, to support specific Component 2 interventions and Component 1 management actions in terms of location and forecast range, developing a capability to produce equivalent forecasts on a national basis; development of verification facilities;

(c) Generation of downscaled climate scenarios to support specific Component 2 interventions and Component 1 management actions, developing a capability to produce equivalent scenarios on a national basis; and

(d) Generation of integrated risk maps, using community-based mapping as a tool, if agreed as sufficiently high priority. Local stakeholders will be trained in the use of standard technologies (e.g., GIS) to map and utilize data on hazards (H), exposure (E), and vulnerability (V).

(e) Workshops to integrate all activities through PhilCCAP.

35. **Subcomponent 3.2: Strengthen Institutional Capacity for Effective Climate Risk Management.** This will focus on two main activity areas: a) capacity building in the information providers; b) capacity building for intermediaries and end users of climate information.

36. PhilCCAP will provide support in building capacity within information producers to provide and distribute all climate information necessary to sustain Components 1 and 2 [this will include indices for weather crop insurance]. Capacity building requirements within PAGASA and other organizations (include the Regional Meteorological Training Centre) will be assessed within the consultancy (see Paragraphs 29 and 32); the consultancy will assess also, and offer recommendations, regarding any capacity building within PAGASA and elsewhere needed to provide improved communication of climate information, both technically and presentationally, within the country and internationally in terms of support needs from modelling centres, etc., and for approaches to obtaining improved feedback from users. Consideration will be given to training of data producers in appropriate insurance, agriculture, flood management, etc., approaches. As part of the training activity PAGASA and other data producers will contribute to the lessons learned and good practices activity in Component 1.

37. A second activity will be the capacity building of intermediaries and of end users in Components 1 and 2. Data providing organizations, such as PAGASA, will be encouraged to participate in the capacity building, to improve two-way communications and to receive feedback on evolving data and information requirements. It is proposed that under PhilCCAP, Component 2 capacity building will be established at two project sites (Region 2 and Region 6). The capacity building may be built on the Climate Field Schools already implemented for farmers in the Dumangas region of Panay (Region 6), but this approach will be reviewed against alternatives by the consultants and an appropriate approach determined.

38. The project would also develop improved communication facilities in risk information management, knowledge development, data sharing and dissemination, with linkages among NAMRIA, PAGASA, local government agencies, and farmers and fishermen including for the distribution of PhilCCAP information plus a facility to archive and distribute project information, and will contribute directly towards the knowledge management activity in Component 1. As part of this activity climate change focal points within all appropriate departments will be trained.

39. Weather and climate observations necessary to support Component 2 activities will be enhanced through the installation of new platforms in the project areas.

<u>Component 4</u>: Project Coordination GEF – US$410,000; Co-financing – US$40,000

40. This component will support the project coordination functions, mainly through the FASPO within DENR. A Project Coordinator will be appointed for the first two years of implementation and will oversee project management functions. The role of DENR's CCO in project implementation will be largely to coordinate project activities in Component 1. FASPO's role will be largely limited to coordination as project activities will be implemented by agencies with the relevant mandates. This component will also include monitoring and evaluation (M&E). Other activities will include adaptive management (adjusting operations based on built-in feedback mechanisms); fulfilling reporting requirements; and organizing relevant seminars and

workshops. A project steering committee would be created, comprising representatives of the participating agencies: DA-BSWM, DA-Planning, DA-FOS, DA-ATI, PCIC, DENR-PAWB, DENR-FMB, DENR-EMB, NIA, NAMRIA, PAGASA, UPCPA, MO, NEDA, DBM and a civil society representative..

ATTACHMENT 1

ACTIVITY SHEET FOR PILOT TESTING THE FEASIBILITY OF WEATHER INDEX-BASED CROP INSURANCE

1. **Objective.** To pilot test the feasibility of weather index-based crop insurance (or weather insurance) products, specifically drought and excessive rainfall insurance, as a risk transfer mechanism for farmers and other agricultural stakeholders' protection from crop losses caused by extreme weather events.

2. **Pilot duration.** Three years: Phase 1 – one year (Pilot Design and Development); Phase 2 – two years (Implementation). Following Phase 2, expansion and scaling up will take place over a further 2 years.

3. **Pilot locations and crops.** Cagayan Valley and Iloilo have been selected as the pilot sites. The pilot crops include both rice and corn.

Phase 1 (Pilot design and development)

4. **Implementing and Collaborating Partners.** A Memorandum of Agreement (MOA) among the collaborating/implementing partners. The Partners can be divided into (a) parties actively involved, through formal staff time provision, in supporting the project's operational team ("the implementing partners"); and (b) a larger number of parties for which consultation will be required from time to time by the Project Operational Team, and those parties with potential future linkages and interests in the insurance programme ("the collaborating partners").

5. **A Steering Committee** will be formed, which will need to have wide representation of interested organisations; a local steering committee in each pilot area is also foreseen. The **Project Operational Team,** which will report to the Steering Committee, should be small and consist of dynamic individuals, in order to ensure that the project activities can be pursued effectively and not become overly burdened by number and size of agencies involved. In this respect the leadership of the project operational team (Team Leader) is critical; similarly the Chairperson of the Steering Committee will play an important role.

6. **The Project Operational Team** will consist of individuals (consultants, and/or staff persons allocated to the project by specific agencies). In Phase 1, the team is expected to consist of: a Team Leader; an Agricultural Insurance Expert; and Agro-Meteorologist/Agricultural Specialist(s). Key organisations identified for Phase 1 inputs within the Project Operational Team include PCIC, PAGASA, Universities (Isabella State University, West Visayas State University, UPLB) and IRRI/PhilRice. The focus of Phase 1 is on technical analysis, data collection, index contract design and insurance planning, together with detailed identification of the pilot sites, clients, weather station requirements, insurance pricing, implementation organisation and delivery channels for insurance. Many other organisations will need to be consulted and involved from time to time, including the private insurance sector, the insurance regulator, and technical agencies as identified by the PhilCCAP1 consultant.

7. The Project Operational Team is expected to be supported by technical assistance from two international consultants, anticipated to consist of an International Agricultural Insurance Expert and an International Weather Insurance specialist.

Phase 2 (Implementation)

8. It should be noted that the work in Phase 1 is relatively intensive, in preparing the product and its implementation. Phase 2 inputs are directed towards education, extension, demand testing, monitoring and evaluation. In phase 2, over a two year period and covering two crop seasons per year, the insurance product(s) designed in Phase 1 will be implemented. The composition of the Project Operational Team may be adjusted in Phase 2, to reflect the activities. Key activities include the marketing and underwriting of the insurance product, and claims settlement. During this period, some modifications to product may be undertaken, as a result of pilot experience and feedback. At the end of the phase, decisions will be taken concerning the three year test period, to determine next steps for expansion of the area, and requirements for scaling up. Further, it is expected that the introduction of the pilot test will focus attention on the existing PCIC products, and the potential opportunities for market segmentation between PCIC and the private sector. A private sector NGO is already experimenting on typhoon index insurance with a private insurer, and is expected to expand into other products. Parallel initiatives in market development should be encouraged by the pilot, and technical collaboration to further the market should be enhanced by maximizing the collaborative efforts in technical matters in the proposed pilot phases.

9. The total estimated number of participants in the pilot insurance is 225 farmers/farm families during wet season (150 farmers in Region 2 and 75 farmers in Region 6) and 100 farmers/farm families during dry season, all in Region 2. Other parties, notably banks, lending institutions, co-operatives will all have an interest in the existence of the insurance as a mechanism to mitigate risks to which farmers are exposed, and due to their own exposures in the value chain.

10. **Project Costs**. Total costs for the pilot activities will be $600,000.

Annex 5: Project Costs

Project Costs by Component (GEF)

Project Cost By Component and/or Activity	Local US $million	Foreign US $million	Total US $million
1. Strengthening the Enabling Environment for CCA	0.47	0.12	0.59
2. Demonstrating CCA in Agriculture and NRM	2.53	0.41	2.94
3. Enhanced Provision of Climate Risk Information	0.68	0.35	1.03
4. Project Coordination	0.41		0.41
Total Project Costs	4.09	0.88	4.97

Project Costs by Financier

	GEF	ENRMP	PIDP	Total Cost
Project Cost By Component and/or Activity	US $million	US $million	US $million	US $million
1. Strengthening the Enabling Environment for CCA	0.59	0.12		0.71
2. Demonstrating CCA in Agriculture and NRM	2.94	~~19.46~~9.84	40.07~~45~~	~~62.85~~52.85
3. Enhanced Provision of Climate Risk Information	1.03		0.38	1.41
4. Project Coordination	0.41	.04		0.45
Total Project Costs	**4.97**	**~~19.46~~10.0**	**40.~~45~~45**	**~~65.42~~55.42**

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Annex 6: Implementation Arrangements

PHILIPPINES: PH - CLIMATE CHANGE ADAPTATION

INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS

1. The project includes a range of activities that directly involve several national government agencies i.e., the National Commission on Climate Change, DA, NIA, DENR, & PAGASA. There would also be linkages through these agencies to NAMRIA, Manila Observatory andthe University of the Philippines and to LGUs. The role in the project of each of these agencies is discussed below under each component. To reinforce the overall development objective of "developing approaches for targeted communities to adapt to climate change through the strengthening of existing institutional frameworks", implementation has been built around existing arrangements to facilitate institutional ownership for the "new ways of doing business," inherent in responding to climate change.

2. That said, there are important linkages to be made between components and agencies that will need particular attention during project implementation. As discussed under Component 1 below, the responsibility for promoting and facilitating such linkages, would depend very much on the initiatives of the newly created Climate Change/Adaptation offices of the DA and DENR, under the overall leadership of the CCC. In recognition of the "newness" of these offices, their very limited capacity, and the relative complexity of concepts and processes needed to adapt to climate change, the project has been designed to provide an "Agenda for Action" for such offices, while relying primarily on existing institutional/implementation arrangements. Important linkages that the CCC and the Climate Change/Adaptation offices of the DA and DENR need to monitor are:

(a) The "CCA Screening Criteria", which would be developed as a tool for use by governments agencies to identify interventions "at risk" and/or in need of climate change adaptation, would become an integral part of regular work planning and programming of government sectoral agencies, such as being piloted under the project in Component 2. The CCC would need to ensure harmonization of similar tools being developed under other initiatives.

(b) The mainstreaming agenda needs to be consistent with the overall national framework being developed and coordinated by the CCC and with processes being put in place for other sectors through comparable partner supported projects.

(c) The "CCA Manual of Best Practices and Experiences" to be developed under the leadership of the DENR's CCO (Component 1) would depend heavily on the sectoral inputs to be developed by the DA, NIA and DENR (in the first instance). This would be an iterative process and build on the experience through implementation of Component 2.

(d) The strengthening of capacity of PAGASA to undertake more extensive climate risk assessments (Component 3) would be a key input to the CCC's overall strategic planning and oversight (Component 1). It would also be critical to the work

planning and programming of sectoral agencies (Component 2). Additionally, the strengthening of PAGASA's information dissemination on climate forecasts will, with time, become a key input to the enhanced awareness and adaptation mechanisms of agricultural, livestock and fishery producers, being developed and piloted under component 2.

<u>Component 1:</u> Strengthening the Enabling Environment for Climate Change Adaptation

3. Primary responsibility for implementing the component would rest with the DENR's CCO. Staffing of this unit is currently small comprising a few core staff and technical expertise in climate change adaptation is largely absent from DENR and DA. As such, the work planned under this component would largely be undertaken by consultants, to be hired and managed by the DENR-CCO in collaboration with the Climate Change Focal Point of DA. The project would provide modest funding to support the incremental work required of these offices in monitoring and facilitating the implementation of the various components described below. Key activities to be undertaken would be as follows:

(a) **Implementation of a National Policy Framework for CCA.** The project would support the CCC in communicating the framework to relevant government agencies and in organizing workshops with key stakeholders to increase awareness.

(b) **Establishment of "CCA Screening Criteria".** Criteria would be developed by major sectors to provide a tool that could be used to identify activities at the planning stage that either have CCA features, or potentially could benefit from further review and elaboration to include CCA. Under the project, CCA Screening Criteria" would be developed for the Agriculture and the Environment and Natural Resource Sectors. Overall responsibility would rest with the DENR CCO for ensuring the development of these criteria is coordinated with the work being undertaken by other projects such as the ACCBio. To facilitate a sense of "ownership," the persons within DENR and DA with whom the consultants would collaborate would be specified, and the means by which the "screening tool" would be reviewed and endorsed by those agencies for general application in their work planning and budgeting processes. These criteria would include guidelines on the use of climate risk information provided by PAGASA, and on the use of Disaster Risk Mapping and information developed by NAMRIA. To facilitate rapid start-up of the project detailed TORs have been prepared and included in the PIP.

(c) **Assimilation of best practices/experiences.** This is designed as an iterative and ongoing process. It would both complement and, over time, help to refine the "screening criteria" described above, while providing guidelines, options and a source of training material to help internalize/ institutionalize provision for climate change adaptation as a standard way of doing business. As for the above subcomponent, overall responsibility would rest with the DENR CCO for ensuring the development of these criteria, with other work being undertaken in both DA and DENR. In the case of the DA, it would be important to link the work of the consultants with the work being directed by BSWM and ATI to

incorporate climate change adaptation/market opportunities into their training modules (see component 2.ii). In the first instance, relevant experience already available from the Philippines and elsewhere would be drawn together in a "CCA Manual of Best Practices and Experiences". Some examples from the Philippines that would be reviewed include i) the Albay LGU Climate Adaptation activities, ii) Iloilo based Climate Field Schools, and in the ENR sense, iii) the Siagao Islands Protected Landscape and Seascape (SIPLAS). The accumulation of best practices and experiences would necessarily be an iterative process. Under the project, it is anticipated that follow-up work/updating of the "CCA Manual of Best Practices and Experiences" would be done in the last year of PhilCCAP. To facilitate rapid start-up of the project detailed TORs have been prepared and included in the PIP.

