Seeing REDD: Towards Reducing Emissions from Deforestation and Degradation in the Philippines

Yasmin D. Arquiza[1]

EXECUTIVE SUMMARY

As one of the signatories to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, the Philippines will be actively participating in the forthcoming 15th Conference of the Parties in Copenhagen in December. One of the agreements that is expected to come out of the meeting is a mechanism for Reducing Emissions from Deforestation and Degradation (REDD), which could affect many forested countries around the world including the Philippines.

The REDD proposal was originally proposed in 2005 by the governments of Costa Rica and Papua New Guinea following a report from the Inter-governmental Panel on Climate Change that 20% of the world's greenhouse gas emissions come from deforestation. Citing lack of revenue streams for forest conservation, they suggested the entry of developing countries into carbon emissions markets as a way of gaining compensation for protecting their forests.

The Philippines is currently represented in the negotiations by the Inter-agency Committee on Climate Change (IACCC) and the Office of the Presidential Adviser on Climate Change (PACC). As of April 2009, the country has not submitted a national statement on REDD, primarily because the Philippines is not interested in mitigation, which is the rationale for the REDD mechanism.

However, the Philippines has adopted the Association of Southeast Asian Nations (ASEAN) common position from the Inaugural Workshop of the ASEAN Regional Knowledge Network on Forests and Climate Change held in Jakarta in October 2008. The statement calls for effective baselines in determining emissions levels according to the capability of individual countries, policies that include a range of mitigation activities including sustainable forest management, and positive incentives that are not limited to market-based but also fund-based approaches.

In the 1st national communication of the Philippines to the UNFCCC in 1999, the country's forests were shown to have absorbed more carbon dioxide emissions than they emitted, although at a fairly minimal level. Subsequent calculations from new data by independent forest researchers, however, showed that the country's forests were a significant carbon sink, with the capacity to absorb all the combined greenhouse gas emissions of the country. The 2nd national communication is due to come out later this year, and early reports show that the country remains a carbon sink, according to IACCC.

[1] Arquiza, Yasmin D. (2009) Excerpts from this paper were presented at the consultative workshop "REDD: Something to dread or the way ahead?" held 28-29 April 2009. Unpublished paper commissioned by the Non-Timber Forest Products - Exchange Programme. Manila, Philippines.

Since the 1960s, the Philippine government has undertaken three forest resource assessments and mapping activities. However, statistics obtained from these exercises are difficult to compare due to differences in methodologies used, definition of forest, and various limitations in conducting the forest inventory.

The first forest inventory in 1969 showed that the country had a forest cover of 10.5 million hectares. In the second forest inventory in 1987, the forest area had gone down significantly to 6.5 million hectares, mainly as a result of commercial logging activities during the Martial Law years. In the latest forest mapping activity in 2003, the country's forest cover was placed at 7.2 million hectares. The increase was attributed to the establishment of tree plantations and the substantial decrease in the area covered by logging concessions since the previous forest assessment.

One of the improvements in the 2003 assessment of the Forest Management Bureau is that the agency started collecting data on the volume of trees on a national scale. This could serve as the country's national baseline for calculating carbon emissions from forests, as the data is updated every year. The total above ground biomass in Philippine forests for 2003 was 3.6 billion tons while the average above-ground woody biomass in forest lands was calculated at 240.93 tons per hectare.

The National Mapping and Resource Information Authority (NAMRIA) is preparing a new forest map based on 2008-2009 satellite images, and this is expected to come out next year. Two non-government agencies are coming out with upland and forest maps this year that can be used as planning tools for REDD initiatives.

Concerns on forestry data were expressed in the 1st National Communication of the Philippines to UNFCCC including the deficiency and variability of data, the need to enhance the capability of government agencies involved in collecting data, limited resources to undertake carbon sequestration studies, and lack of data on soil carbon.

Forestry mapping and inventory personnel admit that there is not enough data to come up with historical emission levels on a national scale, but they believe that they have enough technical capabilities to generate reliable forest data and carbon inventories in the future.

Although the REDD mechanism is not yet final, several funding windows have been made available for readiness and pilot activities in countries that have expressed interest in the mechanism. Among the early players are the World Bank and Norway, which have set up funding facilities for various REDD activities.

Meanwhile, advocacy groups have started to consult forest stakeholders and come up with statements to express their concern about the REDD mechanism. Many of the inputs from civil society have been submitted to the UNFCCC to guide discussions on REDD at the negotiating table.

