The Philippine National REDD-plus Strategy

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Details on all the related consultations and participants are available in Appendix A.

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[1] Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

Summary

REDD-plus is a broad term that describes a range of actions to reduce emissions from deforestation and forest degradation and the role of conservation of carbons stocks, sustainable management of forests and enhancement of forest carbon stocks in developing countries, supported by financing from industrialized nations. As the global initiative on REDD-plus has come to the forefront of international climate change mitigation policy, opportunities for pilot projects have emerged across Southeast Asia, including in the Philippines. The Philippines offers an enabling environment for REDD-plus development: a strong research community and national capacity to engage with forestry projects, relatively decentralized natural resource management capable of instituting local-level REDD-plus projects, enabling environmental, social and rights-based policies and frameworks, a robust civil society capable of supporting REDD-plus development and implementation at multiple scales, and significant opportunities to generate social and environmental co-benefits.

In early 2009, several NGOs noted the potential of REDD-plus in the Philippines and the need for domestic climate change mitigation actions. As Government had not yet commenced REDD-plus planning, civil society spearheaded related consultations, mapping and capacity building throughout the country. Through these efforts, the CoDe REDD was formed to ensure that national REDD-plus developments yield co-benefits for biodiversity conservation and community development. After a series of workshops and increased interest from Government and the Department of Environment and Natural Resources-Forest Management Bureau (DENR-FMB), CoDe REDD partners identified the need to develop a multistakeholder REDD-plus strategy in order to facilitate REDD-plus development in the Philippines; guide REDD-plus discussions within the development of the National Framework Strategy and Program on Climate Change; inform international donors and investors of country intentions; provide an initial national resource for domestic institutions interested in REDD-plus and for continued, broadened stakeholder engagement, and guide a future, targeted action plan. The involvement of the Climate Change Commission led to the integration of REDD-plus into Section 8.5 of the National Framework Strategy on Climate Change and to Executive Order 881 on REDD-plus planning and development.

The Philippine National REDD-plus Strategy (PNRPS) presents a broad range of strategies and corresponding activities over a 10-year time horizon (2010-2020), and seeks to prepare forestlands managers throughout the country to assume responsibility in implementing REDD-plus programs, research, projects and activities with the support of international, national and local agencies, NGOs and other support groups.

The PNRPS offers an overview of the forestry sector in the Philippines, a legal review of national policies in the context of REDD-plus, and a strategic outlook for REDD-plus development. It then specifies REDD-plus strategies and activities to facilitate REDD-plus development over a 3-5 year Readiness Phase, and gradual scaling up to a 5 year Engagement Phase. These strategies are presented within 7 overlapping components: Enabling Policy; Governance; Resource Use, Allocation and Management; Research and Development; Measuring, Reporting and Verification (MRV) of emissions reductions and review procedures for non-carbon social and environmental impacts and benefits; Sustainable Financing, and Capacity Building and Communication.

Nine Key Features emerge throughout the components and characterize the PNRPS.

- The PNRPS assumes a nested, scaling-up approach to REDD-plus, recognizing that a substantial readiness phase is critical yet time-consuming. The plan is to build on existing data sets, capacity and initiatives and develop sub-national REDD-plus initiatives that can be scaled-up in 3-5 years time.

- The PNRPS targets projects on sites where emissions reductions can be achieved at a reasonable scale and cost, while also seeking to maximize co-benefits. It does this by focusing initial sub-national projects in priority areas. Tenured areas such as ancestral domains, protected areas, and community-based forest management areas represent the majority of remaining forests in the Philippines and offer greatest opportunities to deliver social and environmental co-benefits. The PNRPS also targets biodiversity conservation priority areas, often the last remaining forest blocks in the country. In the Philippines, these three priorities—rural development, carbon sequestration and biodiversity conservation—overlap at a number of sites

- The PNRPS proposes a governance approach to REDD-plus that recognizes the need for national-level REDD-plus oversight and management, but prioritizes the decentralization of natural resource management (rights, responsibilities and benefits). The PNRPS recognizes the need for local government unit (LGU) and community engagement to ensure REDD-plus operationalization. It seeks to create opportunities to engage local actors in decision-making and management, and allows for locally-led REDD-plus.

- Although REDD-plus implementation will require new institutional arrangements, programs and policies, the PNRPS seeks opportunities to strengthen and align existing structures, rather than unnecessarily introduce new bodies and regulations. It also endeavors to streamline REDD-plus related processes to facilitate project development and avoid 'red tape'.

- The PNRPS focuses on the roles, responsibilities and benefits of REDD-plus to local communities. It seeks to catalyze REDD-plus resources to deliver multiple social benefits including sustainable rural livelihood development; promoting community-based management and monitoring activities, and emphasizing equitable benefit sharing. It also prioritizes community rights to determine how and whether they engage with REDD-plus.

- The PNRPS will utilize participatory planning, multi-stakeholder and multi-level approaches as main method to strategy planning and implementation. It prioritizes engagement of local resource users and managers, notably Indigenous Peoples and local communities, which is key to ownership and effective and adaptive planning and management.

- The PNRPS assumes an inter-sectoral approach to REDD-plus development, seeking to increase communication and coordination among agencies and sectors with links to deforestation and forest degradation. It views REDD-plus as a catalyst for significant, necessary reforms.

- The PNRPS recognizes the central importance of establishing credible national and sub-national emissions reference levels and a robust national measuring, reporting and verification (MRV) system for carbon accounting. It prioritizes the research, capacity building and institutional structures required to establish rigorous forest carbon accounting.

- The PNRPS assumes watershed, natural ecosystem and landscape-level approaches to REDD-plus development in order to ensure multiple benefits.

The NRPS is guided by a six **Core Values**:

- **C**are for the Earth and life in all its diversity
- **R**espect for human dignity
- **E**ncourage social responsibility
- **A**ttainment of social justice
- **T**ransparency and accountability
- **E**mpowerment through partnership and collaboration

Overview of the Components

The following overview provides a brief summary of each report component followed by a list of its highlights. These abbreviated key points from each component provide a macroscopic overview of the primary strategies and actions required for REDD-plus readiness and engagement. They are not, however, comprehensive and should be used alongside in the more detailed main text.

Enabling Policies

While the Philippines has a comprehensive policy and institutional framework on natural resources management, there is not yet a specific national legal framework on REDD-plus. The component specifically notes that, despite the development of initial national REDD-plus policies, there is a need to allow early REDD-plus developments by addressing potential policy road-blocks that could stifle project development in the short-term. These include clarifying carbon tenure, anticipating sources of potential conflicts among agencies, and actively integrating REDD-plus into other sectors and national climate change mitigation efforts. The 2010 passage of

the Climate Change Act, the creation of the Climate Change Commission (CCC), adoption of the National Framework Strategy on Climate Change (NFSCC) and Executive Order 881 on REDD-plus create significant opportunities to review existing legislation and draft a national legal framework on REDD-plus. This includes creating legal mandates for new REDD-plus institutions. New policies must take into account the weaknesses in institutional and political arrangements that have previously hampered implementation of natural resource management laws and policies, and so should thoroughly investigate previous legislative experiences and shortcomings, and use the opportunity to improve on existing natural resource management frameworks. This process should involve widespread consultations and develop a 'menu' of possible policy options for wider consideration. REDD-plus policy must also ensure robust national laws to mandate social and environmental safeguards.

Highlights:

- Clarify carbon ownership under different tenure instruments.
- Anticipate and clarify sources of potential conflicts among implementing agencies.
- Review forestry sector definitions to ensure coherence with REDD-plus.
- Establish enabling policies for REDD-plus, integrating lessons-learned from previous legislation and aligning conflicting laws and policies among different sectors.
- Establishing a quantifiable national forestry emissions reduction target
- Ensure REDD-plus institutions have clear legal mandates.
- Ensure legal social and environmental safeguards for REDD-plus implementation.

Governance

There is growing consensus that implementation of the Philippines' comprehensive policy and institutional framework on natural resources management has been hampered by weaknesses in institutional and political arrangements, and by a failure to meaningfully engage local actors in management. Improving forest sector governance relies largely on addressing these policy implementation gaps. The PNRPS proposes strategies to increase stakeholder engagement and coordination in the forestry sector. This will require strengthening existing and creating new institutional arrangements capable of bringing together diverse stakeholders and capable of integrating REDD-plus strategies into existing development and management plans. As such, the Strategy proposes a National Multistakeholder REDD-plus Council led by the Department of Environment and Natural Resources and complementary decision-making and accounting bodies at the regional, provincial and local levels, designs for which are discussed. At the local level, the PNRPS proposes to build on existing sub-national forest management structures and regimes to ensure that local Forest Management Units (FMUs) are recognized, capable of local REDD-plus implementation, and capacitated to gather data for local accounting of carbon and non-carbon impacts and benefits. These structures will further facilitate local engagement, share information, resolve conflicts, and report on safeguards related to the forestry sector. Developing and strengthening new structures, improving existing arrangements and integrating plans, however, will require significant stakeholder education, consultation and engagement, technical support and strengthened linkages among the agencies that will be responsible for REDD-plus implementation. The PNRPS further addresses the need for equitable benefit sharing as a strategy to incentivize improved implementation and governance in the forestry sector. As a performance-based mechanism, REDD-plus will be a powerful incentive with which to motivate actors and agencies to follow-through with policy implementation.

Highlights:

- Identify, consult with and meaningfully engage stakeholders from various levels.
- Establish a National Multistakeholder REDD-plus Council based on existing structures.
- Build on existing sub-national (local, provincial and regional) structures to establish institutional arrangements through which to implement REDD-plus, including parallel structures for REDD-plus decision-making and MRV processes.
- Establish equitable benefit-sharing schemes with local government units and communities.

Resource Use, Allocation and Management

Forests provide a wide array of goods and services, including timber, non-timber forest products, water resources, biodiversity habitat, soil retention and stability, and carbon sequestration. Broad landscape, natural ecosystem and watershed-level management approaches are best suited to delivering multiple benefits, and should form part of future REDD-plus management. REDD-plus should promote productive forestry activities to maintain and enhance forest ecosystem services, including carbon retention capacity and biodiversity protection, while adequately and equitably addressing human needs, especially of forest-dependent communities and in consideration of the Indigenous Peoples' Rights Act. In order to achieve this, the PNRPS proposes a

number of specific strategies and actions to help determine, clarify and demarcate allowable activities within different parts of REDD-plus watersheds and landscapes, including within protection and production forest. It clarifies which types of activities should be promoted throughout the forest matrix in order to maximize carbon, ecosystem, wood production and community benefits. However, the process will involve considerable study of existing land uses; human population density, distribution and resource needs, and field-based surveying and border marking. This will enable improved planning as well as increased tenure clarity – both of land and carbon. Similarly, it will provide insight into how to equitably share benefits from REDD-plus.

Highlights:

- Define permanent forest lines and boundaries.
- Promote watershed/ecosystem/landscape-based REDD+ planning.
- Identify and improve on the different forest management regimes for both protection and production forests.
- Clarify land tenure and associated carbon rights, especially for communities.
- Identify and pursue options to enhance and manage carbon stocks to expand both protection and production forests.
- Expand the protected areas network in a way that includes local communities and multiple use.
- Pursue sustainable management of production forests.
- Consider population growth and in-migration in forest management plans.

Research and Development

Research and development (R&D) has a major role in the design and implementation of REDD-plus mechanisms, particularly as policy and operational decisions must be based on scientific principles and empirical data and information. Although there is a growing body of climate change-related research in the Philippines, considerable gaps remain. The PNRPS proposes an initial, collaborative action-based research agenda that addresses a number of core issues of the Readiness Phase. It seeks synergies among research institutions and government agencies, and opportunities to engage communities in local research. The component addresses national and site-specific analysis of the drivers of deforestation and forest degradation, which will inform conservation interventions and core of REDD-plus activities. It also discusses the establishment of pilot/demonstration sites that are both diverse and representative of other potential REDD-plus sites in the country. Robust research agendas should accompany these trials to yield information on topics including the effectiveness of different conservation interventions; appropriate techniques for carbon accounting, measuring, reporting and verification (MRV); review of non-carbon social and environmental impacts and benefits, and the selection of appropriate and equitable benefit sharing arrangements. Further research is needed to establish baselines for emissions reference levels, biodiversity, ecosystem services and social factors. As an action-based research plan, the component also discusses the need to communicate finding, not only within the scientific community, but also to policy makers, local resource users, REDD-plus practitioners and within national capacity building efforts. The PNRPS notes the need for increased funding for research to make these processes feasible.

Highlights:

- Identify the primary drivers of deforestation and forest degradation and collaborate with diverse stakeholders to propose science-based conservation interventions such as legislation, incentive structures and capacity building.
- Identify, establish and thoroughly study a diversity of REDD-plus pilot/demonstration sites, and corresponding provincial and regional pilot/demonstration sites.
- Collaboratively establish a broad REDD-plus research agenda, including on policy, social science and carbon cycle aspects of REDD-plus.
- Establish initiatives to measure site baselines for biodiversity, ecosystem services and carbon stocks, against which to measure future change.

Measurable, Reportable and Verifiable (MRV) Conditions

REDD-plus implementation will rely on the national-level MRV of changes in forest carbon emissions. Carbon stocks data in the Philippines needs to be further reviewed for compatibility with the existing and evolving MRV standards. The country has existing capacity to conduct many of the required processes. The PNRPS proposes that the MRV process begin by identifying these capacities, available data resources, appropriate techniques, and future requirements in order to develop funding and development plans. It targets national-level carbon accounting, yet recognizes the need to build capacity, use interim processes and indicators, and begin accounting based on available data to calculate emissions reference levels and carbon stock changes. MRV will require

expanding existing institutional structures to accommodate MRV, such as those discussed in the governance component, establishing community-based carbon monitoring, expanding the National Forest Resource Assessment sampling approach, and conducting novel research. The strategy further addresses the need to develop an MRV system for associated social and environment impacts to ensure 'no-harm' and assess varied co-benefits of REDD-plus implementation. Both carbon MRV procedures and non-carbon reviews will require increased resources and significant training.

Highlights:

- Assess existing capacities, available data and future requirements for MRV.
- Establish emissions reference levels using existing skills and data, and improving as resources become available (at least to the Tier 2 level).
- Establish community-based accounting with adequate training, resources, incentives and supervision.
- Implement national-level MRV system supplemented by sub-national MRV.
- Establish guidelines for non-carbon reviews.
- Establish MRV system to review REDD-plus related policies and processes.

Capacity Building and Communication

Capacity Building and Communication influence all of the other components of the PNRPS and is a basis for engaging stakeholders and ensuring effective, efficient, equitable, timely and high quality REDD-plus implementation. The PNRPS recognizes the need to build capacity and awareness among a range of stakeholders, and that these will come with varied strengths, weaknesses and needs. It accordingly presents an iterative analysis framework through which to assess needs and a learning pedagogy to help address diverse needs. The PNRPS proposes having a REDD-plus Communication Plan and broad training initiatives that includes novel elements such as the establishment of a Community of Practitioners, teacher training program, a mentoring program, learning exchanges among sites, and use of social contracts to promote perpetual engagement. Both training and communication are expected to operate within the propose governance structure, while also linking into existing training and education institutions.

Highlights:

- Formulate and implement a REDD-plus communication plan to raise awareness among stakeholders and facilitate their engagement in consultations and planning.
- Conduct Competence Assessments to identify needs.
- Conduct wide-spread consultations and dialogues on REDD-plus development in the Philippines
- Conduct training programs for a range of stakeholders.
- Develop a national REDD-plus Community of Practitioners to help serve as national resource persons.

Sustainable Financing

Rainforest countries generally lack the financial resources to incentivize or enforce significant reductions in forestry sector emissions. REDD-plus may offer a mechanism (or combination of mechanisms) capable of financing long-term, large-scale conservation efforts, funds from which the PNRPS suggests can be managed through the proposed national and sub-national structures. To date, financing strategies generally involve 1) voluntary financing from international grants and the voluntary carbon market, and 2) funds from proposed future compliance carbon markets. The PNRPS proposes a staged adoption of both strategies. During the Readiness Phase, the PNRPS proposes to maximize limited domestic resources to catalyze initial readiness, while seeking immediate voluntary donor funding in the form of grants. As pilot/demonstration project mature, the PNRPS proposes their engagement with voluntary carbon markets. Scaling up to the Engagement Phase, the PNRPS proposes to explore a range of funding sources, including potentially with compliance markets and market linked mechanisms, and possibly by bundling carbon with other ecosystem services. The PNRPS also addresses unanticipated consequences and proposes strategies to ensure financial resilience within REDD-plus. These include exploring potential for a national REDD-plus reserve fund, use of conservative buffers, and opportunities to generate self-sustaining low-emissions rural livelihoods. The PNRPS finally addresses the importance of equitable benefit sharing as a mechanism to ensure local compliance with REDD-plus and to ensure continued funding.

Highlights:

- Capitalize on existing national capacities and resources to initiate REDD-plus readiness.
- Develop proposals for immediate voluntary donor funding for REDD-plus readiness.

- Explore opportunities for a diversified long-term financing approach, including both market and non-market-based mechanisms.
- Plan for long-term financial sustainability and resilience by seeking multiple funding sources, establishing contingencies and investing in self-sustaining local-level programs.
- Explore diverse fund management arrangements.

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I. Introduction to the National REDD-Plus Strategy

Background on REDD-plus

The role of forests in sequestering carbon and helping to mitigate climate change was recognized through the Kyoto Protocol. However, only afforestation and reforestation activities were accepted for inclusion in the Protocol's Clean Development Mechanism (CDM). Avoided deforestation, also known as reducing emissions from deforestation, was excluded as an emissions reduction strategy, only to be reintroduced into United Nations Convention on Climate Change (UNFCCC) negotiations at its 11th Conference of Parties (CoP) in Montreal in 2005 through a formal proposal by the Coalition of Rainforest Nations, led by Costa Rica and Papua New Guinea. Negotiations and research ensued, and in 2007, the Intergovernmental Panel on Climate Change (IPCC) identified the forestry sector as the second leading cause of anthropogenic greenhouse gas emissions after the energy sector, responsible for approximately 17% of emissions, largely as a result of deforestation (Pachauri and Reisinger, 2007). Ensuring proposals for Reducing Emissions from Deforestation (RED) (avoided deforestation) were later expanded to include reduced emissions from forest degradation. At the 13th CoP in Bali in 2007, proposals to address Reduced Emissions from Deforestation and forest Degradation (REDD) received considerable support and the Parties agreed to consider policy approaches and positive performance-based incentives to address REDD as well as sustainable forest management, carbon stock enhancement and associated biodiversity conservation and social co-benefits, in developing countries.

At the 15th CoP in Copenhagen, Denmark held in December 2009, the CoP noted consensus among some of the Parties with the Copenhagen Accord[2], which agreed "on the need to provide positive incentives to such actions through the immediate establishment of a mechanism including REDD-plus, to enable the mobilization of financial resources from developed countries" (UNFCCC, 2009a). The adoption of REDD-plus extended allowable activities to include: a) reduce emissions from deforestation; b) reduce emissions from forest degradation; c) conserve forest carbon stocks; d) pursue sustainable management of forests, and e) pursue the enhancement of forest carbon stocks (UNFCCC, 2009b). It did not extend to include reduced emissions from the agricultural sector (often referred to as REDD-plus-plus), as some stakeholders had advocated. It is anticipated that the UNFCCC Parties will formalize their adoption of REDD-plus at the forthcoming 16th CoP in Cancun, Mexico in November 2010.

The REDD-plus concept has evolved considerably over recent years and remains differently understood and contested among stakeholders (Angelsen, 2009). The PNRPS adopts the UNFCCC definition of REDD-plus, and refers to reducing emissions from deforestation and forest degradation and the role of conservation of carbon stocks, sustainable management of forests and enhancement of forest carbon stocks in developing countries (2009a). The UNFCCC definition, however, does not articulate what specific carbon stock enhancement activities would be rewarded, nor clearly prioritizes the delivery of additional environmental and social benefits from REDD-plus. This PNRPS clarifies the types of forestry activities that should be pursued nationally, and adopts a strong vision of how REDD-plus efforts can deliver additional social, biodiversity conservation and ecosystem service benefits.

In the same document, developed nations pledged USD 30 billion dollars by 2012 and USD 100 billion dollars a year by 2020 for climate change mitigation and adaptation actions, including for REDD-plus activities. A coalition of developed nations has further pledged USD 4.5 billion dollars specifically for REDD-plus activities by 2012 (Ganley, 2010). This funding is in addition to substantial REDD "readiness" funding provided to select pilot countries through programs such as the World Banks' Forest Carbon Partnership Facility (FCPF), the UN-REDD Programme, Norway's International Forest Climate Initiative and the Interim REDD+ Partnership. The Copenhagen Accord and the large scale of recent international funding pledges have effectively served as the political and financial "green light" for REDD-plus plans, policies and projects to proceed.

REDD-plus in the Philippine Context

Climate change is of critical concern to the Philippines; it is one of the most climate change vulnerable areas in Southeast Asia (Yusuf and Francisco, 2009). While preparedness through disaster management and adaptation strategies is a priority (MO, 2005), mitigation remains focal. The Philippines has acknowledged common but differentiated responsibility in reducing global carbon emissions, and though already a net carbon sink, can continue to make significant contributions, including through the forestry sector (Lasco and Pulhin, 2000, 2001).

[2] The Accord, however, is not a legally binding document.

Forestry activities are particularly significant, as they offer joint adaptive and mitigative strategies (Ravindranath, 2007). Reforestation efforts, for example, can represent both an enhancement of carbon stocks and adaptive watershed management to reduce flooding (Dang et al., 2003).

Previous opportunities for the Philippines to reduce emissions through the forestry sector, engaging with the CDM, were limited[3]. CDM regulations, including rules on what types of lands were eligible for inclusion, proved strict and transaction costs were high. Implementation of REDD-plus may be more feasible as it will target larger and more varied land areas, and may be based on projections of future land cover (rather than historical as with the CDM)[4], potentially increasing opportunities to participate, generating higher revenues and reducing transaction costs. With the recent inclusion of conservation and enhancement of forest carbon stocks (in addition to funding for reduced deforestation and forest degradation), REDD-plus also increase the number of allowable activities. In fact, despite relatively limited remaining natural forest cover, REDD-plus presents considerable opportunities for forestry sector initiatives in the Philippines[5]. Initial estimates suggest that the Philippines has a total emissions mitigation potential of approximately 38,540,000 tons of CO_2 between 2011-2030 (CIF, 2010). In addition, REDD-plus in the Philippines could generate multiple social and biodiversity co-benefits (Phelps et al., 2010a) in alignment with broader national goals.[6] Such co-benefits are especially relevant to the Philippines, as most remaining forests are under community management, notably within the lands of Indigenous Peoples.

In 2009 the Government enacted the Climate Change Act, establishing a Climate Change Commission to formulate the National Framework Strategy on Climate Change (NFSCC) in the Philippines, and mainstream climate change into government policies.

Several organizations in the Philippines have already started pursuing pioneer REDD-plus related projects. Fauna and Flora International has received funding to begin a 180,000 ha pilot project in the southern Sierra Madre, Quezon Province; the Non-Timber Forest Products-Exchange Programme will commence on a 50,000 ha pilot project in the Victoria-Anepahan mountain range, Palawan Province; the community-led Kalahan Education Foundation has been conducting long-term carbon monitoring of Ikalahan ancestral forests, Nueva Vizcaya Province, and are negotiating a pioneer forest carbon agreement with Mitsubishi, and Conservation International-Philippines recently achieved a certification based on Climate Community and Biodiversity Standards (CCBS) for its reforestation project, the Peñablanca Sustainable Reforestation Project in Cabayan Province. In addition, the 'Forest Policy and REDD' project, in collaboration with the Department of the Environment and Natural Resources (DENR) funded by Germany's Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU[7]) GTZ, will have demonstration sites in the Islands of Panay and Leyte. ICRAF has also initiated some site-level researches on forest carbon development cases in six (6) areas in the Philippines: Mount Kitanglad Range, Arakan Forest Corridor, Palompon Watershed, Cebu Hillylands Watershed, Ikalahan Ancestral Domain, and Quirino Sierra Madre Biodiversity Corridor.

Private sector investors have also reportedly sought to sign agreements with indigenous communities regarding carbon rights and the development of REDD-plus projects, though there is currently a national moratorium on establishing similar agreements in ancestral domain areas until safeguards and policies are in place [8]. The Government of the Philippines is also exploring opportunities for REDD-plus development, recently gaining Observer Status to the UN-REDD Programme and joining 57 other countries in the Interim REDD+ Partnership.

These independent developments demonstrate growing interest in REDD-plus development in the Philippines and highlight the need for a coherent national strategy to guide future development.

In 2010, the Philippines received continued funding from Switzerland to finalize the development of a national REDD-plus strategy, new support from UN-REDD to build stakeholder capacity, and from Germany to begin examining MRV methods. The Philippines has been proposed as a pilot country for the World Bank's Forest

[3] Forest carbon projects being developed under the CDM include: Laguna Lake Development Authority-Municipality of Tanay Project, Conservation Internationa-Philippines Sierra Madre Project, Kalahan Forestry Carbon Project.
[4] UNFCCC technical discussions have not yet established how these baselines will be determined, though some existing voluntary market schemes use projective baselines.
[5] See: "Forestry Sector Scenario" and SWOT of the Forestry Sector on REDD-plus
[6] See "Legal Framework"
[7] Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit
[8] NCIP Memorandum Order No. OED- 84-2010: "Directive to Refrain from Approving Projects on Carbon Trading"

Investment Programme, part of its Strategic Climate Fund. However, this did not materialize and thus, the Philippines has not received funding commensurate with the costs of implementing the PNRPS and for REDD-plus readiness.

Preparation of The Philippine National REDD-plus Strategy (PNRPS)

In early 2009 several NGOs noted the potential of REDD-plus in the Philippines and the need for domestic climate change mitigation actions. As the Government of the Philippines had not yet commenced national REDD-plus planning, civil society spearheaded related consultations, mapping and capacity building throughout the country. This initiative resulted in the founding of the CoDe REDD Philippines, intended to explore and develop REDD-plus in the Philippines while ensuring co-benefits for biodiversity conservation, ecosystem services and community development. After a series of workshops and increased interest from DENR's Forest Management Bureau (FMB), CoDe REDD Philippines and partners identified the need to develop a multi-stakeholder REDD-plus strategy in order to facilitate REDD-plus development in the Philippines. This document, The Philippines National REDD-plus Strategy (PNRPS), is the result of that multi-stakeholder and multi-level process, based on input and writing workshops that brought together the DENR-FMB, representatives from academe, indigenous peoples, local communities, local government units, local and regional conservation organizations and civil society groups. Appendix A details this consultation and writing processes, and future consultation and engagement efforts are described within the document. The authors acknowledge that direct representatives from the private, transport and agriculture sectors have not yet been directly involved in these processes. This was not an intentional exclusion, though the process was conscious of creating opportunities for traditionally marginalized groups. The authors further recognize that ongoing consultations with various stakeholders, including in other sectors, are necessary, and will further influence the Strategy and ensuing policy. The PNRPS, however, has broad support from diverse stakeholder groups and will serve guide future national REDD-plus planning, priority-setting and implementation[9]. In April 2010, the Climate Change Commission (CCC) integrated the PNRPS into Section 8.5 of the National Framework Strategy on Climate Change.

Next steps involve the development of an action plan and early implementation of REDD-plus readiness plans. However, this will require further consultations, through the CCC, DENR, the CoDe REDD initiative and other multi-stakeholder processes.

The PNRPS is intended for a range of audiences, and has been developed to:

- Articulate a common vision among the stakeholders regarding the ways in which the REDD-plus agenda should (and should not) be pursued in the Philippines;
- Guide the Philippine's Climate Change Commission as it further develops the National Framework Strategy and Program on Climate Change;
- Inform international donors that are currently funding country readiness activities and research about the intended direction of REDD-plus development in the Philippines;
- Guide investors and donors considering REDD-plus development in the Philippines, which are expected to adhere to the document principles, values and strategies;
- Provide a common resource for domestic institutions (academic, civil society, government) pursuing REDD-plus-related activities in the Philippines, and
- Serve as an initial resource for the further development of REDD-plus informational and outreach resources for potential participant communities across the Philippines.

The PNRPS is comprised of the following sections:

- Strategic directions section that outlines the PNRPS mission and objectives;
- Overview of the Philippines legal context as it relates to REDD-plus;
- Overview of the national forestry sector, including a table listing the broad categories of drivers of deforestation and forest degradation and their links to the PNRPS;
- Strategies and activities to develop enabling policies for REDD-plus;
- Strategies and activities to improve forest sector governance;
- Strategies and activities to help reassess forest resource use, allocation and management;

[9] The NRPS is distinct from country submissions of Readiness Preparedness Plans (RPPs) to the World Bank's Forest Carbon Partnership Facility, as it is already based on extensive consultations, is written by diverse stakeholders, and already includes an initial strategy for REDD-plus implementation.

- Strategies and activities to establish measurable, reportable and verifiable systems for REDD-plus;
- Strategies and activities to enable to development of a national REDD -plus research and development agenda;
- Strategies and activities to establish a REDD-plus Capacity Building and Communication initiative;
- Strategies and activities to promote sustainable financing for REDD-plus.

The components entitled Research and Development; Capacity Building and Communication, and Sustainable Financing address themes that recur throughout the PNRPS. Footnote references often direct the reader to these other components.

Timeline

The PNRPS assumes a 10-year time horizon (2010-2020) and serves as approximate guide for development of REDD-plus activities in the Philippines. Figure 1 demonstrates that the strategy is divided into three main Phases: Readiness, Scaling up and Engagement. The PNRPS does not seek to prioritize strategies and activities within these Phases or establish related budgets. Priority-setting and budgeting will be part of future action planning. Action planning will also elaborate plans about how to scale-up from the readiness phase to full engagement. However, the PNRPS timeline does provide insight into the process of early REDD-plus development and scaling up towards national-level engagement.

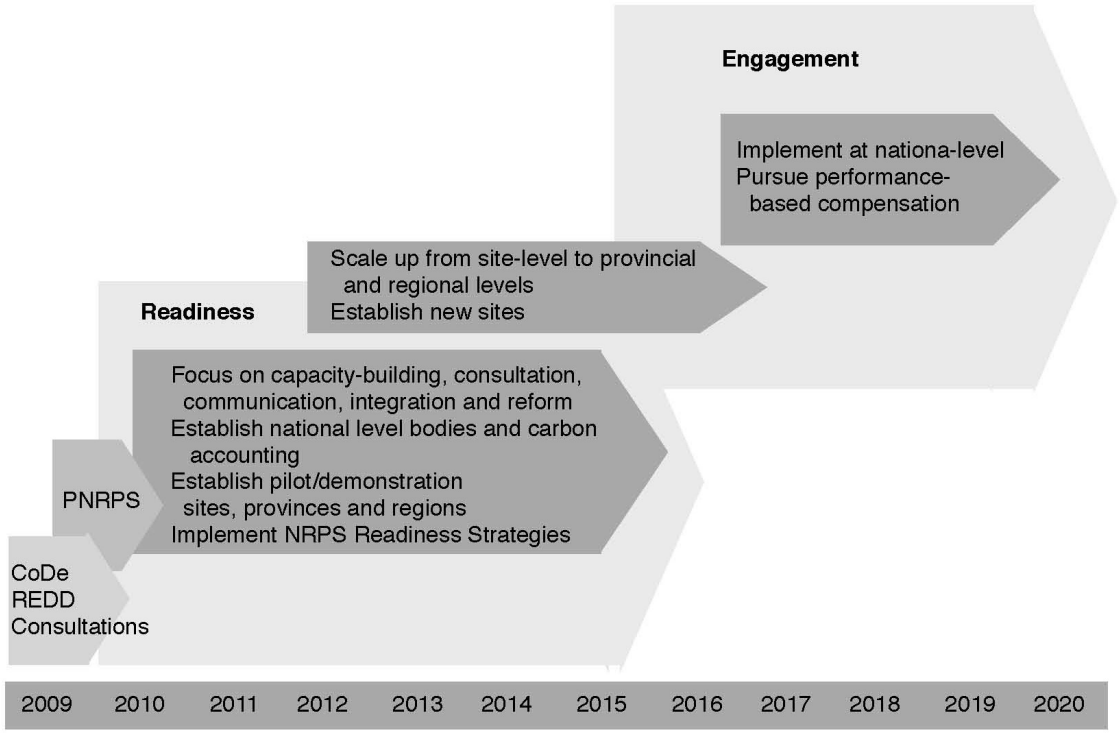

Fig. 1. Anticipated timeline of REDD-plus development in the Philippines

- Readiness Phase. This Phase is a proposed 3-5-year period during which the majority of the strategies and activities articulated in the PNRPS will be further prioritized, discussed and implemented. The Readiness Phase will target:
    - Ongoing and expanded consultations and national communication and capacity building.
    - Action planning and budgeting to facilitate implementation of the PNRPS.
    - Efforts to identify short and long-term funding for REDD-plus.
    - Establishment of pilot/demonstration sites and their related baselines, research, communication, capacity building, carbon monitoring and accounting, institutional support, policy reform, benefit sharing and incentive schemes;
    - Identify and test appropriate carbon MRV approaches and ensure that these can be harmonized across sites and can be scaled up towards the national level.
    - Development of new project sites in the provinces and regions of existing pilot/demonstration projects, where possible;

- Capacity building, institutional support and demonstration projects within the corresponding Provinces and Regions of pilot/demonstration sites,
- Establishment of the national-level bodies responsible for REDD-plus policy, implementation and accounting; and
- National-level policy reform, establishment of national emissions reference levels and targets, establishment of clear safeguards, national-level institutional development, and research.