<u>Component 2:</u> Demonstrating Climate Change Adaptation Strategies in the Agriculture and Natural Resources Sectors

4. This component comprises a range of field level climate change adaptation activities that have been selected to both demonstrate and expand climate change adaptation across a range of different activities in widely different geographical areas. The selection of interventions was designed to build on existing activities where LGUs have already been sensitized to the pending impacts of climate change and have begun to take actions to mitigate the risks. However, to the extent that other intervention possibilities emerge during implementation, these would be considered, subject to fund availability. It is envisioned that decisions on this would be made at mid-term of the project. Implementation responsibility would be divided between DENR and DA.

5. Implementation of each intervention would be in accordance with existing procedures as described below:

(a) **Climate change adaptation of Irrigation Infrastructure by NIA**. The project would build upon the investments already planned under the Participatory Irrigation Development project (PIDP) with a view to including specific CCA modifications into the design of some irrigation systems in Region 2. The process of assessing climate risks and the specific design modifications would be monitored by NIA vis-a vis other interventions as a basis for evaluating the benefits and experiences with such modifications. Such experiences would in-turn be captured as part of the assimilation of best practices and experiences provided for in Component 1. Implementation of the interventions would be in accordance with the Operation Manual for the PIDP. A work program and budget of specific activities to be undertaken has been prepared to facilitate start-up of the project.

(b) **Enhancing delivery and effectiveness of extension services for farm level climate risk management.**

i. The first of the two activities under this subcomponent consists in carrying out a gap analysis of the of climate information services that the DA would

require for of climate information services and that cannot be provided by PAGASA. The gap analysis will lay the foundation for an investment program by the DA to procure the necessary small scale weather stations. This activity will be carried out by a team of consultants. The scope of the assessment includes a gap analysis at the national and sub-national level, an institutional component focusing on coordination arrangements between the DA's and PAGASA's services to strengthen weather forecast services, and an assessment of the available specifications of small scale weather stations available on the market and the pros and cons associated with each option given the objectives set by the DA in terms of service delivery. The BSWM will take the lead in this activity.

ii. The second activity is articulated into three steps (see Annex 4). The first step will focus on the development and field testing of decision support systems for farmers based on appropriate weather and climate information, including forecasts on seasonal timescales and forecasts based on traditional practices, and other relevant agro-ecological information. This activity will be led by the ATI with the support of the BSWM in collaboration with the University of the Philippines Los Banos College of Public Affairs. It will involve both R&D activities and field testing to corroborate the validity of the innovative extension packages that would be developed on the basis of improved weather forecast services and on other spatial information, all of which is intended to produce more precise recommendations on optimal crop management. The field testing of the innovative extension packages will be implemented during the whole course of the project would be undertaken in Regions 2 and 6. Service providers would be employed to assist ATI in undertaking the required analytical and field work.

iii. The second step of this activity consists in the capacity building of farmers and extension workers so as to in help in raising their awareness of climate factors and trends, of the challenges and options this presents for optimizing the productivity of their farms, and in understanding how to best exploit the recommendations on appropriate agronomic practices made available through the innovative extension packages. The training modules and initial "training of trainers" would be undertaken with the help of consultants to be hired by ATI under the project. An important resource to be utilized in developing the methodology and training modules would be the experience gained through Climate Field Schools, which have been piloted in the Philippines,21 especially related to identifying preemptive actions and/or mitigating actions that can be taken by farmers e.g., in regard to pest outbreaks associated with drought stress conditions. To determine the effectiveness of the methodology as a basis for subsequent scaling-up of the program, a baseline survey would be undertaken of farmers and extension workers in the project area to

[21] Climate Field Schools have been piloted in – with funding from--. These schools involve ----(need a good description of what they are, where they are, who is supporting them (sustainability) , what are they teaching and to whom.

determine current practices, and what factors/parameters farmers use in deciding cultivation practices and crop mix. This would be followed-up at the end of the project as a means to evaluate the effectiveness of the methodology in sensitizing farmers to weather related risk, and of the options available to them for mitigating such risks and/or realizing a marketing advantage through timely adjustment of cropping practices.

iv. Under the third step, methods for disseminating innovative extension services (see step 1 above) to farmers would be developed by innovating current systems . One of the approaches that will be pursued is to link spatial-specific extension services generated under step one above to farmers through the Farmers Registry (FR), which the DA is currently developing to strengthen its spatial planning and service delivery to farmers. The FR will allow to link farm and farmer characteristics to cadastral information, including geo-referenced information on location through GIS systems. The possibility of integrating information provided by the FR, which is intended to cover the whole national territory, with spatially-targeted extension services opens the possibility of disseminating through existing ICT extension services down to the farm level. The project will support research and, to the possible extent, testing of how these different information systems can consistently integrated. This sub-activity will be led by the ATI in collaboration with the ITCAF and the PS, both of which are fully involved in the implementation of the FR. Consultants will be hired under the project to carry out specific studies and field trials to test the validity of the systems developed under this sub-activity.

(c) **Piloting of Weather Index-Based Crop Insurance.** Department of Agriculture Would have overall responsibility for the outcome of this subcomponent. The work would be undertaken by a team/organization selected through a competitive bidding process. The goal would be to evaluate the feasibility of developing a weather-index based crop insurance scheme for rice and corn, as a possible option for mitigating risks to farmers in the Philippine context. While the scheme would draw on the experience and methodology developed elsewhere, it would need to be tailored to the specific weather and cropping patterns followed in major rice and corn growing areas of the Philippines. Accordingly, Regions 2 and 6 have been identified as representative of major cropping areas, while also being widely separated geographically and therefore presenting different risk parameters for evaluation.

(d) **Strengthening of Climate Change Management Practices for Protected Areas.** The goal of this intervention would be to expand the experience and methodology for managing Protected Areas in light of the additional pressures (natural, human and animal) that can be expected to result from changing climate and weather patterns. For DENR, local-level NRM activities will be conducted in Regions 2 and 13. Overall responsibility for implementing the Protected Area (PA) subcomponent would rest with the Protected Areas and Wildlife Bureau

(PAWB) of the DENR. Field implementation will be undertaken under the DENR´s Regional Executive Directors (REDs) and mainly through the Regional Technical Directors (RTDs) and staff of the Protected Areas, Wildlife and Coastal Zone Management (PAWCZMS) and the Protected Areas Management Boards (PAMBs) of the Penablanca Protected Landscape and Seascape (PPLS) of Northern Luzon, and ii) the Siargo Island Protected Landscape and Seascape (SIPLAS) of Suriagao del Norte, Mindanao. Staff from the lands and forest sectors oof DENR will be more permanently assigned to assist the PASus in implementation of the PA activities of the PhilCCAP. The endorsement of the PAMBs will be required to execute the subcomponent. To the extent where the PAMBs gives preference to sub-contract activities (e.g. agro-forestry activities), contracts with NGOs, POs etc. will be executed as required, detailing the working arrangements agreed among these entities. Memoranda of Agreement (MOAs) will be executed as required, to detail the working arrangements agreed to among these entities, to ensure the most efficient implementation of PhilCCAP-1 activities.

i. The activities to be supported would build on existing management practices described in the Operation and CDD Manuals prepared under the Bank supported ENRMP project which focus particularly on working with communities to elicit their support in the protection and regeneration of watersheds. Under the subcomponent, these manuals would be adapted specifically for "Protected Areas" and would add the additional dimension of climate change adaptation e.g., in regard to which indigenous species are selected for replanting, planting times and methodology, use of appropriate mangrove species, and methods for coral transplanting and culture. The project would support some activities in the selected areas to gain experience and develop best practices which would be captured in the revision of the Protected Area Manuals. Workshops, demonstrations and field days for communities / stakeholders would also be supported and undertaken under the direction of the responsible Regional Technical Director. To facilitate rapid start-up of the project detailed TORs have been prepared and included in the PIP.

<u>Component 3.</u> Enhanced provision of Scientific Information for Climate Risk Management

6. This component would be implemented by the Philippines Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and support the institutional strengthening of the agency as well as enhance the provision of scientific climate information to end users.

(a) **Strengthening the provision of climate information to guide the design of adaptation actions.** Consultants would be hired to identify what needs to be done (and how) to strengthen PAGASA's access to climate data from local, satellite and other sources. Recommendations would also be made as to how to improve the recording of data, its analysis and the tailoring of information disseminated to meet the needs of public and private interests. The study would identify gaps in the availability of data and make recommendations on how/what is needed. Under PhilCCAP, support would also be provided for upgrading regional/local equipment and facilities needed to improve data

collection, with priority to be given to Regions 2 and 6 in the first instance, to facilitate the testing and possible introduction of a weather-indexed crop insurance scheme (ref Component 2) as well as to help design other interventions under this Component. To facilitate rapid start-up of the project detailed TORs have been prepared and included in the PIP.

(b) **Strengthen Institutional Capacity for Effective Climate Risk Management.** Capacity building requirements of PAGASA and other agencies who provide data as well as those who use it would be assessed through a consultancy and appropriate improvement measures identified and supported under the project.

Annex 7: Financial Management and Disbursement Arrangements

Executive Summary

1. Overall conclusion - A financial management assessment review was carried out at the Department of Environment and Natural Resources (DENR) and the Department of Agriculture (DA), the implementing agencies, in accordance with the Financial Management Practices in World-Bank-Financed Investment Operations issued by the Financial Management Sector Board on November 3, 2005. The purpose of the review is to ensure that there are in place adequate financial management arrangements for the proposed Philippine Climate Change Adaptation Project – Phase 1 at DENR and DA that satisfies the Bank's OP/BP10.02. Under OP/BP 10.02, the Bank requires the grant recipient and all its implementing units to maintain financial management arrangements (budgeting, accounting, internal control, funds flow, financial reporting, and auditing arrangements) that are acceptable to the Bank and that will provide reasonable assurance that the proceeds of the grant are used for the purposes intended.

2. On the overall, the financial management system of DENR and DA will meet the financial management requirement as stipulated in OP/BP 10.02 subject to implementation of agreed actions and mitigating measures. The current weaknesses include: DENR - the Commission on Audit (COA) has issued an adverse audit reports on DENR's three most recent audited financial statements (2006 to 2008) due to the following issues involving noncompliance with prescribed internal accounting controls and procedures such as the following among others: lack of compliance by management to standard procedures for inventory management, unreliable balance of the Property, Plant and Equipment account, outstanding accounts payable for more than two years and with no valid claimants, unreliable cash in bank account, doubtful balances in the account receivable account. DA – COA likewise rendered adverse audit opinions on the three latest (2006 to 2008) audited financial statements of DA. The deficiencies pertain mainly to unreconciled cash accounts; doubtful existence of Loans Receivables; unreliable inventory accounts, doubtful existence and validity of Property Plant and Equipment; Other Assets and Payable account balances.

3. The assessed financial management risk of the Project before the mitigating measures is considered **Substantial**. The residual risk remains Substantial but could be reduced to **Moderate** after the proposed mitigating measures described below are implemented and have shown effective impact. The factors supporting this conclusion and the significant observations and related existing and proposed mitigating measures are summarized below.

4. **NGAS and eNGAS.** The budgetary controls, accounting procedures and internal controls prescribed by COA under the New Government Accounting System (NGAS) are not considered adequate because there are certain internal controls that are found only in various COA memoranda and circulars, and rules and regulations. The Department of Budget and Management through the grant from the Australian Agency for International Development (AusAID) had developed the National Guidelines on Internal Controls (NGIC) to improve the government's internal controls. COA, in its audit of the agency's financial statements, reported certain instances of non-compliance with the internal controls as described above. The

bookkeeping segment of NGAS is computerized and is referred to as electronic NGAS (eNGAS).

5. **Internal Controls and Internal Audit**. DENR and DA's Internal Audit Service (IAS) unit is assessed to be weak in view of the limited scope of coverage and the lack of adequate training of the staff to carry out the internal audit function in accordance with international standards. The internal audit function was authorized under the Internal Audit Code and under Administrative Order No 70 of April 2003 requiring all government offices, local government units, and government corporations to organize an IAS in their respective organizations. Besides, internal audit methods and focus require major upgrading in line with modern practices. The DENR is in the process of hiring a consultant that will provide technical assistance to strengthen its Internal Audit Unit as a requirement under the National Program Support for Environment and Natural Resources Management Project (NPS ENRMP). A generic internal audit manual was developed through a technical assistance funded by the Bank through an IDF grant to Presidential Anti-Graft Commission. The manual is being harmonized with the NGICS and will be customized and used by all government agencies.

6. **COA's Reports on DENR and DA's 2006 to 2008 financial statements.** There were issues reported by COA in its audit of DENR and DA's financial statements such as the following:

(a) DENR - (i) unreliable balance in the Property, Plant and Equipment account; (ii) lack of compliance by management to standard procedures of inventory management such as complete physical count of inventories, preparation of schedules and reports to support the inventory, maintenance of subsidiary ledgers, and stock cards resulting to net misstatement of the total inventory balance and substantial unrecorded inventories of an undetermined value; (iii) the reported payable accounts balances include accounts which have been outstanding for more than two years and with no valid claimants; (iv) cash accounts showed understatement in Cash in Bank – Local Currency Account, collections not recorded and remained unremitted resulting to understatement of recorded cash and income accounts, Cash – Disbursing Officers account remained unliquidated for over 31 days to more than two years, and there were expended by unreplenished petty cash; and (iv) doubtful balance in the receivable account due to unsupported/undocumented balances of Due from Bureau of Treasury account, unliquidated fund transfers to NGAs/LGUs, unsettled recorded disallowances and unrecorded disallowances, expended but unliquidated travel advances to officers and employees, long outstanding unsupported /undocumented receivables.