CONTENTS

List of Tables

Annexes

ACRONYMS

BFD	Bureau of Forest Development
CADT	Certificate of Ancestral Domain Claim
CDM	Clean Development Mechanism
COP	Conference of the Parties (i.e. UNFCCC signatories)
DENR	Department of Environment and Natural Resources
EO	Executive Order
ET	Emissions Trading
FAO	Food and Agriculture Organization
FMB	Forest Management Bureau
FRA	Forest Resource Assessment
FRCM	Forest Resource Condition Map
FRI	Forest Resource Inventory
GIS	Geographic Information Systems
IACCC	Inter-Agency Committee on Climate Change
ICRAF	International Centre for Research in Agroforestry
IPCC	Intergovernmental Panel on Climate Change
JAFTA	Japan Forest Technicians' Association
JI	Joint Implementation
LUCF	Land use change and forestry
NAMRIA	National Mapping and Resource Information Authority
NCIP	National Commission on Indigenous Peoples
PACC	Presidential Adviser on Climate Change
RUPES	Rewarding Upland Poor for Ecosystem Services
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UPLB	University of the Philippines at Los Baños

Introduction

The Philippines is one of the signatories to the United Nations Framework Convention on Climate Change (UNFCCC) and its accompanying agreement, the Kyoto Protocol. In the forthcoming 15th Conference of the Parties of the UNFCCC in Copenhagen in December, a new agreement is expected to come out for implementation after 2012, when the first commitment period of the Kyoto Protocol expires. One of the topics under debate is a mechanism for Reducing Emissions from Deforestation and Degradation (REDD), which could affect many forested countries around the world including the Philippines.

The Non-Timber Forest Products – Exchange Program for South and Southeast Asia works with forest communities in six countries in the region, focusing mainly on livelihood and environment initiatives. As such, it is understandably concerned about the possible impact of REDD in its partner communities. At the same time, it recognizes the potential benefits and opportunities of REDD in putting greater emphasis on community rights to forest land, addressing the threats to forest resources, and conservation of forests in the long term.

In the Philippines, REDD has not ranked highly in the negotiating agenda of the country's delegation to the UNFCCC, despite the fact that it was introduced four years ago. This research paper explores the potentials for the application of the REDD mechanism in the Philippines, and examines the country's readiness to participate in a global agreement on forest protection.

The specific objectives of this study are to determine the following:

- The status of REDD in the Philippines including government statements, programs, policies, proposed institutional mechanisms, if any
- Any possible initiatives and solutions that are being proposed or have been done to resolve methodological issues related to REDD
- The status of carbon inventory or carbon accounting in the Philippines
- Geographic and mapping requirement for REDD, and the availability of forest maps from official and other sources
- The availability of software and hardware, and human resource capacity to use these modern technology in mapping forests in the Philippines
- The status of maps showing deforestation, and the method and regularity by which the rate of deforestation is measured
- Advocacy statements from local and international organizations on REDD

Methodology

Key informant interviews were undertaken with sources in the government, research institutions, and non-government agencies to find out first-hand information and seek clarification on the topics for this study.

Archival research was also done to retrieve research studies, government reports, UNFCCC background information, and other materials produced by various agencies that are related to REDD and Philippine forestry issues.

These sources of information were complemented by previous data gathered by the author during previous experiences in covering eight UNFCCC conferences since 2000.

Intensive analysis of the data was done to come up with the observations and conclusions presented in this report.

Limitations

Due to the necessity of complying with the tight project schedule, this study was done in 15 working days over a period of less than two months prior to presentation in a consultative workshop. Hence, this rapid assessment is unable to cover all the nuances of the REDD debate. The focus is mainly on the prospects for implementing the REDD mechanism in the Philippines in the event that an agreement covering the forest scheme is approved this coming December.

Part I: The REDD Planet

In order to understand the context of REDD, the following overview is provided as a background to the climate negotiations.

UNFCCC

In 1992, world leaders gathered at the historic Earth Summit in Brazil to discuss growing concerns about environmental problems affecting the planet. The meeting produced three important treaties, one of them the UN Framework Convention on Climate Change.[2]

In 1994, the UNFCCC entered into force and the 1st Conference of the Parties was held. The conferences are held annually, usually in November or December. As of April 2009, there were 192 signatories in the international climate treaty, making its membership almost universal.