Other countries have proposed more accelerated readiness timelines. However, the Philippines recognizes that progress is gradual and will require time if REDD-plus is to successfully reduce emissions**.**

- Overlapping Scaling Up Phase. The PNRPS proposes a prolonged scaling-up phase, as some policies, sites and agencies will be prepared to engage sooner than others. Based on the sub-national pilot/demonstration projects and scaling-up to neighbouring forests, the PNRPS proposes to further scaling-up to the Provincial level surrounding the pilot/demonstration sites, and then scaling up to the corresponding Regional level. Provincial and Regional level pilots are integral to eventual national engagement. Based on these examples and as funding becomes available, other sites, Provinces and Regions can engage as part of a national scaling up of REDD-plus.

- Engagement Phase. Based on the proposed readiness plan, beginning in around 2015 the Philippines is expected to be able to engage with REDD-plus at a national scale. This will allow the Philippines to more fully engage with performance-based compensation. This strategy reaches until 2020, though REDD-plus and low-emissions forestry strategies are then expected to continue beyond.

II. Strategic Directions

The goal of the PNRPS is to take a broad approach among communities, allied agencies, organizations and stakeholder groups in promoting REDD-plus towards the attainment of sustainable forest management, development and poverty reduction. Each member should work collaboratively, consonant with real situations and answering the different needs of the people. Stakeholders will go through an adaptive learning process as regards to the implementation of REDD-plus programs and projects for any further adaptation and modification. The time period of this plan is ten (10) years, covering the years 2010 to 2020.

Vision
Empowered managers and support groups sustainably and equitably managing forestlands, protected areas and ancestral domains with enhanced carbon stock and reduced greenhouse gases emission
Within the vision framework, the impact areas include:

- Reduced forest degradation and deforestation
- Poverty alleviation
- Biodiversity Conservation
- Improved governance

Mission
Forestlands, protected areas, and ancestral domains managers to assume responsibility in implementing REDD-plus programs, research, projects and activities with the support of the international, national and local agencies, NGOs and other support groups.

Objectives

- To ensure sustainable management of forests for both reduced carbon emissions and biodiversity conservation;
- To enhance national carbon stocks through forestry programs that deliver clear and multiple social and ecological benefits.
- To provide a research-based enabling environment in the implementation of the REDD-plus programs, projects and activities;
- To leverage REDD-plus resources and projects to deliver social benefits and contribute to poverty alleviation;
- To establish sustainable financing mechanisms to support REDD-plus 'readiness' and long-term implementation;
- To enhance the capability of forest managers and support groups to successfully and equitably implement REDD-plus strategies; and
- To develop and implement a forest carbon emissions reduction measuring, reporting and verification system that engages local managers and is national in scope.

Key Features
The Philippine National REDD Plus Strategy identifies nine key features that transcend all of its strategies and distinguish it among REDD-plus developments internationally.

- Nested, Scaling-up Approach: The Philippine strategy takes a scaling-up approach started with sub-national pilot/demonstration sites during the Readiness Phase and scaling up to Provincial and Regional pilot/demonstrations, while also expanding to new sites. It recognizes that REDD-plus can be integrated into existing initiatives, and will involve pilot studies and gradual technical upgrading and capacity development. In most contexts, these cannot be guaranteed within a brief period, if the national strategy is to ensure safeguards, meaningfully engage stakeholders and guarantee emissions reductions without leakage. To this end, although REDD-plus implementation will begin at the sub-national level, the PNRPS targets national-level MRV starting from the initial Readiness Phase in the interim stage.

- Priority Development Areas: Implementation of REDD-plus will require broad national-level strategies to reduce emissions. However, especially during early stages of sub-national development, there are opportunities to focus REDD-plus on priority sites. This Strategy prioritizes REDD-plus development on a) sites where emissions reductions can be achieved at a reasonable scale and cost, b) tenured areas such as ancestral domain and community-based forest management areas, where safeguards are strongest and there is greatest opportunity to deliver multiple benefits, and c) protected areas and areas

of key biodiversity concern, where REDD-plus can be leveraged to deliver maximum emissions reduction, biodiversity conservation and ecosystem service protection.

- Decentralized Forest Governance: The Philippines has a long and advanced experience with decentralized natural resource management, and there are considerable domestic and international efforts to ensure meaningful local engagement in climate change mitigation adaptation actions, including the Philippines' National Framework Strategy on Climate Change (NFSCC). REDD-plus implementation will rely on significant local buy-in and engagement, but will also require significant national-level leadership, emissions accounting and support. The PNRPS seeks strategies that facilitate decentralized governance and local decision-making within broader national REDD-plus planning and oversight. The PNRPS considers that local actors should be able to determine whether and how to engage with local REDD-plus activities, should receive support and incentives to align their livelihood activities with low-emissions objectives, and should be meaningfully involved in local REDD-plus project design, monitoring, assessment.

- Building on Existing Structures: Although REDD-plus implementation will require new institutional arrangements, programs and policies, the PNRPS seeks opportunities to strengthen and align existing structures, rather than unnecessarily introduce new bodies and regulations. The PNRPS also endeavors to streamline REDD-plus related processes to facilitate project development and avoid 'red tape'.

- Community Focus: The PNRPS presents REDD-plus as an opportunity to achieve multiple objectives and focuses heavily on communities, as most remaining forests in the Philippines are under some form of community management, largely within indigenous lands. The PNRPS seeks not only to maximize REDD-plus social co-benefits, but to utilize REDD-plus as a tool to promote community empowerment, tenure and effective resource management. This includes community rights to determine how and whether they engage with REDD-plus.

- Participatory Planning and Multi-stakeholder Approaches The PNRPS is the result of these approaches, which should extend to future consultations, engagement, planning and implementation. They are key to increasing ownership and to effective and adaptive planning and management that will yield emissions reductions.

- Inter-sectoral Approach: The PNRPS notes that strong inter-sectoral communication and coordination are needed to address the drivers of deforestation, many of which lie outside the forestry sector. The PNRPS presents several strategies intended to bolster this approach, including through policy reform, integration of REDD-plus into local planning and by promoting multi-stakeholder governance structures.

- Rigorous Carbon Accounting: The PNRPS recognizes the central importance of a establishing credible reference levels and ensuring measurable, reportable and verifiable emissions reductions at the national level. As such, the PNRPS prioritizes the research, capacity building and institutional structures required to establish national and sub-national reference levels and monitoring, reporting and verification.

- Watershed, Natural Ecosystem and Landscape Approaches: While site-level management can provide some desired results, landscape, natural ecosystem and watershed-level management are comprehensive strategies that can better provide for multiple-benefits. REDD-plus planning should adopt this approach, which is already part of national policies

Values and Principles: CREATE

The PNRPS is driven by the following core values and associated principles. When there are disagreements among parties, this set of values of principles should determine which arguments are in line or consistent with the PNRPS:

Care for the Earth and life in all its diversity

- Promote the recognition of biodiversity, natural ecosystem and cultural values
- Address the drivers of deforestation and forest degradation

Respect for human dignity

- Promote REDD-plus to further sustainable development goals and contribute to poverty reduction
- Support a rights-based approach to REDD-plus

Encourage social responsibility

- Resolve the issue of permanence by promoting land use planning and stakeholder participation that secure long-term forest resource management and biodiversity conservation

Attainment of social justice

- Ensure equitable secure and sustainable benefit-sharing
- Recognize people's rights to free, prior and informed consent regarding REDD-plus project, notably of Indigenous Peoples on ancestral domains
- Recognize the contribution of women in forest protection and conservation
- Ensure stable, predictable and sustainable financing and "just" financing that does not remove Annex I country obligations to meaningfully reduce domestic emissions

Transparency and accountability

- Promote good forest governance that is transparent, equitable and accountable to ensure effective REDD-plus implementation
- Promote a functioning, credible national measuring, reporting and verification (MRV) system

Empowerment through partnership and collaboration

- Build stakeholder capacity to effectively implement REDD-plus programs and projects
- Generate and develop knowledge management systems and intensity information sharing of both academic and indigenous knowledge
- Knowledge must be in the service of protecting forestlands and communities

III. Legal Context for REDD-plus in the Philippines

The Philippines has passed initial legislation to facilitate REDD-plus planning and initial implementation of the PNRPS. Many of the elements needed for its operationalization are also subsumed within existing laws on the environment and forested areas[10]. These regulations are highlighted in this section.

Regulations Influencing Climate Change and Forests

The Climate Change Act (RA 9729) passed in late 2009 established the Climate Change Commission. The Commission is a the sole policy-making body of the government on climate change, tasked to develop a National Framework Strategy on Climate Change (NFSCC) and coordinate, monitor and evaluate government adaptation and mitigation plans. It is empowered to mainstream climate change adaptation and mitigation into national and local sectoral and development plans and related policy through recommendations, capacity building, and coordination with diverse stakeholders. The Implementing Rules and Regulations (IRR) has also been signed.

The National Framework Strategy on Climate Change, passed in 2010, was developed by the Climate Change Commission and is a 12-year plan for climate change adaptation and mitigation (mitigation is primarily viewed as a strategy for enhancing adaptation). It is a broad strategy, considers all sectors and highlights REDD-plus as a mitigation strategy. Section 8.5 specifically references a National REDD-plus Strategy, and is based heavily on the PNRPS. It lists the following strategic priorities:

a. Review, harmonize, and where necessary formulate, enabling policies towards enhancing the forestry sector's ability to reduce emissions from deforestation and forest degradation and enhance forest carbon stocks, in the process, identifying and ensuring social and environmental safeguards are observed in the implementation of REDD+.
b. Strengthen governance mechanisms in REDD+ coordination and implementation by establishing appropriate institutional arrangements with which to meaningfully engage stakeholders and ensure equitable benefit sharing with local government units and communities.
c. Promote a watershed approach towards REDD+ planning, implementation, and enforcement, pursuing options to improve thee protect ion and sustainable management of forests, and the enhancement of forest carbon stocks and biodiversity .
d. Collaboratively establish a broad science-based REDD+ research and development (R&D) agenda which, among others, identifies relevant national baselines, the drivers of deforestation and degradation in the country, and t he social, policy, and carbon-cycle aspects of REDD+ in the Philippines.
e. Establish and implement a sub-national REDD+ measurement, reporting, and verification (MRV) system, scaling up to a national-level system commensurate with the improvement of capacities and resources.
f. Formulate and implement a national REDD+ communication plan and capacity building program with which to facilitate engagement, dialogues, and training for stakeholders towards REDD+ development.
g. Explore and capitalize on opportunities for financing REDD+, establishing long-term financial sustainability and resilience by seeking multiple funding sources, establishing contingencies and investing in self-sustaining local-level programs.

In 2010, Executive Order 881 authorized the Climate Change Commission to coordinate existing climate change initiatives, including REDD-plus initiatives and other similar mechanisms. As such, the Commission is the primary body through which to institutionalize the PNRPS policies. The Order further designates the Department of Environment and Natural Resources (DENR) as the operation arm for REDD-plus activities, and as manager of REDD-plus resources acquired by the government. This provides initial structure for development of REDD-plus decision-making and carbon and non-carbon accounting, though further, more specific legislation will be necessary.

[10] This section based on: Gutierrez, R. 2009. An Overview of Philippine Laws relating to REDD-plus. Prepared for the Non-Timber Forest Products-Echange Programme. Presented that the National REDD Plus Strategy (NRPS) workshop, Nov 27-29, Bayview Hotel, Manila.

Regulations Influencing Environmental Conservation and Enforcement

• The Constitution of the Philippines provides a primary legal basis for the implementation of REDD-plus in the country.

> The state shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.[11]
>
> All lands of the public domain, waters, minerals, coal petroleum and other mineral oils, all forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna, and other natural resources are owned by the State. With the exception of agricultural lands, all other natural resources shall not be alienated. The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State. [12]

• The revised Forestry Code (PD 705) provides for a system of land classification,[13] basis for utilization and management (including reforestation and forest protection),[14] and penalties for illegal logging and other forms of forest degradation[15]. Thus PD705 could provide the foundation for good forest rehabilitation and governance required by REDD. However PD 705 is essentially utilization-oriented and also the main source law for commercial timber extraction, and details regulations for permitted cutting. The focus on utilization has been somewhat counterbalanced by rules and regulations on forest stewardship and resource management. The policy needs to be harmonized with efforts to reduce the drivers of deforestation and enhance sustainable forest management.

• The National Integrated Protected Areas System (NIPAS) Act aims to preserve the Philippine environment through a system of protected areas in order to maintain essential ecological processes and life-support systems, preserve genetic diversity, ensure the sustainable use of resources, and to maintain natural conditions to the greatest extent possible.[16] The NIPAS Act also presents features such as structures of management (e.g., Protected Areas Management Boards), and planning and management processes which lend themselves to REDD-plus requirements. The Act further clearly articulates the need to counteract the major drivers of Philippine deforestation.[17] However, only a handful of protected areas have been proclaimed. There are opportunities for REDD-plus implementation to draw on the provisions of this Act in order to extend protected areas coverage.

The Strategic Environmental Plan (SEP) for Palawan is a national legislation with a specific focus on the province of Palawan. It seeks, among others, the protection of natural resources in Palawan Province, which hosts a majority of the Philippines' remaining forests, and identifies all natural forests of Palawan as areas of maximum protection. The plan articulates a zonation mechanism and provides for a governing body called the Palawan Council for Sustainable Development.

The Local Government Code (LCG) gives local government units an array of powers on environmental protection and governance. It allows the local government units (LGUs) to pass local ordinances oriented towards environmental protection among other provisions and provides a strong legal basis for LGU support for REDD implementation.

[11] Sec 16, Article II, 1987 Constitution.
[12] Sec. 2, Article 12, 1987 Constitution
[13] See Chapter II, *infra,* P.D. 705.
[14] See Chapter III, *infra*, Ibid.
[15] Sections 78-84, Ibid.
[16] Sec 4(a), RA 7586
[17] For example, see Secs. 12 and 14, Ibid.

Regulations Influencing Safeguards

Social and environmental safeguards form a significant part of the public debate regarding REDD-plus implementation. At the 15th Session of the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties, the Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention[18], which presented much of the text regarding REDD-plus currently under consideration by the parties, stated that, among others, the

> …following safeguards should be [promoted] [and] [supported][19]:
>
> …Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;
> …Full and effective participation of relevant stakeholders, including in particular indigenous peoples and local communities in actions referred to in paragraphs 3 and 5 below;
> …Actions that are consistent with the conservation of natural forests and biological diversity, ensuring that actions referred to in paragraph 3 below are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits (Taking into account the need for sustainable livelihoods of indigenous peoples and local communities and their interdependence on forests in most countries, reflected in the United Nations Declaration on the Rights of Indigenous Peoples and the International Mother Earth Day;

Many deemed that the Copenhagen Accord fell short in ensuring safeguards; the Philippine Representative to the UNFCCC negotiations, while supporting the Accord, expressed the need for stronger safeguards and protection for Indigenous Peoples. However, domestic safeguards already offer much of the needed strengthening.

The Philippine Constitution, particularly the article on the Bill of Rights can be invoked to ensure that safeguards are properly observed, including the right to a healthy environment. The Constitution also includes governance safeguards, such as for public participation, access to justice, access to information, transparency, public accountability and the like. Nevertheless, the Constitution though may require implementing laws and are subject to legal limitations.

The Environmental Impact System (EIS) (PD 1586) provides a legal basis for determining the environmental impacts of proposed activities that are considered as environmentally sensitive or to be established or conducted in environmentally sensitive areas. In the context of REDD-plus, the EIS would offer a safeguard against the possibility of conversion of natural forests to establish plantations for carbon sequestration. However, the EIS has been severely diminished by recent administrative pronouncements that dilute its effectiveness. Thus additional safeguards to address this concern should be developed.

The Indigenous Peoples Rights Act (IPRA) extends extensive rights to indigenous peoples, which would extend to REDD-plus activities. As a majority of remaining forested areas lie within ancestral domains claims, IPRA is highly significant to REDD-plus implementation. IPRA allows indigenous peoples the ownership rights to ancestral domains, and presents the foundation for decision-making on these lands and local access to benefits from associated natural resources. A key concept in IPRA is the "free and prior informed consent" (FPIC) provision, with which all REDD-plus projects in ancestral domains areas will be required to comply. However, despite these protection measures many indigenous communities continue to be marginalized and would remain vulnerable to irresponsible REDD-plus development.

[18] United Nations Framework Convention on Climate Change (UNFCCC), 2009. Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention, Eigth Session, At the Conference of the Parties Fifteenth Session, December 7–18, Copenhagen, Denmark.
URL:http://unfccc.int/../fact_sheet_reducing_emissions_from_deforestation.pdf.

[19] Brackets represent language that remains under negotiation among the parties.

The Community-Based Forest Management (CBFM) strategy (EO263) is a flagship DENR program that provides a strong foundation for communities to be primary stakeholders in REDD-plus development. Extractive components of the program could also be replaced with revenue earning streams from REDD-plus activities.

The Local Government Code requires that periodic consultations must be undertaken with all stakeholders.

The SEP law for Palawan identifies tribal ancestral zones as part of the environmentally critical areas network (ECAN), the main zonation strategy of the law.

Regulations Influencing Benefit Sharing

There are number of national laws that would ensure local ownership rights, where they are due, and rights to equitable income from REDD-plus by local communities, employees and LGUs.

IPRA clearly expresses the rights of ownership of IPs over lands, waters, and natural resources and the rights to the fruits, the right to possess, the right to use, right to consume, right to exclude and right to recover ownership, and the rights of interests over land and natural resources. They have the right to benefit from environmental gains and draw redress for social and environmental costs to such activities.

The Forest Code (PD705) requires any party that applies for a license or permit to utilize, occupy or possess forest land, or conduct any activity therein, is required to allocate at least 20% of its subscribed capital stock in favor of its employees and laborers, which allows for benefit sharing within corporations.

The LGC / RA 7160, along with the Constitution, provides that LGUs are entitled to an equitable share in the proceeds of the utilization and development of the national wealth within their respective areas, including sharing of the same with the inhabitants[20]

The NIPAS has the authority to fix and prescribe reasonable NIPAS fees to be collected from government agencies or any other persons or firm or corporations that derive benefits from within a protected area.

Regulations Influencing Payment for Ecosystem Services (PES)[21]

REDD-plus is a form of PES, and there are opportunities to link payments for carbon conservation with other forms of PES such as for biodiversity and watershed protection. The PNRPS focuses on carbon valuation and payment as well as community and biodiversity appreciation and valuation. Given this broad scope, there is a need to develop a complementary national strategy on PES. Even so, enabling laws for various ecosystem service payments are already embedded in sector policies linked to the use and management of natural resources, and can be integrated with REDD-plus actions. The Philippines Payment for Ecosystem Services Technical Working Group has identified a number of relevant policies, briefly outlined below and discussed further in Appendix B.

Legislation ENR 91-1, The Department of Energy Act (RA 7638), and the Electricity Power Industry Reform Act (RA 9136) specify payments and benefit sharing related to reforestation, watershed management and environmental enhancement that affect hydropower generation. Similarly, the agricultural sector has also observed voluntary payments for watershed services influencing water availability for irrigation. The Water Code of the Philippines (PD 1067) formalized payments to Local Government Units (LGUs) for water sales in their districts, and there are provisions for voluntary payments for watershed management.

Specifically related to biodiversity and forest resources, formalized site-specific payments for ecotourism activities have been established by LGUs at key sites. As mentioned previously, NIPAS Law also allows for collection and distribution of fees related to park management.

The 2004 Executive Order 318 on Promoting Sustainable Forest Management specified proper valuation of forest resources, collection of fees related to resource use and fair benefit distribution. These regulations provide a basis for REDD-plus and related PES efforts.

[20] Section 7, Article X of the 1987 Constitution, and Sections 18 and 289 of the Local Government Code.

[21] From the Philippines Payment for Ecosystem Services Working Group review of enabling laws for PES in the Philippines.

IV. Forestry Sector Scenario

Land Classification
The Philippines has a total land area of 30 million hectares broken down into certified alienable and disposable land (14.195 million hectares or 47%) and forestlands (15.805 million hectares or 53%). Out of the total forestlands, 15.050 million hectares are already classified and the rest are still unclassified. (FMB, 2007).

Forest Cover
NAMRIA is mandated to update national land cover maps every 5 years, but this has not been done due to lack of financial resources. The latest forest cover data is from the 2003 Forest Cover Statistics Project. A joint initiative between Forest Management Bureau (FMB) and National Mapping and Resource Information Authority (NAMRIA), the Project utilized Landsat ETM images acquired by NAMRIA in 2002[22] and adopted the new forest classification from the Food and Agriculture Organization of the United Nations (FAO) Forest Resource Assessment Project, and is in accordance with global forest resources definitions and data reporting[23].

In 2007, NAMRIA was able to order complete coverage of ALOS (Advanced Land Observation Satellite) PALSAR and AVNIR2 images from Remote Sensing Technology Center of Japan (RESTEC). In 2008, 100% of ALOS-PALSAR images were acquired, and by May 2010 40% of images were delivered based on acceptable cloud coverage. NAMRIA is currently analyzing the images and expects to deliver a new Philippine forest cover map in 2011, contingent on complete delivery of the images and funding for field validation. NAMRIA will be conducting the ground-truthing with the assistance by FMB and DENR Field Offices.

Table 1. Forest Cover by Land Classification (in ha)

	Forest area in forestlands	% of total land area	Forest area in A&D lands	% of total land area
Total Cover	6,521,548	22.08	646,852	2.19
Closed Forest	2,495,833	8.45	65,039	0.22
Open Forest	3,578,526	12.12	452,062	1.53
Mangrove	165,425	0.56	81,937	0.28
Plantation	281,764	0.95	47,814	0.16

Source: FMB, 2007

Table 1 shows forest cover by land classification. Forestlands cover approximately 6.5 million ha (22% of the total land area). Open forest is the largest type of forestlands cover, amounting to 3.6 million ha (12.12%), a major portion of which were logged by timber license agreement holders, while others are affected by timber poaching, fires and other human disturbances. Closed forest account for 2.5 million ha (8.45%), and include forests that have not been logged and logged forests whose vegetation has regenerated to reach the closed canopy stage. Approximately 646,852 ha (2.19% of the total land area) are located in alienable and disposable (A&D) lands, and include 452,055 hectares of open forest (1.53%).

In total, approximately 2.56 million hectares (35.7% of forests in the Philippines) are classified as closed forest, and approximately 4.03 million hectares (56.2%) are classified as "open forest." Mangrove forest covers 247,362 hectares (3.4%), and forest plantations cover 329,580 hectares (4.6%). Broadleaf forests are the most common, covering approximately 6.30 million hectares (88%). Mixed forests cover 94,477 hectares (1.3%), and coniferous forest (composed primarily of *Pinus kesiya* and *P. merkusii*) covers 200,833 hectares (2.8%) (FMB, 2007). An analysis of the forest cover data between 1988 and 2003 shows that the Philippines has increased its forest cover by about 700,000 ha (11% increase) (Natividad, 2009). This corresponds to a net annual increase of approximately 47,200 ha.

The results from the Forest Cover Statistics Project closely matched (91% similarity) results from the independent National Forest Resource Assessment (FRA), which was conducted by the FMB from 2002 to 2004 with FAO assistance (FRA 2005). The 2005 FRA used the FAO definition of forests and covered a wide set of variables, including biomass and carbon stock, management regime, forest health, resource resources, and

[22] For the 2003 land/forest cover map of the country, the FMB-FAO Forest Resource Assessment ground survey data was used as validation.
[23] This progress is significant because land classification systems/terminology and methodologies have not always been consistent. This can be seen below when comparing Tables 1 and 4.

biodiversity. The inventory was complemented by a NAMRIA mapping[24] based on 2001 to 2003 Landsat images, which were used to produce the 2004 Landcover map. The forest cover for the Philippines was calculated at 7.2 million hectares in the latest map. The Strengths Weaknesses, Opportunities and Threats (SWOT) in the Forestry Sector are addressed in Appendix C[25].

Tenured Areas

As of 2009, approximately 6 million ha of forestlands were covered by some form of community forest management under various government programs (Lasco et al., 2009), each with corresponding management regimes. This includes 181 Certificate of Ancestral Domains Claims across 2.54 million ha (Catala and Manuel, 2009)[26]; 1,786 Community-Based Forest Management Agreements (CBFMA) covering 1.62 million ha, involving 1,786 People's Organizations (PO) and over 321,726 households (FMB, 2008); 58 Protected Area Community Based Resource Management Agreements (PACBARMA) across 21,573.35 ha

According to the FMB (2008) there are other tenure and management agreements as follows:

- 6 existing/active Timber Licenses in the country, covering 325,310 ha with an annual allowable cut of 65,770 cubic meters;
- 143 Integrated Forest Management Agreement (IFMA) and Industrial Tree Plantation Lease Agreement (ITPLA) holders, covering 767,094 ha;
- 143 Tree Farm and Agro forestry Farm Leases, covering 74,210 ha;
- 1,803 Socialized Industrial Forest Management Agreements (SIFMA), covering 35,587 ha, and
- 370 Forest Land Grazing Lease Agreements (FLGLA) permits, covering 101,187 ha.

Forest Management Regime

The Philippine Constitution offers overarching guidelines for how national forest resources should be managed. It guarantees the right to a balanced and healthy environment in accord with the rhythm and harmony of nature; to protection from disasters like floods and landslides, and to protection from economic and environmental threats resulting from wood and water shortage, biodiversity loss, air pollution and drought. Likewise, the Constitution provides for the full, efficient and rights-based use of natural resources to abate poverty, promote industrialization and full employment, affirm the diverse cultures of the Filipino, and ensure the availability of these resources to present and future generations (1987).

To these ends, Executive Order No. 318 decreed Sustainable Forest Management (SFM) as the prescribed forest management regime (EO 318, 2004). Management is intended to provide for the protections listed in the Constitution, as well as to conform with the 2002 Global Plan of Implementation of the World Summit on Sustainable Development in Johannesburg. Government policy promotes SFM in forests and forestlands in watersheds.

Watersheds are specifically identified as ecosystem management units requiring an integrated ecosystem management approach through SFM, due to the interrelationships and interactions among the various ecosystems of a watershed, from uplands to coastal areas (EO 318). Their management is intended to be holistic, science-based, rights-based, technology-based and community-based. It is intended to observe the principles of multi-use. rational utilization of resources, decentralization and devolution, active participation of Local Government

[24] The Landsat images came from a mapping project on ancestral domain areas for the National Commission on Indigenous Peoples, which then-DENR Secretary Elisea Gozun said the NAMRIA could use to produce a forest cover map as well.

[25] Limitations of available forestry data were also expressed in the 1st National Communication of the Philippines to UNFCCC in 1999 (UNDP, 1999). The Submission noted:
Significant variability among existing data;
Deficiency in country-specific data (data gaps);
Unreliable data on forest area;
Need to enhance capability of some government agencies involved in collecting relevant forest data;
Need to establish systematic schemes for collecting data;
Limited resources available on carbon sequestration studies, and
Data on soil carbon.
The FMB reports in its 2009 communication that many of these limitations have been addressed. The Philippines is now considered as a carbon sink, as data has been updated and corrected.

[26] As of May 2009, the National Commission of Indigenous Peoples (NCIP) had officially recognized 107 Certificates of Ancestral Domains Titles (CADT) and Certificates of Ancestral Land Titles (CALT) in the Philippines, covering roughly 2.7 million ha, with more than 600,000 residents. Many of these CADTs and CALTs had been Claims areas that were converted (Catala and Manuel, 2009).

Units (LGUs), synergism of economic, ecological, social and cultural objectives. It is also the policy of the Government to promote sound, effective and efficient, globally-competitive and equitable forestry practices in both public and private domains (EO 318).

However, there is a prohibition on logging and any commercial exploitation of forestry resources in old growth forests, proclaimed watersheds and other areas covered by the National Integrated Protected Areas System (NIPAS) in order to ensure the perpetual existence of all native plants and animals (EO 318).

The above policies are to be pursued using the following principles:

- Delineation, Classification and Demarcation of State Forestlands
- Holistic, Sustainable and Integrated Development of Forestry Resources
- Community-Based Forest Conservation and Development
- Incentives for Enhancing Private Investments, Economic Contribution and Global Competitiveness of Forest-Based Industries
- Proper Valuation and Pricing of Forestry Resources and Financing SFM
- Institutional Support for SFM

History of Deforestation and Forest Degradation

Deforestation takes place because of the interplay of multiple factors. Deforestation has been traditionally associated with forest encroachment by poor users pursuing local subsistence activities. Population growth compounded with increasing land scarcity and diminishing productivity force people to look for new lands on which to pursue subsistence agriculture (PRP, 2010). This has been, to a degree, the case in the Philippines. However, it is also largely the result of centuries of unrestrained colonial, industrial logging practices. Logging and the export of timber have been major sources of income for the government, wood-based industry and associated business, traders, entrepreneurs, employees, workers and upland communities throughout the Philippines.

Land conversion for settlements and extractive use of forest resources did not exist in the archipelago before the colonial period. Trees were traditionally for domestic use – construction material for abode or residence; conveyance of goods and people; source of fuel wood; material for housing amenities, implements, production tools; and materials of aesthetic and cultural values. Beliefs and customary practices guided the utilization of forests as natural resource to maintain interdependence between people and nature.

Deforestation was the dominant trend under Spain's colonial government under the Regalian doctrine. Land conversion and extractive use of forest resources presaged deforestation as required for the following: the *reduccion* (or 'resettlement') and the *encomienda* as administrative schemes for colonial settlements, timber needs for ships in the galleon trade, and the *real hacienda* that meant plantations for export crops. It was during this period that Central Luzon and the Ilocos provinces as well as the islands of Cebu, Bohol, and Panay were critically deforested. It was also since the colonial period under Spain that privatization of lands by the colonists, expatriate European residents and the native elite (*principalia*) overtook prior native rights and collective use of common lands. Inequitable land distribution became a major driver of deforestation as the share-cropping system and the hacienda expanded throughout the colony.

Share cropping became increasingly inequitable since the American colonial period and throughout the 20th century. Between 1905-1935, the rapid population increase from 7.6 to 16 million people increased the pressure on limited land resources, created a labor surplus and further lowered the standard of living among tenant farmers (Dolan, 1991). The area under cultivation increased from 1.3 million ha in 1903 to 4 million ha in 1935, stimulated by American demand for cash crops and by the growing population (Dolan, 1991). Many sought employment in urban centers and in the logging sector.

It was during the American colonial period that mechanized logging was introduced the Philippines, for timber export to the United States and to open agricultural lands for production to underwrite colonial expenses in governing the Philippines (Gould, 2002). The 1900 forest cover was estimated at 21 million hectares, or 70% of the total land area (ESSC, 1999). However, commercial logging and mining over the following decades greatly reduced forest cover. The first forest census (1900 -1918) reported that mining regions and the areas along river systems were the most deforested, with particular degradation in Negros and Mountain Provinces (Gill, 1959). In the next decade, following particularly intense pressures from logging, settlement expansion, road construction, and copper and gold mining, the forests around Baguio were declared a reservation area to allow reforestation (Lansigan, 1941). At the national level, however, commercial logging continued unabated, and

commercial forests were lost at an average annual rate of about 85,000 hectares, significantly higher than the recommended sustainable level of 46,000 ha. per year (Keith, 1959). By 1934, 17 million ha of forest cover remained (DENR, 1990).

Logging provided former tenant farmers new employment opportunities and logged-over areas could then be easily accessed and further cleared for agriculture. These new agricultural areas provided an alternative to the *kasama* system. However, upland farming as practiced by recently-arrived lowland migrant prevented the forest regeneration and soils eventually became degraded. It was during this period that a majority of the grasslands in the Philippines were formed (Lasco et al, 2010).