(b) DA – (i) unreliable cash account balances; (ii) overstatement in reported receivable balances; (iii) long outstanding liquidation for funds transferred to various NGAs, GOCCs, LGUs, and NGO's/PO; (iv) unreliable balance in Advances to/Due from Officers and Employees; (v) doubtful balance in loans receivable due to accumulation of long overdue loans receivable accounts, unrecorded loan releases resulting in the understatement of the account, misclassification of accounts, and other deficiencies in the maintenance of subsidiary ledgers; (vi) deficiencies in inventory management which include unrecorded issuances of inventory items due to non preparation of Report of

Supplies and Materials Issued (RSMI), failure to conduct physical count in Region IV and deficiencies noted during physical inspection of animals which misstated the inventory accounts..

These resulted to COA issuing adverse opinions on the annual financial statements of DENR and DA from 2006 to 2008. Status of actions by DENR and DA to resolve the issues raised in the 2006 and 2007 audit were included in the audit report by COA on the audit of 2007 and 2008 financial statements, respectively. Review of the status showed significant progress in addressing the issues but there are still issues that remained to be resolved or fully resolved. There is a challenge on how to stop the same issue supposed to have been resolved from occurring again in the following year. The mitigating measures are enumerated under Item 10 of the succeeding paragraphs.

7. **Nature of the project**. The project consists of various components, activities and sub-activities to be undertaken by DENR, DA and other participating agencies. *Component 1* of the project involves strengthening of the enabling environment for climate change adaptation and disaster risk management. The main objective of the component is to strengthen the capabilities of government agencies that play a role in CCA activities in the natural resources and agriculture sectors, in order to increase the country's resiliency to climate change-related impacts. *Component 2* involves demonstrating climate change adaptation strategies in the agriculture and natural resources sectors. The objective of this component is to help poor rural communities that are most at risk of climate change impacts to adapt to the effect of climate change. *Component 3* involves enhanced provision of scientific information for climate risk management. This aims to provide data support for the adaptation interventions to be carried out at the local level under component 2. *Component 4* involves project management to support a variety of project management functions, through the creation of Project Coordination Offices (PCOs) within DENR and DA and in the municipalities. The following are the risk identified: (a) DOST-PAGASA and NAMRIA are not familiar with the Bank policies and procedures on disbursements; (b) LGU's in general are assessed to have weak internal controls; (c) Targeted LGUs under Component 2.1 are geographically far from DENR and DA as the main implementing agency which would affect the financial reporting and consolidation; and (d) the adequacy of the number of dedicated staff in finance of DENR to handle the financial management of the project considering the existing and pipeline projects under the Agency.

8. **Mitigating measures**. The mitigating measures that DENR and DA shall undertake to reduce the risk described above and prevent the issues reported by COA from occurring in the Project transactions are as follows:

(a) Financial management of the project shall be handled by the Financial Management Service (FMS) unit of DENR and DA Central Offices and will be supported by the Foreign Assisted and Special Project Office (FASPO) and Special Project Coordination and Management Division (SPCMAD), respectively.

(b) Maintenance of separate books of accounts for the project and submission of annual audited project financial statements, which shall include the balance sheet

and consolidated statement of sources and application of funds and the notes to the financial statements including audit observations and recommendations.

(c) Maintenance of Designated Accounts for the Project at DENR and DA in a commercial bank acceptable to the Bank. Peso project bank accounts shall also be opened solely to pay for Peso expenditures under the Project.

(d) Unaudited quarterly Interim Financial Reports (IFR) shall be submitted 60 days after the end of each quarter to the Bank.

(e) Conduct orientation on financial management to the Finance and Operations staff of DENR, DA and other participating agencies (DOST-PAGASA, NAMRIA and LGUs) on the Bank's guidelines and procedures on financial management and disbursements.

(f) Disbursements on certain categories (i.e. Consultants Services and Goods) shall be undertaken by DENR or DA, as applicable. Direct payment to consultants and suppliers shall be one of the payment options for the project.

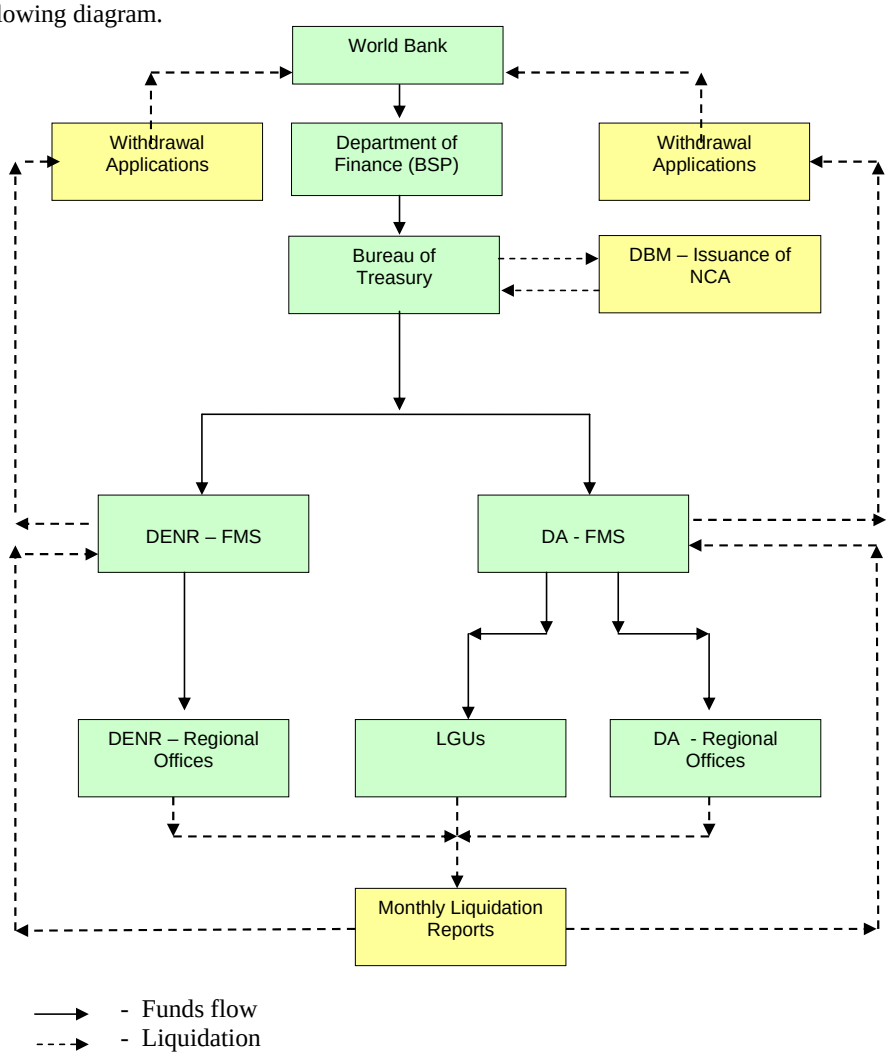
(g) Monthly submission of liquidation of funds downloaded to LGUs.

(h) Require the IAS to include the Project in the areas to be audited and submit a semi-annual internal audit report 90 days after the end of the year audited.

(i) Require DENR and DA to submit a time-bound action plan to satisfactorily resolve the COA audit findings on the 2008 audit of DENR and DA financial statements as a condition for grant negotiation.

9. As discussed in the arrangement above, the financial management of the Project shall be handled by the Financial Management Service (FMS) of both DENR and DA Central Offices. This arrangement shall reduce the FM risk as FMS of DENR and DA has greater experience in implementing Bank assisted Projects.

10. **Funds flow arrangements for the Project**. The flow of funds is depicted in the following diagram.



11. The funds flow from the World Bank to the Bureau of Treasury's account at the Bangko Sentral ng Pilipinas (BSP). After approval by the Department of Budget and Management (DBM), through the issuance of a Notice of Cash Allotment (NCA), funds flow to the DENR and DA's Designated Accounts (DA) maintained in an authorized government depository bank.

Project Peso accounts shall also be opened at DENR and DA central offices and other participating agencies, as applicable to pay for Peso based expenditures. The traditional basis for disbursement (Statement of Expenditures (SOE)) will be used in this project.

Country Financial Management Issues.

12. **Perceived high corruption in the country**. The international institutions monitoring corruption has rated the country's corruption as high. This perception of the existence of high corruption in the country puts any investment in certain degree of risks.

13. **Weak internal controls/ weak or lack of an internal audit function in government units**. One of the outstanding recommendations in the 2003 Public Expenditure, Procurement and Financial Management Review relevant to the Project is the organization of the internal auditing function. The establishment of the internal audit function is authorized under the Internal Audit Code. In 2003, an Administrative Order No. 70 was issued directing all government agencies to organize internal audit service. Only a few government agencies have complied mainly due to budgetary constraints.

14. The Department of Budget and Management (DBM) through the grant from the Australian Agency for International Development (AusAID) had engaged a consultant that assisted in the development of the National Guidelines on Internal Controls (NGICs) to improve the government's internal controls.

At present, the effective coverage of IA throughout the national government is minimal. Only a few agencies have Internal Audit units and they are understaffed with inadequate skills and resources to perform its mandate. Besides, internal audit methods and focus require major upgrading in line with international standards. Internal control systems remain weak and relatively ineffective, which leaves the system open to leakages/fraud. A Generic Internal Audit Manual (GIAM) was developed through a technical assistance funded by the Bank through an IDF grant to Presidential Anti-Graft Commission (PAGC). The manual is being harmonized with the NGICS, and will be customized and used by all government agencies.

Risk Analysis

15. **A summary of the financial management assessment risk ratings is provided in the table below.** The detailed discussion of each subject immediately follows hereunder.

Category of Risk (Issues/Factors)	Risk Rating	Risks Mitigating Measures In Place or to be Adopted	Residual Risk	Condition of Negotiations, Board of Effectiveness (Y/N?)
Inherent risk	H		S	
Country level 1. Perceived high corruption in the country 2. Weak internal controls/weak or lack	H	1. Strengthening of the internal audit functions in government agencies is currently in progress. 2. The Bank has initiated addressing this through its Grant on Strengthening the Internal Audit (IA)	S	N

Category of Risk (Issues/Factors)	Risk Rating	Risks Mitigating Measures In Place or to be Adopted	Residual Risk	Condition of Negotiations, Board of Effectiveness (Y/N?)
of internal audit function in government units.		with the Philippine Anti Graft Commission as its implementing agency. A Generic Internal Audit Manual (GIAM) aligned with international standards has been developed through the IDF grant. AusAid on the otherhand, supported the development of the National Guidelines on Internal Control System (NGICS). Harmonization of GIAM and NGICS is currently being supported by AusAid through Philippines – Australia Partnership for Economic Governance Reform (PEGR). 3. The procurement law and its implementing rules and regulations have been passed and already implemented by all units of government. An empowered Government Procurement Policy Board (GPPB) has been established and is now overseeing implementation to make sure that the transparency, efficiency, economy and accountability principles of the law are carried out.		
<u>Implementing Entity</u> 1. Weak institutional capacity both at DENR and DA, including DENR PENRO. LGUs – generally have weak internal controls. 2. Internal audit unit not functioning in accordance with international standards and needs manpower with adequate internal audit experience and background on finance, accounting and engineering.	S	1. Heavy emphasis of the project is on capacity building under every component. 2. Financial management of the project shall be handled by Financial Management Service (FMS) units at DENR and DA and will be supported by the FASPO and SPCMAD, respectively. 3. The project should benefit on the strengthening of the Internal Audit Service (IAS) Unit at DENR included under the NPS ENRMP. The consulting firm to handle IAS strengthening shall be using the Terms of Reference template reviewed by the Bank and approved by DBM.	S	N
<u>Project</u> 1. Several other agencies, aside from the DENR and DA, are also involved in the implementation of the project (i.e. Penro, Namria and	S	1. An Operations Manual shall be prepared under the Project which shall also include a financial management section for the guidance of all participating agencies/units. 2. Conduct orientation on financial management to the Finance and Operations staff of other	S	Y (Effectiveness)

Category of Risk (Issues/Factors)	Risk Rating	Risks Mitigating Measures In Place or to be Adopted	Residual Risk	Condition of Negotiations, Board of Effectiveness (Y/N?)
Pagasa). 2. Weak financial management capacity at DENR, DA and other participating agencies. .		participating agencies (PAGASA, NAMRIA and LGUs) on the Bank's guidelines and procedures on financial management and disbursements. Method of disbursement through direct payment shall also be made available under the grant. 3. For DENR and DA, the project shall be covered by Internal Audit Review by the Internal Audit Service on a semi-annual basis with report to be submitted to the Bank 90 days after each audit. 4. The Statement of Sources and Uses of Funds of other participating agencies shall be audited by the respective independent external auditors prior to submission to the DENR and DA.		
Control risk	**S**		**S**	
• Budget 1. Special budget shall be automatically appropriated for the grant. Risk of delays in crediting of grant proceeds from BTr to DA.	M	1.Ensure that full SARO is requested from DBM upon grant effectiveness and that Work and Financial Plan is submitted to facilitate releases of NCAs.	L	N
• Accounting 1. Accounting policies & procedures contained in NGAS, government laws and regulations, etc. not fully adhered to by DENR and DA as reported by COA in its observation and recommendations memorandum. 2. Pre-audit of COA may affect the processing lead time for project transactions.	S	1. Maintenance of separate books of accounts for the project shall be required to facilitate the preparation of financial reports and for the project not to be burdened with the outstanding issues reported by COA on the agency's accounts. 2. Continuous monitoring of the status of outstanding issues reported by COA in its previous audit report of the agency's financial statements and preventive measures installed to prevent issues from recurring as required in NPS-ENRMP. 3. Service standards shall be agreed with respective COA auditors on processing of project transactions.	S	N
• Internal controls 1. There were issues	S	1. See discussion under accounting on the action to address the noncompliance on internal controls	S	Y (Effectiveness) Establish an