The main goal of the UNFCCC is to stabilize greenhouse gas emissions into the atmosphere to prevent adverse climate changes from human activities. This objective stems from scientific findings that pollution from transportation and factories, massive deforestation, and other man-made causes have led to increasing levels of carbon dioxide and other greenhouse gases in the atmosphere. This has resulted in erratic climate patterns, thinning ice in the polar regions, more destructive storms and hurricanes, and the occurrence of some of the warmest years on record in the 1990s.

[2] The two other agreements are the Convention on Biological Diversity, which the Philippines also signed, and the Convention to Combat Desertification.

The two main concerns of the UNFCCC are **mitigation**, or the reduction of emissions from various human activities, and **adaptation**, or strategies for coping with the impact of climate change. Since most of the emissions come from industrialized countries, many of the rich nations have the principal responsibility for mitigation activities. Meanwhile, most developing nations do not have the means to undertake adaptation measures such as flood control facilities and resettlement areas for climate refugees, so their agenda in the UNFCCC conferences is primarily on this topic.

IPCC

The major push for the creation of the UNFCCC came from the findings of the Intergovernmental Panel on Climate Change, which was created by the World Meteorological Organization and United Nations Environment Program in 1988. Composed of teams of scientists from various parts of the world, the IPCC came out with its first assessment report in 1990. The scientists pointed to growing evidence linking anthropogenic emissions to the increasing concentration of greenhouse gases in the atmosphere. The findings led to the creation of the UNFCCC in 1992.

The IPCC came out with its second assessment report in 1995, which provided the scientific basis for the ground-breaking Kyoto Protocol two years later (this is discussed in the next section). Two more assessment reports were released in 2001 and 2007, and the network of scientists remains the main source of scientific information for UNFCCC. It has also released a special report on forests that can be downloaded (www.ipcc.ch) from its website.

Among the findings in its latest report was that 20% of carbon emissions in the 1990s resulted from land use change, mainly deforestation. According to the IPCC, keeping forests intact (better known as **avoided deforestation** in UNFCCC jargon) is the mitigation option with the largest and most immediate impact at the global level in terms of preserving carbon stock. Unlike other **sources** of carbon emissions, such as pollution from transportation and factories, forests have a unique role in the climate debate because they also help absorb carbon dioxide (known as **sinks** in the UNFCCC jargon). The major significance of this finding is that it placed a substantive burden on developing countries that harbor most of the world's forests. Governments that had focused mainly on adaptation in the past now had to consider their major role in the mitigation of carbon emissions as well.

Kyoto Protocol

To strengthen global commitment towards the reduction of greenhouse gases, a new agreement linked to the UNFCCC was negotiated in Japan in 1997. Known as the Kyoto Protocol, this treaty sets binding targets for 36 countries that are highly industrialized or undergoing the process of transition to a market economy to reduce greenhouse gas emissions at an average of 5% below 1990 levels from 2008 to 2012. (In UNFCCC jargon, they are collectively known as the Annex 1 countries.) In Asia, Japan is the only country included in the agreement, which entered into force in 2005. So far, 184 Parties have ratified the Kyoto Protocol with the notable exception of the United States, an Annex 1 country.

Unlike the UNFCCC, which merely **encourages** member-countries to reduce carbon emissions, the Kyoto Protocol **commits** the biggest sources of greenhouse gases during that particular period of negotiations to do so. Since 1997, the world's economic profile has changed rapidly and last year, China overtook the United States as the world's biggest polluter. Hence, there is growing international pressure for countries that are growing rapidly and are using substantial amounts of fossil fuel to be included in a binding emissions reduction agreement. In terms of per capita emissions, however, most industrialized nations still have a much bigger carbon footprint than China and other developing countries, which is one of the unresolved points in the climate talks.

With most of the Annex 1 countries anxious to protect their economies and large industries in the face of binding emissions targets, a new commodity was created as part of the Kyoto Protocol – carbon. The treaty also came up with the following market-based mechanisms to allow flexibility in meeting emissions targets:

- **Emission Trading (ET) -** exchanging emissions allowances among Protocol Parties.
- **Joint Implementation (JI) -** credits for emissions avoided through projects in other Annex I countries
- **Clean Development Mechanism (CDM) -** credits for emissions avoided through sustainable development projects in developing countries.