After the Second World War, the reconstruction process drove continued exploitation of the country's forest resources. The Bell Trade Act of 1946 gave the Americans parity rights in the exploitation of natural resources (Quesada, 2004). For the next three decades, the majority of public forests were allocated as logging concessions, accompanied by low forest charges and low export taxes. Logs became a major foreign-exchange earner (Dolan, 1991), and the rate of forest conversion reached 300,000 ha per year during the late 1960s, with few logging operations practiced sustainable techniques (DENR, 1990). , By 1969, forest cover was reduced to 10.64 million ha, though in 1977, 8.3 million ha were still licensed for logging (DENR, 1990).

In addition to the officially sanctioned logging industry, there has been considerable illegal logging, the full extent of which is not easy to determine. However, the discrepancy between Philippine and Japanese statistics on log exports provide an idea as to its degree; according to Japanese import records from 1955 through 1986, log imports from the Philippines were approximately 50% higher than the recorded log exports registered by the Philippines (Dolan, 1991).

By 1988, forest cover decreased to 6.48 million ha, and the contribution of logs and lumber to total Philippine exports eventually declined, from 25% in 1969 to 2% in 1988 (FMB, 1988). Recognizing the dangers of deforestation, the government began to impose restrictions in the late 1980's and reduced the area allocated to logging to 4.42 million hectares as of 1988 (FMB, 1988). Following the Master Plan for Forestry Development (1988), a range of forest conservation policies were established. Logs and lumber exports were banned; logging in the old growth forests and forest with an elevation of greater than 1000 meters was banned; multi-sector forest protection councils were established; expiring timber license agreements were not renewed; the Community Forest Management Program became a key strategy for sustainable forest management; the tariff duty on imported logs was removed and tariffs on imported lumber, plywood and veneer were significantly lowered to reduce pressures on the remaining Philippine forests; and the National Integrated Protected Area System was established

Existing and Future Drivers of Deforestation and Forest Degradation

At present, there is little detailed quantitative data on recent land use change in the Philippines, and limited information regarding contemporary drivers of deforestation and forest degradation (including regarding underlying causes, immediate drivers, manifestation, trends and locations). However, the PNRPS is informed by the expertise of diverse forest users and forestry experts, drawing on a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis (Appendix C). Table 1, below, provides an initial list of the broad categories of known and suspected drivers, and relates these to the PNRPS strategies and activities discussed in the following sections. These links will be further identified and strengthened throughout the Readiness Phase. As described in the "Research and Development" component, as specific drivers are identified and better understood, conservation interventions will be identified.

Suspected primary causes of deforestation and forest degradation include illegal logging and fuelwood and timber poaching, agricultural expansion, strip-mining, migration and plantation development. While there have been initial efforts to identify and qualify the extent of these pressures on biodiversity and forests (Ong et al., 2002), there is limited information and analysis on the drivers of deforestation and forest degradation[27] and inadequate determination of what drivers act on which sites. Through the 'Forest Policy and REDD' project funded by Germany's Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU[28]), GTZ will support REDD-plus related research to analyze the key drivers of deforestation and forest degradation,

[27] It is important to note that the causes of degradation may be very different than the causes of deforestation, and merit separate analysis (Murdiyarso et al., 2005).

[28] Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

and analyze existing forest policies with regard to climate protection and biodiversity conservation and gaps regarding REDD plus. Identifying drivers and appropriate interventions is also major component of the "Research and Development" agenda.

There are approximately 20 million people living in upland watershed areas, half of whom are dependent on shifting cultivation for their livelihood (Cruz and Zosa-Feranil, 1998). Inequitable land distribution, insecure tenure and rural poverty are often-cited causes of deforestation and forest degradation in the Philippines, linked to increases in rural populations both as a result of high fertility and in-migration (Kummer, 1992; Liché, 1997). There is, however, little empirical evidence to support these links, though recent analyses do find links between deforestation and forest access (roads), high agricultural prices, dependence on agriculture sector employment, and low wages (Angelsen and Kaimowitz, 1999). Such drivers of deforestation would have to be addressed by REDD-plus incentives. Deforestation in the Philippines is also linked to mining, including in critical biodiversity areas (Ong et al., 2002; Phelps et al., 2010a), and there is a need to tighten regulations for protected areas and identify economically competitive livelihood alternatives.

Forest degradation is heavily driven by fuelwood harvesting, which is currently the leading demand for timber in the Philippines. Approximately 8 million families lack access and/or cannot afford alternative fuels and rely on wood for cooking (FAO, 2009). Although the exact impacts of these activities are undocumented, they are also suspected to contribute significantly to forest and carbon stock degradation. Such needs for wood resources and livelihoods will have to be addressed.

Growing urban populations also contribute to deforestation and degradation, especially as increasing trade and domestic demands for food and agricultural products place pressure on forestlands. These have been aggravated by government policies to convert agricultural lands into industrial zones, which have resulted in rice shortages and increased government-led and informal agricultural encroachment into forestlands (FAO, 2009; PRP, 2010). These various pressures may further increase under forecasted climate chance scenarios (See MO, 2005), which may increase lowland crop failures and thus increase pressures on forested areas and forest resources.

Many of these threats continue because the country lacks clear forestry legislation (FAO, 2009); the DENR largely lacks the resources to effectively manage and enforce rules across the 15 million ha under its control (FMB, 2010), and local-managers often lacked the resources and training to effectively manage lands (FAO, 2009). Even a number of protected areas lack adequate management regimes and enforcement (FAO, 2009). Between 1988 and 2003, closed canopy forest cover has decreased by an average annual rate of 204,000 ha, converted mainly to open canopy forests. These remain carbon sinks, though are lower carbon density forests (Lasco et al., 2010).

Table 1. Broad categories of suspected and known underlying drivers of deforestation and forest degradation, examples of corresponding immediate drivers, and their links to PNRPS strategies and activities.

Major Underlying Drivers	**Types of Immediate Drivers**	**PNRPS Strategies and Activities** Captions reference PNRPS components, strategies activities
Uncertainty regarding the exact drivers and sites of deforestation and forest degradation, which limits ability to develop targeted and effective conservation interventions.		• Conduct national, regional and site-specific research on the drivers of deforestation and forest degradation ("Research" 2) and on appropriate conservation interventions ("Research" 3).
A lack of resources for the DENR and other Forest Management Units is linked to a number of other drivers.		• Seek donor funding for REDD-plus readiness, and other sources of long-term funding ("Financing" 2-4). • Operationalize fund-management within the National Multistakeholder REDD-plus Council, ensuring resources reach local managers ("Financing" 2.4). • Sustain government and non-government cooperation ("Capacity" 5).
Lack of clear legal mandates and		• Address jurisdictional conflicts and overlaps among national and local groups with forest management

responsibilities among forest managers and agencies has caused a lack of accountability		responsibilities ("Policy" 1.3). • Establish national and sub-national REDD-plus coordinating agencies (based on existing structures) ("Governance" 4) and ensure that all REDD-plus institutional mechanisms have clear legal mandates ("Policy" 3.4). • Strengthen linkages and coordination among key institutions responsible for national-level REDD-plus ("Governance" 2.2). • Establish 3rd party verification to ensure performance to tenure holders and compliance with specified management regimes ("Resource" 4.6).
Inconsistencies within national government policies on various sectors, notably mining and agriculture, energy sectors.	• Planned biofuel plantations will encroach on forests. • Mining concessions in protected areas cause deforestation and degradation. • Conversion of existing agricultural land into industrial land has increased forest conversion pressures. • Planned wood plantations in forestlands may cause deforestation.	• Review existing policies to inform alignment and reforms ("Research" 5). • Engage with the Climate Change Commission to integrate REDD-plus into climate change mitigation planning in various sectors ("Policy" 1.2; "Governance" 2) • Complete delineation of permanent forest lines ("Resource" 1). • Review new REDD-plus policies to assess their effectiveness, efficiency and equity. ("Measure" 9). • Sustain government and non-government cooperation ("Capacity" 5).
Lack of clear and updated forestry legislation.	• Lack of sustainable forest management regulations allows continued degradation from unsustainable practises. • Continued legal logging in natural forests causes degradation. • Forestlands without clear boundaries and management regimes are subject to encroachment.	• Review existing policies to inform alignment and reforms ("Research" 5). • Complete delineation of permanent forest lines to inform national forest mapping ("Resource" 1). • Develop a 'menu' of legal options related to REDD-plus ("Policy" 3.3), notably a revision and update of the Forestry Code based on the REDD-plus Readiness process and findings ("Policy" 3.3.1). • Sustain government and non-government cooperation ("Capacity" 5).
Poor local land use forest management planning among LGUs and FMUs, and lack of coordination among government agencies agencies responsible for land use planning, due to lack of resources, capacity and supervision.	• Human-induced fires degrade forests and prevent regeneration. • Road construction increases access to protected forests. • Limited rule-enforcement. • Allocation of permits for unsustainable activities in protected forestlands.	• Establish and strengthen Provincial REDD-plus decision-making Councils to facilitate provincial planning ("Governance" 4.4). • Establish/recognize and/or strengthen local-level Forest Management Units ("Governance" 4.5; "Resource" 2.4). • Complete delineation of permanent forest lines ("Resource" 1). • Prior to funds disbursement to LGUs, mandate integration of Forest Land Use Plans (FLUPs) into local Comprehensive Land Use Plans (CLUPs) ("Governance" 3.3.3; "Resource" 2.2). • Define and delineate the protection and production forests within forestlands ("Resource" 3). • Provide support to tenure holders to ensure improved

		forest management ("Resource" 9), including information, education and communication activities ("Capacity" 1-5). • Sustain government and non-government cooperation ("Capacity" 5). • Review of REDD-plus policies and implementation to ensure effectiveness, efficiency and equity ("Measure" 7-9).
Lack of local enforcement of specified management regimes for protection and natural forestlands.	• Illegal commercial logging. • Subsistence fuelwood and timber harvest. • Encroachment by illegal agricultural and mining.	• Define and delineate the protection and production forests within forestlands ("Resource" 3), and segregate managed forest blocks with markers ("Resources" 2.3). • Improve management of protection forests through development of clear management regimes and improved enforcement, notably through support and recognition of local-level and community enforcement ("Resource" 6). • Ensure management plans address biodiversity conservation objectives ("Resource 6.4) and that environmetnal impacts are measured ("Research" 9.6; "Measure" 7). • Establish buffer zones around protected forests ("Resource"6.5). • Restore degraded forestlands for protection ("Resource" 8.1).
High domestic wood demand relative to production.	• Poaching for fuelwood and timber for household use causes forest degradation. • High incentives for illegal logging.	• Reforest denuded forestlands for production forest through sustainable forest management and integration of agroforestry ("Resource" 8.2). • Intensify responsible establishment of plantations for production ("Resource" 8.3). • Improve management of production forests through development of clear management regimes, use of sustainable forest management practises and improved enforcement ("Resource" 6, especially 6.5-6.9). • Reforest denuded forestlands for production forest through sustainable forest management and integration of agroforestry ("Resource" 8.2). • Provide support to tenure holders to ensure improved forest management, including for production ("Resource" 9). • Conduct information, education and communication activities ("Capacity" 1-3).
Industrial pressures, notably from the mining and agricultural sectors.	• Direct deforestation and forest degradation. • High opportunity costs associated with extractive industries	• Conduct resource valuation ("Research" 4) and develop a national Payment for Ecosystem Service (PES) strategy/policies to increase valuation of protected forest ("Policy" 4). • Explore diverse, long-term and resilient financing opportunities ("Financing" 3-4), including bundling REDD-plus with co-benefits ("Financing" 3.4). • Engage with the Climate Change Commission to integrate REDD-plus into climate change mitigation planning in various sectors ("Policy" 1.2; "Governance" 2)
Uncertain and contested land tenure, and 'open access' forests.	• Creates incentives for over-exploitation of forest resources. • Lack of clear regulations on	• Review and clarify existing tenure instruments and allocate new instruments, with specific consideration for rights of indigenous and traditional peoples ("Resource" 4), and consideration of associated carbon rights ("Resource" 5).

	forestlands use allows exploitation.	• Extend protected areas coverage ("Resource" 7).
Rural poverty and lack of livelihood alternatives, aggravated by rapid population growth.	• Poaching for fuelwood and timber for household use causes forest degradation • Slash-and-burn agriculture. • Small-scale mining.	• Establish equitable benefit sharing schemes that include multiple incentives ("Governance" 3; "Resource" 5.2; "Research" 7; "Financing" 5), including up-front incentives for communities in pilot/demonstration sites ("Resource" 10). • Apply a watershed approach to REDD-plus that allows for multiple-use ("Resource" 2). • Identify low-emissions rural livelihood strategies that harmonize REDD-plus objectives with local needs and livelihoods ("Research" 8.1). • Conduct information, education and communication activities ("Capacity" 1-3). • Conduct census of forest dwellers and integrate population management into forest management plans ("Resource" 11).
Corruption and vested interests.	• Allocation of resource use concessions/permits contrary to regulations. • Inconsistent enforcement.	• Establish financial review procedures for REDD-plus resources ("Measuring" 8). • Establish review of policies and transaction processes ("Measuring" 10). • Establish national and sub-national REDD-plus coordinating agencies ("Governance" 4), and clear fund-management procedures ("Financing" 2.4) and exploring alternative fund-management arrangements that link local actors directly to marketplaces ("Financing" 6). • Strengthen linkages and coordination among key institutions responsible for national-level REDD-plus ("Governance" 2.2). • Establish 3rd party verifying teams ("Governance" 4.6). • Create a national REDD-plus policy advocacy community to engage government ("Governance" 5).

There is limited modeling of future deforestation and degradation rates, trends and pressures. However, population is rapidly increasing, resource (energy, land, food) demands are increasing, and forest management and enforcement regimes are not currently positioned to address increased pressures (Liché, 1997). With a national population growth rate of 2.35%, the Philippine population could double within 29 years (FAO 2009), and pressures on forestlands are expected to increase accordingly (PRP, 2010). Given increasing demands, there are existing plans for fuelwood plantations, which may affect forestlands (FAO, 2009). Government also has plans to significantly increase domestic biofuel production. Current plans involve 2 million ha of jatropha plantations and 600,000 ha of coconut plantations, largely in forestlands (FAO, 2009). These developments are expected to both increase pressures on existing forests and reduce opportunities for regeneration, reforestation and carbon stock enhancement (FAO, 2009). Although exact deforestation and forest degradation estimates are unavailable and there are no future projections, these trends suggest potential reductions in national carbon storage capacity in natural forests, which presents opportunities for REDD-plus additionality.

REDD-plus activities, both at the national and sub-national levels, depend on identifying these drivers and where they act, a key activity within the PNRPS, further within the "Research and Development" component. Likewise, the "Research and Development" component highlights the need to use this information to identify appropriate, targeted conservation interventions and diverse incentives to reduce deforestation and forest degradation.

Forest Carbon Stock Assessment and Emissions from Land Use Change

Climate change research in the Philippines dates to as early as 1987, and there are now more than 40 related studies, largely from World Agroforestry Center (ICRAF), University of the Philippines at Los Baños (UPLB), Ecosystems Research and Development Bureau (ERDB), and several other state universities and colleges.

(Appendix D: Summary of Research on Forests and Climate Change in the Philippines). Research has focused on carbon stock assessments in various types of forest; greenhouse gas emissions from various sectors, including land use change in forestry; national vulnerability and adaptation to climate change, and climate projections (Pulhin and Lasco, 2010).

There is not yet, however, significant research on CO_2 sequestration potential in the Philippines. Initial estimates suggest that REDD-plus activities in the Philippines represent an emissions mitigation potential of approximately 38,540,000 tons of CO_2 between 2011-2030 (CIF, 2010). Continued research and more accurate estimates will form part of the "Research and Development" agenda.

Over the last 100 years, deforestation in the Philippines has contributed approximately 2.6Pg[29] of carbon to the atmosphere. Philippine forest lands now store approximately 1,100TgC[30] (Lasco and Pulhin, 1998; Lasco and Pulhin, 2001), roughly equivalent to 40 times the 1994 net national carbon emissions. Based on the 1996 Intergovernmental Panel on Climate Change (IPCC) Revised Methodology for Greenhouse Gas Inventory, the Land-Use Change and Forestry (LUCF) sector in the Philippines has swung from being a net source of CO_2 emissions in 1990, to a strong net sink in 1998 (Table 2). This adjustment is due largely to the changes in activity data used (e.g. forest area, rate of deforestation) and the availability of country-specific data for the sector.

Table 3. Total annual emissions from LUCF in the Philippines (in Gg CO_2-e)

Source	1990 Inventory (Francisco, 1997)	1990 Inventory (ADB, 1998)	1994 Inventory (UNDP, 1999)	1998 Inventory (Lasco and Pulhin, 2001)
Change in forest and biomass stock	-48.654	-2.622	-68.373	-190.522
Forest and grassland conversion	126.738	80.069	68.197	46.624
Abandonment of managed lands	-1.331	-1.331	Not determined	Not determined
Net Annual Emission	**70.753**	**81.360**	**-126.000**	**-142.007**
Total Philippine emissions	128.620	164.103	100.738	100.738
% of total Philippine emissions	55.01	50	<-1	-142

Source: Lasco and Pulhin, 2009 Note: 1 Gg= 1 kilo ton

In the context of REDD-plus, there is an increasing body of research on the carbon stocks of Philippine forest and other land cover types in public lands (also known as forestlands). The 2005 Forest Resource Assessment was the first to collect data on the volume of trees at a national scale (Table 4), representing an improvement over previous years when data was collected on a project site basis. The 2005 FRA could serve as the country's national baseline for calculating carbon emissions from forests[31].

Table 4. Above-ground biomass of major land cover categories in the Philippines

Land cover	Carbon (tons of carbon)
Total	3,611,978,558
Forestlands	1,725,681,529
Other wooded land	299,733,041
Other land	1,508,960,507
Inland water	29,842,915

Source: FRA, 2005

[29] 1 pentagram (Pg) is equivalent to 10^{15} grams
[30] 1 teragram (Tg) is equivalent to 10^{12}g
[31] One limitation of the FRA is that 25 of the 363 permanent plots, representing about 1.8 million hectares of forestlands, were not included in the report. The FRA varied from IPCC guidelines for measuring volume and used a different computation to determine carbon stocks. Such inaccuracies limiting existing baseline data, however, can be corrected using satellite data.

The FRA 2005 estimated that the average above-ground woody biomass in forestlands is 240.93 tons/ha, while trees outside forestlands store an average of 82.36 tons/ha However, more nuanced ranges are available from a number of other studies, demonstrating that, even within forestlands, carbon densities vary significantly (Table 5). These range from old growth and secondary forests storing more than 200tC/ha, to completely denuded grasslands with only 12tC/ha (5% the carbon stock of a mature forest). This implies that approximately 95% above-ground carbon can be lost due to deforestation. Substantial carbon stocks may also be lost to biomass degradation, as can be seen by the lower carbon values of cover types such as a tree plantation (Lasco et al, 2010).

Table 5. Mean above-ground carbon density of forest land cover in the Philippines[32]

Land Cover	Carbon (tons of carbon/hectare)
A. Protection Forest	
1. Old growth	165 – 260
2. Mossy	183.8
3. Pine	90.1
4. Mangrove	176.5
B. Secondary Forest	207.9
C. Brushlands	29.0
D. Tree Plantation	59.0
E. Agroforestry	45.4
F. Grasslands	12.3

Sources: Data compiled in Lasco and Pulhin, 2003

As part of the country commitment to FAO, the FMB is preparing a new Forest Resources Country Report for 2010 based on data sets from 1987 and 2003, using linear interpolation. Initial figures show a continued net increase in forest cover, though this remains subject to validation and calibration in order to allow comparison with previous FAO statistics. The report contains updated figures on forest biomass, which may be used in future carbon inventory calculations.

[32] Table 5 is based on "old" forest cover categories, also used in 1st National Communication (based on data from 2000). New categories (e.g., "closed forest" and "open canopy") were adopted in 2003 based on the international standard. There is a need to harmonize data given changed definitions.

V. Enabling Policy

While the Philippines has a comprehensive policy and institutional framework on natural resources management[33] there is not yet a specific national legal framework on REDD-plus. Such a legal framework[34], beyond existing regulations, is essential to guiding REDD-plus, including related to tenure issues, settling disputes, payment systems, rule enforcement, and project implementation on the ground.

A future legal framework should seek to build REDD-plus into existing policies and institutional frameworks on natural resource management, including a comprehensive national system of protected areas and a wide variety of institutions to administer the policy and legal framework. These frameworks are largely decentralized, seek to strengthen stakeholder participation in decision-making, expand the role of civil society groups and recognize the rights of indigenous peoples, farmers and coastal dwellers.

A future legal framework must also integrate and be adaptive to new developments in science while harmonizing with indigenous/traditional knowledge systems and local practices. It must also provide for processes and schemes on how to manage risks and conflicts associated with REDD-plus. For example, a key concern that must be addressed by the national legal framework would be ownership of forest carbon, an issue over which contention is likely.

The pursuit of an enabling and stable policy for REDD-plus must further take into account the weaknesses in institutional and political arrangements that have hampered the implementation of natural resource management laws and policies[35]. A future legal framework should thus be clear about identifying roles and responsibilities and clarifying jurisdictional overlaps; identifying rights and safeguards, and specifying incentives and enforcement measures.

The 2009 passage of the Climate Change Act, the creation of the Climate Change Commission (CCC) and the issuance of Implementing Rules and Regulations (IRR)[36] provide an initial structure for development of REDD-plus governance. They also present significant opportunities to engagement government and diverse stakeholders in the drafting of national legal framework on REDD-plus. In particular, local communities (legal and *de facto* land managers) must be actively engaged, not only consulted, in the crafting a REDD-plus framework. This will help ensure that local customs, practices and perspectives are considered in the development of a REDD-plus legal framework. The development of enabling REDD-plus policy will involve a range of agencies and organizations, and will depend on substantial domestic expertise. The "Capacity Building and Communication" component addresses the need for such capacity building and coordination.

Given these considerations, strategies must be undertaken to develop a REDD-plus policy that is stable, enforced, enabling and integrates all stakeholders, including communities.

[33] This includes national legislation, executive issuances and international commitments as expressed in international treaties and covenants. international agreements and treaties such as the Millennium Development Goals (MDG), United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biodiversity (CBD), Convention on International Trade of Endangered Species (CITES), Philippine Agenda 21, Bonn Guidelines to the CBD.

[34] The International Union for the Conservation of Nature (IUCN) in Switzerland, in collaboration with the IUCN Environmental Law Center in Bonn, Germany recently published "Legal Frameworks for REDD, Design and Implementation at the National Level". This includes a "Checklist for development of national REDD legal frameworks", which is a good reference material or guide for drafting the national legal framework for the Philippines. URL: http://www.iucn.org/what/tpas/climate/resources/publications/?uPubsID=3943.

[35] See "Governance" Component

[36] It must be noted that civil society groups have raised concerns on the expeditious issuance of implementing rules and regulations of the Climate Change Act, there being no broad consultations and meetings on the ground.

Proposed Strategies and Activities

1. Enabling early REDD-plus development in the Philippines through policy

Many of the proposed reforms and activities will take time to develop. However, given the rate of REDD-plus planning internationally, the Philippines should prepare for engagement in the short-term.

1.1. Establish national legislation on REDD-plus

Based on the reviews discussed, there is a need to establish national-level legislation to ensure an enabling and stable environment for REDD-plus implementation, harmonization across sectors and safeguards.

1.2. Engage Climate Change Commission (CCC) with the PNRPS

As the sole national-level decision-making body on climate change adaptation and mitigation, the CCC should continue to draw on the PNRPS to integrate REDD-plus and forestry sector mitigation and adaptation into its planning. It should further consider other sectors (e.g., agriculture, mining) into plans to reduce drivers of deforestation and forest degradation.

1.3. Address potential jurisdictional conflicts/overlaps

Potential overlaps and conflicts among the CCC, the Department of Environment and Natural Resources (DENR), the Forest Management Bureau (FMB) and several other national agencies in relation to REDD-plus implementation must be actively resolved. At the local level, conflicts related to tenure, co-management, LGUs, the private sector and industry need to be addressed.

1.4. Clarify legal carbon ownership and tenure upfront

Prior to any significant national-level REDD-plus developments, there is a need to clarify carbon ownership and tenure. Rights may be allocated directly to forest owners, notably in the case of Indigenous Peoples (IP) and private land and title-holders, subject to taxes. However, that State may also claim ownership of carbon as a publicly-owned asset, in which case the principles of community priority rights in terms of revenue and equitable sharing shall govern the sharing of profits.[37] These issues must be transparently addressed up-front. In doing this, existing research projects on the dynamics of carbon ownership in the Philippines can be considered.

2. Establishing quantifiable national forestry emissions reduction target

Based on consultations, sector input and research discussed in the "Research and Development" component**,** there is a need to establish quantifiable and realistic national targets and timelines for emissions reductions from reduced deforestation and forest degradation and enhanced carbon stocks.

3. Identifying enabling policies for REDD-plus

Policy review and advocacy are required in order to identify existing policies that are flawed and/or have not been successfully operationalized, to harmonize existing policies in order to reduce deforestation and forest degradation, and in order to establish new policies that will complement and facilitate REDD-plus implementation.

3.1. Review existing policies and proposed bills

Future REDD-plus policy should be based on a review of natural resource use and environmental laws and policies, including international treaties and covenants and local legislation, as there is a need to build on existing initiatives and streamline laws and regulations that will influence REDD-plus implementation. The German Government has funded an initial review of existing forest policies and their implications for biodiversity and conservation. The policy review should specifically address conflicting laws and policies, and means for harmonization and alignment. Current laws on mining, agrarian reform, agricultural development, biofuels and plantations, harvest of forest products, and renewable energy illustrate these conflicts. The review should further address overlaps among agencies that could result in conflicts. Other issues for inclusion relate to carbon taxation, policy incentives for carbon stock

[37] Options in the sharing of profits can include: (1.) 75-25, based on gross income, in favor of the community (e.g., CBFM PO), with the 25% to be shared between the municipality, province and national government; (2.) 50-50, based on gross income; (3) negotiated sharing based on area-specific circumstances or conditions (eg. LGU communal forest).

enhancement, and social issues such as population management. The strategy depends on significant stakeholder consultations and feedback[38].

3.2. Review lessons learned from previous legislation

Policy reviews should also consider the effectiveness of existing policies and draw lessons-learned, a major component of the "Research and Development" component agenda. This includes reviews legislation at the local government-level dealing with forests and watershed protection and comprehensive land, water and forest use planning. Previous efforts that remain unfinished, unimplemented or problematic provide an opportunity to improve and/or develop more comprehensive legislation and implementation mechanisms.

3.3. Develop a "menu" of legal options for REDD-plus at the national and local levels.

Based on the reviews of existing policy, research, reviews of policy implementation and stakeholder feedback and engagement, there is need to develop a "menu" of legal options for REDD-plus at the national and local levels that can be further debated, articulated and ultimately adopted. In particular, there is a need to address:

3.3.1. Updating the Forestry Code

The draft Sustainable Forest Management Bill should be further reviewed and developed into an updated Forestry Code, based on the REDD-plus Readiness Phase policy reviews, consultations, forestlands assessments, delineation and mapping.

3.3.2. Protection of remaining natural forest

There is a need for legislation to protect remaining natural forest in the country and ensure that activities within natural forest do not jeopardize climate change adaptation.

3.3.3. Mandated Forest Local Use Planning (FLUP)

FLUP should be mandated at the Local Government Unit (LGU) level prior to the development of local REDD-plus projects.

3.3.4. Devolved forest management

The Philippines has a long history of decentralization within forest management. However, there is a need to formalize policy on devolved forest management to local managers and users at both the LGU and community level.

3.4. Establish institutional mechanisms

There is a need to integrate existing forest management bodies into REDD-plus institutional mechanisms, including a National Multi-stakeholder REDD-plus Council, Provincial Council, Forest Management Units, and Designated National, Regional and Provincial Authorities for carbon measurement, reporting and verification. These are described in the "Governance" component and will each require legal mandates.

3.5. Review forestry sector definitions

Many formal definitions within the forest sector lack clarity or are contradictory, which is a problem both domestically and at the international level. There is a need to review existing definitions and engage with diverse stakeholders to adopt a coherent, updated list of national definitions, which should also conform to international standards[39].

4. Developing a long-term policy on Payment for Ecosystems Services (PES)

REDD-plus is a form of PES, and there are considerable opportunities to bundle carbon payments with payments[40] for other ecosystem services. In some cases, resource valuation can be achieved through existing

[38] See Strategy 1 of the "Governance" component.

[39] Key definitions for review include "forest", "deforestation/deforested land", "forest degradation/degraded forest", "reforestation" and "restoration".

[40] Bundling services refers to joining various ecosystem service 'products' such as carbons sequestration services, watershed services and biodiversity conservation together. Bundling can potentially integrate multiple revenue streams, increasing the financial incentives for conservation.

legislation[41], though national PES policy is also under development through DENR, National Economic Development Authority (NEDA) and other agencies and non-governmental organizations within the PES Technical Working Group.

5. Ensuring REDD-plus social and environmental safeguards[42]

REDD-plus implementation must do no social or environmental harm and seek to create multiple benefits. Safeguards should specifically ensure the REDD-plus policies and projects protect the rights of Indigenous Peoples and local communities, and should ensure their meaningful engagement in designing and implementing (including monitoring and evaluation) REDD-plus, especially in determining the parameters and design of local REDD-plus implementation (Phelps et al, 2010b)

5.1. Review existing safeguards

A review of existing regulations for social and environmental protection, including national legislation on benefit-sharing and safeguards and regulations under the United Nations Framework Convention on Climate Change, will help determine what additional regulations may be required. This should be informed by the updated Community, Climate and Biodiversity Alliance (CCBA) standards[43].

5.2. Engage stakeholders to determine safeguards[44]

Multi-stakeholder consultations and dialogues can be used to identify the needs for additional safeguards and appropriate monitoring approaches.

5.3. Establish safeguards for engaging with private sector on REDD-plus

Private investment may feature heavily in REDD-plus financing, and there is a need to ensure safeguards apply to private sector, and that criteria are established to avoid unreasonable speculation in the forestry sector.

[41] See "Legal Context" component on PES.
[42] See "Measurable, Reportable and Verifiable Conditions" component for a discussion on monitoring of safeguards.
[43] Available at: http://www.climate-standards.org/redd+/index.html
[44] See Strategy 1 of the "Governance" component.

VI. Governance

There is growing consensus that despite the Philippines' comprehensive policy and institutional framework on natural resources management, implementation has been hampered by weaknesses in institutional and political arrangements. The PNRPS takes this reality into account and proposes strategies to bolster 'good' governance[45] in the forestry sector. This would enhance the participation of both citizens and governments in formulating and implementing policies (CIFOR, 2009), and would allow for efficient, effective and equitable REDD-plus design and implementation.

Existence of enabling laws and good policies is insufficient. Robust leadership; democratic and participatory governance; political will; and both new and strengthened institutional arrangements will be essential to creating and operationalizing REDD-plus policies. Many of the existing drivers of deforestation and degradation are linked to the inability to effectively operationalize existing legislation and policies. These links and ensuing failures need to be clearly articulated, which will form part of the policy reviews discussed in the "Policy" component. As a performance-based initiative, REDD-plus has unique potential to help motivate follow-through and policy implementation at multiple scales.

However, improving forestry sector governance also relies on increasing multi-level and multi-stakeholder participation. There is a need to overcome differences among diverse stakeholders and the various government agencies working to manage forests and various resource users in order to build trust and ensure equity; create and implement sound REDD-plus policies; create a culture of accountability (e.g., financial, ecological, social, cultural); ensure alignment among policies and activities, and instill confidence in potential investors. This will require strengthening existing, and creating new institutional arrangements (based on existing structures) capable of bringing together diverse stakeholders to catalyze major shifts in forest management decision-making and regimes, and to better operationalize existing policies. These structures should be covered by clear legal mandates. Improved horizontal coordination can help ensure that stakeholders are treated with the same level and degree of influence to implement REDD-plus. Increased vertical coordination is necessary so that groups at different spatial scales and with different degrees of influence can collaborate to negotiate how a REDD-plus scheme can be effective and equitable on the ground. Cooperation and coordination among stakeholders requires healthy debates and negotiation. This will entail significant awareness building, arrangements to increase public participation, conflict resolution processes, and political processes that encourage transparent and accessible deliberation about forest management. REDD-plus implementation not only requires these conditions, but presents opportunities for reform.

Proposed Strategies and Activities

1. Conducting broad consultations and meaningful engagement

This strategy has guided the PNRPS development process, and is a strategy referred to throughout the document. It is the basis for increasing multi-level and multi-stakeholder participation, and creating a REDD-plus action plan with meaningful stakeholder engagement[46].