Category of Risk (Issues/Factors)	Risk Rating	Risks Mitigating Measures In Place or to be Adopted	Residual Risk	Condition of Negotiations, Board of Effectiveness (Y/N?)
reported by COA related to weak internal controls and non-compliance in procedures on cash, inventory, Property, Plant and Equipment, accounts payable and account receivable. 2. Internal audit unit not fully functioning in accordance with international standards		reported by COA as required under NPS ENRMP. 3. Review of the project by the IAS of DENR and DA shall be required semi-annually with copy of the report submitted to the Bank 90 days after each calendar semester. 4. With separate books of accounts maintained for the project, the project financial statements will not be burdened by the issues reported by COA in the past.		Action Plan to address COA's findings
• Funds flow 1. Due to several implementing agencies handling various components and activities for the project, there is a risk of delayed release of funds by DENR and DA and delayed liquidation of funds by implementing agencies (i.e. Penro, LGUs). 2. Grant proceeds take long period before they are credited to the Designated Account from the Central Bank of the Philippines..	S	1. As applicable, consultancy contracts for other implementing agency shall be handled by DENR. Direct payments can also be made by DENR to suppliers, contractors and consultants of other implementing agencies. 2. Monthly liquidation of funds advanced through statement of expenditures shall be required from other implementing agencies. 3. Since grant proceeds are automatically appropriated, full Special Allotment Release Order (SARO) can be obtained even prior to receipts of proceeds, provided there is a signed grant agreement. However, a Work and Financial Plan (WFP) is required by DBM prior to release of Notice of Cash Allocation. DENR to ensure that these requirements are complied with to avoid delays in processing.	M	N
• Financial reporting 1. Inaccurate financial reports as discussed above due to the non-compliance with certain accounting policies and internal	S	1. The project will require unaudited interim financial reports (IFRs) on a quarterly basis.	M	N

Category of Risk (Issues/Factors)	Risk Rating	Risks Mitigating Measures In Place or to be Adopted	Residual Risk	Condition of Negotiations, Board of Effectiveness (Y/N?)
controls and procedures.				
• Auditing 1. Delayed completion of the audit and submission of audit report to the Bank due to delayed submission of the financial statements by the implementing agencies.	M	1. The Bank will require the implementing agencies to submit the unaudited financial statements duly received by their respective commission on audit to provide COA reasonable time to conduct the audit.	M	N
Overall Control Risk				
Overall Risk Rating	S		M[22]	

Risk Rating: H (High Risk), S (Substantial Risk), M (Modest Risk), L (Low Risk)

16. **Strengths and Weaknesses**. The significant strength of **DENR** in financial management is the familiarity of DENR officials and staff (at both FMS and FASPO) with the Bank's policies, procedures and reporting requirements. Such familiarity was acquired during the implementation of the Bank-financed projects. The DENR FMS is using the eNGAS in recording the project transactions and in the preparation of basic financial statements. This will minimize, if not eliminate errors in the generation of the annual financial statements. There is also segregation of duties and responsibilities which somehow offset other weaknesses in internal controls. For **DA**, the use of NGAS has upgraded the accounting system of the Agency to Internationally Accepted Accounting Standards. The Agency personnel have been trained in NGAS and they have adopted the system. This provides the foundation for good accounting of Agency and project transactions. The Agency has installed and is now using the electronic version of the NGAS, the eNGAS at the Central office and later at its Regional Field Operating Units. Documented policies and procedures as well as organization charts and job descriptions of staff ensure clarity of jobs and responsibilities.

17. The **significant weaknesses** and the corresponding corrective actions are summarized below.

Significant Weaknesses	Corrective Action
DENR and DA	
1. The audit opinions issued	1. Maintenance of separate books of accounts for the project

[22] The Overall Risk Rating could be reduced to Moderate if the proposed mitigating measures are implemented and have shown effective impact.

by COA on both DENR and DA's financial statements for the last three years were all adverse.	shall be required to facilitate the preparation of financial reports and for the project not to be burdened with the outstanding issues reported by COA on the agency's accounts.
2. Other participating agencies such as LGUs, PENRO also have weak financial management capacity.	1. Conduct orientation on financial management to the Finance and Operations staff of other participating agencies (PAGASA, NAMRIA and LGUs) on the Bank's guidelines and procedures on financial management and disbursements. Method of disbursement through direct payment shall also be made available under the grant.

Financial Management Arrangements for the Project

18. **FM organization and staffing**. The financial management functions of the Project shall be mainstreamed and thus shall be performed by the existing Financial Management Services at the DENR and DA. The DENR and DA FMS will utilize its current existing structure and will assign staff for the project.

19. **Budgeting.** The project will be using the government's budgeting system for grants wherein a special budget shall be automatically appropriated. The full Special Allotment Release Order (SARO) shall be requested from DBM upon signing of the grant agreement and a Work and Financial Plan shall be submitted also to DBM upon submission of Withdrawal Application to the Bank to facilitate release of the corresponding Notice of Cash Allocation (NCA).

20. **Accounting.** The books of accounts of the project shall be maintained using NGAS chart of accounts and recorded using eNGAS. The project FM teams at the DENR and DA, shall be responsible for the maintenance of the books of accounts, monitoring of the Designated Account (DesA), and preparation of the Project Financial Reports required by the Bank. They shall also be responsible in the preparation of withdrawal applications. The other participating agencies shall submit to DENR a report of funds received and utilized.

21. **Internal Controls/Internal Audit.** The project shall follow the internal controls policies and procedures found in the NGAS, Government Audit and Accounting Manual (GAAM), COA and DBM memoranda and circulars, other laws and regulations. In addition, the following requirements shall be implemented for the project:

(a) Maintenance of separate books of accounts and submission of quarterly unaudited interim financial reports (IFR);

(b) Designated Account shall be maintained separately at DENR and DA where grant proceeds released from the Bank shall be credited. Other implementing agencies shall be required to maintain a project bank account, as applicable, for the grant funds transferred from DENR/DA to pay for the expenditures incurred to implement their respective component/activities.

(c) Monthly bank reconciliation statements shall be required to be submitted by other implementing agencies to DENR together with the monthly trial balance.

(d) An annual work and financial plan shall be prepared and submitted to the Bank every November of each year, with details per office and per month for proper monitoring of project activities.

(e) Annual physical count of fixed assets of the project, as applicable, shall be carried out and reconciled with the accounting and property & asset management records. Results of such reconciliation shall be submitted to the FASPO/SPCMAD and to the Bank as part of the first quarter IFR of each year of the project life.

(f) The project shall be covered by an Internal Audit review of the Internal Audit Service of DENR/DA semi-annually, with reports submitted to the Bank 90 days after the end of each audit period.

22. **External Audit**. The external audit arrangements shall be in accordance with the Bank's policies on audits of Projects, and based on terms of reference acceptable to the Bank. COA is the external auditor of DENR and DA's financial reports. This supreme audit institution is an independent office which has the mandate under the Philippine Constitution to audit all accounts pertaining to all government revenues and expenditures and uses of government resources. The COA's audit is substantially in accordance with the international auditing standards prescribed by the International Federation of Accountants (IFAC).

23. **Financial Reporting**. Under this project, DENR and DA shall submit the following reports to the Bank throughout the life of the project:

(a) **Unaudited Interim Financial Reports (IFRs) within 60 days** after the end of each calendar quarter.

Agreed format of the Interim Financial Reports shall be a condition for negotiation.

(b) **Annual audited project financial statements,** shall be submitted to the Bank no later than 6 months after the end of each fiscal year.

24. **Disbursement Arrangements.** This Project will be disbursed over a period five years. The disbursements of the grant shall be in accordance with the financial plan of the project for the following categories:

Allocation of Grant Proceeds

Category	Amount of the Grant (Expressed in Thousand US Dollars)	% of Expenditures to be Financed
Goods	883.6	100%
Works	559.3	100%
Consultants	1,396.8	100%
Training and Workshops	972.6	100%
Sub-Grants under Sub-Component 2 of the Project	554.3	100%
Incremental Operating Costs	607.5	100%
TOTAL	4,974.0	

25. The Project funds are composed of the grant fund. The funds from the grant will flow from the World Bank to the Bureau of Treasury account at the Central Bank of the Philippines. After the issuance of NCA by DBM, the funds will be credited to the Designated Accounts of the project maintained at DENR and DA central offices. DENR and DA shall open a Designated Account (DesA) in US Dollars, in an authorized government depository bank, where an initial amount shall be deposited. This amount, shall be treated as advances from the GEF Funds in the Bank. The funds advanced to the DesA shall be liquidated through the submission of Withdrawal Application (WA) and Statement of Expenditures (SOEs) on a monthly basis. Additional cash advances may be obtained by submitting WA, provided the outstanding DesA will not exceed the maximum allowed. Disbursements under the Project shall comply with the Bank policies and procedures on disbursements and financial management as reflected in the Bank's Disbursements Handbook and Financial Monitoring Report Guidelines. All disbursements to the DesA shall only be for eligible expenditures based on the agreed eligibility/financing percentage in the Grant Agreement and shall have adequate supporting documents. SOEs to be attached to withdrawal applications shall be based on threshold limits of SOEs. Funds shall be transferred to the implementing agencies, which are drawn from the DA and deposited into the project bank accounts of the implementing agencies opened exclusively for the project. The implementing agencies shall submit to the central office of DENR and DA monthly SOEs to liquidate the funds transferred. In addition, other disbursement mechanism such as direct payments and special commitments shall also be available for this Project. Maintenance of second generation accounts or project bank accounts at other implementing agencies is necessary due to the following reasons: (a) there is a logistical problem in making all payments from the DENR and DA CO where the Designated Account will be maintained because some contracts or expenditures are entered into or incurred at other implementing agencies, and (b) the other implementing agencies do not have enough resources to pre-finance the activities under the grant. An additional internal control measure that shall be implemented by the project to monitor the proper maintenance and usage of the funds at other IA are as follows: (a) Monthly SOEs shall be submitted to DENR; (b) Monthly bank reconciliation statements and copy of the trial balance shall be submitted to DENR; and (c) The quarterly IFRs submitted by DENR to the Bank will include a copy of the bank reconciliation statements of the Designated Account.

Financial Covenants

26. The financial reports that shall be submitted to the Bank are as follows:

(a) **Unaudited Interim Financial Reports (IFRs),** within 60 days after the end of each calendar quarter, which shall consist of the: (a) financial reports consisting of the following: (i) balance sheet; (ii) statement of sources and uses of funds which should include the current and cumulative data compared with plan; (iii) a brief narrative on the analysis of significant variances between actual and planned disbursements; (iv) bank reconciliation statements; and (iv) schedule of funds released to various offices; (b) physical progress report and (e) procurement status report. The physical accomplishment report must be linked to the financial report.

Agreed format of the Interim Financial Reports shall be a condition for negotiation.

(b) **Annual audited project financial statements,** which shall consist of the balance sheet, statement of income and expenses and consolidated statement of sources and uses of funds together with a copy of the management letter reflecting the auditor's findings and recommendations, shall be submitted to the Bank no later than six months after the end of each calendar year. The auditor for this project is COA. The Audit Certificate to be issued shall be based on the Bank's pro forma audit certificate. The other implementing agencies who received project funds shall also submit their annual audited financial statements consisting of balance sheet and statement of sources and uses of funds to DENR not later than end of May of the succeeding year.

(c) The Project shall be reviewed by the Internal Audit Service (IAS) of DENR and DA, as applicable, at the end of each calendar semester starting December 31, 2011 and furnish a report to DENR and DA Management and the Bank within 90 days at the end of each semester.

(d) For the duration of the project, within twelve months from issuance of subsequent external audit reports, satisfactory implementation of recommendations, if any, arising from such subsequent external audits.

Conditions for grant effectiveness

27. Operations Manual which must contain a section on Financial Management.

28. DENR and DA shall submit a time-bound action plan satisfactory to the Bank to resolve the 2008 and prior years COA audit findings.

Supervision Plan

29. The frequency of the FM supervision will be in line with the FM Manual and EAP FM regional guidelines and is dependent on the FM risk rating of this project in any given year during project implementation. FM supervision can also be performed by telephone and emails in cases of follow up of certain issues. The scope of the supervision is left to the professional judgment of the FM specialist. It may cover any of the following: (1) review of the continuous maintenance of adequate FM system by DENR and DA; (2) review of selected transactions, where deemed necessary; (3) follow up of timeliness of FM reporting and actions taken on issues raised by external auditors; (4) review of financial reports of the project; (4) follow up of the status of the agreed actions; and (5) review of compliance with the financial covenants. In addition, the FM implementation review shall include desk review of the quarterly IFRs, internal audit reports, and audited financial statements and management letter submitted to the Bank.