In 2007, the UNFCCC secretariat reported that a review process had verified around 6.5 billion out of approximately 56 billion tons of emission allowances expected for all industrialized countries under the Kyoto agreement. Governments with on-line registries that control the creation of emission allowances and their delivery from sellers to buyers are linked with the International Transaction Log (ITL) in the UNFCCC Secretariat.

"The ITL is the international community's safeguard that registries accurately track their allowances and work within the rules agreed for the Kyoto Protocol," according to secretariat chief Yvo de Boer. "Not a single allowance may ever be lost and none may be conjured out of thin air."

Clean Development Mechanism (CDM)

For the Philippines and other developing countries, the most relevant mechanism in the Kyoto Protocol is the CDM, which gives them the benefit of hosting environment-friendly projects funded by Annex 1 countries. As of December 2008, the Philippines had 25 registered projects in the CDM.
(See Annex 1 for list of CDM projects in the Philippines)

Under forestry-related projects, only afforestation and reforestation are allowed in the CDM. The Marrakesh Accords of 2001, which finalized the technical details of the Kyoto Protocol, defines these two categories as follows (quoted verbatim):

- "Afforestation" is the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources

- "Reforestation" is the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on 31 December 1989

A wide variety of projects are qualified for CDM, but as of April 2009, only three afforestation and reforestation projects had been registered. In contrast, there are 1,169 projects for energy industries, 343 for waste handling and disposal, and 106 for agriculture projects.

According to forest experts and officials familiar with the climate negotiation process, CDM forestry projects have not gained popularity among many countries due to difficulties in dealing with complex methodological issues. These include monitoring and verification of forest data, lack of familiarity among project consultants with tropical forests, and the inadequate experience of foresters in developing countries in handling complicated carbon stock statistics. For Annex 1 countries, afforestation and reforestation do not constitute high priority as the Marrakesh accords only allow 1% of their Kyoto commitments for these projects.

REDD Proposal

With the latest findings of the IPCC pointing to the critical role of forest conservation in reducing carbon emissions, however, the forest debate in the climate negotiations took on a renewed urgency in recent years.

In 2005, the governments of Costa Rica and Papua New Guinea made a submission to the 11th Conference of the Parties in Montreal entitled "Reducing emissions from deforestation in developing countries: approaches to stimulate action." Some of its main points are the following:

- Tropical deforestation is the second leading cause of climate change (next only to the combustion of fossil fuels)
- There is little incentive to prevent deforestation due to lack of revenue streams for forest conservation
- 1.5 gigatons of carbon emissions could be reduced in 10 years if deforestation is prevented through climate change and conservation revenues
- International frameworks have to be modified to allow equitable access for developing countries to carbon emissions markets

They suggested the following possibilities to address the imbalance:

1. Optional protocol – this could be a free-standing agreement linked to the UNFCCC that is open to both industrialized and developing nations
2. Expansion of the Kyoto Protocol & the Marrakesh accords – this could allow crediting for projects that reduce emissions from deforestation, which are currently not covered in the treaty

Official expressions of support for the proposal were sent by the following Parties: Bolivia, Central African Republic, Chile, Congo, Costa Rica, Democratic Republic of the Congo, Dominican Republic, and Nicaragua. Together with Papua New Guinea and Costa Rica, they are collectively known as the Coalition for Rainforest Nations (CfRN) and have often negotiated as a bloc in the climate debate.

The Parties emphasized that the proposal is about the critical role of forests in carbon emissions and not as sinks. This is significant, as it highlights the willingness of developing countries to take on a bigger share of responsibility in mitigating carbon emissions, which had previously been delegated mainly to industrialized nations.

In the Bali Action Plan of 2007, adopted during the 13th Conference of the Parties in Indonesia, forest degradation was officially added as an element in the mechanism, as it was acknowledged as another source of emissions. Other highlights of the Bali decision are as follows:

- ✓ Recognizes that needs of local and indigenous communities should be addressed
- ✓ Notes that sustainable reduction in emissions requires stable availability of resources
- ✓ Encourages Parties to explore actions that address drivers of deforestation, and enhance forest carbon stock through sustainable forest management (SFM)
- ✓ Use of IPCC guidelines in reporting emissions from deforestation is encouraged
- ✓ Reduction in emissions from demonstration activities should be based on historical emissions, taking into account national circumstances

Through the years, the proposal has evolved in terms of coverage, as follows:

- RED – deforestation only
- REDD – deforestation and degradation
- REDD++ - deforestation, degradation and sustainable forest management including the conservation of existing carbon stocks and protected areas

The Marrakesh Accords **defines deforestation** as "the direct human-induced conversion of forested land to non-forested land" but does not give a definition of forest degradation. Various countries are divided on the inclusion of SFM, which further complicates the measurement of carbon that can be included in the emissions trading mechanism.