1.1. Identify stakeholders

Social mapping and scoping can be used to identify REDD-plus key players, both nationally and at local levels.

1.2. Conduct broad-based consultation and engagement process

These processes must further clarify REDD-plus objectives and management strategies; explain the benefits and cost accruing at stakeholders from the REDD -plus regime; clarify roles and responsibilities of various users and managers, including ways to integrate REDD-plus into agency and local plans; strengthen social relations between national agencies and managers [e.g., communities, Local Government Units (LGU) and the Department of Environment and Natural Resources (DENR)], and build consensus on the different aspects of REDD-plus. It is through local consultations that issues and concerns such as

[45] 'Good' governance is a form of political decision-making that emphasizes legality (rules to resolve conflicts), legitimacy (acceptance and trust by the public that create accountability), transparency (clearness of decisions and decision making processes to stakeholders) and participation (inclusiveness within decision making).

[46] Free, prior and inform consent should guide the engagement process within ancestral domains. Indigenous systems of governance should be integrated into consultation and engagement processes.

benefit sharing and tenure security may be discussed, and that can offer ground-up feedback on the adequacy of existing policies and feasibility of conservation interventions. Meetings among LGUs, municipal and provincial structures and national agencies will similarly be important to discussing jurisdictional overlaps and responsibilities. Resource persons, mediators and facilitators are needed to help manage these processes, discussed below.

1.3. Continue long-term engagement

REDD-plus will require an on-going dialogue process, such that consultations, meetings and action planning should be continued indefinitely to ensure the stakeholder engagement that is essential to effective and equitable implementation. Working groups, Community of Practitioner (CoP) groups, Forest Management Units (FMU) and implementing agencies should all meet regularly.

2. Integrating REDD-plus in sectoral plans

There is a need to integrate REDD-plus implementation, measuring, reporting and verification (MRV) conditions into existing sectoral, national and local government plans and funding schemes. This includes integration with Comprehensive Land Use Plans (CLUP), Forest Land Use Plans (FLUPs), Department of Agrarian Reform (DAR) key result areas, the National Framework Strategy on Climate Change[47], and forestry and watershed sector frameworks currently under drafting by the Forest Management Bureau (FMB), Forest Development Center and the Society of Filipino Foresters. REDD-plus will also need to be integrated into local plans such as Local Development Plans (LDP)[48] and community-level plans such as Community Resources Management Frameworks (CRMF) in CBFMA areas Community-Based Project Plans within Protected Areas (CBP-PA)and Ancestral Domain Sustainable Development and Protection Plans (ADSDPP) in CADT areas.

2.1 Information, education and communication (IEC)

The strategy will require a considerable IEC campaign and meaningful engagement with various LGUs and government agencies, as discussed in Strategy 1 and also in Capacity Building and Communication Component.

2.2 Strengthen linkages among key institutions responsible for REDD-plus

There is a specific need to strengthen the working relationships among implementing parties, including through strengthened horizontal and vertical integration. This includes work with the Climate Change Commission (CCC) and its Climate Change Office, DENR and its Climate Change Office, Bureaus, and Attached Agencies such as NAMRIA and NCIP, the agencies advising the CCC, and local groups [e.g., Provincial Technical Working Group in Southern Leyte for CBFM People's Organization (PO)]. This coordination extends even beyond IEC efforts.

2.3 Acquire necessary equipment and human resources

This includes Global Positioning System (GPS) units, Geographic Information System (GIS) softwares, computers, office space, office furniture and fixtures. Where possible, especially at the local level, efforts should be made to utilize existing facilities. Human resource development, including at the local, provincial, regional and national level, are discussed in the "Capacity Building and Communication" component.

3 Establishing equitable benefit sharing schemes

Previous decentralization efforts have often devolved responsibility without creating mechanisms to ensure meaningful local capture of revenues and benefits. Improved benefit sharing mechanisms are important to incentivize participation in REDD-plus and ensuring reduced emissions, addressing equity issues, improving livelihoods and strengthening LGU function and service provision.

3.1 Develop local benefit sharing mechanisms and systems for rewards and sanctions

These should be informed by consultations, the pilot/demonstration sites and existing benefit sharing practices[49], and should consider benefits to the multiple local stakeholders involved, notably LGUs and

[47] The NFSCC was signed by the President in April 2010.

[48] For example, based on the Joint Memorandum Circular No. 2003-01, 5% of the local development fund must be allocated for environmental protection and development activities.

[49] Including analysis of existing sharing schemes, such as for CBFM in which benefit sharing is based on a 75-25% scheme for harvestable plantations not planted by Peoples' Organizations(PO): 75% goes to the PO, 12.5% goes to the LGU

communities. Benefit sharing should include not only direct payments, but consideration for other incentive strategies. At the community level, alternative incentives may include support for community funds, scholarships, insurance, enterprise development, investments in low-emissions livelihood strategies and others. At the LGU level, incentives should involve direct revenue sharing, as well as incentives related to institutional support and capacity building. Research on benefit sharing is addressed in the "Research and Development" component. Clear, legal benefit sharing agreements are necessary prior to project development, and recipients should be directly involved in deciding the benefits they will receive.

3.2 Pursue activities to enable communities to deal with political arrangements

Communities need to be capacitated to negotiate with government agencies, local officials[50] and private sector investors. Pro-forma Memorandum of Agreements (MOA) that are beneficial to Indigenous Peoples and forest communities can be prepared to assist communities and help ensure equitable benefit sharing. Contracts between communities and potential investors can be published to apprise stakeholders of proposed arrangements on forest carbon and allow for public comment.

4 Establishing national and sub-national REDD-plus coordinating agencies

REDD-plus development and implementation requires new national-level institutional arrangements, for decision-making, carbon MRV and reviews of non-carbon impacts and benefits. These should be formed through a collaboration of existing organizations related to the forestry sector; should embody the key features of the PNRPS, current legal frameworks on climate change and other environmental laws, and should be driven by clear legal mandates. They should bring together diverse stakeholders to guide national policy on REDD-plus; manage and disburse related funds held by government; help resolve grievances and disputes related to REDD-plus that cannot be resolved at the local or Provincial levels; specify and oversee roles, responsibilities and co-benefits; set national standards of good practice, and coordinate activities for implementing the PNRPS, including national-level carbon MRV and accounting for non-carbon impacts and benefits.

Similarly, REDD-plus implementation requires sub-national arrangements to facilitate regional, provincial and local decision-making, carbon MRV and reviews of non-carbon impacts and benefits. These should also build off of existing structures.

Figure 2 depicts the proposed integration of national and sub-national bodies, with parallel tracks for decision-making and for accounting: carbon MRV and review of non-carbon impacts and benefits. The national-level structure is based on Executive Order 881, which designated the CCC responsible for national-level climate change mitigation and REDD-plus policy, and the DENR as its operational arm.

The structures described in Figure 2 will take time to develop. The PNRPS focuses on development of the national-level bodies (National Multi-stakeholder REDD-plus Council and Designated National Authority), and enhancement of local FMU structures at pilot/demonstration sites. At both national and sub-national levels, there remains a need to identify exact roles and responsibilities for actors within the proposed bodies. These should be discussed and clarified during action planning.

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revenue, and 12.5% goes to a local development fund held jointly by the DENR and PO. Moreover, based on the performance-based nature of REDD-plus, a system of incentives and disincentives/sanctions can be devised to ensure that tasks are delivered. At certain sites, this may also be based on existing indigenous justice systems.

[50] See "Capacity Building and Communication" component.

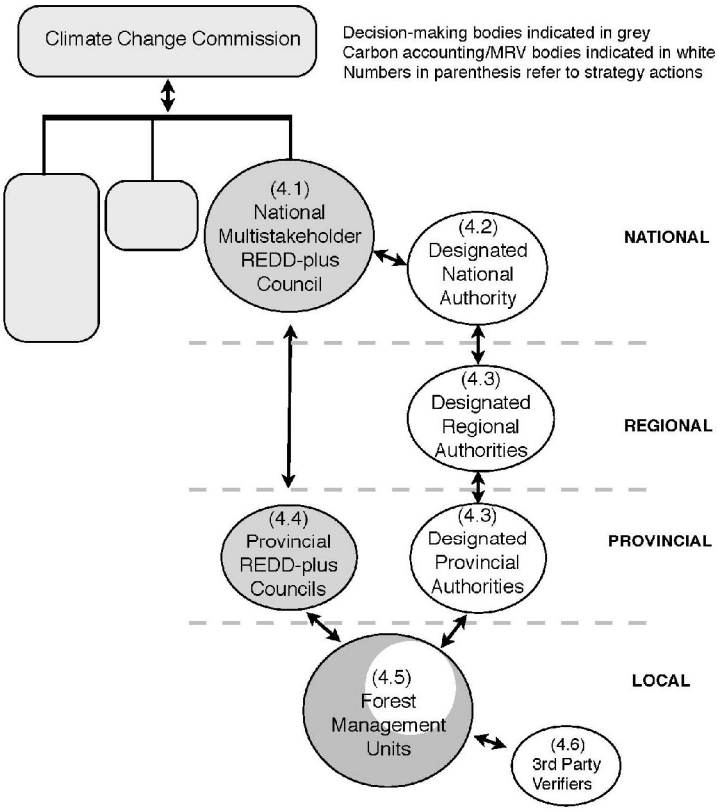


Fig. 2. Proposed arrangement for REDD-plus coordinating agencies

4.1 Establish National Multi-sectoral REDD-plus Council

The PNRPS proposes that the DENR lead an executory National Multi-stakeholder REDD-plus Council as the primary implementation and coordinating body on REDD-plus in the Philippines. The DENR is an established institution whose Climate Change Office is tasked to coordinate among DENR agencies, particularly its Bureaus, NAMRIA and NCIP in terms of Climate Change. As a line agency, DENR has field operations that can operationalize REDD-plus procedures, though it is overloaded, financially constrained, and will require additional support. In order to maintain checks and balances, the DENR will not take part in the actual fund custody and disbursement in terms of deciding where and how to release funds; these responsibilities will fall to the broader Council. The Council will include diverse stakeholders as voting members, including representatives from different DENR Bureaus, from Indigenous Peoples groups, Peoples' Organizations, academe and representatives from Research and Development institutions, and civil society. It will also engage extensively with the Research and Development community to ensure science-based decision-making, and with the advocacy community discussed in "Policy" component. The PNRPS proposes that the Council Chair will be the DENR Secretary, and the Deputy Chair will be drawn from civil society, and that the Council should have provisions in the case that either is inactive or unavailable. The Council will respond to the Climate Change Commission (CCC) to which it would also offer recommendations on national REDD-plus policy. The Council will propose reforms, facilitate stakeholder engagement, establish and ensure safeguards and eligibility criteria, help resolve grievances, facilitate project implementation, and oversee a Designated National Authority responsible for forest carbon accounting. It will also decide on disbursing REDD-plus funds received at the national-level to local agencies, notably forest managers. Funds management is further discussed in the "Sustainable Financing" component.

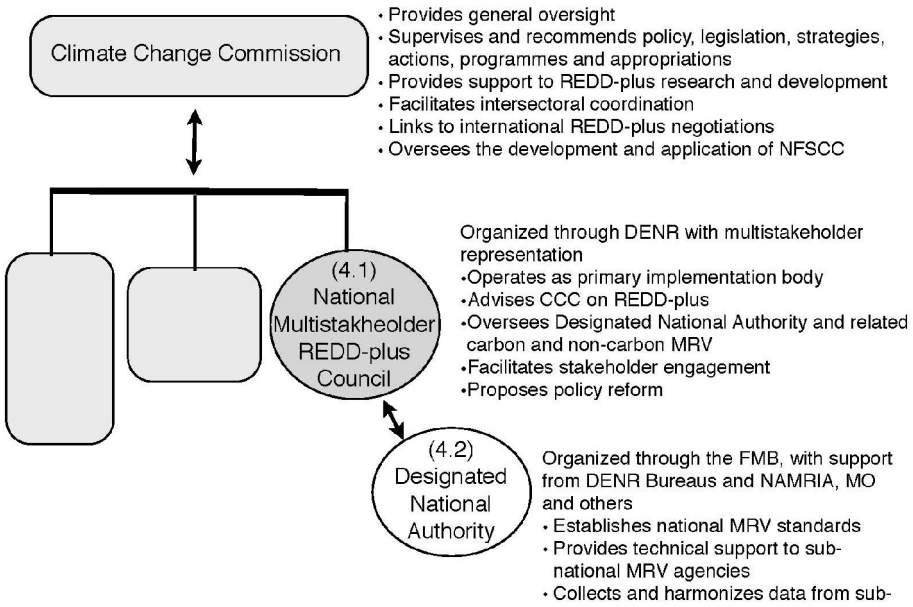
4.2 Establish Designated National Authority (DNA) for carbon/co-benefits accounting

The National Multi-stakeholder REDD-plus Council must include a DNA responsible for national-level carbon accounting and the measuring, reporting and verification (MRV) process and review of non-carbon impacts and benefits. This function is central to demonstrating reduced emissions. The DNA will also be responsible for MRV related to non-carbon social, biodiversity and ecosystem co-benefits. It will require technical units and capacity to acquire and analyze data and harmonize the carbon accounting across the country. It should further establish protocols and ensure that MRV is implemented in accordance with national and international standards. It should also facilitate related trainings. This should be a transparent and coordinated system, centralized under a single central agency with extensive support from other

groups. The FMB would be an appropriate lead agency, and through the coordinative mechanisms of the DENR Climate Change Office, will receive support from DENR Bureaus, NAMRIA and NCIP, as well as from projects supporting DENR. FMB can also tap other organizations outside of government such as but not limited to Manila Observatory (MO), Environmental Science for Social Change (ESSC), conservation groups such as Conservation International (CI) and Fauna and Flora International (FFI), national Civil Society Organizations (CSO) and academe involved in carbon accounting, environmental monitoring and forest-based rural development.

Figure 3 describes the two proposed national-level REDD-plus coordinating bodies: the National Multi-stakeholder REDD-plus Council and the Designated National Authority.

Fig. 3. Description of the proposed national REDD-plus coordinating bodies



4.3 Establish Designated Regional and Provincial Authorities

Sub-national authorities will consolidate REDD-plus carbon and co-benefits monitoring actions and data. At the provincial level, Provincial Environment and Natural Resource Offices (PENRO) of the DENR[51] could lead data collection and provide support to local MRV efforts, though these can only be operationalized following increased capacity. Data will then be communicated data to Designated Regional Authorities coordinated through Regional DENR Offices, which would ultimately communicate information to the DNA. Where projects overlap between provinces, the Provincial Authorities will be expected to collaborate to integrate data. Figure 4 depicts and describes the proposed sub-national bodies. These authorities will be encouraged to work with local CSOs, academe and REDD-plus project holders obtain comprehensive data.

4.4 Establish Provincial REDD-plus Councils

Provincial REDD-plus Councils, mirroring the National Multi-stakeholder REDD-Plus Council, will serve as Provincial decision-making bodies. Where possible, existing Provincial Development Councils (PDC) can be expanded to fulfill this role and should be represented in Regional Development Councils that address regional budgeting, planning and funding. PDCs may receive support from the National Council, professional organizations and resource institutions. Where projects overlap between Provinces, the Provincial Councils will be expected to collaborate. These councils will be encouraged to work with local CSOs, academe and REDD-plus project holders obtain comprehensive data.

4.5 Establish/recognize/strengthen Forest Management Units (FMU)

[51] In Palawan, the Environmentally Critical Areas Network (ECAN) Boards can serve as the Provincial Council, though these require orientation and capacity building.

There is a need for local, field-level units that can organize forest management units and determine whether and how forest users and managers will engage with REDD-plus. FMUs already exist at many sites and under various arrangements, including around CBFM groups, POs, ancestral domain units, watershed management units, protected areas managed by Protected Areas Management Boards (PAMBs) with support form the Protected Areas and Wildlife Bureau (PAWB), LGUs and through hybrid systems. Where they exist, FMUs should be recognized, supported, engaged and 'activated'. FMUs should be established where they are lacking, according to local needs and land use type[52], integrating local governance structures (including traditional structures within ancestral domains areas) and ensuring participatory governance. In cases of co-management agreements and private-public cooperation, there is a need to establish criteria and ensure community participation.

FMUs should serve to promote local-level engagement and decision-making, conduct rule enforcement, assess local grievances and conflicts, communicate information to local users, organize trainings, and resolve local tenure issues. FMUs will also be responsible for local forest inventories and carbon stock assessments for Tier 3 inventory methods and for factoring into Tier 2 estimates, and for reviews of non-carbon impacts and benefits[53]. Community-based monitoring will be a focal activity.

4.6 Organizing national and local 3rd Party Verifying teams

Verification schemes are necessary for the current voluntary markets and will remain important under future compliance markets and/or to receive compensation for reduced emissions. To date, an international consultant generally carries out external verification by registered auditors. However, there are opportunities to train national and local certification groups, including Society of Filipino Foresters (SFF), non-governmental support groups and potentially qualified POs and communities. These may be able to gain international accreditation that will enable Philippines to engage the auditors and even participate in international audit activities.

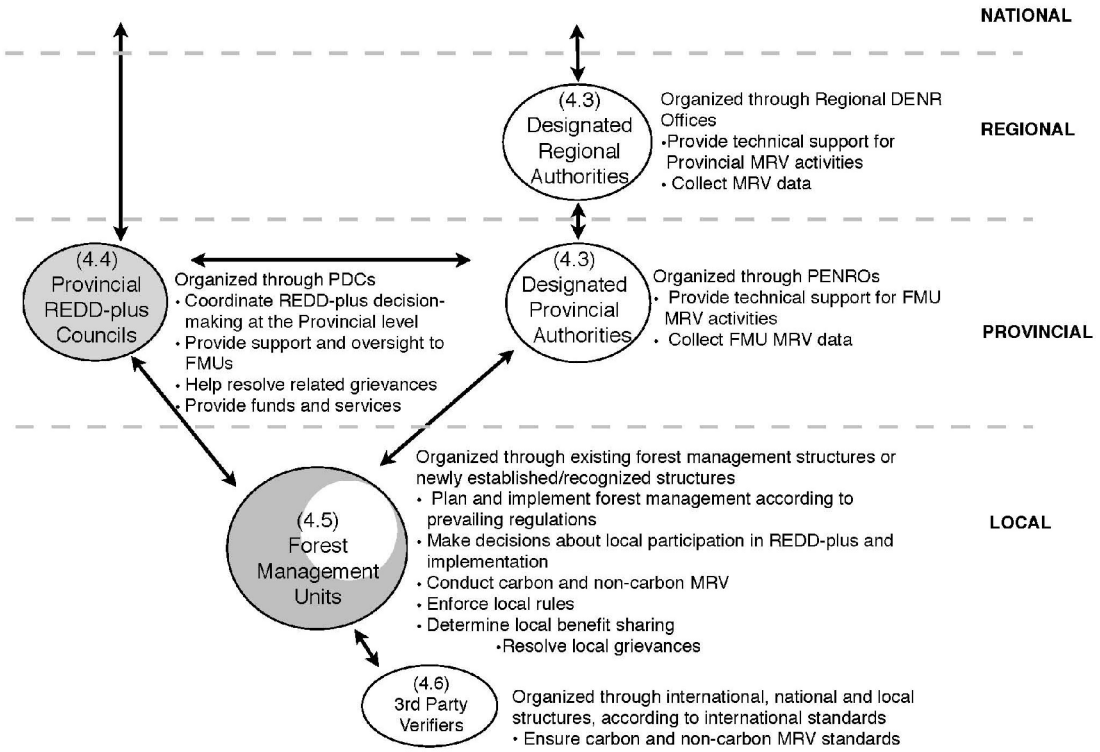


Fig. 4. Description of the proposed sub-national REDD-plus coordinating bodies

5. Creating a national REDD-plus policy advocacy community

[52] Although local forest management units already exist in many areas many are not be formally recognized by government. The "Resource Use, Management and Allocation" component addresses the need for secure land can carbon tenure.

[53] See "Measurable, Reportable and Verifiable Conditions" component. FMUs will require capacity building in order to conduct MRV and reviews non-carbon impacts and benefits. LGUs, CSO and the Provincial and Regional Designated Authorities can offer additional support and supervision.

Democratic processes in the Philippines increasingly engage non-government and local-level stakeholders in decision-making. REDD-plus policy development should continue in this trend, and there is a need to promote mutual-understanding and collaboration among these stakeholders as discussed by the "Capacity Building and Communication" component, so that their interests are adequately represented within the proposed governance bodies.

5.1 Recruit REDD-plus "champions"

Policy reform benefits from the leadership of "champions" from various sectors: government, religious groups, artists, civic groups and local communities that can influence and inform the policy-making process, national and local[54].

5.2 Conduct intra-sectoral policy advocacy on REDD-plus

Beyond IEC processes, there is a need for key REDD-plus stakeholders, including IPs, forest dwellers and civil society groups, to organize, communicate and plan their responses to the REDD-plus agenda. This will require orientation sessions[55] and advocacy strategy sessions that can respond to local concerns and ensure that all stakeholders are informed enough to engage in the development of a national REDD-plus policy.

[54] LGU leagues at the city and municipal levels meet annually and have special meetings.
Local REDD-plus resource persons, trainers and "champions" can help plan out orientation and planning sessions on REDD-plus with local and regional bodies. Engagement with local officials is necessary to crafting local ordinances and resolutions that will localize REDD-plus implementation.

[55] See Strategy 1 of the "Government" component and the "Capacity Building and Communication" component.

VII. Resource Use, Allocation and Management

Forests provide a wide array of goods and services, including timber, non-timber forest products, water resources, biodiversity habitat, soil retention and stability, and carbon sequestration. There is a need for broad landscape, ecosystem and watershed-level management that can deliver multiple benefits. In developing climate change mitigation and adaptation strategies there is a need to further reassess the use, allocation and management of forest resources. This includes a renewed analysis of land tenure instruments and security, traditional and controlled commercial resource use regimes, and efforts to diversify the livelihood opportunities of rural and forest-dependent communities. National REDD-plus planning requires science-based and equitable resource use, adequate allocation of resources and management for multiple benefits. It must also consider local needs, indigenous and traditional knowledge systems and practices, gender rights and equity.

Resource use, allocation and management is defined by a range of stakeholders, but generally managed within the Department of Environment and Natural Resources (DENR) and its Bureaus. Other government agencies also have interests in watershed areas throughout the country and need to be consulted and engaged, including the Philippine National Oil Company, the National Power Corporation, the National Irrigation Administration, and the National Commission on Indigenous Peoples, which formulates and implements policies and programs within ancestral domains. Although REDD-plus governance may rely heavily on the proposed national coordinating agency[56], REDD-plus will also require a broad institutional base, as multi-sectoral landscape management is a responsibility shared diverse agencies and stakeholders.

Proposed Strategies and Activities

1. **Completing the delineation of permanent forest lines**
   Current land classification needs to be assessed to determine forestlands, agricultural and national park boundaries. These boundaries need to be defined on the ground to enable planning, accurate management and enforcement, at both national and local scales. Within ancestral domain areas, these efforts are subject to the Indigenous Peoples' Rights Act (IPRA) and "free, prior and informed" consent. In addition, activities should be done in the context of the Intergovernmental Panel on Climate Change (IPCC, 2006) key categories framework. Work on the establishment of forest lines requires revision of the forest definition as discussed in Strategy 3.5 of the "Policy" component.

   1.1. Develop indicative map per province
   Apply the Geographic Information System (GIS) technology in the generation of indicative maps using the different thematic maps (Land Classification (LC), Re-plotted LC map, forest cover, slope map) and other textual data. The indicative map should indicate the preliminary boundary lines of the area to be assessed. Although much of this process will be at the national-level conducted by the National Mapping and Resource Information Authority (NAMRIA), LGUs (and indigenous peoples within ancestral lands claims/areas) should be active in the process and capacitated with appropriate technology and resources.

   1.1. Conduct assessment of old forest lines
   Using the indicative maps, vegetation and land use assessments should be conducted at 500 meters on both sides of the preliminary boundaries of forestlands and non-forestlands. Based on the assessment, preliminary markers should be placed on the proposed forestlands boundaries. These assessments and a finalized map should be used to inform a bill for consideration by Congress[57].

   1.2. Demarcate final forest lines to clarify forestlands boundaries and allowable activities
   After the legislation, demarcation of final forest lines shall be established on the ground by placing monuments in accordance with existing survey standards.

2. **Applying the watershed, natural ecosystem and landscape approaches**
   These broader management approaches should be used in planning and management for REDD-plus to ensure delivery of multiple benefits. A range of ecological processes and socio-economic activities take place in a watershed and natural ecosystem, and different parts of the system satisfy different ecological, social and economic needs. While site-level management can provide some desired results, broader

[56] See "Governance" component
[57] See "Policy" component

management can better provide for multiple-benefits to the diverse, linked stakeholders and processes that form a landscape, natural ecosystem or watershed. Within Philippine forests, management is generally targeted at the watershed level.

2.1. Assess and characterize each watershed and conduct land use suitability assessments
This includes preparing baseline data against which to compare future monitoring. GIS technology can be used to generate watershed-specific design options for REDD-plus based on existing land cover and uses.

2.2. Integrate Forest Land Use Plan (FLUP) into local planning
No national land use plan has been enacted. Land use planning is carried out at the provincial and municipal levels through development of Comprehensive Land Use Plans (CLUP). Local government CLUPs offer frameworks for land use zoning, but generally lack focus on forest and watershed management. Integration of FLUPs with CLUPs is important to integrating REDD-plus into local planning.

2.3. Segregate managed forest blocks with markers
Markers in the field are required to clearly designated managed areas, and distinguish these from areas without a currently specified management regime.

2.4. Assign or recognize existing Forest Management Units (FMU)
The Philippines endeavors to have all forests under a specified management regime. FMUs provide a structure for forest sector planning and management, and are described in the "Governance" component. As FLUP plans are integrated into local planning, there is a need to assign each forest block with a specific FMU with due recognition of existing traditional forest management systems.

2.5. Apply sustainable management principles
Sustainable management principles are already established in the context of watershed resource management, and should be expanded to include development of low-emissions rural development strategies that address local needs and are culturally sensitive that are right-based and gender responsive.

3. Defining and delineating the protection and production forests within forestlands
Forestlands management in the Philippines seeks a balance between protection and production that is mutually reinforcing rather than competing. Within a watershed management unit, management can often be varied, integrating biodiversity conservation with production activities, especially if local communities depend on forest resources for their livelihood. The exception is within strict protection zones.

3.1. Determine potential areas for protection and production
Within each watershed unit, there is a need to define appropriate protection and production areas based on factors such as local needs, forest quality, existing tenure and biodiversity assessments. Such designation is also necessary within degraded areas of watersheds, as these can be considered for restoration as either protection or production forests.

3.2. Conduct surveys and map areas identified for protection and production purposes
The DENR and NAMRIA will be responsible for leading these efforts and establishing/ensuring standards.

3.3. Conduct ground delineation
Both protection and production forest boundaries also need to be clarified on the ground to ensure proper management. This can achieved through mapping exercises and using satellite data with ground truthing.

4. Securing land tenure
There is a need to clarify tenure of local communities, private individuals and groups engaged in forest development to ensure proper management regimes and reduce pressure on forests. A large extent of forests and forestlands belong to the State, which is legally responsible for allocating rights and licenses to individuals, POs, corporations and other groups for development, use and exploitation. Many unregulated open access areas remain in the Philippines, and many forestlands are governed by conflicting tenurial instruments. There is a need for greater tenure clarity and clearer boundaries in order to improve management regimes, increasing the security of local users and reduce pressures on natural forests.

4.1. Identify forestlands with open access and conflicting tenure

Conflicting claims, inconsistencies and open access areas should be first identified using existing spatially explicit registries (GIS and official maps). There is then a need to determine their legal and appropriate forest management regimes, and issue or clarify the corresponding tenure instruments.

4.2. Clarify boundaries of existing tenure instruments

Field surveys using Global Positioning System (GPS) technology should be used to map and clarify existing tenure instruments.

4.3. Review ancestral claims

Many existing land claims by IP communities have not been surveyed and delineated on the ground. REDD-plus tenure review provides an opportunity to engage with NCIP to increase recognition and titling for ancestral domains claims. These efforts can be directly linked to REDD-plus project development on ancestral lands.

4.4. Establish baseline data

This should be done for all existing and new tenure instruments to allow for measurement of progress and indication of changes in land use.

4.5. Delineate and survey individual claims within communal management areas

Within community managed areas, community-level agreements govern family/individual land claims that must be clearly delineated and can determined through community mapping and deliberation.

4.6. Assess the performance of tenure holders

External assessments (verification) are an integral part of REDD-plus, and should be done on a regular and progressive basis. Beyond emissions, however, assessments are also important to ensuring proper management according to specified regimes as described by the PNRPS and its objectives.

5. Securing carbon tenure

Carbon tenure may, in some cases need to be addressed separately from land tenure. The rights to resources of private landholders, ancestral domains title holders, *de facto* users and managers of open access lands, LGU forest managers and CBFM managers all vary. However, regardless of legal land tenure status, all forest managers are significant to REDD-plus implementation, and so must receive incentives to engage in low-emissions activities.

5.1. Formally clarify community rights to carbon tenure

Carbon tenure must be formally addressed for lands to which communities have rights, especially on ancestral domain lands subject to the Indigenous Peoples' Rights Act and United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). In these cases, there will be a need to establish equitable resource taxation. This is further discussed in the "Governance" component.

5.2. Establish equitable benefit sharing with users

Where users lack formal rights to carbon tenure, there is a need to establish equitable benefit sharing, as discussed in the "Governance" component.

5.3. Establish clear taxation schemes

These have largely been established for forest products, and need to be established related to sale of ecosystems services such as carbon.

6. Improving management of both protection and production forests for REDD-plus

Managing lands for multiple uses requires active monitoring, clear regulations, impact assessments strong enforcement and collaboration among stakeholders. REDD-plus initiatives, as with harvest of forest products and mining, must comply with Environmental Impact Assessment (EIA) and Environmental Compliance Certificate (ECC) regulations and should further ensure that all activities in protection and production forests are evaluated to determine how they can better ensure low-emissions objectives. Improving management to protect existing carbon stocks can be incentivized with REDD-plus funds but requires demonstrated additionality.

<u>Activities in all forestlands areas:</u>

6.1. Formulate development plans and management regimes

All forestlands should have clear management regimes, based on their legal classification and local FMUs. For lands managed by communities, there is a need to establish long-term management regimes based on the Community Resource Management Framework (CRMF) for Community-Based Forest Management areas; the Community Resource Management Plan (CRMP) for Community-Based Projects within Protected Areas (CBP-PA), Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) for Certificates of Ancestral Domains Titles (CADT), and Protected Area Community Based Resource Management Agreements for Community Based Protected Areas. In the case of private or corporate regimes, the Comprehensive Development Management Plan (CDMP) for Integrated Forest Management Agreement (IFMA) shall be prepared. . In the case of community-based resource management regimes, there is a particular need to identify previous achievements and failures and support to communities so that they are able to deliver emissions reductions.

6.2. Enforce forest laws and regulations

Increased enforcement is important to reducing/eliminating illegal activities, notably illegal logging and forestlands conversion. Around existing protected areas, this will involve strengthening of enforcement by managers such as the PAWB. This should also include customary and traditional law enforcement and increased local participation in rule enforcement. Enforcement teams should be recognized through traditional authorities, and trained and deputized through DENR within a reasonable period.

6.3. Intensify forest protection activities by local actors

Local actors, including forest dwellers and LGUs, can engage in activities such as forest fire prevention; patrolling and monitoring to prevent illegal logging activities and associated trade, and local apprehension and prosecution of forest violators, where traditional/local recourses exist.

Activities within protection forests:

6.4. Ensure management addresses biodiversity conservation objectives

Existing management plans and activities need review to ensure they adequately address biodiversity conservation objectives. Where they are deficient, they will need to be modified[58].

6.4.1. Establish baseline information on biodiversity.

6.4.2. Establish regular biodiversity assessment and monitoring regimes.

6.4.3. Identify and manage for the protection of threatened species.

6.4.4. Propagate threatened indigenous and endemic species.

6.5. Establish buffer zones

Buffer zones should be used to help enhance protection forests, and should have clearly identified allowable activities, and accordingly plan or limit access around and into protection forests. Buffers should be integrated into community management plans and may involve restoration of degraded lands for protection. This is addressed in Strategy 7.

Activities within production forests:

6.6. Adopt indigenous community knowledge and practices

This integration is especially appropriate within ancestral domains and lands, and may also offer lessons for other forestlands.