Annex 8: Procurement Arrangements

PHILIPPINES: Climate Change Adaptation Project

General

1. Procurement for the proposed project shall be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits," dated May 2004 and revised October 2006; "Guidelines: Selection and Employment of Consultants by World Bank Borrowers," dated May 2004 and revised October 2006; and the provisions stipulated in the Legal Agreement. While the new Philippine Procurement Law (RA 9184) is in reasonable harmony with the Guidelines at the NCB level, the Procurement Schedule of the Grant Agreement shall include an annex detailing procedures under the national law that are not acceptable to the Bank. Other than that, NCB procurement should be carried out in accordance with the competitive bidding procedures required by RA 9184. The general description of various items under different expenditure categories for the first 18 months are described below and summarized in the attached Procurement Plan. For each contract to be financed by the grant, the different procurement methods, estimated costs, prior review requirements, and time frame are agreed between the recipient and the Bank task team in the Procurement Plan. The Procurement Plan should be a rolling plan that should be updated at least annually or as required to reflect actual project implementation needs and improvements in the institutional capacity of the implementing units.

2. ***Procurement of Works.*** Works to be procured under this project include small contracts for piloting of the climate-proofing intervention for a few farm-to-market roads, trading posts and irrigation canals. Contracts estimated to cost US$100,000 up to less than US$500,000 may be procured following national competitive bidding (NCB) procedures using the Philippine Bidding Document (PBD) as harmonized with the Bank. Procurement of very small works costing below US$100,000 may be awarded based on shopping procedures, by comparing price quotations obtained from several contractors, usually at least three, as defined in paragraph 3.5 of the Guidelines. Climate proofing interventions for existing contracts, awarded in accordance with procedures acceptable to the Bank, may, subject to prior agreement with the Bank, be procured though direct contracting method in accordance with paragraph 3.6(a) of the Procurement Guidelines. Community participation in procurement, in accordance with the procedures included in the CDD Manual agreed with the Bank under the NPSENRMP (Loan No. 7470PH), maybe be used for small contracts required for demonstration trials including the establishment of nurseries, reforestation, management of coral reefs and enhancement of fish sanctuaries.

3. ***Procurement of Goods.*** Goods to be procured under this project include office and information technology equipment, GPS, GIS, software, rain gauges, solar panels, vehicles, and training and IEC materials. Procurement through ICB is not expected. NCB may be used for procurement of goods estimated to cost US$100,000 or more but less than US$500,000 per contract where the goods are normally available locally at competitive prices. Shopping may be used to procure goods estimated to cost less than US$100,000 per contract. Specialized equipment and software that are proprietary and obtainable only from one source may, subject to prior agreement with the Bank, be procured though direct contracting method in accordance with paragraph 3.6(c) of the Procurement Guidelines.

4. ***Selection of Consultants.*** Consultant services for the project include project management, capacity building and LGU training, TA for Strengthening Climate Change Resiliency through Improved Watershed Management and development of communication strategy. While Quality and Cost Based Selection (QCBS) is the default method for contracts estimated to exceed US$200,000, Quality Based Selection (QBS) and Fixed Budget Selection (FBS) may also be used for consultant services that meet the requirement of paragraph 3.2 and 3.5 of the guidelines respectively. Selection based on Consultants' Qualification (CQS) may be used for contracts estimated to cost less than US$200,000 each. Short lists of consultants for services estimated to cost less than $200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. Services for assignments that meet the requirements set forth in the first sentence of paragraph 5.1 of the Consultant Guidelines may be procured under contracts awarded to individual consultants in accordance with the provisions of paragraphs 5.2 through 5.4 of the Consultant Guidelines. Due to the highly technical nature of the project it is likely that certain small and specialized assignments may, subject to prior agreement with the Bank, be selected through single-source selection of a firm in accordance with paragraph 3.10 of the Consultant Guidelines or sole source of individual consultants in accordance with paragraph 5.4 of the Consultant Guidelines.

5. ***Operating Costs.*** Activities relating to managing the project, including staff travel and office utilities, and supporting project operations, based on annual operating cost, will be provided in accordance with existing government prescribed limits and procedures acceptable to the Bank.

6. **Advance Procurement Action.** The grant is expected to be presented to the World Bank Board by late May 2010 and declared effective by around July 2010. Selection of the consulting services for the institutional strengthening and project management, estimated at US$ 0.42 million, have been initiated. To accelerate project implementation, the DENR and the DA proceeded with the initial steps of procurement before signing the related agreement with the Bank. The procurement, including advertising, shall be carried out in accordance with Bank's Consultant Guidelines for these contracts and any other procurement that commenced before project effectiveness in order for the contracts to be eligible for Bank financing. The prior review process by the Bank shall also be followed.

Assessment of the agency's capacity to implement procurement

7. The earlier procurement capacity assessment (PCA) found inherent weaknesses and inefficiencies in Department of Environment and Natural Resources (DENR) procurement. While there were recent improvements through the establishment of a Procurement Unit (PU) within DENR's Foreign-assisted and Special Project Office (FASPO) and the implementation of the DENR Procurement Improvement Program there is no evidence yet of remarkable improvement in procurement processing. Also, though the set up of a PU in FASPO, with trained and qualified staff who can handle the procurement of existing portfolio following Bank procedures, the procurement capacity is limited due to the increasing number of DENR projects. It is expected that the current PU capacity will be overstretched because of the technical

complexity of the project and the many partner agencies that are either weak or lack experience in Bank procurement.

In regard to the Department of Agriculture (DA), the previous capacity assessment including the implementation of the Diversified Farm Income and Market Development Project (DFIMDP) had identified weaknesses in DA procurement; however, the central DA BAC has qualified staff who can handle the procurement in accordance with the Bank procedures. The DA's Regional Office Nos. 6 and 7 have staff trained to handle NCB and Shopping following Bank's procedures. With respect to NIA, the assessment found that implementation of mitigation measures are now in progress under the Participatory Irrigation Development Project (PIDP)

8. The key issues and risks concerning procurement for implementation of the project have been identified and include the following:

a. Limited procurement capacity of the DENR Procurement Unit, which may be overstretched as it has few staff to deal with the increasing number of projects, and restricted capacity of DA
b. Other partner agencies are either weak or lack experience in Bank procurement; and,
c. Transparency issues in processing procurement.

9. The following corrective measures have been agreed to:

a. To mitigate the risk due to limited capacity, additional procurement staff shall be appointed to complement the capacity of the Procurement Unit of DENR.
b. Procurement by the DA would be restricted to the central BAC and Region 6, and that procurement of works for the irrigation subprojects shall be handled by NIA;
c. All procurement under the project are subject to oversight supervision of the Procurement Unit in FASPO, accordingly contracts requiring prior review shall firstly be examined by the Procurement Unit in FASPO before they are transmitted to the Bank.
d. After pre-appraisal, the DA and DENR staff who will manage the project and new members of the Bids and Awards Committees (BACs) shall undergo procurement training.
e. Advance procurement in accordance with paragraph 1.12 of the Consultants Guidelines would be implemented for critical contracts; hence TORs and RFPs should have been drafted during appraisal.
f. A detailed review of the first 18-month procurement plan shall be conducted by a technical specialist to ensure that contracts are packaged in an appropriate and optimum manner and then reviewed and cleared by the DPS. Monitoring of progress should be on the basis of the annual procurement plan. In addition to the prior review, post review at a ratio of 1:5 would be carried out. The ratio shall be reviewed and adjusted as required based on the performance of DENR, DA and the LGUs.
g. To mitigate the risk due to partner agencies that are either weak or lack experience in Bank procurement, procurement for PAGASA, Manila Observatory, NAMRIA and UP RMTC will be handled by DENR. DA, NIA and LGU procurement shall be under oversight supervision by DENR.

h. To address transparency issues, civil society representatives should participate as witnesses to the project's procurement process, as required by RA 9184.
i. All bid opportunities and contract awards should be posted electronically (for wide dissemination) at the PhilGEPS (Philippine Government Electronic Procurement System) as required by Philippine procurement law.

10. The overall project risk for procurement is high, and subject to implementation of the mitigation measures could be reduced to substantial.

Procurement plan

11. The Procurement Plan (PP) developed by the DENR during appraisal provides the basis for the procurement methods. The PP agreed between the DENR and the DA, and the Project Team on March 26, 2010 is available at the FASPO Office, DENR Complex, Visayas Avenue, Quezon City and SPCMAD Office, DA Building, Quezon City, respectively. It should also be available in the project's database and on the Bank's external website. The procurement plan should be updated in agreement with the Project Team, annually or as required, to reflect actual project implementation needs and improvements in institutional capacity.

Frequency of procurement supervision

12. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment has recommended that supervision missions visit the field twice a year to carry out post-review of procurement actions.

Details of the procurement arrangements involving international competition

13. Goods, Works, and Non-Consulting Services

a. Contract packages to be procured following NCB:

1	2	3	4	5	6
Ref. No.	**Contract (Description)**	**Estimated Cost (US$)**	**Procurement Method**	**Review by Bank (Prior / Post)**	**Expected Bid-Opening Date**
CCAP-G-10-01	Meteorological equipment	224,000.00	NCB	Prior	Aug 2, 2010
CCAP-W-10-01	Farm to Market Road (Janiuay)	127,000.00	NCB	Post	May 5, 2012

b. Any ICB and all direct contracting contracts shall be subjected to prior review by the Bank.

14. ***Consulting Services***

1	2	3	4	5	6
Ref. No.	**Description of Assignment**	**Estimated Cost (US$)**	**Selection Method**	**Review by Bank (Prior / Post)**	**Expected Proposals Submission Date**
PhilCCAP1-2010-1	CCA Adaptation Policy and IEC	277,810.00	QCBS	Yes	31-Aug-10
PhilCCAP1-2010-2	Climate Proofing for Agri-Support Infrastructure	77,000.00	CQS	No	31-Aug-10
PhilCCAP1-2010-5	Research Study to Develop and Field Test Innovative extension services to improve agronomic services	217,000.00	FBS	Yes	17-Sep-10
PhilCCAP1-2010-6	Strengthening Climate Change Resiliency thru Protected Area Management	203,000.00	QCBS	Yes	05-Jul-10
PhilCCAP1-2010-7	Community Mobilization for PPPLA	33,000.00	CQS	No	17-Sep-10
PhilCCAP1-2010-8	Enhanced Provision of Scientific Information for Climate Risk Management	128,000.00	QCBS	Yes	17-Sep-10
PhilCCAP1-2010-12	Baseline and End-Project Surveys - Project Impact	73,000.00	CQS	No	17-Sep-10
PhilCCAP1-2010-13	IEC strategy	108,000.00	CQS	No	17-Sep-10
PhilCCAP1-2010-14	Market/Demand Analysis	33,000.00	CQS	No	17-Sep-10
PhilCCAP1-2010-15	PPLA Protected Area Management	24,000.00	FBS	No	30-Jul-10
PhilCCAP1-2010-16	SIPLAS Protected Area Management	40,000.00	FBS	No	30-Jul-10

a. Consultancy services to be provided by firms estimated to cost US$ 100,000 or more per contract, single-source selection of consultants (firms), and sole-source selection of individuals shall be subjected to prior review by the Bank.

b. Short lists of consultants for services estimated to cost less than US$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Annex 9: Economic and Financial Analysis

Philippines: Climate Change Adaptation Program Phase 1

Overview of Approach

1. Due to the complexities of undertaking an economic evaluation of climate change adaptation projects, and given the nature of PhilCCAP which is primarily piloting and demonstrating new approaches, financial and economic analyses have not been undertaken for the preparation of the PAD. It will be conducted however over the course of the project implementation for specific adaptation activities. The following section discusses in detail the methodology involved in the economic evaluation of adaptation investments in agriculture and natural resource management, which could be applied during project implementation.

2. The economic evaluation of climate adaptation in agriculture and natural resources at the project level involves three major steps, namely the evaluation of the potential impacts of climate change upon agricultural productivity in the project area assuming either autonomous adaptation or no adaptation at all, the evaluation of the costs and benefits of possible planned adaptation and the consideration of the implications of uncertainty with respect to the choice of specific adaptation options. Determining the impacts of climate change and the expected damages avoided through adaptation is associated with uncertainty due to the complexity in the relationship between the greenhouse gases, temperature increases and climate pattern and in determining the effectiveness of adaptation investments and the extent of autonomous adaptation. Moreover, similar to other environmental issues, translating the physical and ecological changes in monetary terms and estimating the benefits of soft adaptation are not straightforward. Even accounting for uncertainty in the economic analysis is problematic as it relies on probability distributions that are not known in the case of climate change. Factoring uncertainty in the evaluation is particularly necessary when benefits accrue only in the context of climate risks. However, this is not the case for this project.

Evaluating the costs and benefits of adaptation

3. The benefits and costs of adaptation measures in agriculture can be determined through a cost-benefit economic framework or a noneconomic evaluation approach. An alternative to cost benefit analysis is the Multiple Criteria Decision Analysis.

4. The costs of adaptation differ whether the adaptation project is standalone or is part of a larger developmental project. For PhilCCAP, the goal is to integrate adaptation activities with PIDP and ENRMP through retrofitting. For development projects that fully integrate adaptation in their design, an educated guess can be made of the percentage of the project costs that can be allocated to adaptation. The additional costs of adaptation for instance can be determined by comparing the total project costs with costs of existing projects with similar purposes implemented in the same areas but with no regards to climate change. The costs of autonomous adaptation on the other hand can be ascertained by solicitation of information from the local communities that are vulnerable to climatic risks that are responsible for adaptation relevant decisions.