The UNFCCC referred the REDD proposal to its Subsidiary Body for Scientific and Technological Advice (SBSTA), which started discussions on the mechanism in May 2006. Experts' meetings and workshops were also held in Rome (2006), Cairns (2007), Tokyo (2008), and Bonn (2009) as part of global efforts to fully understand the intricacies of forestry issues in the context of the climate debate. The negotiating text on REDD is expected in June 2009, when the SBSTA takes up the REDD proposal again. Its agenda for the June meeting includes reference emission levels, SFM, changes in forest cover, enhancement of forest carbon stocks, capacity-building and issues concerning indigenous peoples and other forest communities. The SBSTA is expected to conclude its work on REDD in time for the approval of the mechanism during COP15 in Copenhagen, along with a new agreement for carbon reduction targets after 2012.

Among the outstanding methodological issues under deliberation at the SBSTA level are as follows:

- Additionality – how to determine new efforts to reduce deforestation (as opposed to business-as-usual scenarios)
- Reference levels – should national historical levels be used as baselines? According to the original proponents of REDD, national baselines would resolve technical issues that arise from a project-based approach to emission reductions
- Leakage - how to ensure that conserving forests in one area does not lead to destruction of forests in another area
- Permanence – refers to the length of time that carbon emissions are reduced, and how to ensure that the forests are conserved for the duration of credit payments
- Monitoring - what is the most accurate and most cost-effective way of measuring carbon sequestration and carbon stock in forests?
- Role and contribution of conservation and SFM in reducing emissions

Part II. Is the Philippines Ready for REDD?

On May 8, 1991, Presidential Administrative Order No. 220 established the Inter-agency Committee on Climate Change (IACCC) to coordinate the country's activities on this topic. It had the following composition:

- Chair: Secretary, Department of Environment and Natural Resources (DENR)
- Co-Chair: Secretary, Department of Science and Technology (DOST)
- Secretariat: Environmental Management Bureau (EMB-DENR)
- Members:
    - Philippine Atmospheric, Geophysical, Astronomical Services (PAGASA)
    - Department of Foreign Affairs (DFA)
    - National Economic Development Authority (NEDA)
    - Department of Energy (DOE)
    - Department of Transportation and Communications (DOTC)
    - Department of Agriculture (DA)
    - Philippine Network on Climate Change (NGO)

The main task of the IACCC is to prepare the Philippines' climate change policies and positions at the UNFCCC. Members of the committee led national efforts towards the country's ratification of the UNFCCC in 1994, and the Kyoto protocol in 2003.

The Climate Change Information Center (CCIC), managed by the Manila Observatory at the Ateneo de Manila University campus, formulated the Draft Work Plan of the IACCC and assisted the agency in its tasks. In 1999, CCIC was transformed into Klima under the Climate Studies Division of Ateneo de Manila as a joint venture of IACCC, DENR and DOE under the Philippine Climate Change Mitigation Program with funding assistance from the United States Agency for International Development (USAID).

The DENR and DOE secretaries have usually represented the Philippines as head of delegation in the UNFCCC conferences, with IACCC representatives as members of the

Party. The set-up remained unchanged when Administrative Order 171 came out in February 2007 creating the Presidential Task Force on Climate Change (PTFCC), with DENR as chair and secretariat and the IACCC as its technical arm. During the UNFCCC conference in Bali in December 2007, the DENR Secretary represented the Philippines as head of delegation. The PTFCC was later transferred to the Department of Energy.

On August 2008, the Office of the Presidential Adviser on Climate Change (PACC) was created; Sec. Heherson Alvarez subsequently headed the Philippine delegation to the 14th COP in Poznan, Poland. In December 2008, Executive Order No. 774 reorganized the PTFCC with the Philippine President as chair and cabinet secretaries as members, and the PACC as secretariat. It is silent on the role of IACCC; instead, the new order created 14 Task Groups mandated to implement Conservation, Protection and Restoration (CPR) Economics in the country.