6.7. Implement integrated, diversified, forest-based, low-emissions livelihood projects

Communities within production forest areas will require support, access to finance, training, product development and access to markets in order to enhance and develop new, low-emissions livelihood strategies. These should address local needs and be culturally sensitive/appropriate that are rights-based and gender responsive.

[58] Biodiversity monitoring and assessment training for communities is included within "Capacity Building and Communication".

6.8. Conserve and protect steep slopes within production forests

6.9. Apply Sustainable Forest Management (SFM) practices

SFM is an evolving and broadly adopted management approach, including within the United Nations[59]. SFM seeks to enhance economic, social and environmental values of forests by allowing for multiple use, and includes a range of activities such as protection, restoration and reforestation in tandem with sustainable harvest.

SFM also refers to sustainable forest resource use principles, such as low-impact logging and techniques that reduce damage to soil and vegetation and minimize forest sector emissions. Although many of the associated definitions and techniques remain ill defined and not all may be rewarded with REDD-plus funds, both controlled and traditional use of timber and non-timber forest products should adhere to sustainable use principles.

In terms of REDD-plus, although SFM tree harvest leads to a fall in carbon stock, successive phases of regrowth and sustainable harvest can enhance carbon stocks over time and lead to forestlands with stable carbon stocks. New SFM standards for REDD-plus are likely to emerge at the international level, to which the Philippines should adhere.

6.9.1. Establish forest and timber certification schemes

Establishing certification schemes extends beyond the scope of REDD-plus, yet is important to promoting and verifying sustainable forest management. There is a need to establish a clear national SFM policy and standards[60], which should comply with IPCC Good Practice Guidelines. Future international guidelines for REDD-plus and SFM are likely to be more stringent. However, the certification process should be free for communities, which should provide field-level assistance to the certification process.

7. Extend protected areas network

In addition to better protecting existing protection forests, extending the protected areas network is a viable approach for reducing emissions from deforestation and forest degradation and ensuring permanence. This can be done through the PAWB of the DENR as well as through other protected area tenure arrangements. However, any new protected must consider local inhabitants, engage them in project design, provide livelihoods support and incentives, involve them in management, and integrate areas for multiple use.

8. Enhancing carbon stocks

The "plus" within REDD-plus includes rewards for activities that enhance carbon stocks, notably those within the existing forest matrix and buffering natural forest. Enhancement can be pursued through a number of methods, though not all will necessarily be eligible for REDD-plus funding. The United Nations Framework Convention on Climate Change (UNFCCC) has not yet defined specific allowable activities for the carbon enhancement activities within REDD-plus. When these definitions are determined, it will help participating countries to select what enhancement activities to pursue. However, in the context of the Philippines, it is important to establish a carbon enhancement agenda that avoids creating perverse incentives that could reward environmentally harmful activities, addresses national resource needs and is sensitive to forest dependent communities, and while at the same time enhances biodiversity conservation. The PNRPS outlines several different types of carbon enhancement and recommends a tiered approach that uses varied carbon stock enhancement techniques to buffer and connect existing protected natural forest areas and fragments, and provide for livelihood and resource needs (Figure 5). Forests in the Philippines, however, are part of a heterogeneous mosaic, and Figure 5 represents an idealized model that would have to be reconciled

[59] The SFM concept has been furthered by the United Nations Forum on Forests (www.un.org/esa/forests/about.html) and was adopted in 2007 as a non-legally binding instrument for all forest types by the UN General Assembly (A/C.2/62/L.5). SFM is based on seven themes 1) Extent of forest resources, 2) Biological diversity, 3) Forest health and vitality, 4) Productive functions of forest resources, 5) Protective functions of forest resources, 6) Socio-economic function, 7) Legal, policy and institutional framework. The concept is broadly in line with the Philippines multiuse and landscape/watershed approach to forest management and co-benefits approach to REDD-plus. At the international level, these concepts are likely to be further elaborated to provide a REDD-plus framework that delivers multiple benefits.

[60] See "Policy" component.

with on-the-ground realities. The site assessments discussed in Strategies 1-6 of this component should serve to identify land use areas.

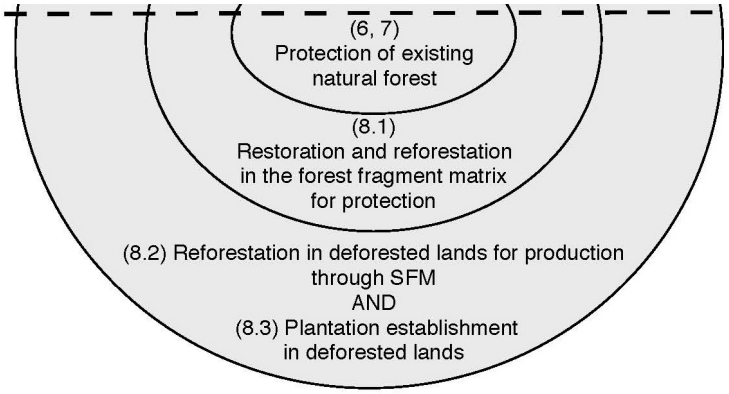


Fig. 5. Idealized model of a tiered approach to carbon stock enhancement around existing natural forest and (simplified) within the existing forest fragment matrix. Numbers in brackets refer to PNRPS strategies/activities.

8.1. Restore degraded forestlands and reforest deforested lands for protection[61]

Both degraded and deforested forestlands within the existing forest fragment matrix and/or bordering existing natural forests may be restored and/or reforested[62] for carbon and biodiversity conservation. These activities can serve to buffer, connect and extend existing protected areas, would be rewarded within REDD-plus and can employ various techniques, described below. However, these activities should consider the human context and address local resource needs, consider opportunities for multiple-use and SFM, engage communities in management, and provide incentives for local participation.

8.1.1. Allow for natural forest regeneration

In many degraded areas and buffer areas, natural regeneration may be most appropriate and is likely to be rewarded by REDD-plus.

8.1.2. Assisted Natural Regeneration (ANR)

ANR and mosaic enhancement planting can be used for rainforest restoration. It should make use of diverse indigenous species to create multi storey and species diverse forest stands.

8.1.3. Reforestation using diverse native species

The existing forest matrix includes deforested areas, where reforestation can serve to connect both protected and degraded/restored forest fragments.

8.2. Reforest deforested land for production purposes

Within deforested lands outside of those identified for restoration and protection, reforestation can be conducted for production purposes. It should use diverse indigenous species, and should ensure multiple biodiversity, ecosystems services and social co-benefits. These activities are likely to be rewarded through REDD-plus, if established within the broader forest fragment matrix and/or as buffers to existing restored forests and employ appropriate reforestation and harvest techniques. These include diverse reforestation, restoration and enhancement techniques, Sustainable Forest Management (SFM) techniques and actions to demonstrate carbon stock enhancement. It is also important for these forests be monitored over time, as many previous production forest initiatives have not been maintained (FAO, 2009).

[61] Definitions of deforestation and forest degradation remain ambiguous. The need for updated definitions and increased clarity are addressed with the "Policy" component. However, as these definitions influence that types of carbon stock enhancement will be allowed in different forestlands, it is important to highlight that, within the PNRPS, a deforested forestland is considered a natural forest that has lost its natural forest cover. A degraded forest is a natural forest that has been subjected to loss of timber stock. These definitions need to be clarified, but are differentiated here because degraded forests—especially those bordering an existing protected forest—have greater potential for restoration and generally offer greater biodiversity protection and ecosystem services than completely deforested areas. As such, the PNRPS prioritises the restoration of existing degraded forestlands for protection, while suggesting that reforestation for SFM and plantation development be limited to deforested areas.

[62] Restoration here refers to activities that enhance the biodiversity, carbon stocks and other ecosystem services of a degraded forestland. Reforestation refers to activities to enhance deforested lands.

8.2.1. Application of Assisted Natural Regeneration (ANR)

These techniques can enhance carbon stocks, and should use diverse indigenous species to ensure multiple biodiversity and social co-benefits. ANR techniques should be used to create multi storey and species diverse forest stands that benefit biodiversity.

8.2.2. Application of rainforestation technology

This approach is particularly appropriate in degraded areas as an enhancement planting technique and in combination with income sustaining activities and biodiversity conservation.

8.2.3. Enrichment planting

Enrichment of existing residual forests may favor economically valuable species, but should use diverse indigenous species and ensure multiple biodiversity and social co-benefits. For REDD-plus, tree cutting should be managed to increase carbon stock.

8.2.4. Promote agroforestry

Agroforestry may be most appropriate in forest-agricultural mosaic areas, though not in along steep slopes or in critical watersheds and biodiversity hotspots. Elsewhere, agroforestry should involve the use of diversified and integrated resource management, increased tree planting within grazing lands, use of organic fertilizers and natural farming aids, use of soil and water conservation measures, and planting of sustainable species in farm boundaries for fuel wood production. These can harmonize with customary forest management practices and generate co-benefits, while reducing emissions. There is a need to ensure that rural communities residing in high elevation areas are still able to participate in small-scale agricultural activities, and that carbon stock enhancement activities are subject to and harmonize with Ancestral Domain Sustainable Development and Protection Plan**s** (ADSDPP) and Community Resource Management Framework**s** and Plans (CRMF/P).

8.3. Intensify responsible establishment of plantations for production

Although on stand-alone will not be not eligible for REDD-plus funding[63], new plantations can be established by block or compartment in unprotected deforested areas that are not designated for protection (Strategy 7), restoration or reforestation for protection (Strategy 8.2) or production through SFM (Strategy 8.2). These can serve to provide local livelihoods, national needs for wood and pulp resources, and reduce pressures on natural forests. They can be established by the private sector, the State and through community initiatives, through existing tenure instruments or in open access areas through appropriate management regimes. These should only be pursued outside of key biodiversity areas, should do no harm and must adhere to stringent social and environmental safeguards. Introduction of new exotic species and genetically modified organisms is subject to the provisions of the Cartagena Protocol on Biosafety and applicable rigorous, transparent and participatory risk assessment procedures.

8.4. Plant trees into urban areas

Urban enhancement such as increased planting along roads and in municipal and provincial parks that form part of the CLUP of LGUs are possible voluntary activities that make contributions to emissions reductions and yield significant co-benefits. These however, would not be included for REDD-plus payments due to small scale and monitoring challenges.

9. Providing appropriate support to tenure holders to ensure improved forest management and to decrease pressures on natural forests.

Additional support for tenure holders, especially small holders dependent on natural resources and vulnerable communities, will help ensure the smooth implementation of forest-related programs, projects and activities. Support includes policy reform, social programs, training, data gathering within the forestry, as these will influence the success of local managers, attract investment and ensure emissions reductions. These aspects are addressed in a number of other components.

10. Providing incentives for early REDD-plus engagement in pilot/demonstration[64] communities

[63] This has not been clarified by the UNFCCC, but the PNRPS considers it a potential perverse incentive to grant REDD funding for large production plantations.

[64] The development of pilot/demonstration sites are discussed in the "Research and Development" component.

While REDD-plus financial benefits will take time to develop, participating communities require resources, sustainable livelihood opportunities[65] and services in the short term. Early incentives are necessary to promoting REDD-plus development at the pilot/demonstration sites. Future REDD-plus benefit sharing mechanisms will phase-in to provide additional long-term incentives and support.

11. Integrating population growth and in-migration into forest management.

Population growth in the Philippine uplands, both from high fertility and in-migration, is increasing and exerting greater pressure forest resources. Similarly, lowland populations are significantly increasing demands for water, timber and food. These issues must be factors into any future reforms to forest resource use, allocation and management. Research and policy on these issues should be culturally sensitive, rights-based and gender responsive.

11.1. Conduct census of forest dwellers and users

This should include rural forestlands areas and should identify various land use practices, notably related to traditional farming techniques such as *kaingin*, and other traditional forest-based livelihood activities such as hunting and collection of non-timber forest products.

11.2. Establish baselines of existing settlements and built up areas

11.3. Coordinate with migration and population monitoring programs

There is a need to integrate existing related data and programs into forest monitoring and management.

11.4. Ensure that adequate delivery of services

There is a need to incorporate services (e.g., utilities and facilities) into both local development plans and national development plans on forest protection.

11.5. Determine the carrying capacity of FMUs

11.6. Inform and educate forest communities on population control and management

[65] The "Sustainable Financing" component addresses the need to combine sustainable livelihood development into long-term REDD-plus funding plans.

VIII. Research and Development

Research and development (R&D) has a major role in the design and implementation of REDD-plus mechanisms, particularly as policy and operational decisions must be based on scientific principles, empirical data and information. R&D will inform REDD-plus policy reform and governance, enhancing research capacity through collaborations and community engagement and training, providing baselines and perfecting MRV techniques.

As discussed in the introductory "Forestry Sector Scenario" and shown in Appendix D, there is a growing body of climate change-related research in the Philippines. However, there remain considerable gaps. During the REDD-plus Readiness Phase (3-5 years) and extending into the implementation phase, the Strategy proposes a robust research agenda. The agenda is guided by the need for "action research"; collaboration among diverse research institutions and with communities and practitioners; delivery of practical outcomes that can inform REDD-plus policy and ensure effective implementation, and widespread and transparent information sharing. The core of R&D involves the development of significant research initiatives to accompany a series of pilot/demonstration sites that will be developed throughout the Readiness Phase. The research agenda, however, is largely contingent on increased and sustained R&D funding.

R&D results will prevent the "re-inventing of the wheel" and avoid costly consequences of misguided policy interventions. R&D will capture the lessons learned from existing REDD-plus pilots and related carbon projects; inform and extract new lessons from pilot/demonstration sites in the Philippines; undertake studies to develop new and enhance existing tools, methodologies, protocols, systems, and technologies on various aspects of REDD-plus; determine the impacts of REDD-plus on the environment and on human communities; explore mechanisms for benefit sharing, and provide guidance through science-based recommendations. The proposed research process also promises to empower local communities and enhance local capacity through their active engagement and meaningful feedback of information, and will ensure the free, prior and informed consent of all participants, notably residents of pilot/demonstration sites.

A multi-sectoral consultation and needs assessment that will be jointly coordinated by the College of Forestry and Natural Resources (CFNR) of the University of the Philippines Los Baños (UPLB), the Ecosystems Research and Development Bureau (ERDB) of the Department of Environments and Natural Resources (DENR), the Forest Products Research and Development Institute (FPRDI) and the Philippine Council for Agriculture Forestry and Natural Resources and Development (PCARRD) both under the Department of Science and Technology (DOST). These institutions will work with existing networks among which are the National Agriculture, Forestry and Natural Resources Research and Development Network (NARRDN) in the Philippines (composed of state and private colleges and universities, research stations and centers), the Philippine Forestry Education Network (PFEN, comprising state universities and colleges offering forestry courses), and the Forests and Natural Resources Research Society, Inc. (FORESPI, an association of researchers and extensionists). Relevant international organizations with research activities in the Philippines will also be included, including Conservation International (CI) and the World Agroforestry Centre (ICRAF), ERDB-DENR, FPRDI-DOST, PCARRD-DOST, the CFNR-UPLB, and members of the networks along with key stakeholders and local communities will identify key R&D activities for the agenda, seek sustainable financing to develop the R&D agenda on REDD+ and implement the R&D activities. Specific roles, responsibilities and collaboration agreements will be established by the participating agencies and stakeholders after the consultation, needs assessment and action planning. Resource sharing opportunities and collaborative research will be prioritized.

Proposed Strategies and Activities

1. Developing a comprehensive R&D Program on REDD-plus

1.1. Identify relevant REDD-plus R&D agenda through multi-sectoral consultations

The CFNR-UPLB, ERDB-DENR, FPRDI-DOST and PCARRD-DOST will lead in packaging an action-oriented R&D agenda on REDD+. It is expected that the group will develop relevant R&D activities on REDD+ and identify implementing and collaborating agencies and/or organizations to conduct priority R&D activities in each region. A multi-sectoral consultation and needs assessment will be made through a workshop in all the 14 NARRDN Regional Consortia, PFEN members, and FORESPI to identify key R&D activities for the agenda. Finally, the CFNR-UPLB, ERDB-DENR, FPRDI-DOST and PCARRD-DOST together with key stakeholders and local communities will seek sustainable financing to develop the R&D agenda on REDD+ and to implement the R&D activities.

1.2. Distill lessons from REDD-plus pilots in other countries

Lessons learnt from pilot project designs and approaches in other countries under the Forest Carbon Partnership Facility (FCPF) and United Nations Collaborative Programme on REDD (UN-REDD) will be analyzed in collaboration with key stakeholders and local communities to determine appropriate mechanisms for the Philippines.

1.3. Establish data warehouses for REDD-plus and climate change

Data warehouse (repository of an organization's electronically stored data) is necessary to facilitate local reporting and analysis through the use of business intelligence tools (software for data analysis, knowledge discovery, data mining, predictive analytics, and machine learning). Relevant data on climate change and REDD-plus should be stored, updated and made available to users for local and national purposes, particularly for research, management, and other interventions. The DENR will be responsible for climate change data management in collaboration with national government agencies, institutions and LGUs. The National Mapping and Resource Information Authority (NAMRIA) has a big data warehouse, it has to be connected to data warehouses of other national and local agencies for the data to be accessible and useful for research, policy making, planning, and implementation purposes.

1.4. Build capacity among R&D institutions and staff

As part of identification of R&D agenda, capability building of R&D institutions and staff, as well as local communities to form part of the participatory research mechanism, is needed to effectively implement R&D activities. Specifically in the identification of action-oriented R&D activities in the agenda, a component on capability building is required[66].

2. Analyzing drivers of deforestation and forest degradation

As a priority, the R&D component will build on existing forestry reviews (e.g., DENR, 1990; FAO, 2009) to identify drivers, agents, underlying causes and chain events triggering planned (legal) and unplanned (illegal) deforestation and forest degradation. This should consider both immediate drivers and underlying causes as well as their manifestation and trends, and need to be identified at multiple scales (national, regional, local and site-specific) and in different geographic areas. This will serve to identify conservation interventions and determine REDD-plus financial feasibility (see Strategy 3), and inform carbon monitoring approaches and policy reforms. The Philippines is particularly deficient in empirical data regarding the drivers of degradation, though suspected drivers include illegal logging, timber poaching and fuelwood gathering[67]. Research may involve review of forest inventory records and remote sensing techniques coupled with Geographic Information System (GIS) and field studies. NAMRIA will thus play a central role in this research.

2.1. Conduct literature reviews on drivers of deforestation and forest degradation

2.2. Identify historical, spatial and temporal deforestation and forest degradation patterns

Remote sensing and GIS data can be used to establish this at the national, regional and local levels.

2.3. Verify identified drivers on the ground

Local collaborations and research can help to confirm activities at the field level and receive input from stakeholders regarding feasible interventions. Community-based assessment of threats is an appropriate tool.

3. Identifying conservation interventions

Based on research on the drivers of deforestation and forest degradation, policy review, previous experiences and consultation, multidisciplinary R&D teams can propose informed conservation intervention. These may include policy and addition of necessary legislation. It should also focus on possible incentive structures that can be linked to REDD-plus, and appropriate field strategies to prevent deforestation and forest degradation. This should be done first for the demonstration sites and then nationally, and should be further adapted

[66] See "Capacity Building and Communication" component

[67] One study showed that logging activities could deplete up to 50% of carbon (Lasco et al., 2000). However, the forest biomass recovers with time to perhaps almost the same as before logging. An existing indicator of degradation relates to fuelwood gathering, for which per capita estimates exist. However, it is not certain whether the wood comes from natural forest or from scattered trees in private lands. Both represent important research themes.

through consultations with other stakeholders. Identifying realistic interventions and incentive structures is critical to improving on past failures and to the performance-based nature of REDD-plus.

4. **Enabling resource valuation**

Carbon resource valuation is central to REDD-plus decision-making. It can help determine wise (cost efficient) resource use and allocation and whether REDD-plus is viable for different sites relative to other land use options. Valuation can help individual or community participants decide whether or not to participate in REDD-plus. Resource valuation can also inform other Payment for Ecosystem Services initiatives related to bundling ecosystem services, resource user fees (e.g., water districts using watershed resources) and taxation. While carbon valuation is the focus of the PNRPS research agenda, where resources and expertise allow, valuation of other ecoystem services may also be conducted. Valuation of non-carbon resources should also be conducted through initiatives complementary to REDD-plus.

Economic valuation for REDD-plus must involve full accounting of on-site and off-site economic benefits of current and alternative land uses, notably REDD-plus versus other land uses. Spatially explicit opportunity cost analysis should be used to identify strategic REDD-plus areas. Off-site costs and benefits should further consider downstream economic values and potential impacts of REDD-plus (Ghazoul et al. 2010). This should include economic runs: Estimated Internal Rate of Return, Net Present Value, Benefit Cost Ratio and Economic Rent.

5. **Reviewing policy to inform alignment and reforms**

As discussed in the "Policy" component, forestry sector policies require review. Other sectors that also influence deforestation and forest degradation (e.g. mining, agriculture) require similar policy reviews. These can be used to generate policy recommendations related to REDD-plus.

6. **Establishing pilot/demonstration projects on REDD-plus**

Demonstration projects will provide lessons and baselines for the development and enhancement of methodologies, systems, technologies, and policies prior to the Engagement Phase. The Voluntary Carbon Standard's (VCS) Guidelines on Agriculture, Forestry and Other Land-Uses (AFOLU)[68] are an appropriate resource for the development of pilot/demonstrations (Appendix G). All projects should be coordinated with relevant local stakeholders and the DENR and listed in a national registry. Research involving communities should be culturally sensitive, rights-based and gender responsive. Where appropriate, once site-specific pilot/demonstration sites are established, corresponding Provincial and Regional pilot/demonstrations will also be developed, as part of the scaling up and 'nested' approach to REDD-plus.

6.1. Identify REDD-plus pilot/demonstration sites

Based on watershed mapping and assessments[69] demonstration sites will be selected. These will be chosen based on carbon benefits (existing stocks, threats and additionality), technical feasibility, replicability and relevance in terms of MRV, drivers of deforestation and forest degradataion, and policy experience. They should additionally maximize REDD-plus co-benefits by targeting projects on ancestral lands and biodiversity priority areas, but should also represent a range of community types (e.g., IP, migrant, etc.), forest types, geographic locations (e.g., regional, major island groups, etc.), drivers of deforestation and degradation, and governance arrangements (e.g., community carbon pool, local government-led, protected area, etc.). Candidates need to be assessed in terms of biophysical criteria (e.g., forest type, tree diversity and density, carbon density and biodiversity), and social, political and economic criteria (e.g., community readiness, the availability of the REDD-plus area and tenure, and availability and commitment of local support groups). Basic information should also include baseline deforestation and forest degradation trends. Similar types of information will be necessary for areas neighboring and surrounding target demonstration sites in order to address issues of permanence, additionality, leakage and monitoring.

6.2. Prepare support groups for REDD-plus

Support groups (e.g., local government agencies, NGOs, academe, and others) will be required to assist community participants. As a new, untested mechanism, support groups will need to be informed and capacitated to engage with REDD-plus. This is further discussed with in the "Governance" and "Capacity Building and Communication" components.

[68] More information on the VCS Standards is available from http://www.v-c-s.org/afl.html
[69] See "Resource Use, Allocation and Management" component for plans.

6.3. Prepare communities for pilot/demonstrations sites

Most communities will require assistance from capable and trained focal/local groups. Participatory methods need to be emphasized to address local needs and increase local project ownership. These are addressed with in the "Governance" component.

6.4. Conduct baseline assessments of pilot/demonstration sites

In addition to the original watershed assessments, more detailed baseline information will be necessary.

6.4.1. Establish forest carbon stock estimates and site reference levels

These should be conducted to Intergovernmental Panel on Climate Change (IPCC) Tier 2 level accounting and a credible reference level based on existing voluntary market scheme or forthcoming UNFCCC compliance scheme standards.

6.4.2. Conduct socio-economic and biophysical assessments

Prior to implementation, sites will require socio-economic and biophysical, and threat assessments[70]. These will help determine community readiness for REDD-plus, the general condition of the area, what resources and support mechanisms are available, project feasibility, and potential conflicts with planned and unplanned deforestation and forest degradation activities.

6.4.3. Identify conservation interventions

Site-specific study and consultation will serve to identify appropriate conservation interventions and incentives to reduce deforestation and forest degradation. There were addressed in Strategy 3.

6.4.4. Conduct legally-required assessments and conduct risk assessments

REDD-plus projects will legally require Social and Environment Impact Assessments (SIA/EIA), and will include analysis, monitoring, managing and mitigating intended and unintended consequences (risk and vulnerability assessments).

6.5. Establish and maintain sites

The site represents opportunities to implement, review and test existing and new protocols and systems for REDD-plus.

6.5.1. Adhere to established carbon assessment standards

REDD-plus demonstration projects will implement the necessary steps and procedures developed internationally (e.g., IPCC, United Nations Framework Convention on Climate Change, Voluntary Carbon Standard) and/or adopted by the Government of the Philippines.

6.5.2. Test carbon and co-benefits assessment methodologies

Sites will demonstrate and test: development of baselines and references (*ex ante* estimates and actual measurement and monitoring), techniques in carbon pools identification, measurement, reporting and monitoring, mitigation of planned and unplanned drivers of deforestation and forest degradation, carbon stock enhancement activities, sustainable forest management activities, performance of biodiversity and other ecosystem co-benefits.

6.5.3. Test trading, benefit sharing and incentive schemes

Sites will further demonstrate varied approaches to carbon trading and negotiations schemes, benefit sharing and forest governance, which will be observed, tested, monitored and evaluated. This research agenda is further described in Strategy 7, below.

6.6. Assess and evaluate projects and disseminate lessons learned

Throughout the lifecycle of the demonstration sites, lessons will continually be documented, processed and distilled. Prior to the full engagement phase, these will be widely disseminated for the purpose of improved REDD-plus implementation.

[70] These parallel the types of studies needed across all forest areas.

7. Determining realistic and appropriate benefit-sharing schemes

The development of realistic and appropriate benefit-sharing schemes is a cross-cutting theme. Research is needed to determine effective, efficient and equitable incentive structures for REDD-plus.

7.1. Test benefit-sharing approaches

Benefit sharing should explore various incentive mechanisms such as direct payments, scholarships, insurance, support for enterprise development and low-emissions livelihood strategies, non-financial benefits such as service provision, and investment into community-managed funds. Research will include equity analysis in terms of participation, benefits, responsibilities, costs and opportunity costs, and will contribute to benefit-cost analyses and economic feasibility studies. The research process should be culturally and gender sensitive, and should specifically consider traditional marginalized groups (e.g., Indigenous Peoples (IP), women, poor households). This research agenda is highlighted within the pilot/demonstration sites.

7.2. Identify community representation strategies for REDD-plus transactions

Some international funding sources will require national negotiations, while others may directly transact with local communities, in which adequate representation strategies will be important. Participatory discussions and decisions should guide this research, including the advantages, disadvantages, consequences and costs of national, sub-national and local level negotiations and transactions.

8. Identifying strategies to harmonize REDD-plus and community practices

In addition to REDD-plus incentives, there is a need to harmonize REDD-plus with existing community practices, including land and resources uses, livelihoods and property arrangement. There is a need to identify and overcome barriers to community participation.

8.1. Identify low-emissions livelihood strategies sensitive to local needs

There is a need to examine the carbon dynamics of various customary land use practices and to identify existing activities that could be rewarded under REDD-plus. There is also a need to work directly with communities to research low-emissions livelihood alternatives that are sensitive and address local needs, and to identify good practices within traditional and indigneous forest management.

8.2. Identify possible policy innovations

Barriers such as high transaction costs and lapses in capacity are documented limitations to community participation in the forest carbon sector. Research based on the pilot/demonstration studies, as well as policy review, consultations and previous experience with community resource management, will identify strategies that can facilitate local involvement in forest carbon projects and markets[71].

9. Developing and communicating REDD-plus baselines

Research initiatives are often dependent on the availability of strong baselines that can support deeper research. REDD-plus R&D should by guided by efforts to establish baseline data. These efforts closely overlap with the "Measurable, Reportable and Verifiable Conditions" component.

9.1. Conduct carbon accounting

The goal is to achieve IPCC Tier 2 carbon accounting in all appropriate regions[72], which will require research to develop the input factors for IPCC equations. This can contribute to emissions reduction targets[73], and estimates of carbon sequestration potentials important to informing investment levels fore REDD-plus in the Philippines. In addition, accounting requires improved understanding of carbon dynamics in both plant biomass and substrates are essential to determining appropriate management regime for a particular forest management unit (FMU). This involves carbon accounting from different tree/plant parts, from leaves to below ground biomass. This is similar to a carbon budget where varied avenues of loss out of the closed system are quantified.

[71] For example, carbon pooling (cooperatives) among communities that share a common watershed or within an association.

[72] Standards are discussed in the "Measurable, Reportable and Verifiable Conditions" component.

[73] Establishment of a national emissions reduction target is discussed in the "Policy" component.

9.2. Establish permanent sample plots (PSP)

PSP should be established in diverse forest types within identified REDD-plus areas, and vary in size from several hundred square meters to a hectare. These plots will provide data about biomass increase/decrease as a basis for determining the rate of carbon addition in the ecosystem, including carbon locked in the necromass and forest substrates. The IPCC 2006 compliant stratification method, targeting sites with high carbon values and high risk of deforestation, is one cost-effective measurement approach.

9.3. Analyze biomass degradation & aggradation dynamics

Rates of biomass degradation determine the rates of methane production, one of the main sources of GHGs. The rate of aggradation is determined to measure the carbon load from the substrate brought about by accumulated sediment in the forest.

9.4. Determine carbon sequestration ability of various tree species

The ability of tree species to sequester carbon depends largely on the growth rate of the plants. Carbon accumulation by species, however, is determined by morphological differences related to leaf area index, stomatal position relative to leaf configuration, number of stomates, etc. These attributes are essential in the selection of plant species for reforestation and rehabilitation for optimum carbon sequestration. Research should compare sequestration potentials among native and exotic species.

9.5. Quantify emissions from forest soils, peatlands, marshlands/mangroves

Forest emissions sources also involve forest biomass decay, forest soils, peat soils, marsh areas and mangrove habitats (wetlands), though there is little related data available for the Philippines. Appropriate methodologies are needed to quantify these gases in both spatial and temporal dimensions.

9.6. Map and analyze non-carbon ecological benefits in REDD-plus areas

Geographically mapping and evaluating biodiversity and ecosystem services co-benefits is integral to maximizing REDD-plus resources (Karousakis, 2009), and is linked to measuring, reporting and verification discussion on assessing non-carbon benefits of REDD-plus. Research will focus on the positive (reduction in habitat destruction) and potentially negative (biodiversity decline through establishment of monoculture plantations) impacts of REDD on biodiversity over time. Analysis, comparison, and evaluation of varied approaches and methods of promoting biodiversity and ecosystem co-benefits in REDD can provide inputs to policy makers.

9.7. Research carbon life cycle analysis of wood products

Carbon footprints for tree biomass that is converted into utilizable final wood products is a rich ground of basic research and can be linked to IPCC 2006 Tier 1 methods for harvested wood products. Further conversion into any forms or utility (e.g., as fuel) would provide a complete picture of carbon footprint cycle.

9.8. Analyze impacts of REDD-plus on forest-based and related industries and markets

As REDD-plus is an encompassing system that would influence all aspects of the forestry sector, as well as related sectors such as mining and agriculture, there is a need to assess impacts on industry. Within forestry sector, there is a further need to examine how tools such forest certification, chain of custody certification, industrial carbon footprints, sustainable forest management techniques and reduced impact logging can be used to reinforce REDD-plus objectives.

9.9. Analyze social and gender implications of REDD-plus implementation

The social implication of REDD-plus, notably gender roles of forest occupants, are highly significant to the capacity building requirements, burdens and responsibilities under REDD-plus. There is a need for research to consider these implications and seek opportunities for greater inclusiveness.

10. Information dissemination and knowledge management of R&D

Results of R&D outputs, information, and technologies and lessons learned from pilot/demonstration sites will be disseminated to the proper authorities and the public for use in policy making or practical utilization. These efforts will be closely linked with the "Capacity Building and Communication" component and should be widely distributed and translated into local languages, where necessary.

10.1. Package R&D outputs

Data, information and technologies need to be processed into easy-to-understand materials (e.g., policy papers/briefs, brochures, manuals, etc.) for distribution to policy makers and the national-level and regional agencies[74], the national Community of REDD-plus Practitioners[75], and the general public.

10.2. Prepare training materials

The R&D community should contribute to the development of resources for national REDD-plus training, including Training The Teachers (T3) modules, Exchange Programs and topical capacity building efforts[76].