5. Estimating the benefits of hard investments that assist adaptation to climate change is straightforward given the direct relationship between inputs provided by the physical investment and the production output. Evaluating the soft adaptation on the other hand is more complicated because the benefits are inferred from resulting changes in private sector behavior and prices. Assumptions also need to be made about how the interventions could change the farmer's decision making, their production and their economic returns. The co-benefits of adaptation investment must also be considered in the economic evaluation, particularly if the benefits are of public goods nature to the beneficiaries.

6. The adaptation project can also be evaluated using non-economic approaches. This is a more appropriate choice if the decision makers need to evaluate the alternatives across a range of different criteria such as a number of social, environmental and economic indicators or if the monetary value of potential benefits from adaptation or their likelihood of being realized is scarce. In the first case, a Multiple Criteria Decision Analysis can be used in lieu of the cost-benefit analysis. Direct solicitation, such as structured interviews on the other hand can be employed if significant amount of informed judgment is needed, such as in the case of local resident's expert knowledge on how prior changes in ecosystem conditions affect productivity to evaluate the impact of climate change on ecosystem services.

Application to the PhilCCAP

7. The economic analysis of climate impacts using the discussed methodologies is feasible given some caveats on the limitations of data available. To quantify the extent of exposure to climate risks, the sensitivity of the economy to climate variability and the potential impacts of climate variability upon the economy, key relationship among changes in climate parameters such as average temperature, average precipitation, temperature and precipitation extremes, sea level rise, and storm surges and the impacts on economic activities and livelihoods measured through changes in agricultural, fishery and forestry productivity, and impacts on ecosystems functions, human health, infrastructure and coastal areas must be quantified. This requires historical climate information as well as projections of these climate variables by global circulation models or regional and downscaled climate models under given climate scenarios. These information are available from PAGASA and Manila Observatory. The country has a good database as well on economic data from economic ministry and relevant government agencies, particularly on productivity, assets and population that are needed to assess exposure to climate change. The Philippine Institute for Development Studies for instance has a representation of important economic data in GIS which can easily be put together with climate information to assist in exposure analysis. The assessment of climate change has in fact already been undertaken to determine impacts in the agricultural, water, coastal, watershed and forest resources in the country by Lansigan and Salvacion (2007), Perez et al (1999), Jose and Cruz (1999), Lasco (2002) and Lasco (2008) respectively. Climate changes and impacts on crop yields in selected provinces in the regions of interest of the project have also been studied, particularly by Lansigan and Salvacion (2007) using the agronomic model, CERES. The World Bank has also undertaken a hydro-meteorological risk assessment under future climate change in select areas in the country with their analysis focusing on the impact of increased incidence and magnitude of flood and typhoon events on agricultural productivity and infrastructure. While a

Ricardian analysis has not been undertaken to assess economic (in particular, agricultural productivity) impacts of climate change, it can be undertaken with agricultural production, land values, revenue and other relevant agricultural data from Bureau of Agricultural Statistics and climate information from PAGASA.

8. The assessment of the costs and benefits of a number of adaptation measures identified in the project can thus be analyzed given the assessment of projected climate change and natural hazard risks for the regions 2 and 6 using available climate models and scenarios. The projected trends in the relevant climate variables, obtained through statistical downscaling of results from GCMs can then be combined with sector level impact assessment models to quantify potential impacts. The impact in particular on agricultural production and irrigation infrastructure in these regions can be undertaken following the same methodology as existing studies. The analysis can also be extended to watershed and coastal areas of the project scope. Estimating the benefits of physical investments that support adaptation to climate change is clear-cut given the direct relationship between inputs provided by the physical investment and the production output. The retrofitting/ redesign and rehabilitation of irrigation infrastructure, the incorporation of climate adaptation in extension packages, the introduction of climate resilient crops/seed varieties and adaptation interventions in protected areas translate into higher agricultural and forest productivity. A number of adaptation measures particularly those introduced in the protected areas also have important co-benefits that are of public goods nature. The weather based crop insurance on the other hand must be assessed in terms of their net financial benefits to the farmers (that is, whether it pays for the farmers to participate in the insurance) and in terms of their sustainability (or whether there will be sufficient payments from the farmers to sustain expansion without major subsidies). A sensitivity analysis can be undertaken with respect to the assumption on the discount rates to determine how sensitive the economic valuation is with respect to the valuation of long term benefits. Accounting for uncertainty is not particularly important to given that the benefits of most of the adaptation measures introduced by the project can be expected even in the absence of the climate risks.

Annex 10: Safeguard Policy Annex

Introduction

1. The project will have four components: Component 1 on support to strengthening the enabling environment for climate change adaptation; Component 2 on demonstration of climate change adaptation strategies in the agriculture and natural resources sectors; Component 3 on enhancement of provision of scientific information for climate risk management; and Component 4 on support to project management.

2. Components 1, 3 and 4 involve basically soft activities that do not have any safeguard implications and impacts. The core of the project is Component 2, since the adaptation measures demonstrated in this component will yield the greatest direct, on-the-ground benefits in terms of improving the resiliency of local communities to climate change. The sites selected for these demonstrations are in Regions 2 and 6, areas that are prone to frequent flooding and drought and considered among the most vulnerable based on existing assessments; and Siargao Island in Region 13, which represents an island ecosystem at risk from sea level rise.

Environmental assessment

3. A detailed environmental assessment (EA) was conducted as part of project preparation. Through the EA process and the analysis of impacts, it was ascertained that the overall environmental benefits of the project far outweigh the envisaged negative environmental impacts, which are assessed to be benign and localized and can be readily mitigated through proper design and civil works implementation. The expected benign environmental impacts relate to climate-proofing of irrigation infrastructure (subcomponent 2.1) supported under the Bank-financed Participatory Irrigation Development Project (PIDP) and the implementation of agro-forestry and alternative livelihoods as a climate risk management strategy (subcomponent 2.4). Possible impacts associated with construction or improvement of irrigation systems include localized erosion resulting from cut-and-fill, and resultant sedimentation; modification of natural drainage ways; oil and grease spills; dust and noise pollution; and damage to vegetation through clearing.

4. The irrigation systems under PIDP, which will be climate-proofed under the project, have their respective Initial Environmental Examination (IEE) reports, which assessed the environmental impacts during construction and operation and Environmental Management Plans EMPs) to address the impacts. These IEEs and EMPs have been reviewed and cleared by the Bank prior to the appraisal of PIDP. However, as there may be new activities not covered in the IEE reports, supplemental environmental management measures have been prepared under the project to address the additional impacts that may be brought by the climate-proofing activities. These also include measures to mitigate impacts from alternative livelihood activities.

Mitigating Measures

5. The mitigating measures to address the impacts are shown in Table 10.1.

Table 10.1: Mitigation Measures to Address Potential Environmental Impacts

Proposed Components / Activities	Mitigation Measures
Climate-proofing of irrigation infrastructure	**Construction Phase (Mitigation Measures for Physical Impacts)**
	• Design and construct effective drainage systems and silt traps/ponds and sand bagging in civil works • Schedule earthwork activities during the dry season • Stabilize immediately the exposed surfaces and slopes using vegetative and mechanical means • Dispose properly spoils from construction • Use spoils as filling materials
	• Install silt traps, drainage canals and sand bagging to protect rivers and water bodies downstream
	• Sprinkle water over exposed soils and bare earth during summer season
	• Schedule excavation and construction during the day time
	Maintenance and Operation Phase (Mitigation Measures for Physical Impacts)
	• Control erosion upstream through vegetative and mechanical means
	• Install adequate drainage canal and stabilize pond embankments
	• Introduce and implement proper solid waste disposal by upstream communities
	Construction Phase (Mitigation Measures for Biological Impacts)
Agroforestry and livelihood activities	• Use native species of forest for Agroforestry to avoid the proliferation and encroachment of exotic or alien species into natural forest. • Allow the establishment of Agroforestry plots in designated areas where biodiversity of flora and fauna is not threatened • Maintain a buffer zone around biodiversity-rich areas beyond which no agro-forestry or livelihood activities would be allowed • Do not allow livelihood activities that cut natural forest and limit the harvesting of non-timber forest products
	• Monitor regularly the buffer zones of natural forest to cull out weeds, grass, shrubs and seedling of exotic plan species and prevent them from displacing or blocking the natural regeneration of indigenous forest species
	• Promote the use of IPM and pesticides allowed by the government (FPA and BPI) • Inform and educate the farmers on the proper application of IPM and pesticides.
	• Promote the use of organic fertilizers • Educate and inform the farmers on the proper application and balanced use of organic and inorganic fertilizers
	• Adopt soil conservation measures and install soil erosion control structures in cultivated areas along slopes • Do not allow livelihood activities such as grazing of goats on highly erodible soils and pure crop cultivation in sloping areas.
	• Prohibit or regulate the clearing of grasses and shrubs in areas identified as habitats of endangered or endemic species of wildlife.
	• Fast track reforestation of denuded natural forest using indigenous species of forest.
	• Minimize or limit the areas to be planted to exotic plantation species for Agroforestry purposes

Institutional arrangements

6. The implementation of EMP in PIDP irrigation system will be the responsibility of the concerned NIA Regional Office who has control over the system.

7. For agro-forestry and alternative livelihood activities, the DA and the DEBR will have shared responsibilities. The DA will partner with the Municipal Agriculture Officer (MAO) of

the LGU in monitoring crop diversification with reference to the application of IPM, soil conservation, soil fertility management and the incidence of pests and diseases in the project sites. The DENR will tap its CENROs or deputize NGOs, and farmers' organizations in monitoring the environmental impacts of crop diversification and Agroforestry adaptation measures.

8. Capacity building on the monitoring and management of climate change adaptation activities is needed for the staff of DA, DENR, LGU-ENRO and their partner NGOs and deputized farmers. Those personnel who will be involved in the monitoring of impacts and in the implementation of mitigation or environmental management plan will be provided classroom and field hands-on training to make them effective agents.

Social Assessment

9. A social assessment was carried out, focusing on the analysis of potential project impacts on the social and economic circumstances of the households and communities, and other stakeholders, in areas where pilot testing of climate risk reduction measures in key productive sectors will be implemented. Overall the project is expected to improve income streams and equitable distribution of opportunities among farmers, indigenous peoples, and other beneficiaries.

10. The interventions which might be expected to cause possible social impacts are confined to Component 2.

11. Of the activities contained in Component 2, two have potential social dimensions that may be enhanced for improved benefit to the vulnerable groups:

(a) **Subcomponent 2.2: Enhancing delivery and effectiveness of extension services for farm-level climate risk management and Subcomponent 2.4 Improved watershed management and coastal resource management.** The first subcomponents will support the DA in enhancing the content and delivery of extension packages and methodology to support the adaptation of agronomic practices and crop varieties to manage climate-risk at the farm level. The second supports the DENRs mandate for natural resources management where IPs are often affected. To ensure that this component supports the principle of social inclusion and conforms to the OP Policy on Indigenous Peoples it is expected that, where IPs are present, the extension packages and activities related to watershed and coastal management be culturally sensitive and appropriate so that the IP communities if present, benefit from the project. Blending modern scientific approaches for setting up early warning systems for extreme weather events, with systems based on appropriate traditional, local practices and observations including those coming from indigenous knowledge skills and practices of IP communities in pilot sites will provide venues for IP participation in the validation and dissemination of these traditional knowledge.

Social safeguard framework

12. The two irrigation projects (Pinacanauan and Jalaur River Irrigation Systems) for climate proofing are covered by the PIDP. Through task team project visits and discussions with project staff, it was found that the planned civil works for both irrigation systems have no triggers to the Bank's Policy on Indigenous Peoples and Involuntary Resettlement Policy. In the remote chance that social safeguards triggers are encountered in the implementation of the project, the PIDP IP and Resettlement Policy Frameworks shall be applied. These will ensure that adverse impacts on project affected persons including IPs, if any, will be mitigated in compliance to Bank's OP 4.10 and 4.12 so that adversely affected persons may directly benefit from the proposed activities, and that they are consulted throughout the life of the project.

13. On the other hand the two protected areas (Penabalanca and Siargao) for improved management of protected areas for implementation by DENR will be covered by the ENRMP IP Policy Framework a similar ongoing project for Integrated Ecosystem Management System should IPs be found to be affected by the project.

14. The use of these existing IP Frameworks will not only help prevent confusion among the implementers, it is also expected to help institutionalize its application to other protected area management and irrigation projects across the host agencies operating units.

15. **Stakeholder Identification.** The Department of Environment and Natural Resources (DENR) will be the coordinator for PhilCCAP1 implementation; and work in cooperation with the Department of Agriculture (DA) and its attached agency, the National Irrigation Administration which will be the direct implemetors of the demonstration project with assistance from the following support agencies: Local Government Units (LGUs); Departments of Health (DOH), and Agrarian Reform (DAR); National Commission on Indigenous Peoples (NCIP); Non-Government Organizations (NGOs); Peoples Organizations (POs) including Irrigators' Associations (IAs); international and local donor organizations and research institutes; and representatives of the local people for the detailed project development and implementation process for the four proposed adaptation activities under Component 2.

16. Annex Table 10.2 below describes the major categories of stakeholders and their participation in the project with respect to development and implementation of the four proposed activities under Component 2.