On forestry matters, the Task Group on Watershed Protection would be most relevant, as it gives a mandate to the DENR to undertake a survey and mapping of protected areas and forest land. Restoration and regeneration of these areas would come from the P2-billion allocated for reforestation, the watershed rehabilitation fund under the Electric Power Industry Reform Act, and the research budgets of state universities and colleges.

On February 26, 2009, Executive Order 785 was issued mandating the PTFCC to develop a National Climate Change Framework that will consolidate all government programs related to this subject. The PACC was given the task of reviewing government and foreign-assisted projects on climate change, and monitoring of projects under EO 774.

According to Joyceline Goco, chief of the institutional coordination & documentation section of the IACCC, the committee continues to attend UNFCCC meetings together with the PACC. The IACCC is currently preparing the Second National Communication on Climate Change as part of the country's commitment as a non-Annex 1 Party. This will be presented in a public consultation before submission to the COP15.

With two separate institutions officially implementing climate change activities in the Philippines, it is unclear how the country's delegation will present a national forestry policy in the REDD debate at the international level.

Philippine position on REDD

As of April 2009, the Philippines has not officially issued a country statement on REDD, according to the IACCC. However, it has adopted the Association of Southeast Asian Nations (ASEAN) common position from the Inaugural Workshop of the ASEAN Regional Knowledge Network on Forests and Climate Change held in Jakarta on 30 and 31 October 2008, as follows:

> "1. The method for defining baseline or Reference Emission Level (REL) should be left open to approaches, additional to those based on historical emissions. Due to the erratic nature and scarcity of historical data on emissions in AMS, each country should be allowed to use an approach

that best suits its national circumstances and capacity, with agreement on some common parameters between different approaches. Most important is that the choice of method should be based on the effectiveness of the method in demonstrating emissions reduction from deforestation and forest degradation, including the forest conservation and sustainable forest management (SFM) practices in greenhouse gases inventories.
2. Policy approaches should also be left open for a range of mitigation activities (reducing deforestation and forest degradation, SFM, conservation, enhancement of carbon stocks) depending on the capacity and the circumstances of the countries.
3. Positive incentives should be diversified and not only limited to market-based but also fund-based approaches, depending on the readiness of the country.
4. Coverage or Readiness activities under other related financial supports such as Climate Investment Fund and Forest Investment Program should be expanded (e.g. expand to include improved forest management, conservation, and enhancement of carbon stock through SFM).
5. The need must be reiterated for Annex I countries of the UNFCCC to support capacity building, improvement of infrastructure, technology transfer, and exchange of knowledge and experiences for developing countries."

According to Goco of IACCC, mitigation is not a priority for the Philippines as it is not a major source of greenhouse gases. Since REDD is primarily a mitigation mechanism, the Philippines has followed the lead of many developing countries that are not interested in reducing emission levels.

The latest carbon inventory indicates the country is a carbon sink, which means that it absorbs more greenhouse gases than it emits, according to the IACCC. Despite this finding, the PACC submitted a Philippine Proposal for Voluntary Emission Reduction & Climate Risk Insurance. Part of the country's submission to the UNFCCC on 24 March 2009 states:

> "Given the urgency of the situation, the Philippines intends to adopt a model mitigation plan patterned after previous commitments actually made by Annex I countries. It will begin in 2012 with a voluntary emission reduction target of 5% from its 1990 levels utilizing similar mechanisms found under the Kyoto Protocol but adapted to Philippine developing country-setting. Mindful of the non-binding nature of this model course of action, the Philippines intends to learn from the lessons and experiences of developed countries as it strives for a low-carbon sustainable development pathway."

There was no mention of forests in the 24 March submission, which came shortly before the April meeting of the UNFCCC in Bonn. Except for a brief reference to watershed management and protection, there was also no mention of forests and REDD in the 24 April 2009 submission of the Philippines to the UNFCCC, in preparation for the June meeting also in Bonn. Instead, the delegation supported the Swiss proposal for a carbon

tax on countries with high per capita consumption of fossil fuels, which would go to the Adaptation Fund. The Philippines also proposed that 10% of the proceeds from the JI and ET mechanisms be allocated to the same fund.