10.3. Present outputs in the academic community

Outputs should also be shared with the broader scientific community, though meetings, conferences and technical publications. These will contribute to the generation of new knowledge and information on REDD-plus and highlight the Philippines as a centre for forestry and forest carbon research.

10.4. Establish protocols for information sharing

Information should be widely distributed and protocols are needed regarding public access to information.

[74] Described within the "Governance" Component.
[75] See the "Capacity Building and Communication" Component
[76] See the "Capacity Building and Communication" Component

IX. Measurable, Reportable and Verifiable Conditions

Changes in forest carbon stocks must be measured, reported and verified (MRV) in a transparent, consistent, comparable, complete and accurate manner in order to ensure mitigation. The PNRPS proposes development of a rigorous MRV process, based on the Voluntary Carbon Standard's (VCS) Guidelines on Agriculture, Forestry and Other Land-Uses (AFOLU)[77], the most robust voluntary standard developed to date for carbon accounting within REDD-type projects. The PNRPS also seeks to develop review systems for associated social and environment impacts to ensure 'no-harm' and co-benefits to determine additional contributions from REDD-plus implementation. These can be reviewed based on the sTandards and procedures recommended the Climate, Community and Biodiversity Alliance (CCBA) standards[78].

As in the case of many other developing countries, reliable data on carbon stocks remain scarce and significant resources are limiting. In the Philippines, there is currently a lack of national data needed to establish historical emission levels. In fact, many countries have limited ability to make complete and accurate estimates of Greenhouse Gas (GHG) emissions; less than 20% of countries have submitted a GHG inventory. (Angelsen et al., 2009). Many countries are also unable to complete accurate estimates of forest loss and are far from prepared to implement MRV systems. A recent review shows that only three of 99 tropical developing countries have very good capacity for monitoring forest area change and forest inventories (Angelsen et al., 2009). Similarly, there are considerable gaps in knowledge regarding methods to measure forest degradation. This is an area in which the Philippines will require investment to build capacity and access greater data.

However, as discussed in the "Forest Sector Scenario", there is a growing body of knowledge related to MRV in the Philippines, and the capacity for monitoring gross changes in forest cover is improving rapidly with advances in remote sensing technology. National-level technical capacity in the Philippines is also relatively strong. The National Mapping and Resource Information Authority (NAMRIA), the Department of Environment and Natural Resources (DENR) agency responsible for forest mapping, and the Forest Management Bureau (FMB) personnel have sufficient technical capabilities to generate reliable forest cover data and carbon inventories in the future, given adequate resources. NAMRIA has 100 personnel in its remote sensing department who are well-trained in mapping. The agency also has adequate hardware and software to analyze satellite images. Meanwhile, FMB has started estimating biomass and carbon since 2003 and are updating their data every five years for the Food and Agriculture Organization (FAO). Several other government agencies and Civil Society Organizations (CSO) also have existing capacity (technical capability, manpower, software and hardware, organization) to upscale REDD-plus monitoring, and achieve cost-effective synergies, if coordinated within a REDD-plus and Land Use, Land Use Change and Forestry (LULUCF) and Agriculture, Forestry and Land Use (AFOLU) frameworks. These include the DENR Field Offices and Protected Areas and Wildlife Bureau (PAWB), as well as Department of Agriculture- Bureau of Soils and Water Management (DA-BSWM), Philippine Atmospheric, Geophysical and Astronomic Services Administration (PAGASA), and Environmental Science for Social Change (ESSC). Scientists based at University of the Philippines in Los Baños, particularly those connected with the College of Forestry and Natural Resources, are also involved with a range of forest carbon studies[79]. Several also collaborate with the World Agroforestry Center (ICRAF), have completed academic publications about specific project sites and have assisted the Kalahan Educational Foundation with community-based carbon accounting methodology. These represent robust local capacity and initial collaborations that will be fundamental to future REDD-plus development.

The proposed institutional structures for managing and implementing MRV processes are discussed in the "Governance" component, which describes a chain of Designated National, Regional, Provincial Authorities organized through the Department of Environment and Natural Resources (DENR), and local Forest Management Units (FMUs) that will gather forest carbon and non-carbon data. The proposed National REDD-plus Council will assist with reviews of finances and policy, though verification of all processes will depend on external parties. MRV and non-carbon reviews also involve strategies discussed in the "Research and Development" component and build significantly on capacity building efforts discussed in the "Capacity Building and Communication" component.

[77] More information on the VCS Standards is available from http://www.v-c-s.org/afl.html. VCS standards have been adopted by a number of other institutions, including to craft standards for the Social Carbon-CCB Standard, TUV-SUD, Terra Global Capital and Biocarbon Fund.
[78] CCBA Standards are available through: http://www.climate-standards.org/standards/index.html

Proposed Strategies and Activities

1. Utilizing appropriate MRV tools

1.1. Identify MRV techniques sensitive to drivers of deforestation and degradation[80]

Different methods should be tested at the pilot/demonstration sites and early during the Readiness Phase to identify the most appropriate MRV techniques for planned (legal) and unplanned (illegal) deforestation and forest degradation. There is a particular need to identify methods for measuring forest degradation. Establishing MRV methods early in the Readiness Phase is important to scaling up and to ensuring that data can be integrated at the national-level, and will feature among the initial Readiness activities.

1.2. Target MRV approaches

For each REDD-plus action area, there is a need to implement the MRV approaches best suited to addressing the deforestation and degradation drivers at that site. These can differ significantly throughout the Philippines.

2. Assessing capacities and technologies for remotely measuring changes to forest cover

This aspect of the MRV process will be resource and time intensive, and so should begin with an assessment of both existing and required capacities and technologies to inform future investments, data acquisition and training[81].

2.1. Establish baselines with available historical data

Satellite data from 1990 and 2000 can be accessed online for free, though it is often characterized by high cloud cover and ground-truthing cannot be conducted on old data sets. However, these can be supplemented with secondary data, cloud free commercial satellite data, and photographs.

2.2. Acquire supplementary remote sensing data

Remote sensing is considered an appropriate means of assessing historical and future deforestation rates (forest change), but requires greater investment in technology and training to conduct regular forest change monitoring.

2.3. Acquire carbon monitoring satellite images

These must be collected periodically, at 3-year intervals, and require both interpretation to establish forest changes, and ground truthing to ensure accuracy. Acquisition of more recent satellite imageries, such as Advanced Land Observing Satellite (ALOS), would be valuable to establishing a documented pattern of forest and land use change at the national and sub-national levels. Modis, LIDAR, ASTER and aerial photographs are also viable tools. Choice of data sets is largely contingent on access to funding, as prices vary significantly.

3. Improving capacity to monitor emissions factors

Carbon stock changes, also known as emissions factors, are based on field-level measurements.

3.1. Establish community monitoring

As discussed in the "Governance" component, local measuring and monitoring units may be established and could serve to gather this data, especially in target REDD-plus action areas. These can serve to catalyze community-based carbon monitoring, which can be highly accurate, provide detailed data, verify satellite data, and cost significantly less than professional monitoring (Skutsch et al., 2009). Although geographically limited, it can provide field-level emissions factor estimates, reducing error margins and increasing emissions reduction claims. Implementation will require training, supervision and data management, which can be achieved with the support of foresters, specialized trainers, Local government units (LGU), the DENR and the proposed Designated Regional and Provincial Authorities. There is need to incentivize community participation in MRV activities.

[80] See the "Research and Development" component for a discussion on the identification of drivers of deforestation and degradation.

[81] See the "Capacity Building and Communication" component for a discussion on identifying training needs.

3.2. Expand on the National Forest Resource Assessment (NFRA)

Based on data gathered between 2002-2003, the 2005 NFRA provides an initial step in establishing national level forest carbon stocks, and basis for setting up a baseline and long-term monitoring system for REDD-plus in the Philippines.

3.3. Draw on existing national research

The status of existing emissions factor research is described in the "Forestry Sector Scenario" and Appendix D.

3.4. Improve design of field monitoring plots

The permanent sample tracts and plots established in the 2002-2003 NFRA could be supplemented with additional tracts/plots to densify the national array of monitoring plots to a level that is statistically sufficient for monitoring forests and land use changes at the sub-national level. Monitoring the increased number of sites could include community involvement.

3.5. Increase research on carbon dynamics

Related research needs are detailed in the "Research and Development" component.

4. Calculating emissions reference levels (at least to the Tier 2 level)

Emissions reference levels will be based on 2 variables: forest area change determined through remote sensing and/or spatial images, and emissions factors (carbon per hectare) determined through field studies – both discussed above and in the "Research and Development" component. Emissions levels will first be established for pilot/demonstration sites. Calculations will first draw on available and accessible data, and can involve several possible models, including Forest Transition (FT) curves, spatial opportunity cost analysis, spatiotemporal modeling, and land rent modeling approaches at the national and sub-national level. This will need to be complete at approximately 3-year intervals.

5. Create business-as-usual and REDD-plus projections

To demonstrate additionality. there is a need to model and compare business-as-usual projections of deforestation and forest degradation against projections including REDD-plus implementation. These can be based on reference level calculations (Strategy 4 above) and research on the drivers of deforestation and forest degradation as discussed in the "Research and Development" component. Tools developed for the Clean Development Mechanism (CDM) provide a starting point for projections methods, however, other tools can be explored.

6. Assuming a phased approach to carbon MRV

The costs and time required to implement national-level MRV are significant. The PNRPS targets national-level MRV, though this is contingent on resource availability. Until resources become available, a phased approach is most appropriate.

6.1. Analyze available data

Given the financial limitations that restrict access to data, the PNRPS proposes a phased approach to MRV. The Philippines should immediately invest in using the data currently available to determine historical and current baselines as accurately as possible.

6.2. Establish community-based carbon monitoring

As discussed above, community monitoring is a cost-effective, informative and participatory approach that can be developed in the short-term to gather detailed data.

6.3. Establish interim indicators

As stringent MRV systems can be slow to develop, interim performance indicators can be established for during the Readiness Phase to assess performance.

6.4. Increase data accuracy over time

As funding becomes available within the Readiness Phase, data accuracy should be improved and national-level MRV should be implemented as soon as possible.

7. Establishing socioeconomic and environmental impact assessments[82]

There is a need to review, measure and verify non-carbon benefits. Standards and procedures can be based on existing Climate, Community and Biodiversity Alliance (CCBA) standards[83].

7.1. Establish review process to measure social and environmental impacts and co-benefits

Review will focus on social parameters such as poverty alleviation and ecological parameters such as additional conservation of biodiversity and ecosystem services. The purpose is to measure the ways in which REDD-plus efforts provide additional co-benefits, and to ensure that investments are being maximized. As discussed in the "Research and Development" component, where possible, ecosystem co-benefits should be valued and priced.

7.2. Monitor projects to ensure minimum safeguards

There is also a need to develop a review system that addresses factors such as social justice, human rights and gender-responsiveness to ensure that REDD-plus efforts are not causing harm. Similarly, there is a need to ensure efforts are not harming biodiversity or ecosystem services, such as by promoting leakage or land clearing for plantations.

8. Establishing financial review procedures

Good financial governance, including transparent accounting, budgeting, fiscal management and funds and revenue transfer, is important to REDD-plus effectiveness and will be overseen by the REDD-plus councils. Independent fiscal review and regulation will also be necessary.

9. Establishing review of policies and transactions

Once other accounting systems are established and REDD-plus pilot/demonstration sites are active, there is a need to consider issues related to REDD-plus policies and transactions to ensure their equity and effectiveness.

9.1. Conduct review of REDD-plus-related policies

Once new governance structures and policies are established[84], there will be a need for follow-up MRV to assess their effectiveness, efficiency and equity of the new strategies.

9.2. Conduct review of the transactions process

Depending on how an international REDD-plus mechanism develops, transactions may range from arrangements between government and land users/holders or direct transactions with international investors. There is a need for an review system to review equity and accountability in these processes.

[82] See "Policy" component for a discussion on the need for legal safeguards for REDD-plus implementation.
[83] Standards are available through: http://www.climate-standards.org/standards/index.html

[84] See "Policy" and "Governance" components.

X. Capacity Building and Communication

Capacity Building and Communication influence all of the other Strategy components. The effective, efficient, equitable, timely and high quality implementation of REDD Plus is heavily contingent on stakeholder capacities and understanding.

Capacity building will be spearheaded by the Designated National, Regional and Provincial Authorities[85] with support from the Human Resources Development Service of the Department of Environment and Natural Resources (DENR), the Community of Practitioners described later in this component, professional organizations, civil society, academe, international agencies, and others.

Potential participants identified to date for capacity building and information-sharing include:

- Forest-dependent communities, and holders of Certificates of Ancestral Domains Claims/Titles (CADC/Ts), Community Based Forest Management Agreements (CBFMAs), and Protected Area Community Based Resource Management Agreements (PACBRMAs);
- Local Government Units (LGUs);
- Civil Society Organizations (CSOs)
- National government agencies such as National Commission for Indigenous Peoples (NCIP) and Local Department of Environment and Natural Resources (DENR), including local offices;
- Members of Protected Areas Management Boards (PAMBs);
- National academic and research institutions, and
- Government Owned and Controlled Corporations (GOCCs) such as National Power Corporation (NPC), Energy Development Corporation (EDC), and the like particularly private organizations.

Stakeholders will come from very different contexts with varied strengths, weaknesses and needs. The learning pedagogy is thus responsive to address participants' present conditions and recognizes that capacity-building processes will have differentiated impacts on participants (Appendix E: Learning Pedagogy). The Strategy also proposes an iterative analysis framework to identify gaps between stakeholders' present capacities and the capacity requirements for REDD Plus implementation. The Strategy further uses Community of Practice technology to further communication and capacity building (Appendix F: Community of Practitioners).

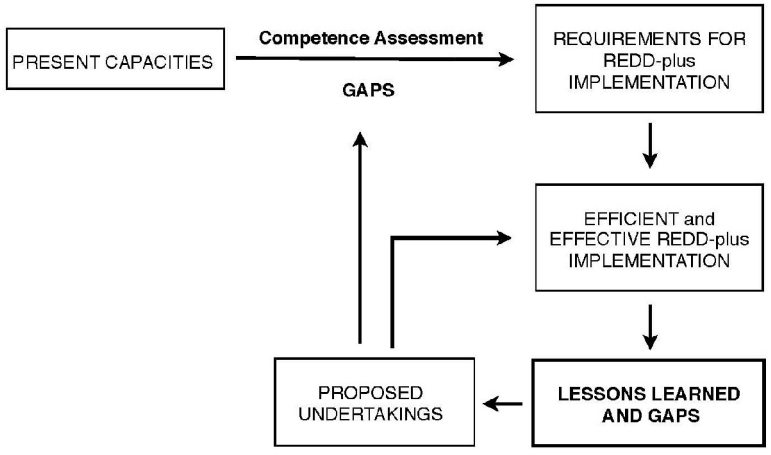


Fig. 6. Iterative Analysis Framework

As shown in Figure 6, the capacity building process being with identifying the present and required stakeholder capacities. Gaps will be identified through competence assessments; corresponding undertakings will be proposed and implemented. Given that REDD-Plus is an ongoing process, an adaptive feedback and management mechanism will be established to inform the analysis framework. This process hopes to narrow the gap between the present and required capacities that will also enable players to readily respond to possible new requirements.

[85] Described in the "Governance" component.

In both content and process, the undertakings should make reference to external standards discussed in Appendix G: Selecting Standards as Benchmarks for Capacity Building. Activities should observe the principles adopted by the PNRPS presented as CREATE in the "Strategic Directions" component.

In parallel with formal capacity building efforts, the learning will also occur through the development of a national Community of Practitioners (CoP) on REDD-plus. A CoP draws on diverse experiences, encourages questioning, facilitates group reflection, and adheres to logic, science and philosophy to aid in decision-making and judgment. In the Philippine context, the CoDe REDD initiative is one such example. (See Appendix F: Community of Practitioners). The body serves not only to promote immediate information-sharing and facilitate collaborative decision-making, but to encourage dissemination of information and capacity building as participants return to their communities. The use of CoP will contribute significantly to the Strategy scaling-up approach, drawing information from sub-national REDD-plus initiatives and contributing to national-level REDD-plus preparedness.

Proposed Strategies and Activities

1. Promoting REDD-plus through information, education, and communication (IEC) activities.
This strategy is closely linked with the consultation and engagement initiatives described in Strategy 1 of the "Governance" component.

1.1. Formulate and implement a national REDD-plus Communication Plan.
The Communication Plan will be development-oriented in that it will refer to existing frameworks on advocacy, social mobilization, behavioral change, and social change[86]. It will include basic explanations of climate change and the environment, particularly related forests in order to explain the concept of REDD-plus; the PNRPS; related tenure and policy reform, and research and development findings. While implementing the plan, it will draw from the processes and outcomes of the various strategy components. Communications, including the PNRPS, should be translated into local languages to ensure widespread understanding.

1.2. Co-develop and utilize a Competence Assessment Tool.
A competence tool will be crafted in order to establish stakeholder competence and capacity needs. Stakeholders will be engaged in developing the tool so that it is co-owned by all involved and individuals will be willing to utilize it.

1.3. Co-Develop and utilize a tool to REDDify plans
There is a need to develop a "REDDfying" tool comparable to the United Nations Development Program (UNDP) and German "climate proofing" tools (UNDP, 2009; GTZ, 2010) to help organizations prepare for REDD-plus engagement. Similar to the Competence Assessment Tool, the tool to REDDify plans will be produced collaboratively. Concerned organizations will be encouraged to REDDify their respective plans.

1.4. Conduct training programs
Based on the results of the Competence Assessment, training programs will be carried out to address individual stakeholders' needs. Topics are likely to include (1) Technical issues such as inventory and assessment (e.g., forest, biodiversity) techniques; field-level carbon accounting techniques; REDD-plus-related standards [e.g., Voluntary Carbon Standard (VCS), Climate Community and Biodiversity Alliance (CCBA), Intergovernmental Panel on Climate Change IPCC)]; measuring, reporting and verifying (MRV) emissions reductions; development of Project Design Documents (PDD) and project proposals; use of Global Information Systems (GIS) and remote sensing technology; (2) Financing issues such as REDD-plus financing and the carbon market, funds management; Payment for Ecosystem Services and related opportunities in the Philippines; (3) Governance issues such as law enforcement, negotiating skills; participatory decision-making; basic legal procedures and paralegal skills; trust and confidence building; policy development; (4) Socio-economic issues such as gender and rights issues; improved low-emissions

[86] For example, see tool available from:
www.portal.unesco.org/.../11714461571**UNICEF**.../**UNICEF**_stocktaking_10th_round_table.ppt.
http://www.spitfirestrategies.com/Tools/Spitfire-Tools.html

resource management such as natural farming and sustainable agroforestry using diverse indigenous species, and other sustainable livelihood options, and population management strategies.

In line with the learning pedagogy, the training programs will use the Results Based Management framework and customized module with due consideration to indigenous knowledge, skills and practices (IKSPs). The programs will likewise include incentives, social contracting, a tracking system for coaching and mentoring, knowledge management, and certification.

1.5. Enjoin stakeholders to participate in the REDD Plus Community of Practitioners.
Stakeholders with technical knowledge and members of the scientific community will be encouraged to be part of the REDD Plus CoP. Involvement will be encouraged through social contracting as a way to 'give back' to the broader community. The CoP, which will offer expertise related to different PNRPS components and with relevance to different sectors, will be instrumental to training others, engaging in research and pilots projects, and informing policy. The PNRPS proposes that resources should be available to further develop domestic expertise.

1.6. Conduct training for trainers
Training will offer skill and content-based training. Some trainers will focus on content and serve as resource-persons on specific topics; future moderators will focus on skills that will allow them to facilitate group meetings, training and decision-making, and facilitators will train in both areas.

2. Establishing a REDD-Plus Continuing Education Mechanism

2.1. Organize REDD Plus community of practitioners
Upon involvement with the CoP and T3 programs, interested stakeholders will be informally organized into a responsive mechanism that can provide timely and quality services to REDD-plus field-level initiatives throughout the Philippines. The team will map out local demands and help deploy expertise from within the country.

2.2. Conduct mentoring and coaching
Members from the T3, training programs and the CoP, will offer customized mentoring and coaching to participating groups, responding to local needs, tracking skill-development and drawing on/contributing to the national knowledge base.

2.3. Generate and develop an appropriate knowledge management system and intensify information sharing
Informed by the experiences of the CoP, Research and Development (R&D) outputs, and the results of coaching and mentoring, a knowledge management system will be developed. The focus of this system will be on compiling and facilitating the retrieval, in combination with a reliable referral and exchanges protocol.

3. Enhancing REDD-plus learning exchanges

3.1. Facilitate learning visits and exchange programs
These may include visits to and among REDD-plus pilots in the Philippines and the region, each of which may exemplify key lessons, processes or themes. This opportunity will serve as a form of incentive for CoP involvement.

3.2. Adopt community-based and managed learning centers
Building on the achievements and lessons learned while implementing community-based forest management, sites will be selected as community-based learning centers that can host exchanges, trainings and partner with REDD-plus R&D initiatives and State University and College extension and training services.

4. Strengthening REDD-plus implementing mechanisms and structures through organizational development, institutional strengthening and collaboration

4.1. Develop varied REDD-plus certifications for organizations and individuals
In partnership with formal learning organizations, the National Multistakeholder REDD-plus Council will establish certifications based on training in various themes related to REDD-plus.

4.2. Strengthen inter-Local Government Unit (LGU) networks

Existing networks to facilitate coordination among LGUs, including among Indigenous Peoples groups, need to be enhanced to facilitate cooperation on REDD-plus. The REDD-plus Councils present a venue through which to enhance cooperation.

4.3. Establish fora to bring together DENR with other sectors

As most drivers of deforestation and forest degradation lie outside the forestry sector, and REDD-plus will be part of a broad watershed approach to forest management, there is a need for the CCC and DENR to engage other sectors and government agencies in their efforts to reduce forestry emissions. There is a need to establish forums and lines to communication to improve cooperation and policy alignment.

5. Sustaining government and non-government cooperation

5.1. Identify and mobilize organizations and individuals by mandate/position to formalize REDD-plus roles

To ensure sustainable REDD-plus implementation, collaborations should be based on respective mandates and positions to ensure that commitments will not be personalized but official and formalized.

5.2. Develop arrangement for sharing of funds and other resources

The difference between state and non-state accounting and auditing rules, practices and flexibility has traditionally limited resource sharing. For REDD-Plus implementation, resource mobilization will first focus on maximizing and sharing funds that are already authorized through the General Appropriations Act (GAA), and then seek future, additional government support.

5.3. Facilitate the process of putting teams or people to task

Sustained critical engagement between state and non-state actors can be achieved through working groups or committees, formal and informal feedback sessions, transparent information sharing and exchange of notes.

XI. Sustainable Financing

Rainforest countries generally lack the financial resources to significantly reduce forestry sector emissions, whether through incentives or enforcement. REDD-plus financing may offer a mechanism (or combination of mechanisms) capable of financing significant conservation efforts in developing countries in the long term. Several proposals have been developed at the international and national levels, but the exact nature of future mechanisms remains undefined, largely as a result of incomplete international climate change negotiations. Financing mechanisms also require further study and justification (Bohm and Dabhi 2009, Viana et al 2009, Streck 2009), as the ultimate success of REDD-plus efforts emanates from ensuring sustainable financing. In the Philippines, a successful, sustainable and long-term financing scheme is expected to fuel a robust REDD program to deliver permanently reduced emissions, poverty alleviation and social justice for forest-dependent communities, biodiversity conservation, and protected and improved environmental services.

To date, REDD-plus planners have considered various combined and sequenced financing strategies, generally involving 1) donor financing, largely from government grants, 2) market-based financing from both existing voluntary markets and proposed future compliance carbon markets, and 3) fund-based financing based on mandated payments by Annex I countries and polluting industries. Many developing countries have proposed integrating various approaches, either simultaneously or one after the other (Boucher, 2008; IUCN, 2009; Streck, 2009; Viana, 2009). Although largely contingent on international negotiations, the PNRPS tentatively proposes both a staged approach, and an expanded approach that considers more diversified funding plans. It does not specify budgeting priorities, as these will be identified during action planning.

Proposed Strategies and Activities

1. **Capitalizing on existing resources to initiate REDD-plus readiness**
   The Government of the Philippine and various non-governmental organizations have existing capacity and some, limited resources for forestry-related and sustainable rural development programs. Although these are clearly insufficient and cannot be specifically allocated to REDD-plus, early REDD-plus actions, including at pilot/demonstration sites, should capitalize on any existing resources in order to initiate readiness.

2. **Seeking immediate donor funding for REDD-plus readiness**
   Donor REDD-plus grant funding to other countries has been to improve forest governance, develop REDD-plus pilot projects, strategies and mechanisms (e.g., policy, infrastructure, services). The Philippines intends to pursue this upfront readiness funding. It will be informed by the experiences of other countries, including related to the expenses of developing REDD-plus projects. Donor projects should be participatory and work within the PNRPS.

   The PNRPS will be used as a tool to seek government and funding agency interest in supporting implementation of the Strategy. Given the Philippines high level of international debt, however, it will seek primarily grants for this initiative.

   2.1. Develop funding proposals for REDD-plus
   Early stages of the REDD-plus Readiness Phase (already in action) will identify primary needs and investments that can inform funding requests and proposals.

   2.2. Scout for readiness donors and funding agencies
   There is currently significant bilateral, multilateral and UNFCCC Conference of Parties-mandated voluntary funding opportunities for REDD-plus planning and development. These include the World Bank's Forest Carbon Partnership Facility, the Interim REDD-Plus Partnership, and the United Nations Cooperative Programme on REDD. The Philippines is currently under consideration for significant multilateral funding.

   2.3. Seek early private sector finance
   Forest carbon projects, including in the Philippines, have accessed funding from private sector investors voluntarily offsetting emissions or speculating on future carbon markets. However, these should be approached with caution and there is a need to establish safeguards and eligibility criteria[87].

[87] This is addressed in the "Policy" component discussion on safeguards.

2.4. Operationalize fund-management within the National Multistakeholder REDD-plus Council[88]

There is a need to ensure financial transparency and accountability to both donors and forest managers in order to develop trust and gain confidence that REDD-plus can be viably implemented in the Philippines. Checks and balances, information-sharing and clear procedures are paramount. As discussed in the "Governance" component, the DENR will remove itself from direct fund management.

2.5. Finance REDD-plus preparatory phase

The preparatory phase includes all the major components of the PNRPS, as well as funds to incentivize REDD-plus engagement at the pilot/demonstration sites.

2.6. Engage with existing voluntary carbon markets on a project-basis

Voluntary payments for corporate and individual carbon emissions offsetting can be used to fund REDD-plus. Once Philippine pilot/demonstration sites are mature enough to ensure emissions reductions, these can begin to engage directly with voluntary markets for increased funding. This will allow re-allocation of national REDD-plus resources to scaling-up initiatives in the Philippines.

2.7. Document the Philippine REDD-plus readiness financing experience

As a potential pilot in the region, the Philippines can serve as a prospective model for other countries, especially considering the enabling environment it offers for REDD-plus development. Documenting the readiness experience can also demonstrate that the Philippines is able to properly manage international financing and deliver on commitments, which will be integral during the scaling-up of REDD-plus implementation and funding.

3. Seeking diverse long-term funding mechanisms

There is a need to ensure that REDD-plus funding is long-lasting so that projects can have continuity and participants have assurance of sustainability.

3.1. Continue to seek government and development funds

There will be continued and diverse opportunities to combine international donor funding for forest management and rural livelihood activities than can be aligned with REDD-plus in the long term. Combining development and conservation funds to further strengthen REDD-plus efforts will maximize overall benefits. Similarly, the Philippines could establish a National REDD-plus Fund, similar to that established in Brazil and under development in Indonesia, through which to directly channel international donor funds into REDD-plus development and projects.

3.2. Explore funding from a potential market-based mechanism

As climate change negotiations progress, an international compliance market may develop and could provide long-term REDD-plus financing by allowing Annex 1 countries to offset their emissions reduction obligations by funding REDD-plus. The Philippines will need to ensure that it is able to deliver verifiable emissions reductions to participate with this mechanism; this will be based heavily on the readiness process and pilot/demonstration projects.

Although all funding strategies have pros and cons, the market-based approach is considered a particularly complicated approach (Lang, 2010; Bohm and Dabhi, 2009; Gilbertson and Reyes 2009, Karsenty, 2009). There are also concerns regarding the long-term stability of future carbon markets. If driven purely by market forces, a future compliance market could also fail to decrease global emissions (Gilebertson and Reyes, 2009); this shall be taken into account in order to ensure financial sustainability.

3.3. Explore alternative finance mechanisms

The PNRPS should explore proposals for alternative mechanisms that are not fully market-based, as they may offer greater financial resilience. The proposed Tropical Deforestation Emission Reduction Mechanism (TDERM) (Hare and Macey, 2007; Thies and Czebiniak, 2008) is one such alternative. Industrial countries would be mandated by the UNFCCC to buy a minimum number of emissions credits

[88] See "Governance" component for the proposed designs of a central cordinating agency. Also see Strategy 6: Exploring diverse fund management arrangements.

from the TDERM based on a percentage of their total domestic emissions. These funds would be distributed by a multilateral fund to rainforest countries that can demonstrate verified emissions reductions. Greater reductions would receive higher financing.

Similarly, an international fund for REDD-plus and other mitigation and adaptation activities could draw funds from direct taxation on industrialized countries, based on their ability to pay and historical emissions, and from levies on emitting industries such as aviation (Tuvalu, 2008). These funds could be supplemented with philanthropic and voluntary donations, and have the potential to contribute resources commensurate with the anticipated costs of REDD-plus.

3.4. Explore opportunities to bundle services

There are opportunities to combine REDD-plus with broader Payment for Ecosystem Service (PES) efforts. Combining multiple revenue streams with REDD-plus could increase financial incentives in favor of conservation (Phelps et al., 2010a), especially in Southeast Asia where REDD-plus payments may not overcome opportunity costs (Venter et al., 2009). The Philippines offers unique biodiversity that could be eligible for future biodiversity credits. Similarly, given the relative degradation of many national ecosystem services in the Philippines, their conservation is in particular demand and bundling may be financially viable. The Philippines has some existing legislation relevant to PES[89] and there are considerable international case studies to which to refer[90]. Given that methodologies, markets and policies are not yet mature in the Philippines, a PES strategy and related consultations, research and piloting are required. However, even in the case that other ecosystem services are not priced, likely in the early phases of REDD-plus development, projects with demonstrated co-benefits are likely to merit a premium price on the carbon market

3.5. Capitalize on climate change adaptation funding

Although currently limited in comparison with the resources available for mitigation activities, climate change adaptation funding for forest protection and ecosystem services can also be used to improve forest management and governance, linking adaptation and mitigation.

4. Ensuring resilience within REDD-plus

Anticipating externalities is important to REDD-plus financial sustainability. There is a need to explore strategies that can promote resilience.

4.1. Explore potential for national reserve fund

In the event that REDD-plus financial inputs prove inconsistent, there is risk for dependent national and local strategies. As such, there is a need to explore the development of national reserve or price stabilization fund that could retain and invest a portion of REDD-plus funds for investment. These funds would then be available to insulate against fluctuations in the price of carbon and for long-term reserve. This could be linked to the National REDD-plus Fund discussed in activity 3.1.

4.2. Promote conservative buffers

Instances of local non-compliance could result in national level implications if they affect national carbon accounting to which funding is tied. As such, there is a need for a conservative approach to emissions targets that are tied to financial compensation, whether market or donor-based. There is a need to explore what buffers are required to reduce these risks.

4.3. Catalyze REDD-plus co-benefits

Diverse social co-benefits and benefit-sharing structures may be pursued, including direct payments, delivery of services and support for low-emissions strategies. However resources should also be maximized to also promote sustainable, low-emissions livelihoods that are sensitive to local cultures, will perpetuate forest carbon objectives in the long term, and can adequately address local needs.

4.4. Complement REDD-plus efforts with other development efforts

Concurrent with REDD-plus development, the Philippines can also continue to pursue national microfinance and technical support opportunities, based on domestic and international investments. These

[89] See "Legal Context".
[90] For example, see URL: http://www.tyndall.ac.uk/publications/working_papers/twp94.pdf.

can be leveraged to further promote sustainable rural livelihoods that address REDD-plus objectives and local needs in the long-term, independent of indefinite REDD-plus funding.