Annex Table 10.2 Key Stakeholders and Roles and Responsibilities

Stakeholder	Roles and Responsibilities
National Council for Climate Change	The CCC shall oversee the project and lead in facilitating the development of policies and institutions that shall promote CCA.
Department of Environment and Natural Resources (DENR)	DENR will be responsible for the overall coordination and implementation of the Project including its monitoring and evaluation.
Department of Agriculture (DA)	DA will work in close cooperation with DENR and other key stakeholders for the implementation of component activities directly pertinent to its mandate.
National Irrigation Administration (NIA)	NIA is an attached agency of DA, and one of the main partners of the Project in the implementation of CC-resilient irrigation system.
National Commission on	NCIP is one of the main partners of the Project. It will be a member of

Stakeholder	Roles and Responsibilities
Indigenous Peoples (NCIP)	the PSC and will contribute to the Project especially in the development of indigenous peoples and protection of their rights over ancestral lands and domains to enhance the benefits to IP groups.
Local Government Units (LGUs)	LGUs (Provinces and Municipalities) in selected pilot areas will be represented in the Project local committees and involved in relevant Project activities.
Department of Agrarian Reform (DAR)	DAR is one of the main partners of the Project as a member of the PSC and will contribute to the Project in facilitating issuance of pertinent land tenure security for landless tenants and leaseholders in private agricultural lands in selected pilot areas where applicable.
Other government agencies	PhilCCAP1 will coordinate with said entities to help develop an enabling environment for CC resiliency..
Press and Media Organizations	PhilCCAP1 will cooperate with national and local press and media on public awareness issues.
Academic and Research Institutes	PhilCCAP1 will collaborate with relevant academic and research institutes having climate change adaptation initiatives in selected pilot sites on scientific surveys and educational activities. One representative of the institutes will be a member of the PSC.
Local NGOs	Local NGOs supporting selected pilot areas on related activities will be invited to Project local committees and they will be encouraged to take active role in implementing Project activities.
Peoples Organizations (POs) including Irrigators Associations (IAs)	POs/IAs within the selected pilot areas will be invited to Project local committees and they will be encouraged to take active role in implementing Project activities.
Representatives of local communities IP tribal communities and their Chieftains	Local people of the communities within the selected pilot areas will be made aware of the issues and invited to take part in the decision making process. They will be represented in the Project local committees by recognized local/traditional leaders and actively involved in the project activities. Their cooperation and consent will be sought in implementing project activities including resource protection, alternative income development, awareness raising, etc. The community leaders will be the main counterparts in linking the Project objectives and activities to the needs of the people in the pilot areas.
World Bank/Global Environment Facility (WB/GEF)	PhilCCAP1 builds upon lessons learned and good practices on climate change adaptation funded by WB/GEF elsewhere, including the results of the World Bank-funded Provention study on Philippine agriculture. WB/GEF project team is involved in the design of this Project to ensure that lessons learnt are internalized and the gaps are addressed.

Annex 11: Project Preparation and Supervision

PHILIPPINES: PH - CLIMATE CHANGE ADAPTATION

TO BE COMPLETED

	Planned	Actual
PCN review	06/11/2007	06/07/2007
Initial PID to PIC	07/02/2007	07/03/2007
Initial ISDS to PIC	07/02/2007	07/03/2007
Appraisal	02/02/2010	02/08/2010
Negotiations	03/26/2010	
Board/RVP approval	05/27/2010	
Planned date of effectiveness	06/30/2010	
Planned date of mid-term review	12/30/2012	
Planned closing date	06/30/2015	

Key institutions responsible for preparation of the project:
Department of Environment and Natural Resources; Department of Agriculture

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Samuel Wedderburn	Senior Natural Resources Management Specialist	EASER
Minneh Kane	Lead Counsel	LEGES
Robert O'Leary	Senior Finance Officer	CTRFC
Josefo Tuyor	Senior Operations Officer	EASPS
Alexander Lotsch	Technical Specialist	DECWD
Fabrizio Bresciani	Rural Development Economist	EASPS
Abel Lufafa	Agricultural Officer	ARD
Felizardo Virtucio	Operations Officer	EASPS
Victoria Florian Lazaro	Operations Officer	EASPS
Sladjana Cosic	ETC	EASER
Noel Sta. Ines	Senior Procurement Specialist	EAPPR
Tomas Sta. Maria	Financial Management Specialist	EAPFM
Arne Jensen	Consultant	EASER
Douglas Forno	Consultant	EASER
Mike Harrison	Consultant	EASPS
John Hay	Consultant	EASNS
William Dick	Consultant	ARD
Luningning Bondoc	Consultant	EASPS
Peter Carreon	Team Assistant	EASPS
Michelle Dee	Consultant	EASER
Julia Hanniawaty	Program Assistant	EASER
Cynthia Dharmajaya	Program Assistant	EASER

Bank funds expended to date on project preparation:
1. Bank (GEF) resources: USD308,702.13
2. Trust funds: USD18,000.00
3. Total: USD326,702.13

Estimated Approval and Supervision costs:
1. Remaining costs to approval: $10,000
2. Estimated annual supervision cost: $70,000

Annex 12: Documents in the Project File

PHILIPPINES: PH - CLIMATE CHANGE ADAPTATION

1. Detailed Project Preparation Reports prepared by DENR:
   a. Agriculture
   b. Forestry
   c. Natural Resource Management
   d. Irrigation
   e. Technical Study on the Capacity Building Needs of Pagasa
   f. Climate Risk Management
2. Project Implementation Plan
3. Project Operations Manual
4. Detailed Project Costs
5. Commitment Letter from NIA

Annex 13: Statement of Loans and Credits

PHILIPPINES: PH - CLIMATE CHANGE ADAPTATION

			Original Amount in US$ Millions						Difference between expected and actual disbursements	
Project ID	FY	Purpose	IBRD	IDA	SF	GEF	Cancel.	Undisb.	Orig.	Frm. Rev'd
P106262	2008	PH- Bicol Power Restoration Project	12.94	0.00	0.00	0.00	0.00	3.49	-0.82	0.00
P079935	2008	PH- Natl Rds Improv. & Mgt Ph.2	232.00	0.00	0.00	0.00	0.00	232.00	0.00	0.00
P101964	2007	Support for Tax administration Reform	11.00	0.00	0.00	0.00	0.00	10.61	3.01	0.00
P084967	2007	Mindanao Rural Dev. Project - Phase 2	83.75	0.00	0.00	0.00	0.00	80.90	5.65	0.00
P096174	2007	PH-Nat'l Prog Supt for ENV & NRMP	50.00	0.00	0.00	0.00	0.00	46.00	6.50	0.00
P075464	2006	PH-NP Support for HNP	110.00	0.00	0.00	0.00	0.00	91.68	8.32	0.00
P094063	2006	PH-NP Support for Basic Ed	200.00	0.00	0.00	0.00	0.00	134.75	54.75	0.00
P064925	2006	PH-SUPPORT FOR STRATEGIC LOCAL DEV & INV	100.00	0.00	0.00	0.00	0.00	94.14	-1.91	0.00
P073206	2005	PH LAND ADMINISTRATION AND MANAGEMENT II	19.00	0.00	0.00	0.00	0.00	14.75	4.44	0.00
P079628	2005	PH-2ND WOMEN'S HEALTH & SAFE MOTHERHOOD	16.00	0.00	0.00	0.00	0.00	15.12	3.18	0.00
P079661	2005	PH-MANILA SEWERAGE 3	64.00	0.00	0.00	0.00	0.00	46.84	21.47	0.00
P066076	2004	JUDICIAL REFORM SUPPORT PROJECT	21.90	0.00	0.00	0.00	0.00	12.28	11.56	0.00
P066397	2004	PH-Rural Power Project	10.00	0.00	0.00	0.00	0.00	1.27	-2.69	0.00
P070899	2004	PH LAGUNA DE BAY INSTITUTIONAL STRENGTHE	5.00	0.00	0.00	0.00	0.00	3.35	3.19	0.00
P075184	2004	PH: Diversified Farm Income & Mkt. Devt	60.00	0.00	0.00	0.00	0.00	32.63	19.30	0.00
P077012	2003	PH KALAHI-CIDSS PROJECT	100.00	0.00	0.00	0.00	0.00	31.52	31.52	0.00
P073488	2003	PH - ARMM Social Fund	33.60	0.00	0.00	0.00	0.00	4.19	4.19	0.00
P071007	2003	PHSecond Agrarian Reform Communities Dev	50.00	0.00	0.00	0.00	0.00	10.33	10.33	2.87
P069491	2002	PH-LGU URBAN WATER APL2	30.00	0.00	0.00	0.00	15.00	8.38	22.79	5.52
P057731	2001	PH-MMURTRIP	60.00	0.00	0.00	0.00	0.00	13.53	13.53	3.67
P048588	1999	PH-LGU FINANCE & DEV.	100.00	0.00	0.00	0.00	40.00	10.22	50.22	8.68
		Total:	1,369.19	0.00	0.00	0.00	55.00	897.98	268.53	20.74

PHILIPPINES
STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

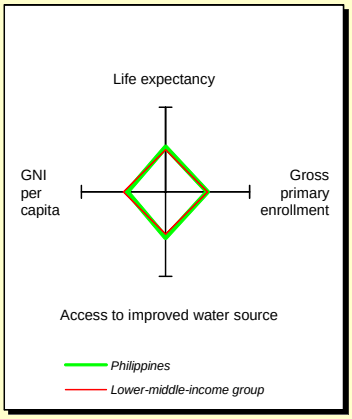
		Committed				Disbursed			
		IFC				IFC			
FY Approval	Company	Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2001	AEI	0.86	0.00	0.00	0.00	0.86	0.00	0.00	0.00
2002	APW Trade	0.00	0.00	0.65	0.00	0.00	0.00	0.65	0.00
	Alaska Milk	0.00	0.62	0.00	0.00	0.00	0.62	0.00	0.00
2000	Asian Hospital	3.30	0.00	1.00	0.00	3.30	0.00	1.00	0.00
	Bahay Financial	0.00	0.16	0.00	0.00	0.00	0.16	0.00	0.00
2005	Balikatan HF	0.00	1.89	34.31	0.00	0.00	1.89	32.13	0.00
2002	Banco de Oro	0.00	6.03	10.00	0.00	0.00	6.03	10.00	0.00
2005	Cepalco	15.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	Drysdale Food	4.31	0.00	0.00	1.87	4.31	0.00	0.00	1.87
2002	Eastwood	13.53	0.00	0.00	0.00	13.53	0.00	0.00	0.00
2005	Eastwood	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	Filinvest	17.73	0.00	0.00	0.00	17.73	0.00	0.00	0.00
2005	Filinvest Lan...	43.69	0.00	0.00	0.00	21.84	0.00	0.00	0.00
2004	Globe Telecom	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	H&Q PV III	0.00	0.94	0.00	0.00	0.00	0.94	0.00	0.00
1989	H&QPV-I	0.00	0.15	0.00	0.00	0.00	0.15	0.00	0.00
1993	H&QPV-II	0.00	0.08	0.00	0.00	0.00	0.08	0.00	0.00
1992	Holcim Phil	0.00	1.97	0.00	0.00	0.00	1.97	0.00	0.00
2004	LARES	22.00	2.70	0.00	0.00	0.00	0.00	0.00	0.00
2000	MFI MEP	0.00	0.11	0.00	0.00	0.00	0.11	0.00	0.00
2001	MNTC	36.33	0.00	0.00	0.00	36.33	0.00	0.00	0.00
2003	MWC	29.84	0.00	0.00	0.00	29.84	0.00	0.00	0.00
2004	MWC	30.00	14.96	0.00	0.00	0.00	14.96	0.00	0.00
2000	Mariwasa	10.89	0.00	3.52	0.00	10.89	0.00	3.52	0.00
1993	Mindanao Power	0.00	2.22	0.00	0.00	0.00	2.22	0.00	0.00
1993	Mirant Pagbilao	3.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00
2001	PEDF	1.50	0.00	0.00	0.00	0.75	0.00	0.00	0.00
2005	PLGIC	0.00	0.00	1.50	0.00	0.00	0.00	1.50	0.00
1992	Pilipinas Shell	0.00	1.56	0.00	0.00	0.00	1.56	0.00	0.00
2000	PlantersBank	0.00	0.00	2.32	0.00	0.00	0.00	2.32	0.00
1998	Pryce Gases	13.34	0.00	1.70	5.82	13.34	0.00	1.70	5.82
2000	STRADCOM	6.85	0.00	0.00	0.00	6.85	0.00	0.00	0.00
2003	SVI	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
1995	Sual Power	18.29	0.00	0.00	23.88	18.29	0.00	0.00	23.88
1994	Walden Mgmt	0.00	0.03	0.00	0.00	0.00	0.03	0.00	0.00
1994	Walden Ventures	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00
	Total portfolio:	303.74	35.44	55.00	31.57	180.86	30.74	52.82	31.57

		Approvals Pending Commitment			
FY Approval	Company	Loan	Equity	Quasi	Partic.
2001	PEDF	0.00	0.00	0.00	0.00
2002	Eastwood	0.00	0.00	0.00	0.00
	Total pending commitment:	0.00	0.00	0.00	0.00

Annex 14: Country at a Glance

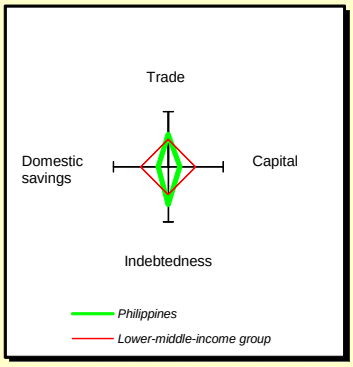
PHILIPPINES: PH - CLIMATE CHANGE ADAPTATION