During the 13th COP in Bali in 2007, however, then-director Romy Acosta of the Forest Management Bureau helped push for the inclusion of sustainable forest management (SFM) as part of the REDD regime. In his presentation at the NTFP-EP workshop in April 2009, Acosta made a distinction between deforestation and degradation, as follows:
Deforestation – permanent conversion of forest land to another (non-forest) land use
Degradation – temporary reduction in biomass due to extraction e.g. timber harvesting, fuel wood gathering, natural disasters

Keeping these definitions in mind, Acosta said a common agreement on what constitutes forests *(see Part III)* is still under debate, as the Food and Agriculture Organization and UNFCCC have different definitions of forests even though they are both UN organizations. On the matter of degradation, he believes that carbon accounting methods have to consider that when timber in forests are harvested and converted into construction material and furniture, carbon is not released into the atmosphere unless these products are burned.

Status of Carbon Inventory

Since the 1960s, the Philippine government has undertaken three forest resource assessments, but only the latest inventory in 2003 measured biomass, which is the principal basis for measuring carbon content and carbon dioxide emissions from forests. In all industries, compilation of greenhouse gas inventories in the Philippines started only in 1991, and estimates are updated regularly in accordance with IPCC guidelines and the availability of new data.

In the forestry sector, the IPCC has specified the following components in measuring carbon emissions: changes in forest and other woody biomass stocks, forest and grassland conversion, and abandonment of managed lands. Data needed in worksheet computations include the following: area of forest and other land uses, growth and conversion rates, biomass stocks, carbon fraction and content, and harvests or extraction rates.

In 1990, the US Country Studies Program and the Asia Least-Cost Greenhouse Gas Abatement Strategy (ALGAS) project funded by the Asian Development Bank came up with carbon assessments that showed the land use change and forestry sector as a huge source of carbon emissions. *(See table 1)* Later studies showed a reversal of these findings, as can be seen in 1994 and 1997-1998 data that showed Philippine forests as a carbon sink. According to one study, wide fluctuations in carbon estimates from forests has happened even in Annex 1 countries, citing Netherlands as an example (Lasco & Pulhin 2003). Hence, the sources of data in computing carbon from forests are vital in coming up with a credible inventory. In a country like the Philippines, where such data is sometimes unreliable due to various methodologies used in forest assessment and other reasons, the government would have to beef up its capability building program in order to

include the forestry sector in any commitment for carbon mitigation in the UNFCCC process. More effort is needed to standardize carbon measurements to come up with reliable data on the contribution of forests to the reduction greenhouse gas emissions.

Table 1. GHG Emissions in the Land Use Change/Forestry sector in 1990

Source	1990 inventory by the US Country Studies Program (Francisco, 1997)	1990 inventory by the ALGAS project (ADB, 1998)
Change in forests and Biomass stocks	-48,654	2,622
Forest and grassland conversion	120,738	80,069
Abandonment of Managed lands	-1,331	-1,331
Net emissions	70,753	81,360

Reference: Lasco, Rodel D. and Pulhin, Florencia B. (2003) Philippine Forest Ecosystems and Climate Change: Carbon stocks, Rate of Sequestration and the Kyoto Protocol. Annals of Tropical Research 25

Since the Philippines is not an Annex 1 country, it is not required to report its carbon emissions every year, as contained in the national communications submitted to UNFCCC. According to the IACCC, non-Annex 1 countries are expected to submit this document every four years, but most developing countries are unable to do so due to lack of human and material resources.

The Philippines submitted its first communication in 1999 based on official 1994 data. According to Goco of IACCC, carbon accounting in the forestry sector is based on statistics analyzed by experts from ground surveys. Based on the 1994 data, the carbon inventory in the Philippines for the forestry sector is reflected in the following table:

Table 2: GHG Emissions in the Land Use Change/Forest Sector in 1994

Sub Sector	CO_2 Emissions (+) and Uptake (-) in kilotons
Change in Forest/Woody Biomass	-68,323
Biomass Growth	-110,704
Round wood/ Fuel wood Harvests	42,381
Forest/Land Use Change	68,197
On Site Burning	28,868
Off Site Burning	6,555
Decay	32,774
TOTAL	-126

Source: 1st National Communication of the Philippines

The 1994 figures are based on a total forest land use area of about 16 million hectares, according to the 1st National Communication of the Philippines to the UNFCCC. While biomass growth absorbed a substantial amount of carbon, this was offset by harvesting activities and deforestation. In addition, some amount of forest carbon was lost due to on-site burning for clearing and off-site burning for domestic and industrial fuel wood use.

According to the Lasco & Pulhin study, the US Country Studies Program used a much higher deforestation rate, which explains the higher emissions from land conversion in the 1990 data compared to the 1994 inventory.