5. **Pursuing equitable and reasonable benefit-sharing among stakeholders**
   In order to ensure delivery of services on the ground, reduce conflicts and ensure equitable REDD-plus implementation, there is a need to address benefit-sharing concerns[91]. This is key to sustainable financing, as it is integral to reducing emissions – the currency upon which REDD-plus funding relies

6. **Exploring fund management arrangements**
   A future international REDD-plus mechanism may target national-level payments, for both country-wide projects and disbursement to sub-national initiatives. At the national level, there is a need to integrate civil society into this fund management, likely through the proposed National Multistakeholder REDD-plus Council. However, REDD-plus in the Philippines should also explore diverse fund management arrangements, including direct links between carbon buyers and sellers. This may include direct payments to sub-national level initiatives. In the event of national-level payments, it should involve efficient fund disbursement to locally managed funds, including by the communities and local government responsible for Forest Management Units (FMUs). Such alternative arrangements in the Philippines will reduce delays, and are appropriate because robust sub-national structures already exist to manage financial resources and forest management projects (e.g., ancestral domains, Palawan Council for Sustainable Development (PCSD), watershed councils).

[91] There are discussed in greater depth in multiple other components, as it is a central to incentivizing reduced emissions and to equitable REDD-plus development.

XII. Conclusion

The PNRPS and associated consultations represent vital first-steps towards the development of REDD-plus with co-benefits in the Philippines. The strategies presented are accompanied by activities that will help catalyze improved forest management and operationalize REDD-plus. However, there is a clear need for ongoing and expanded consultations, and for targeted action planning to can ensure positive impacts on the ground. As a performance-based initiative, REDD-plus will require empirical evidence of impacts, and a strong system to measure, report and verify emissions reductions. The incentives introduce by REDD-plus promise to catalyze some of the necessary changes, but effective forest conservation will require more than financial incentives. On-the-ground operationalization of new and existing policies will depend on increased engagement with field-level managers, notably communities, capacity building, institutional strengthening and strong leadership.

REDD-plus development must be treated as a learning process, as REDD+ implementation will inevitably prove a complex process and will involve certain risks that will require careful planning and robust safeguards. However, at the same time, there is great need for pro-active development, as climate change mitigation is globally critical, and particularly important to island nations like the Philippines. The PNRPS attempts to strike that balance as REDD-plus is not the only solution to the current and emerging problems in the Philippines. It would still be dependent on how this country move forward sustainable management of forests that is rights-based and gender-responsive and at the same time contributing to the emission accounting under the UNFCCC.

Abbreviations

A&D	Alienable and Disposable Land
ADSDPP	Ancestral Domain Sustainable Development and Protection Plan
AFOLU	Agriculture, Forestry and Other Land Use
ANR	Assisted Natural Regeneration
BMU	Budesministerium für Umwerlt, Naturschutz and Reaktorsicherheit (Germany's Federal Ministry for Environment, Nature Conservation and Nuclear Safety)
CCBA	Climate, Community and Biodiversity Alliance
CLUP	Comprehensive Land Use Plan
CoP	Community of Practitioners
CoP	Conference of Parties (to the UNFCCC)
CBFM/CBFMA	Community-Based Forest Management / Area
CBFMPO	Community-Based Forest Management Peoples Organizations
CDMP	Comprehensive Development Management Plan
CFNR	College of Forestry and Natural Resources
CI	Conservation International
CRMF	Community Resource Management Framework
CRMP	Community Resource Management Plan
CSO	Civil Society Organization
DA-BSWM	Department of Agriculture - Bureau of Soils and Water Management
DAR	Department of Agrarian Reform
DENR	Department of Environment and Natural Resources
DANN	Designated National Authority
ECAN	Environmentally Critical Areas Network (Palawan)
ECC	Environmental Compliance Certificate
EDC	Energy Development Corporation
EIA	Environmental Impact Assessment
ESSC	Environmental Science for Social Change
IEC	Information, Education and Communication
IRR	Implementing Rules and Regulations
ERDB	Ecosystems Research and Development Bureau
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FFI	Fauna and Flora International
FLGMA	Forestlands Grazing Management Agreement
FLUP	Forest Land Use Plan
FMB	Forest Management Bureau
FMU	Forest management Unit
GAA	General Appropriations Act
GHG	Greenhouse Gas (emissions)
GIS	Global Information Systems
GOCCs	Government Owned and Controlled Corporations
GPS	Global Positioning System
ICRAF	World Agroforestry Centre
IFMA	Integrated Forest Management Agreement
IKSP	Indigenous Knowledge, Skills and Practices
ITPLA	Industrial Tree Plantation Lease Agreement
IP	Indigenous Peoples
IPCC	Intergovernmental Panel on Climate Change
IPRA	Indigenous Peoples Right Act
LC	Land Classification
LDP	Local Development Plans
LGU	Local Government Unit
LULUCF	Land Use, Land Use Change and Forestry
MO	Manila Observatory
MOA	Memorandum of Agreement
MRV	Measuring, Reporting and Verification

NAMRIA	National Mapping and Resource Information Authority
NARRDN	National Agriculture, Forestry and Natural Resources Research and Development Network
NEDA	National Economic Development Authority
NFRA	National Forest Resource Assessment
NFSCC	National Framework Strategy on Climate Change
NIPAS	National Integrated Protected Areas System
NCIP	National Commission of Indigenous Peoples
NGO	Non-governmental Organization
NPC	National Power Corporation
PNRPS	The Philippine National REDD-plus Strategy
NTFP-EP	Non-timber Forest Products Exchange Programme
PACBRMA	Protected Area Community Based Resource Management Agreements
PAGASA	Philippine Atmospheric, Geophysical and Astronomic Services Administration
PAMB	Protected Areas Management Board
PAWB	Protected Areas and Wildlife Bureau
PCSD	Palawan Council for Sustainable Development
PCARRD-DOST	Philippine Council for Agriculture, Forestry and Natural Resources Research and Development – Department of Science and Technology
PDC	Provincial Development Council
PDD	Project Development Document
PES	Payment for Ecosystem Services
PO	Peoples Organization
PSP	Permanent Sample Plots
R&D	Research and Development
RDC	Regional Development Council
REDD-plus	Reducing Emissions from Deforestation and forest Degradation - Plus
RPP	Readiness Preparedness Plans (World Bank Forest Carbon Partnership Facility)
SFF	Society of Filipino Foresters
SFM	Sustainable Forest Management
SIA	Social Impact Assessment
SIFMA	Socialized Industrial Forest Management Agreements
TDERM	Tropical Deforestation Emission Reduction Mechanism
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Programme on REDD
UPLB	University of the Philippines at Los Baños
VCS	Voluntary Carbon Standard

Glossary[92]

Additionality
The requirement that an activity or project should generate benefits, such as emissions reductions or carbon stock enhancements, that are additional to what would happen without the activity.

Afforestation
The conversion of non-forest land to permanent forested land for a period of at least 50 years (as defined by the Kyoto Protocol).

Agroforestry
A forestry approach that integrates trees and shrubs with crops and/or livestock to create more diverse, productive, profitable, healthy and sustainable land-use systems.

Alienable and Disposable Lands
Refers to those lands of the public domain which have been the subject of the present system of classification and declared as not needed for forest purposes"

Ancestral Domain
Area generally belonging to indigenous cultural communities/indigenous peoples (ICCs/IPs) comprising lands, inland waters, coastal areas occupied or possessed by ICCs/IPs, by themselves or through their ancestors, communally or individually since time immemorial, continuously to the present except when interrupted by war, force majeure, deceit, stealth, as a consequence of government projects or any other voluntary dealings entered into by government and private individuals/corporations, and which are necessary to ensure their economic, social and cultural welfare.

Ancestral Domain Sustainable Development and Protection Plan
Plans for the sustainable management and development of the land and natural resources as well as human resources within ancestral domains based on indigenous knowledge systems and practices and on the principle of self-determination.

Annex I and non-Annex I countries
Under the UN Framework Convention on Climate Change (UNFCCC), nations fall into three categories: developed countries (Annex I countries), developing countries (non-Annex I countries) and central European economies in transition (Annex B). In accordance with the principle of 'common but differentiated responsibilities', Annex I countries have greater commitments to enacting policy and reporting than non-Annex 1 countries.

Assisted natural regeneration
The technique involved mixed planting and maintenance of indigenous tree species to promote biodiversity, particularly in degraded areas. Prior to the introduction of valuable species in forest areas, native pioneer species are used to simulate natural regeneration.

Biomass
The total dry mass of living organic matter.

Canopy Cover
The share of the surface of an ecosystem that is under the tree canopy. Canopy cover is also referred to as 'crown cover' or 'tree cover'.

Carbon market
A market in which greenhouse gas emission reductions are traded, usually in the form of carbon credits. Carbon markets can be voluntary (where emissions reductions targets are not regulated) or compliance (where carbon credits are traded to meet regulated emissions reductions targets). The largest carbon market is currently the EU Emissions Trading System (ETS).

[92] Where national definitions are lacking (DENR, 2005), a number of the definitions taken from Angelsen et al., 2009.

Carbon sequestration
The removal of carbon from the atmosphere to long-term storage in sinks through physical or biological processes, such as photosynthesis.

Carbon sink
A pool or reservoir (e.g.,, a forest) that absorbs or takes up carbon released from other components of the carbon cycle, and that absorbs more than it releases.

Carbon stock
The quantity of carbon contained in one of five main carbon pools in forests: aboveground biomass, belowground biomass, dead wood, litter and soil organic matter.

Carbon stock enhancement
Refers to activities such as assisted natural regeneration, afforestation and reforestation to enhance the quantity of carbon contained in a degraded forestlands or denuded area.

Certificate of Ancestral Domains Claims/Titles

Closed forest
Formation where trees in various storey and undergrowth cover a high proportion (>40 percent) of the ground and do not have a continuous dense grass layer. They are either managed or unmanaged forests, in advance state of succession and may have been logged over one or more times, having kept their characteristics of forest stands, possibly with modified structure and composition.

Co-benefits
Benefits arising from REDD-plus in addition to climate mitigation benefits, such as enhancing biodiversity, enhancing adaptation to climate change, alleviating poverty, improving local livelihoods, improving forest governance and protecting rights.

Conference of the Parties
The governing body of the UN Framework Convention on Climate Change, which meets once a year.

Deforestation
The conversion of forest to another land-use, or the long- term reduction of the tree canopy cover below the minimum 10% threshold. The Philippines uses the FAO definition (FAO, 2001)

Degradation
Changes within the forest, whether natural or human-induced, that negatively affect the structure or function of the stand or site, and thereby lower the capacity of the resulting degraded forest to supply products and/or services.

The Intergovernmental Panel on Climate Change (IPCC) has not concluded on a specific definition, though in their working definition degradation refers to "direct, human-induced, long-term loss (persisting for X years or more) of at least Y% of forest carbon stocks [and forest values] since time T and not qualifying as deforestation".

Enrichment planting
The introduction of valuable species into forest areas, where economic species are lacking. This is usually done in combination with measures to ensure favorable conditions for natural regeneration.

Forest
The Philippines currently adopts that Food and Agriculture Organization of the United Nations 'forest' definition, which requires revision. Forest refers to land with an area of more than 0.5 hectare and tree crown cover (or equivalent stocking level) of more than 10 percent. The trees should be able to reach a minimum height of 5 meters at maturity in situ. It consists either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground or open forest formations with a continuous vegetation cover in which tree crown cover exceeds 10 percent. Young natural stands and all plantations established for forestry purposes, which have yet to reach a crown density of more than 10 percent or tree height of 5 meters are included under forest. These are normally forming part of the forest area, which are temporarily unstocked as a result of human intervention or natural causes but which are expected to revert to forest. It includes forest

nurseries and seed orchards that constitute an integral part of the forest; forest roads, cleared tracts, firebreaks and other small open areas; forest within protected areas; windbreaks and shelter belts of trees with an area of more than 0.5 hectare and width of more than 20 meter; plantations primarily used for forestry purposes, including rubber wood plantations. It also includes bamboo, palm and fern formations (except coconut and oil palm).

The UN Framework Convention on Climate Change allows for a more flexible forest definition: minimum canopy cover 10–30%, minimum tree height 2–5 m, minimum area 0.1 ha.

Forestlands
Lands of the public domain classified as needed for forest purposes. They include all forest reserves, forest reservations and all remaining unclassified lands of the public domain

Forest Management Unit
Local-level bodies (whether local government, communities, private land holders) legally responsible for the management of a forestland under a specific management regime.

Indigenous people
According to the Philippines' Indigenous Peoples Rights Act (IPRA) Republic Act 8371, Indigenous Cultural Communities/Indigenous Peoples refer to a group of people or homogenous societies identified by self-ascription and ascription by other, who have continuously lived as organized community on communally bounded and defined territory, and who have, under claims of ownership since time immemorial, occupied, possessed customs, tradition and other distinctive cultural traits, or who have, through resistance to political, social and cultural inroads of colonization, non-indigenous religions and culture, became historically differentiated from the majority of Filipinos. ICCs/IPs shall likewise include peoples who are regarded as indigenous on account of their descent from the populations which inhabited the country, at the time of conquest or colonization, or at the time of inroads of non-indigenous religions and cultures, or the establishment of present state boundaries, who retain some or all of their own social, economic, cultural and political institutions, but who may have been displaced from their traditional domains or who may have resettled outside their ancestral domains.

Kyoto Protocol
A 1997 agreement under the UN Framework Convention on Climate Change. Annex I countries that ratified the Protocol committed to reducing their emissions of carbon dioxide and five other greenhouse gases by an average of 5.2 % between 2008 and 2012, compared to their 1990 level. The Kyoto Protocol now covers 189 countries globally, but less than 64% in terms of global greenhouse gas emissions. As of November 2009, the United States is the only signatory nation that has not ratified the Protocol. The first commitment period of the Kyoto Protocol ends in 2012.

Leakage
In the context of climate change, the carbon leakage happens when interventions to reduce emissions in one area, lead to an increase in emissions in another area. Carbon leakage is also referred to as "emissions displacement". Within the UNFCCC, leakage refers to the "increase in GHG emissions by sources which occurs outside the boundary of an afforestation/reforestation (A/R) Clean Development Mechanism (CDM) project activity which is measurable and attributable to the A/R CDM project activity".

Mangrove forest
Forested wetland growing along tidal mudilats and along shallow water coastal areas extending inland along rivers, streams and their tributaries where the water is generally brackish and composed mainly of *Rhizopora, Brugukm, Ceriops, Avicenia, Aegicerus,* and Nipa species.

Mixed forest
Forest in which none of the species groups such as conifer, broadleaved, bamboo and palm accounts for more than 75 percent of the tree crown cover.

Mossy forest
Forest stand found principally on high elevations and very rough mountainous regions characterized by steep ridges. The trees are mostly dwarf with stems and branches usually covered by epiphytes (moss) and dominated by Podocarpaceae, Myrtaceae, and Fagaceae.

Natural forest
Forest composed of indigenous trees, not planted by man.

Nested approach
Refers to a hybrid approach of structuring REDD-plus that includes elements of both sub-national and national approaches. It allows for site-level project development and scaling up a national level over time, and requires consistent emission accounting between project-based, sub-national, and national levels.

Open Forest
Forest formations with discontinuous tree layer with coverage of at least 10 percent and less than 40 percent. They are either managed or unmanaged forests, in initial state of succession.

Old Growth Forest

Payments for environmental services (PES)
In a PES scheme, a buyer that values environmental services pays to the provider or the manager of the land use supplying the environmental service if and only if, the seller actually delivers the environmental service. In REDD-plus, PES refers to a results based system in which payments are made for emissions reductions or carbon stock enhancements relative to an agreed reference level.

Permanence
The duration and irreversibility of a reduction in greenhouse gas emissions.

Plantation forest
Forest stands established by planting or/and seeding in the process of afforestation or reforestation. It may be composed of broadleaved, coniferous, and/or mixed forests.

Production forest
Land that can be made available for timber and agro-forestry production, rangelands for grazing and other forest lands for special uses.

Protection forest
Area wholly or partly covered with vegetation managed primarily for its beneficial effects on water, climate, soil, aesthetic value and conservation of biodiversity.

Rainforestation
Refers to reforestation techniques that align with agroforestry to generate multiple environmental and social benefits.

Readiness
REDD-plus country actions, including capacity building, policy design, consultation and consensus building, and testing and evaluation of a REDD-plus national strategy, prior to a comprehensive REDD-plus implementation.

Reducing emissions from deforestation and forest degradation (REDD and REDD-plus)
REDD refers to mechanisms currently being negotiated under the UN Framework Convention on Climate Change process to reduce emissions from deforestation and forest degradation, conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

Reforestation
The direct human-induced conversion of deforested/non-forested land to forested land through planting, seeding and/or promotion of natural seed sources. It refers to land that was forested, but that has been converted to non-forested land'. In the first commitment period of the Kyoto Protocol, reforestation activities were recognized on lands that were not forested on 31 December 1989, but have had forest cover at some point during the past 50 years.

Remote sensing
A scientific discipline which, in the context of REDD-plus, can be used to measure deforestation and/or forest degradation by a recording device that is not in physical contact with the forest, such as a satellite.

Restoration

Sub-national activity/development
Activities implemented at the sub-national level as part of a national REDD-plus strategy. Governments, local authorities, communities, NGOs or private entities can implement sub-national activities. They may be embedded in a national or international crediting mechanism.

Sustainable Forest Management (SFM)
The term SFM has different meanings to different individuals and organizations. According to the UN General Assembly, SFM is 'a dynamic and evolving concept [that] aims to maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations'. In the REDD-plus debate, some organizations make a distinction between 'sustainable forest management' (SFM) and 'sustainable management of forests' (SMF): SFM is then referring to industrial logging, while SMF is a broader term. The PNRPS refers to SFM as an umbrella term to cover activities that enhance and maintain the products and services provided by forests, including carbons storage, and seek to provide multiple social and environmental benefits.

Strict protection zones
These consist of natural areas with high biodiversity value, closed to all human activities except for scientific studies and or ceremonial or non-exclusive use by IPs. It may include habitats of threatened species or degraded areas that have been designated for restoration and subsequent protection, even if these areas are still in various stages of regeneration.

Tier 1, 2, 3 inventory
The Intergovernmental Panel on Climate Change (IPCC) Good Practice Guidance tiers are levels of methodological complexity. Tier 1 is the most basic and uses default values, assumptions, and methods to estimate greenhouse gas emissions. Tier 1 data are highly generalized and may be very different from the actual situation in any given location on the ground.
Tier 2 uses national values; Tier 2 data are based on national-level inventories and studies, and are typical values for forest types present in that country. Tier 2 data are likely to be a little closer to the actual situation, but could still be very inaccurate for specific locations. It is likely that safety margins will be needed and deductions will be made to ensure estimates are conservative if Tier 1 and 2 data are used.
Tier 3 is most demanding in terms of complexity and data requirements, and uses site-specific values for carbon stocks. Tier 1 data are default data on average carbon stocks.

Verification
Independent third-party assessment of the expected or actual emissions reductions of a particular mitigation activity.

Voluntary carbon market
The voluntary carbon markets function alongside compliance markets. Buyers are companies, governments, NGOs and individuals who are voluntarily seeking to offset their emissions by purchasing verified emissions reductions.

References and Resources

ADB (Asian Development Bank). 1998. Asia Least-Cost Greenhouse Gas Abatement Strategy: Philippines. Asian Development Bank, Manila, Philippines. 228pp.

Angelsen, A. (Ed.). 2008. Moving Ahead with REDD: Issues, Options, Implications. Center for International Forestry Research (CIFOR), Bogor. URL: www.cifor.cgiar.org/publications/pdf_files/.../BAngelsen0801.pdf.

Angelsen, A. 2009. The REDD+ Idea Meets Reality. In: Angelsen, A. (Ed.) Realising REDD-plus: National Strategy and Policy Options. Center for International Forestry Research (CIFOR), Bogor, Indonesia

Angelsen, A., et al. (Eds.). 2009. Realising REDD-plus: National Strategy and Policy Options. Center for International Forestry Research (CIFOR), Bogor, Indonesia.

Angelsen, A., Kaimowitz, D. 1999. Rethinking the causes of deforestation: lessons from economic models. *The World Bank Research Observer* 14(1):73-98.

Avoided Deforestation Partners (ADP). 2009. REDD Methodology Framework Ver. 1.0. URL: http://www.netinform.de/KE/files/pdf/1_REDD-MF%20REDD%20methodology%20framework%20v1.1.pdf.

Biocarbon Fund (BF). 2008. Methodology for Estimating Reductions of GHG Emissions from Mosaic Deforestation, Washington, DC. URL: www.communitycarbonforestry.org/BioCarbon%20Fund-REDD_Mosaic_Methodology.pdf.

Böhm, S., Dabhi, S, (Eds). 2009. Upsetting the Offset: The Political Economy of Carbon Markets, University of Essex Working Paper. URL: www.essex.ac.uk/ebs/research/working_papers/WP_08-03.pdf

Bond et al. 2009. Incentives to Sustain forest Ecosystem Services: A Review and Lessons for REDD. Natural Resource Issue No. 16. International Institute for Environment and Development, UK, with Center for International Forestry Research, Bogor, Indonesia, and World Resources Institute, Washington, DC, USA. URL: www.iied.org/pubs/pdfs/13555IIED.pdf.

Boucher, D. 2008. Filling the REDD Basket: Complementary Financing Approaches, Tropical Forest and Climate, Union of Concerned Scientists, Washington D.C. URL: www.ncseonline.org/Conference/Biodiversity/.../REDD-funding.pdf

Calata, S.S., Manuel, J.D. 2009. Summary of AD/AL Delineation and Titling as of May 31, 2009. National Commission on Indigenous Peoples, Manila, Philippines.

CCBA (Climate, Community and Biodiversity Alliance). 2009. REDD Feasibility Tool. URL: http://www.climate-standards.org/projects/redd.html.

CIF (Climate Investment Funds). 2010. Report of the Forest Investment Program (FIP) expert group to the FIP Subcommittee: Recommendations for the selection of pilots under the FIP. URL: http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/FIP%202%20Annotated%20Provisional%20Agenda%20March%202010%20jdk.pdf.

CIFOR (Center for International Forestry Research) n.d. Simply REDD: CIFOR's Guide to Forests, Climate Change and REDD. URL: http://www.cifor.cgiar.org/publications/pdf_files/media/MediaGuide_REDD.pdf.

Climate, Community and Biodiversity Association (CCBA). 2005. Climate, Community and Biodiversity Project Design Standards (First Edition), Washington DC. URL: www.climate-standards.org.

Dang, H.H., Michaelowa, A., Tuan, D.D. 2003. Synergy of adaptation and mitigation strategies in the context of sustainable development: the case of Vietnam. *Climate Policy* 3: S81-S96.

DENR (Department of Environment and Natural Resources). 1990. Philippine Master Plan for Forestry

Development. URL: http://forestry.denr.gov.ph/rfmp.htm#back.

DENR (Department of Environment and Natural Resources). 2005. Adopting forestry definitions concerning forest cover/land use. DENR Memorandum Circular 2005-005.

DENR (Department of Environment and Natural Resources). 2007. Community Based Forest Management Strategic Plan.

DENR (Department of Environment and Natural Resources) and Japan International Cooperation Agency. 2009. Training Guide for Community Based Forest Management Practitioners.

Dolan, R.E. 1991. Philippines: A Country Study. Federal Research Division, US Library of Congress, 1991.

Eggleston H.S., et al. (Eds.). 2006. Guidelines for National Greenhouse Gas Inventories. National Greenhouse Gas Inventories Programme for Intergovernmental Panel on Climate Change. Japan.

FAO (Food and Agriculture Organization of the United Nations). 2009. Philippines forestry outlook, study. Asia- Pacific Forestry Sector Outlook Study II Working Paper Series #APFSOSII/WP/2009/10. Bangkok.

FCPF (Forest Carbon Partnership Facility). 2009. FCPF Brochure. URL: http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/English_54462_WorldBank_FCPF_Brochure.pdf.

FMB (Forest Management Bureau). 1988, 2003, Philippine Forestry Statistics. URL: http://forestry.denr.gov.ph/stat2007.htm.

FMB (Forest Management Bureau), Forestry Development Center, Senior Foresters Group, Society of Filipino Foresters Inc. 2010. National framework strategy for climate change: forestry and watershed sectors. Draft prepared for the Climate Change Commissions of the Philippines.

FPP (Forest People Program). 2008. The Forest Carbon Facility: Facilitating the weakening of indigenous people and rights to lands and resources. URL: http://www.forestpeoples.org/documents/ifi_igo/bases/wb_safeguard.shtml.

Francisco, R. 1997. Greenhouse gas sources and sinks from Philipine agriculture, land use and forestry. Paper presented at the Synthesis Workshop on Greenhouse Gasses, Aerosols, and Land Use and Cover Change in Southeast Asia. Taipeh, Taiwan. 15-19 November 1997.

Ganley, E. Meeting on deforesataton boosts morale, budget. March 11, 2010. Associated Press. URL: http://www.google.com/hostednews/ap/article/ALeqM5jNcYn41DoIUhLYsvgKUqhKotngRQD9ECKU180

Ghazoul, J., Butler, R.A., Mateo-Vega, J., Koh, L.P. 2010. REDD: a reckoning of environment and development implications. Trends in Ecology and Envolution. in press.

Gilebertson, T., Reyes, O. 2009. Carbon Trading: How it Works and Why it Fails, Dag Hammarskjold Foundation, Occasional Paper Series 7, Uppsala, Sweden. URL: http://tni.org/carbon-trade-fails.

Gill, T. 1959. Forestry proposals for the Philippines: a report to the International Cooperative Administration and the National Economic Council, Manila, p. 33.

GOFC-GOLD (Global Observation of Forest and Land Cover Dynamics). 2009. Reducing Greenhouse Gas Emissions from Deforestation and Degradation in Developing Countries: A Sourcebook of Methods and Procedures for Monitoring, Measuring and Reporting. Canada, Alberta, Canada. URL: www.gofc-gold.uni-jena.de/.../sourcebook/Sourcebook_Version_July_2009_cop14-2.pdf.

Gould, D.G. 2002. The Evolution of Land Tenure in the Philippines. URL:

www.spatial.maine.edu/~onsrud/Landtenure/.../Philippines.pdf.

Gutierrez, R. 2009. An Overview of Philippine Laws relating to REDD-plus. Prepared for the Non-Timber Forest Products-Exchange Programme. Presented that the National REDD Plus Strategy (PNRPS) workshop, Nov 27-29, Bayview Hotel, Manila, Philippines.

GTZ (German Technical Cooperation). 2010. The GTZ Climate Check. Division of Environment and Climate Change. URL: http://www.gtz.de/en/themen/umwelt-infrastruktur/24205.htm.

Hare, B., Macey, K. 2007. Tropical Deforestation Emission Reduction Mechanism: A Discussion Paper. Greenpeace International. URL: www.greenpeace.org.uk/files/pdfs/.../tderm-funding-mechanism.pdf.

IUCN (International Union for Conservation of Nature). 2009. Reducing Emission from Deforestation and Forest Degradation (REDD) in Developing Countries, United Nations Framework Convention on Climate Change, 1st to 12th June 2009, Bonn, Germany.

Karousakis, K. 2009. Promoting Biodiversity Co-Benefits in REDD. Organization for Economic Co-operation and Development, Environment Working Papers 11. URL: www.oecd.org/dataoecd/33/42/44164572.pdf.

Karsenty, A. 2009. What the (Carbon) Market Cannot Do. Perspective on Forest sand Climate Change 1. La Recherche Agronomique Pour Le Development, Paris, France. URL: www.cirad.fr/en/content/download/.../4/.../Perspective1_Karsenty_eng.pdf.

Keith, H.G. 1959. Report to the Government of the Philippines on Forest Policy and Legislation. Food and Agriculture Organization of the United States, Rome.

Lang, C. 2010. REDD: Breathing New Life into the Scam of Carbon Trading, World Rainforest Movement Bulletin 151. URL: http://www.wrm.org.uy/bulletin/151/viewpoint.html

Lasco, R.D. Evangelista, R.S., F.B. Pulhin, Lopez. 2009. Community-Based Forest Management (CBFM) and Climate Change Mitigation in the Philippines. Paper presented at the ASEAN Social Forestry Network Annual Meeting, June 2009, Subic, Philippines.

Lasco L.D., Pulhin F.B., Bugayong L., Mendoza M.D. 2010. An Assessment of Option for REDD in the Philippines. Working Paper, ICRAF-World Agroforestry Centre, Laguna, Philippines.

Lasco, R.D., Pulhin, F.B. 2000. Forest land use change in the Philippines and climate change mitigation. *Mitigation and Adaptation Strategies for Global Change* 5: 81–97.

Lasco, R.D., Pulhin, F.B., 2001. Climate change mitigation activities in the Philippine forestry sector: application of the Comap Model. *Mitigation and Adaptation Strategies for Global Change* 6: 313–334.

Lasco, R.D., Pulhin, F.B. 2003. Philippine forest ecosystems and climate change: carbon stocks, rate of sequestration and the Kyoto Protocol. *Annals of Tropical Research* 25(2): 37-51.

Lasco RD and Pulhin FB. 2009. Carbon Budgets of Forest Ecosystems in the Philippines. Journal of Environmental Science and Management. 12(1):P. 1-13.

Lasco, R.D., et al. 2006. Carbon stocks assessment of a selectively logged dipterocarp forest and wood processing mill in the Philippines. *Journal of Tropical Forest Science* 18: 212-221.

Lansigan, N.P. 1941. Relationship between the mining industry and the Benguet Pine Forest in the Mountain Province. *Philippine Journal of Forestry* 4(1): 49

Liché, B. 1997. Critical Connections on Population and Biodiversity. The Forum For Family Planning and Development Inc.

Lopes, P. 2009. Review of Forestry Carbon Standards – Development of a Tool for Organizations to Identify the Most Appropriate Forestry Carbon Credit. Msc. Thesis. Imperial College London.

(MO) Manila Observatory). 2005. Mapping Philippine Vulnerability to Environmental Disasters. URL: http://www.observatory.ph/vm/summary.html

Murdiyarso, D. et al. 2008. How do we measure and monitor forest degradation? In: Angelsen, A. (Ed.) Moving Ahead with REDD: Issues, Options, Implications. Center for International Forestry Research (CIFOR), Bogor. URL: www.cifor.cgiar.org/publications/pdf_files/.../BAngelsen0801.pdf.

Natividad, M.Q. 2009. Forest Cover Data in the Philippines. Presented at the Workshop on the National Strategy Formulation for REDD+ in the Philippines, 26-27 November 2009, Manila.

Ong, P.S., Afuang, L.E., Rosell-Ambal, R.G. (Eds.). 2002. Philippine Biodiversity Conservation Priorities: A Second Iteration of the National Biodiversity Strategy and Action Plan. Department of Environment and Natural Resources-Protected Areas and Wildlife Bureau, Conservation International Philippines, Biodiversity Conservation Program-University of the Philippines Center for Integrative and Development Studies, and Foundation for the Philippine, Environment, Quezon City, Philippines.

Pachauri, R.K., Reisinger, A. (Eds.). 2007. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Intergovernmental Panel on Climate Change, Geneva, Switzerland. URL: http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html.

Pedroni, L., et al. 2009. Methodology for Estimating Reductions of GHG Emissions from Mosaic Deforestation. BioCarbon Fund. URL: http://www.v-c-s.org/methodology_mferogefmr.html.

Phelps, J., Guerrero, M.C., Dalabajan, D., Young, B., Webb, E.L. 2010a. What makes a 'REDD' country?. *Global Environmental Change* 20:322-332.

Phelps, J., Webb, E.L., Agrawal, A., 2010b. Does REDD+ threaten to recentralize forest governance ? *Science* 328:312-313.

Philippine Constitution. 1987. URL: http://www.lawphil.net/consti/cons1987.html.

PRP (Prince's Rainforest Project). 2010. Drivers of Deforestation. URL: www.rainforestsos.org/pages/drivers-of-deforestation.

Pulhin, F.B., Lasco, R. 2010. Inventory of Climate Change Researches in the Philippines. Presentation at the Forest Management Bureau, FDC, Society of Filipino Foresters Inc., Workshop on Drafting the National Climate Change Framework Strategy: Forestry and Watershed Pillars. February 27, 2010, Diliman, Quezon City, Philippines.

Quesada F. B. 2004. Fact About Philippine Independence. Philippine News Online.

Ravindranath, N.H. 2007. Mitigation and adaptation in the forestry sector. *Mitigation and Adaptation Strategies for Global Change* 12:843-853.

RECOFTC (Regional Community Forestry Training Center) 2009. Decoding REDD. www.recoftc.org/site/fileadmin/docs/themes/climate_change/DECODING_REDD_11.pdf

Skutsch, M. M., et al. 2008. Community Monitoring in REDD-plus. In: Angelsen, A. (Ed.). Moving Ahead with REDD: Issues, Options, Implications. Center for International Forestry Research (CIFOR), Bogor. URL: www.cifor.cgiar.org/publications/pdf_files/.../BAngelsen0801.pdf.