POVERTY and SOCIAL	Philippines	East Asia & Pacific	Lower-middle-income
2008			
Population, mid-year *(millions)*	90.3	1,931	3,702
GNI per capita *(Atlas method, US$)*	1,890	2,631	2,078
GNI *(Atlas method, US$ billions)*	170.4	5,081	7,692
Average annual growth, 2002-08			
Population *(%)*	1.9	0.8	1.2
Labor force *(%)*	2.2	1.2	1.6
Most recent estimate (latest year available, 2002-08)			
Poverty *(% of population below national poverty line)*	..	..	..
Urban population *(% of total population)*	63	44	41
Life expectancy at birth *(years)*	72	72	68
Infant mortality *(per 1,000 live births)*	26	22	46
Child malnutrition *(% of children under 5)*	21	13	26
Access to an improved water source *(% of population)*	93	87	86
Literacy *(% of population age 15+)*	93	93	83
Gross primary enrollment *(% of school-age population)*	108	111	109
Male	109	112	112
Female	107	110	106



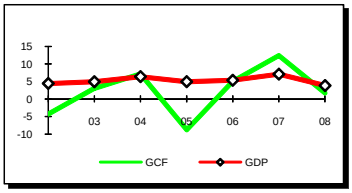
KEY ECONOMIC RATIOS and LONG-TERM TRENDS	1988	1998	2007	2008
GDP *(US$ billions)*	37.9	65.2	144.0	166.9
Gross capital formation/GDP	18.7	20.3	15.4	15.2
Exports of goods and services/GDP	28.4	52.2	42.5	36.9
Gross domestic savings/GDP	20.1	13.7	15.6	13.4
Gross national savings/GDP	20.0	19.5	34.1	35.3
Current account balance/GDP	-1.0	2.3	4.9	2.5
Interest payments/GDP	5.3	3.5	2.6	2.4
Total debt/GDP	76.4	82.3	45.8	38.9
Total debt service/exports	30.8	10.9	13.2	15.1
Present value of debt/GDP	..	..	46.1	34.7
Present value of debt/exports	..	..	86.9	71.8

	1988-98	1998-08	2007	2008	2008-12
(average annual growth)					
GDP	3.0	4.9	7.1	3.8	2.9
GDP per capita	0.7	2.9	5.1	2.0	0.4
Exports of goods and services	8.6	6.6	5.4	-1.9	-3.9

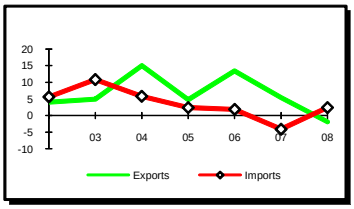


STRUCTURE of the ECONOMY

	1988	1998	2007	2008
(% of GDP)				
Agriculture	23.0	16.9	14.2	14.9
Industry	35.2	31.5	31.6	31.6
Manufacturing	25.6	21.9	22.0	22.3
Services	41.9	51.6	54.2	53.5
Household final consumption expenditure	70.8	73.0	74.5	76.9
General gov't final consumption expenditure	9.0	13.3	9.8	9.7
Imports of goods and services	26.9	58.8	42.3	38.7



	1988-98	1998-08	2007	2008
(average annual growth)				
Agriculture	1.5	4.0	4.8	3.2
Industry	3.1	4.0	6.8	5.0
Manufacturing	2.7	4.2	3.3	4.3
Services	3.7	6.0	8.1	3.3
Household final consumption expenditure	3.7	4.2	-0.5	7.5
General gov't final consumption expenditure	3.6	2.3	6.6	3.2
Gross capital formation	5.0	2.0	12.4	1.7
Imports of goods and services	10.1	3.8	-4.1	2.4



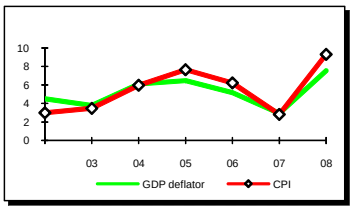
Note: 2008 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

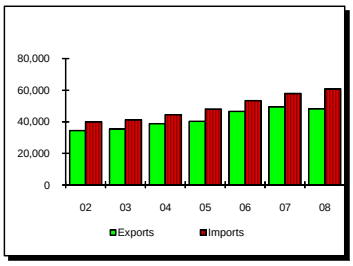
PRICES and GOVERNMENT FINANCE

	1988	1998	2007	2008
Domestic prices				
(% change)				
Consumer prices	13.9	9.2	2.8	9.3
Implicit GDP deflator	9.6	10.5	2.9	7.5
Government finance				
(% of GDP, includes current grants)				
Current revenue	13.4	17.3	15.7	15.8
Current budget balance	-0.8	1.3	1.5	1.9
Overall surplus/deficit	-2.9	-1.9	-0.2	-0.9



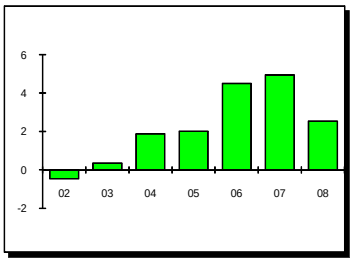
TRADE

	1988	1998	2007	2008
(US$ millions)				
Total exports (fob)	7,074	29,496	49,512	48,202
Electronics/Telecom	1,476	17,137	32,243	29,928
Garments	1,317	2,356	2,309	1,952
Manufactures	4,338	25,843	42,956	40,979
Total imports (cif)	8,159	29,524	57,903	60,784
Food	379	1,603	2,481	4,034
Fuel and energy	1,096	2,020	9,593	12,331
Capital goods	1,637	12,051	9,711	9,302
Export price index *(2000=100)*	..	..	..	..
Import price index *(2000=100)*	..	..	..	..
Terms of trade *(2000=100)*	..	..	..	..



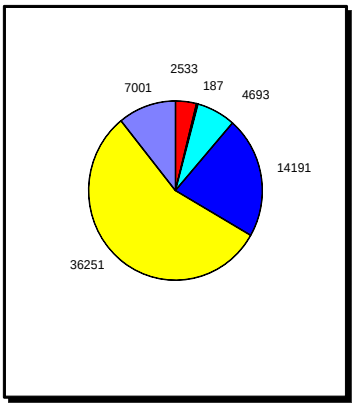
BALANCE of PAYMENTS

	1988	1998	2007	2008
(US$ millions)				
Exports of goods and services	9,487	34,531	59,278	58,396
Imports of goods and services	9,440	39,631	65,420	69,540
Resource balance	47	-5,100	-6,142	-11,144
Net income	-1,212	6,211	-892	146
Net current transfers	775	399	14,153	15,225
Current account balance	-390	1,510	7,119	4,227
Financing items (net)	983	-151	1,438	-4,138
Changes in net reserves	-593	-1,359	-8,557	-89
Memo:				
Reserves including gold *(US$ millions)*	2,059	10,842	33,751	36,659
Conversion rate *(DEC, local/US$)*	21.1	40.9	46.1	44.5



EXTERNAL DEBT and RESOURCE FLOWS

	1988	1998	2007	2008
(US$ millions)				
Total debt outstanding and disbursed	28,932	53,608	65,910	64,856
IBRD	3,408	4,311	2,726	2,533
IDA	102	205	195	187
Total debt service	3,405	4,742	10,136	12,194
IBRD	572	654	563	614
IDA	1	4	8	9
Composition of net resource flows				
Official grants	219	198	309	271
Official creditors	703	17	-12	-874
Private creditors	-735	1,171	2,548	-2,190
Foreign direct investment (net inflows)	936	2,287	2,916	1,403
Portfolio equity (net inflows)	0	264	3,178	-1,289
World Bank program				
Commitments	505	679	395	445
Disbursements	262	301	372	192
Principal repayments	283	389	410	478
Net flows	-22	-88	-38	-287
Interest payments	290	268	161	144
Net transfers	-312	-356	-199	-431



Note: This table was produced from the Development Economics LDB database. 12/9/09

Annex 15: Additional Cost Analysis

PHILIPPINES: PH - CLIMATE CHANGE ADAPTATION

1. The Philippines is an archipelago of over 7100 islands and a coastline that extends for about 17,400 km. There are 419 river basins with steep and short topography. The primary sectors (agriculture, fisheries and forestry) depend heavily on natural resources, contribute about 20% of GDP, and employ approximately 37% of the workforce, many of whom constitute the poorest households in the country.

2. The Philippines is widely known as one of the countries that is most exposed to natural hazards, including typhoons, floods, landslides, droughts, volcanoes, earthquakes and tsunamis. Over the past decades, these hazards have on average resulted in average financial losses of around USD$300 million annually (not including the costs of deaths, injuries and indirect losses) and claimed about 850 lives per year. Not counting the most recent events in 2009, natural hazards since 1900 have cost an estimated 50,000 lives and more than US$7 billion in property damage. These figures do not reflect the impacts of a large number of smaller hazard events that do not get registered in the statistics, but have very large impacts at the household level, primarily for the poor. At macroeconomic level, recurrent individual disasters, particularly when they are not large scale, are generally hard to trace.

3. However, the 1982-83 and 1997-98 El Niño events, which caused large drops in the volume of agricultural production, also contributed to the sharpest falls in GDP in the past decades. These events create enormous strains on water resources due to low water inflows into major watersheds and reservoirs. During severe El Niño-driven drought, water for agriculture has, at times, been totally cut in favor of domestic and industrial water supply.[23] An estimated US$372 million in agriculture losses during the period 1990-2003 have been attributed to the effects of El Niño.

4. The large impacts of natural disasters are not only related to the geography of the country and its high exposure to natural hazards, but also to its vulnerability, which is closely linked to poverty and environmental management. Urbanization and lack of land-tenure are driving many poor to move into high-risk areas. In rural areas, agricultural production, the key economic activity for the poor, is strongly affected by natural disasters. Once a disaster strikes, it throws people further back into poverty, and forces them to rely on coping mechanisms, such as withdrawal of children from school, that decrease their long-term chances for a better life.

5. Another important factor is environmental degradation: uncontrolled deforestation, especially in watershed areas; soil erosion; air and water pollution; coral reef degradation; increasing pollution of coastal mangrove swamps; poor waste management and sanitation all increase vulnerability to natural hazards. Once the natural hazards strike, they exacerbate the degradation. In many cases, the poorest people suffer the worst consequences, creating a complex vicious cycle of poverty, environmental degradation, and natural disasters.

[23] Moya and Malayang, 2004.

6. **Baseline Scenario.** There is currently very limited capacity to integrate climate change into the plans and programs of the Philippine government. Under the baseline scenario, the DA, DENR and NIA would carry out their operational activities without special attention for climate change. PAGASA would continue to provide weather and climate forecasts but there would be limited use of these for planning purposes and for designing project interventions. Investments and activities in natural resources management and agriculture development, including irrigation systems, would be planned without paying attention to the rising climate risks. Instead of realizing the potential for such programs to contribute to a reduction in vulnerability to climate change, many of these investments might physically be affected by climate change (for instance if more intense rainfall would damage irrigation systems); would not realize their long-term benefits in terms of poverty reduction and economic development (in case of investments in crops that are becoming less suitable); and could even contribute to mal-adaptation (in the case of promoting irrigation in an area that will face water shortages).

7. **SCCF Alternative.** In the Special Climate Change Fund alternative, the additional risks to these specific investments would be substantially reduced by improved planning, taking into account the best climate information and by additional investments to enhance the climate resilience of the existing strategies and programs. While climate projections for the Philippines still contain some uncertainties, particularly with respect to rainfall in specific areas of the country, there is substantial scope to make the investments more robust to the changes that are currently identified. In particular, this could be achieved by employing win-win solutions that address the rising risk of extreme events by increasing the general robustness of the investments, among others by changes to the physical investments (including changes in design or regarding prioritization of locations); making better use of climate risk information (including climate projections and forecasts on various timescales); introduction of new technologies, such as drought tolerant seed varieties, minimum tillage, and improved soil moisture management; and awareness raising among stakeholders.

8. Furthermore, these specific planning improvements and investments would act as pilot cases to develop and apply systematic diagnosis and options analysis for climate risk management, which would include an enhanced institutional framework and planning capacity for climate risk management. These experiences and improvements would enhance the resilience of the agriculture and natural resources sectors as a whole, enabling government programs and investments to deliver their expected benefits in terms of economic development and poverty alleviation, even in the face of the negative impacts of climate change. Moreover, the Special Climate Change Fund alternative would generate benefits even beyond these sectors, by enhancing interagency coordination and provision of scientific information for climate risk management, which could benefit all climate sensitive government programs, as well as other actors affected by climate change (private sector, local government, communities, NGOs).

9. In the SCCF alternative the project would strengthen the climate resilience of the two World Bank supported investment projects, the ENRMP and PIDP, as well as other programs of the DENR and DA:

10. *Environment and Natural Resources Management Project ($57 million)*: incorporation of climate resilience into existing protected areas plans; additional work with respect to

rehabilitation and protection of degraded areas including riverine areas; forest management; sustainable livelihood improvements; and investments in aqua-silviculture and coastal areas. In addition, the project would contribute to enhanced planning and policy systems, such as including adaptation into the prioritization and implementation of policies to improve the enabling environment for better ENR management, and in strengthening of the environmental impact assessment system.

11. Within NIA's *Participatory Irrigation Development Project ($38 million)*, inclusion of climate risk management within participatory improvement and modernization of the national irrigation systems would result in improvements in canal conveyance capacity, construction or improvement of structures for better water level and flow control, and improving equity in water distribution, drainage water re-use, and conjunctive use of surface and ground water.

12. The difference between the cost of the baseline scenario ($95 million) and the SCCF alternative ($103.37 million) is $8.37 million of which US$4.94 million is the sum being requested from the SCCF.

Annex 16: Maps

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