Streck, C. 2009. Financing REDD: a review of selected policy proposals. WWF Macroeconomic for Sustainable Development Program Office, Washington D.C. URL: http://assets.panda.org/downloads/redd.pdf.

TGC (Terra Global Capital). 2009. Methodology Documentation - Baseline and Monitoring. URL: http://www.netinform.de.

Thies, C., Czebiniak, R. 2008. Forest for climate: developing a hybrid approach for REDD, Greenpeace International, Amsterdam. URL: http://www.greenpeace.org/international/press/reports/forestsforclimate2008.

Tuvalu. 2008. Submission to the UNFCCC regarding views on the AWG-LCA process. URL: http://unfccc.int/files/kyoto_protocol/application/pdf/tuvalu200509.pdf.

UNDP (United Nations Development Programme) . 1999. The Philippines' Initial National Communication on Climate Change. Submitted to the United Nations Framework Convention on Climate Change. URL: http://unfccc.int/essential_background/library/items/3599.php?rec=j&priref=2739#beg.

UNDP (United Nations Development Programme). 2009. Guidelines for Climate Change Proofing in UNDP Projects and Programmes in Armenia.

UNFCCC (United Nations Framework Convention on Climate Change). 2009a. Copenhagen Accord Draft Decision. Conference of the Parties Fifteenth session, December 7–18, Copenhagen, Denmark. URL: http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf.

UNFCCC (United Nations Framework Convention on Climate Change.) 2009b. Policy Approaches and Positive Incentives on Issues Relating to Reducing Emissions from Deforestation and Forest Degradation in Developing Countries; and the Role of Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks in Developing Countries. Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention, Eigth Session, At the Conference of the Parties Fifteenth Session, December 7–18, Copenhagen, Denmark. URL:http://unfccc.int/../fact_sheet_reducing_emissions_from_deforestation.pdf.

UN-REDD (United Nations Cooperative Programme on REDD). 2010. UN-REDD Programme Fact Sheet. URL: http://www.fao.org/climatechange/51379/en/.

(VCS) Voluntary Carbon Standard). 2008. Tool for AFOLU Methodological Issues. URL: http://www.v- c-s.org/methodology_mferogefmr.html.

Venter, O., et al. 2009. Harnessing carbon payments to protect biodiversity. *Science* 326:1368.

Viana, V. M. 2009. Financing REDD: meshing markets with government funds, IIED Briefing, International Institute for Environment and Development, London. URL: www.iied.org/pubs/pdfs/17053IIED.pdf.

Women Initiatives for Society and Environment, Inc (WISE). Various training modules.

Yusuf, A.A., Francisco, H.A. 2009. Climate change vulnerability mapping for Southeast Asia. Economy and Environment Program for Southeast Asia, Singapore. URL: www.idrc.ca/uploads/user-S/12324196651Mapping_Report.pdf.

Preparing the PNRPS
Appendix A

In April 2009, the Non-Timber Forest Products-Exchange Programme (NTFP-EP), with support from the NatureandPoverty.net, a learning platform supported by IUCN-Netherlands, launched a set of national and regional consultations on REDD. The purpose of the consultations was to increase awareness and understanding on REDD and to promote for safeguards to ensure social justice, community development, biodiversity conservation and good governance.

A total of 234 persons attended all the consultations, including 29 from national government agencies, 27 from local government agencies, 7 from academic and research institutions, 3 funding institutions, 26 from national NGOs, 45 from local non-governmental organizations, and 32 community members from 23 provinces. Lists of participants from each of the national and regional REDD consultations are included below.

CoDe REDD, a network of civil society organizations promoting a pro-community and pro-conservation REDD+, was formed during the early months of the consultations process and then led the ensuing consultation. NTFP-EP is the facilitator of the CoDe REDD network. The consultations also generated a civil society statement on REDD+ in the Philippines, which highlighted the need for attention to co-benefits such as biodiversity conservation, poverty reduction, recognition of indigenous peoples rights, priority for community tenured instruments, necessity for good forest governance and resolution of large-scale drivers of deforestation.

During one of the consultations, it was recommended that a joint Civil Society-Department of Environment and Natural Resources (DENR) working group on REDD be established. It was also proposed that the working group would co-organize future workshops and activities to develop a National REDD-Plus Strategy (PNRPS). The national strategy was deemed important to directing responsible REDD+ development in the country, and as a basis for seeking financial assistance to establish national REDD+ mechanisms and implement REDD+ actions.

The PNRPS process began in late 2009 with the receipt of additional financial support from the Swiss Agency for Development and Cooperation. The process of writing the initial PNRPS was a three step process.

1) An initial workshop in November 2009 brought together varied stakeholders from different government agencies, civil society, research organizations, and Peoples Organizations (PA) to draft the initial framework. This included reaching a consensus on the principles and major components for the PNRPS.

2) Participants broke into working groups to further develop the components. Each working group included members from the government sector, civil society sector and scientific community in order to maintain a balance and breadth of experiences and disciplines, and to enhance representativeness. Working groups met from December 2009 to March 2010. Resulting component sections were shared electronically through a dedicated "e-group" to other stakeholders for comment.

3) The final step involved a write-shop process where both original participants and other stakeholders gathered to review the components. Each component went through two rounds of peer reviews. Working groups distributed and presented their components for comment from the other participants. After each round, each component group was asked to revise the document based on the recommendations made in the plenary. The participants also made recommendations on the outline and flow of the PNRPS. After the two rounds, the component groups were tasked to further review and submit their sections to an integrator responsible for consolidating and streamlining the components into a coherent document strategy. Over 3 weeks, the participants, then referred to as the Philippine REDD-plus Strategy Team, worked via email, through the "e-group", Skype and YahooMessenger to refine the text.

Over 60 individuals and over 30 organizations participated in the drafting of the PNRPS.

The document was presented to the Department of Environment and Natural Resources (DENR) and the Climate Change Commission (CCC) and continues under revision. It will also be subject to sectoral consultations as well as geographical regional consultations before it is finalized. Action planning and budgeting will ensue after the consultation process.

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Appendix B
Enabling Legal Context for PES

From: Philippines PES Working Group

1.1 Assessing Legal, Policy Context for PES in the Philippines

The policy environment enabling adoption of PES or PES-like schemes is embedded in sector policies linked to the use and management of natural resources. These policies are found in power generation, protected areas and irrigation.

The devolution of powers under the Local Government Code presents opportunities to generate local financing from extraction or use of natural resources, e.g. mining, domestic water use, hydropower, forestry. The law provides for a 1% share of LGUs in the national wealth as stipulated in the Local government Code of 1991 (RA 7160). A summary of these policies as they correspond to specific watershed service is presented in Table 1-1.

Table 1. Enabling Policy for PES, valuation methods used and responsible agency

Ecosystem Service	Policy	Valuation method	Implementing Agency
Hydropower	ENR 94-1 RA 7638 (DOE Act), RA 9136 (EPIRA)	1/2 of 1 centavo/kwh of gross sales	IPP, DOE, LGU, NAPOCOR
		Voluntary	IPP
Hydropower	1% share of national wealth, Local Government Code	1% of gross sales	LGU
Irrigation	Voluntary	% of summer yield	Irrigators Association, CBFMO
Eco-Tourism	LGU ordinance	WTP, Travel Cost	LGU, operators
Biodiversity, bio-prospecting	NIPAS Act (RA 7586)	WTP or Cost-Based	PAMB, DENR
	Wildlife Act (RA 9147)	Fee-based	PAMB, DENR
Domestic Water	PD 1067 Water Code of the Philippines	Cost-based	National Water Resources Board, Water District
	1% share of national wealth, Local Government Code	1% of gross sales	Water District, LGU
Carbon Payments	Kyoto Protocol	$/ton-CO2e sequestered	DNA, DENR
	REDD	carbon stocks in trees	
Forest services	Executive Order 318 (2004)		

IPP, Independent Power Producer
DOE, Dept of Energy
LGU, Local Government Unit
RA, Republic Act
EPIRA, Electricity Power Industry Reform Act
NAPOCOR, National Power Corporation
CBFMO, Community-Based Forestry Management Organization
NIPAS, National Integrated Protected Areas System
DNA, Designated National Authority
REDD, Reduced Emission through Deforestation and Degradation

1.2 Valuation Method per sector

This section summarizes the valuation methods used per sector that can sustainably finance watershed protection.

Power Sector

The power sector is one of the potentially significant contributors to PES schemes. For all power projects, the Dept of Energy established the Reforestation, Water shed Management, Health and/or Environment Enhancement Fund (RWMHEEF) through Republic Act 7638 of 1992. The Implementing Rules and Regulations, as contained in ER-94-1, Sec 6(f), states that:

> *"One-half of one centavo (PhP 0.005) per kilowatt hour of the total electricity sales of the energy-generating facility shall be set aside by the power producer to be used for reforestation, watershed management, health and/or environment enhancement. The power producer and the energy resource developer, to the extent of their respective contribution to the fund, shall each submit work programs for reforestation, watershed management, health and/or environment enhancement which would have to be approved by the DOE in consultation and close coordination with the DENR, the DOH, the relevant water districts, local government units, regional development councils, non-government organizations, and other affected parties…"*

This was amended by Department Circular No 2000-03-003, whereby the electrification fund will get 50% of one centavo and the remaining 50% will be shared equally between the Development and Liveihood Find and the RWMHEEF). Republic Act 9136 also known as the Electric Power Industry Reform Act of 2001 (EPIRA) adopted these amendments to ER 94-1.

The funds accruing from RWMHEEF are administered by the Department of Energy. For NAPOCOR assets, the fund is administered by NAPOCOR. The local government unit submits proposals to DOE/NAPOCOR for evaluation. The proposals may include construction of health centers, communal toilets, water supply system, erosion control, forest management, reforestation, rehabilitation, soil fertility conservation and enhancement, waste disposal and other related projects.

While these amounts may be small, the hydropower company may augment their investment in the watershed corresponding to the values they attach for watershed services. In addition to the RWMHEEF schemes, the power producer may provide for voluntary payments taken from their producer surplus.

LGU Share from National Wealth

The local government code provides a 1% share from gross sales in favor of the local government unit. Proceeds can come from gross sales of minerals, oil, natural gas, water, and other products derived from extraction or use of natural resources.

Irrigator Associations.

The National Irrigation Administration (NIA) is mandated to build irrigation infrastructures (weirs, canals, pumps, etc) to increase farm productivity in rice and corn lands. NIA also organizes farmers into irrigator groups in order to access loans for irrigation infrastructure. Irrigation fees are set to cover the capital outlay and operating costs for irrigation development.. Cognizant of the links between forests and water resources, organized irrigation groups have voluntarily initiated watershed conservation activities.

Ecotourism payments.

Payments from visiting tourists can be in the form of entrance fees authorized through provincial or municipal legislation. Examples of LGU-legislated financing can be found in Tubbataha Reefs, Mabini-Tingloy (Anilao) Batangas, Puerto Galera, Olango Island and Hilituran in Cebu and St Pauls Subterranean River in Puerto Princesa City.

Future operators in watersheds can run packages for boating, kayaking, rapelling and white-water rafting activities. These operators can pay a fee similar to those charged by competing sites such as Chico River and Pinacanauan Rivers respectively in Cagayan Province.

Biodiversity

The NIPAS Law of 1992 is an act providing for the establishment and management of National Integrated Protected Areas system, defining its scope and coverage, and for other purposes. The law allows the park to collect entrance fees, donations, penalties and fines arising form park administration. The park collections are deposited in the national treasury where 75% are allotted to the park for direct use and 25% accrues to the IPAF sub-fund to subsidize other parks.

Wildlife Protection

The Wildlife Act of 2001 is an act providing for the conservation and protection of wildlife resources and their habitats, appropriating funds therefore and for other purposes. The law upgrades the penalties and fees associated with wildlife violations. It also sets the procedures, protocol and fees for bio-prospecting by local and foreign institutions for commercial and non-commercial and academic purposes.

Domestic Water

The LGU may collect 1% from the gross sales of the water district as its share of national wealth. For Abuan, these collections can earn the LGU up to USD 474,500 per year from domestic water use. These collections however do not guarantee earmarking for watershed activities.

Under the Philippine Water code, the NWRB through the Local Water District is responsible for setting water tariffs to be charged to consumers. Current water policies however do not reflect the true cost of water provision which includes the cost of maintaining watersheds. Apart from the 1% levy by LGUs, the water district may however voluntary set aside funds for watershed protection.

Forest Services

Executive Order 318 (2004) on Promoting *Sustainable Forest Management* "provides for proper valuation and pricing of forestry resources and collection of fees for use of environmental services of forests and watersheds." It also provides for a plough-back mechanism that ensures service providers are properly compensated.

Appendix C
Strengths, Weaknesses, Opportunities and Threats (SWOT) in the Forestry Sector

The SWOT analysis was prepared by a group of PNRPS authors and was used throughout the PNRPS writing process to ensure alignment and lesson learned from previous forestry sector experience.

STRENGTHS

1. The Philippines National Forest Resources Assessment (FRA)
    a. The FRA of 2002-2003 (results published in 2005) provides an initial step in establishing national level of (forest) carbon stocks, and basis for setting up a baseline and monitoring system for REDD+ in the Philippines.
    b. The acquisition and analysis of more recent satellite imageries (ALOS-PALSAR) by NAMRIA would be valuable to establish a documented pattern of forest and land use change at the national and sub-national level.
    c. The permanent sample tracts and plots established in the 2002-2003 FRA could be augmented by establishing new and additional tracts/plots to densify the national array of monitoring plots to a level statistically sufficient to monitor forest and land use changes at sub-national level.
    d. Improving on the methods and forest/land use classifications in (a) through additional efforts in (b) would entail much less costs than if a classification system and measurement methods would have to be developed from the ground up.
2. Several government agencies and some CSOs have existing capacity (technical capability, manpower, software and hardware, organization) to upscale REDD-plus monitoring, and achieve cost-effective synergies if coordinated within a REDD+ and LULUCF/AFOLU framework. These agencies, among others, are DENR (Field Offices, FMB, PAWB), NAMRIA, DA-BSWM, PAGASA; CSO organizations such as ESSC.

3. Legislations already exist to support REDD-plus activities: NIPAS, IPRA, EO 881, NSFCC, Clean Air Act, Climate Change Act, Revised Forestry Code (in the absence of the pending SFMA).
4. Site- and agroforestry cropping pattern-specific carbon studies exist, and several are ongoing (e.g.,, ICRAF studies), which can be used as initial basis for setting and deciding on baselines.
5. There is strong advocacy and research going on Payment-for-Environmental-Services (PES) in the country. These efforts would be important in setting up REDD+ activities and methodologies in the country. (The core idea underlying REDD+ is to compensate forest owners and users to reduce emissions, increase removals, and conserve forest carbon stocks (Angelsen et. al., 2009).

WEAKNESSES

1. The current level of awareness at all levels of government, local communities, private sector (agriculture- and forest-based), and CSO is low about the interaction between forests and climate change, the concept of REDD+, and the cross-sectoral nature of land use dynamics.
2. Absent (or very weak) capacity to mainstream carbon management in forest and land management policies by government agencies concerned (DENR, DA, LGUs); legislative and policy framework non-existent (or very peripheral) to mainstream REDD+ in land use, agriculture, forest governance.
3. Disagreements between government agencies and CSOs on forest types and definitions, differences in forest categories and measurements in pre-2000 forest resource datasets, precluding agreements on what constitute 'forests' for REDD+ purposes.
4. Inadequate information and analysis on drivers of deforestation and forest degradation, and inadequate determination of which drivers are principally accountable for deforestation and degradation in different parts of the country (e.g.,, forest change in certain areas may be very sensitive to population and economic growth rates in those areas, as well as to changes in forest and agriculture commodity prices which affect cropland demand). REDD+ activities at sub-national (or project) level will be determined by which drivers are in effect at those specific levels.

OPPORTUNITIES

1. If payments for emission reductions are to be expected, credible baseline determination and measurement need to be agreed upon (nationally and vis-à-vis expected [international] emission-reduction market(s)). At present level of capacity and data-holdings of several government agencies and some CSOs, it is possible to evaluate the following approaches: (i) historical approach, which establishes the average annual emissions (from forest and land use change) in the past 5-10 years and, assuming "business-as-usual" (BUA), these rates would continue at those levels in the future; (ii) modeling future emissions under BUA based on such factors as population and economic growth, development plans and projections of land use requirements for different crops based on forecasted demand; iii) time discount approach, which relates the deforestation rate to correlated parameters based on different regression techniques. The choice of the baseline approach depends on the historic trend of deforestation (increasing, decreasing, constant) and the conclusiveness of the drivers and agents' analysis.
2. Reducing emissions from unsustainable timber harvesting, illegal logging, enhanced protection of protected forest areas, and land fire management may be a lot more cost-effective as start-up REDD+ activities.
3. There is already significant participation of community-based forest management organizations under the CBFMA and PACBRMA, and indigenous peoples in their ancestral domains, and strengthening the capacities and authorities of these sectors over forests (about 5.2 million has.) are highly cost-effective (rather than mobilizing and capacitating new players) and possible in the near-term, for REDD+ start-up. Demonstration activities can be set up in a very short period in these PO and IP controlled areas (but will need fast adjustments in CBFM, PA and AD implementation and operations guidelines of government agencies concerned).
4. The forest management activities of IFMA holders, which presently have management responsibilities over about 800,000 has. Administrative guidelines on forest management over these areas can be reconfigured in the near-term to provide incentives for REDD+ participation, at the same time tightening accountabilities for forest carbon management and conservation. Measures include forest and timber certification, low/reduced impact logging
5. Protected areas already covered by legislation can be mainstreamed in the near-term to engage in REDD+ activities.

THREATS

1. The biggest threat to successful REDD+ engagement are (i) continuing conversion of forests to commercial agriculture, and (ii) continuing encroachment by small farmers and agribuisness corporations into forested lands.

2. The opportunity cost of preventing these conversions are appear to be very high compared to the value of emissions reductions. However, studies need to be undertaken to determine the real opportunity costs, especially to small- and landless farmers, since there are indications that most of the rents from such conversion are captured by traders or by large agribusiness corporations.
3. Putting in place credible MRV could be very costly. Experience from the 2002-2003 FRA work demonstrate the difficulties (and costs) in establishing a credible forest cover baseline and the need for strictly coordinating the collection of spatial and field data.
4. Permanent forest management units (FMUs) are not currently defined, and there is inadequate assessment of growth and yield for determining the sustainable allowable cuts. SFM methods are currently not in place on the ground, and forest management operations are not adequately monitored and regulations not effectively enforced.
5. Uncontrolled forest and grassland fires are still prevalent, exacerbated by ENSO.
6. The conflicts between designations of permanent forest production areas, conservation forests, protected areas, and mining areas are unresolved, and conflict resolution methods are inadequate and most often emotion- rather than science-driven.
7. The ownership over forests and forestlands (between State v. community forest POs, IPs and forestlands-based corporate entities; between national government and LGUs) are not clear; this issue will be crucial in REDD+ decisions, emissions crediting, and compensations and payments for REDD+.

Appendix D
Summary of Research on Forests and Climate Change in the Philippines

From: Pulhin, F.B. 2010. Inventory of Climate Change Researches in the Philippines. Presentation at the Forest Management Bureau, FDC, SFFI Workshop on Drafting the National Climate Change Framework Strategy: Forestry and Watershed Pillars. February 27, 2010, FMB-DENR, Diliman, Quezon City.

YEAR	RESEARCHER(S)	BRIEF DESCRIPTION
1998	Lasco, R.D., J. Lales, M. T. Arnuevo and I. Q Guillermo	Determined carbon stocks of the different land uses of the PNOC Geothermal Reservation in Leyte
1998	Lasco, R. D., F. B. Pulhin and I. Q. Guillermo	Assessed the carbon stocks of a secondary forest in Mt. Makiling Forest Reserve
1998	Lasco , R. D., F. B. Pulhin, R. Salez and R. Estrella	Assessed the carbon storage potential of two agroforestry systems in the Philippines
1999	Zamora, D.	Assessed the carbon storage potential of multistorey agroforestry systems in Mt Makiling.
1999	Racelis, D.	Used a dynamic simulation model to analyze the potential of major land uses in the Philippines to store and release atmospheric carbon under three different scenarios: 'business as usual (BAU)', 'total log ban' and 'Master Plan'.
2000	Lasco, R. D., F. B. Pulhin, I. Q. Guillermo and R. Sales	Assessed carbon stocks of different land uses in the Philippines
2000	Racelis, E.	Evaluated the amount of carbon stored in large leaf Mahogany and Dipterocarp stands in MFR
2000	Lasco, R. D. and F. B. Pulhin	Evaluated the potential mitigation options in the Philippines using the Comprehensive Mitigation Assessment Process (COMAP) model under two scenarios: baseline and mitigation
2001	Lasco, R. D., F. B. Pulhin, I. Q Guillermo and R. Sales	Investigated the amount of carbon stored in secondary forests in three sites: Zambales, Laguna and Quezon.
2001	Juarez, J. C.	Estimated the carbon stocks of a secondary forests in Mt Makiling Forest Reserve
2001	Ebreo, M.	Estimated the carbon stored in four multistorey agroforestry farms in MFR
2001	Macandog, D. and M. Delgado	Developed an allometric regression equation to estimate aboveground biomass of tropical tree species in the Philippines using the dataset from the study of Kawahara et al. in 1981.
2001	Lasco, R. D., F. B. Pulhin, I. Q. Guillermo and R. F. Sales	Analyzed the uptake/emissions of the LUCF sector using the local data generated from the carbon stocks assessment studies

YEAR	RESEARCHER(S)	BRIEF DESCRIPTION
2002	Aguiero, M.	Assessed the carbon density of secondary forest in Mt Makiling
2002	Lasco and Pulhin	Assessed the carbon stored in the La Mesa watershed
2002	Lasco, R. D., F. B. Pulhin, I. Q. Guillermo and R. F. Sales	Assessed a selectively logged area in Mindanao
2002	Tiburan, C.	Estimated the potential biomass density of the MFR using geographic information system.
2003	Banaticla, M. R. N.	Investigated the amount of carbon in the different land cover types in the western margin of Mt. Makiling Forest Reserve
2003	Pulhin, F.	Tracked the amount of carbon lost during logging and processing of wood products.
2003	Lasco, R. D and F. B. Pulhin.	Assessed carbon stocks of various land uses in Kaliwa watershed
2003	Pulhin, F.	Conducted a GHG inventory for the LUCF sector using the IPCC guidelines and used the CO2 fix model to track the amount of carbon through the years
2003	Orpia, R.	Assessed the carbon stocks of secondary forests Kaliwa in watershed
2003	Lasco, R. D., F. B. Pulhin, M. Campos and J. Goco	Assessed the GHG emissions from the agriculture and LUCF sector of the Laguna Lake Basin (LLB).
2004	Pulhin, F. B. and R. D. Lasco	Estimated the stocks of carbon in Caliraya-Lumot watershed.
2004	Sales, R., R. D. Lasco and M. R. N. Banaticla	Assessed the carbon storage and sequestration potential of small holder tree farms in Leyte.
2004	Lasco, R. D., F. B. Pulhin and M. R. N.Banaticla	Determined the drivers of carbon emission and identified less carbon intensive development pathways
2004	Banaticla, M.R.N	Developed equations for predicting tree biomass using secondary data involving destructive sampling in plantations in several localities in the Philippines.
2005	Pulhin, F B. , R. D. Lasco , P. Jaranilla	Quantified nitrous oxide emissions of the multistorey agroforestry systems and mahogany plantation in MFR
2005	Castro, L.G. Jr	Studied the carbon storage potential of an agroforestry farm in Bayombong, Nueva Vizcaya.
2005	Pulhin, F. B. and R. D. Lasco	Investigated the amount of carbon stored in the different land uses of Angat watershed.
2005	Lasco, R. D., F. B. Pulhin and R. F. Sales	Analyzed leakage in carbon sequestration project in Upper Magat watershed

YEAR	RESEARCHER(S)	BRIEF DESCRIPTION
2006	Breva, L.	Assessed the amount of carbon stored in Rhizophora and Avicennia communities in mangrove areas in Quezon.
2006	Lasco, R. D., R. V. O. Cruz, J. M. Pulhin, F. B. Pulhin R. J. Peras and S. S. Roy	Conducted the first integrated assessment of climate change impacts, vulnerability and adaptation in watershed areas and communities in the Pantabangan-Carranglan watershed (PCW) in Central Luzon, Philippines. Assessed the vulnerability of the watershed in terms of its land use using GIS and CLUE-S model. Impact of climate change on forests was also investigated using the Holdridge life zones and GIS
2007	Tandug, L.	Used destructive sampling in estimating the amount of carbon sequestered by *Gmelina arborea, Sweitenia macrophylla, Eucalyptus deglupta, Acacia mangium, Periasanthes falcataria , Polyscia nodosa*
2008	Pulhin, F. B., R. D. Lasco and D. T. Gevana	Assessed the carbon stocks of mangrove areas in Pagbilao, Quezon
2008	Gevana, D. T., F. B. Pulhin and N. Pampolina	Assessed the carbon stocks of mangrove areas in San Juan, Batangas
2009	Lasco, R. D., P. A. Jaranilla, R. J. Delfino and F. B. Pulhin	Impact of climate change on forests was investigated using the Holdridge life zones and GIS

Appendix E
Learning Pedagogy

Given participant diversity, the learning pedagogy will address both intellectual and cognitive aspects at the individual level, which will cumulatively influence the organizational level. The organizational level will adhere to Results Based Management Framework as proposed in the recent study made through the Asian Development Bank.[93]

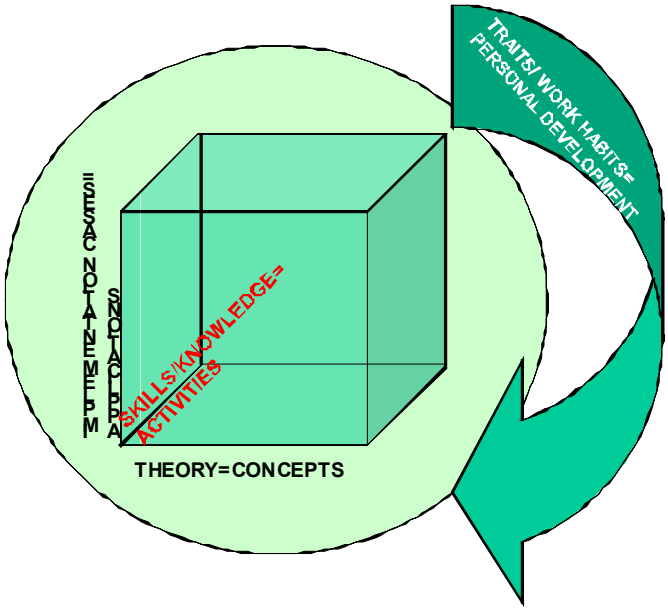
The basic assumptions of PNRPS pedagogy:

- Participants retain knowledge best when education is within the context to and related to what they actually do;
- Participants learn best by doing, and by making mistakes;
- Participants strengthen skills and improve them by reflecting on the strategies they used to solve problems and comparing their solutions with other successful responses; and
- Learning among peers is most successful when coming from respect of everyone's experiences and context

The above model is also consistent with the statements of educational psychologists in terms of things what people remember, a critical element in learning. Accordingly, people retain information depending on how the information are absorbed, as follows:

- 10 % of what is read
- 20 % of what is heard
- 30 % of what is seen
- 50 % of what is heard and seen
- 70 % of what is said and written
- 90 % of what is said and done

Fig. 1. Learning Pedagogy from Personal to Organizational

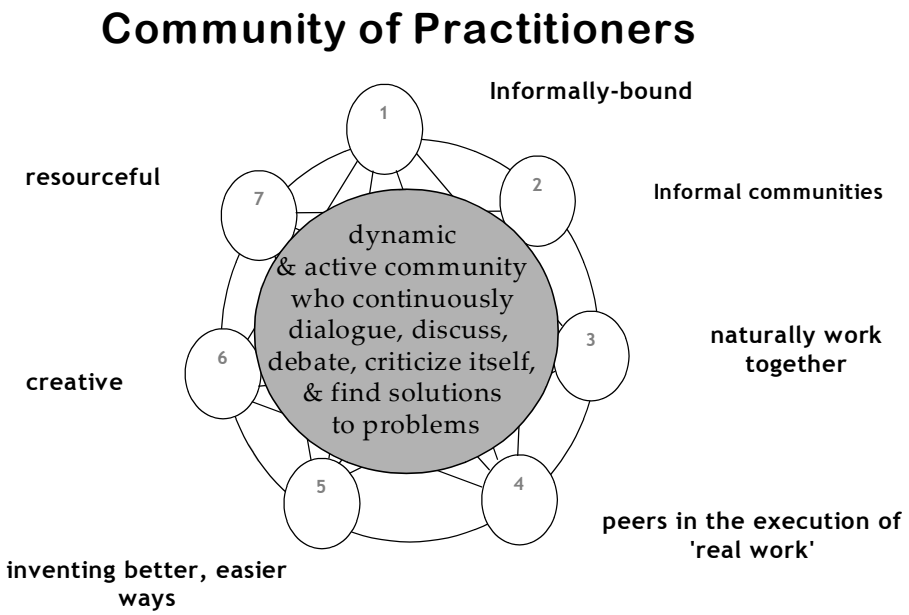


[93] http://www.adb.org/Documents/Produced-Under-TA/41060/41060-PHI-DPTA.pdf.

Appendix F
Community of Practitioners (CoP)

A CoP draws on diverse experiences, encourages questioning, facilitates group reflection, and adheres to logic, science and philosophy to aid in decision-making and judgment. A CoP does not get tired of seeking resolutions and managing situations as the participants recognize that there could be no final answer. The CoDe REDD initiative is a developing CoP. Participants are dynamic, active people that share common interests. They purposively engage in dialogue, discussion, debate and self-criticism with the endview of coming up with solutions to problems or address concerns and issues. The level of openness is high and respect is observed.

Fig. 1. Community of Practitioners



In view of the above and building on to the training guide of the CBFM Practitioners, the learning pedagogy for REDD Plus Strategy will:

- Bring together multi-disciplinary Community of Practitioner
- Adopt community-based learning areas
- Respond and contribute to existing activities using customized modules
- Use Results Based Management framework
- Provide incentives via competition for promising re-entry plans
- Engage practitioners via Social Contracts
- Institute tracking system for coaching and mentoring, and knowledge management
- Coordinate with other learning organizations to achieve a level of certification for competencies gained

Appendix G
Selecting Standards as Benchmarks for Capacity Building

Ensuring Measurable, Reportable and Verifiable emissions reductions represents a bulk of the capacity building needs for effective and efficient REDD-plus. As the PNRPS prioritizes carbon, community and biodiversity, it requires standards to measure, report and verify all three. There are a number of options that have been developed for existing voluntary carbon markets that can inform efforts in the Philippines, though not all are appropriate for a REDD-plus projects (Table 1). As discussed in the "Measurable, Reportable and Verifiable Conditions" component, the PNRPS proposes a double certification process: The Voluntary Carbon Standard's (VCS) Guidelines on Agriculture, Forestry and Other Land-Uses (AFOLU)[94] are the most robust voluntary standard developed to date for carbon accounting within REDD-type projects. The Climate, Community and Biodiversity Alliance (CCBA) standards[95] are the most robust for ensuring 'no harm' and additional social and environmental benefits from REDD-type projects.

Table 1. Available Standards for REDD (Currently developed for existing voluntary markets)

	Description	Project types	Appropriate for REDD?	Carbon verification	Environmental and social benefits	Geographical reach
CCBS	Multiple-benefit project design standard	All land-based projects	YES	No	Yes	Global
VCS	Carbon verification standard for voluntary market	All types carbon offset	YES	Yes	No	Global
CCX	Internal system for CCX offset projects	Includes A/R and AD	Yes	Yes	Yes	Global
VER-plus	Certification for offsets, carbon neutral	All land-based projects	YES	Yes	No	Global
Social Carbon	Methodology and certification for multiple-benefit land-based project	All land-based projects	YES	In development	Yes (more social)	South America and Portugal to date

Source: Lopes, P. 2009. Review of Forestry Carbon Standards: Development of a tool for organizations to identify the most appropriate forestry carbon credit. URL: http://www.carbonoffsetsdaily.com/resources/learn/review-of-forest-carbon-standards-development-of-a-tool-to-help-organizations-to-identify-the-most-appropriate-forestry-carbon-credit-14203.htm.

Future capacity building efforts should take the standards (VCS, CCBA) as benchmarks from which to determine the types of technical skills and resources that will be necessary.

[94] More information on the VCS Standards is available from http://www.v-c-s.org/afl.html
[95] CCBA Standards are available through: http://www.climate-standards.org/standards/index.html