As a percentage of the total emissions from the Philippines, the forestry sector contributed a minimal decrease in carbon, as shown in the following table:

Table 3: GHG Emissions and Sinks in the Philippines in 1994

Category	in CO_2 equivalent, in kilotons
Energy	50,040.33
Industrial Processes	10,602.93
Agriculture	33,128.57
Land-Use Change and Forestry	-126.49
Waste	7,094.78
Total	100,740.12

Reference: UNFCCC website

In their 2003 study, forest scientists Rodel Lasco and Florencia Pulhin compiled the findings from various research sites and the 1997-1998 land cover data to recalculate carbon stock and the rate of carbon sequestration in protection forests, secondary forests, brush lands, and tree plantations using the 1996 IPCC Revised Guidelines. The results in the table below show that the land use change and forestry sector absorbed much more carbon than indicated in the 1994 official figures, even surpassing total Philippine emissions from other sources.

Table 4: Comparison of GHG emissions from the LUCF sector, 1994 and 1997-1998

Source	1994 inventory (in CO_2 equivalent, M ton)	1997-1998 inventory (Lasco & Pulhin, 2001, recalculated in 2003)
Biomass growth	-111	-218
Harvests	42	27
On site and off site burning	36	43
Decay	33	40
Net Absorption	-0.126	-107

Reference: Lasco and Pulhin, 2003

If the sources of data are accurate, these figures reveal the important role of Philippine forests in mitigating climate change, especially in the context of the REDD mechanism. Aside from absorbing the country's fossil fuel emissions, Philippine forests still have the capacity to mitigate emissions from other countries that are finding it difficult to meet their carbon reduction targets.

However, since carbon inventory is a fairly new field in the Philippines, further research is necessary to validate the studies coming from selected project sites. The IACCC relies on the calculations of Dr. Lasco, currently the Philippine Programme Coordinator of the International Centre for Research in Agroforestry (ICRAF), who has done several studies on carbon measurements in several parts of the country. According to Dr. Lasco, carbon

inventory in forests only started in earnest in the Philippines towards the end of the 1990s, mainly due to the inclusion of afforestation and reforestation in the CDM.

For the 2003 study, Lasco & Pulhin based their calculations on the following data on land use within the classified forest land in the country:

Table 5: Area according to land use in Philippine forest lands

Forest type	Area (in hectares)
Agro-forestry	5,859,000
Secondary forest	2,731,000
Brushlands	2,232,000
Grasslands	1,800,000
Mossy forest	1,040,000
Old growth forest	805,000
Tree Plantation	600,000
Submarginal lands	475,000
Pine forest	228,000
Mangrove forest	112,000

Reference: Lasco & Pulhin, 2003

Carbon stock was calculated based on IPCC default values, as follows:

Table 6: Default values for carbon stock in Philippine forests

Vegetation type	Density of carbon stock (in tons/hectare)
Old growth forests	165 to 260
Secondary forest	207.9 (average)
Mossy forest	183.8
Mangrove forest	176.8
Pine forest	90.1
Tree plantation	59 (average)
Agroforestry farm	45.4 (average)
Brushlands	29
Grasslands	12.1 (average)

Reference: Lasco & Pulhin, 2003

The study found limited information for carbon sequestration because this requires long-term monitoring. The following table relied on data obtained from 1981 to 2001 in selected areas including Iloilo, Makiling, Nueva Ecija, Leyte, and Mindanao.

Table 7: Carbon sequestration in selected forest lands

Vegetation type	Rate of carbon sequestration (tons/hectare)
Secondary forest	1.1 (average) 0.9 minimum
Tree plantation	4.2 (average), highest is 17.5
Agroforestry farm	5.3 (fallow system in Cebu)
Brushlands	4.3 (Leyte)

Reference: Lasco & Pulhin, 2003

According to Carlo Consolacion, inventory chief of the Forest Management Bureau (FMB) of the DENR, the government only started to collect data on volume of trees on a national scale for the 2005 Forest Resource Assessment (FRA) supported by FAO. This is a marked improvement over previous years, when data gathering was done on a project site basis. The 2005 FRA could serve as the country's national baseline for calculating carbon emissions from forests. One of the limitations of the FRA, however, is that 35 tracts representing about 2.7 million hectares of forest land were not included in the report. Another problem is that the FMB used a different computation instead of the IPCC guidelines in measuring the volume, which is the basis for computing carbon.

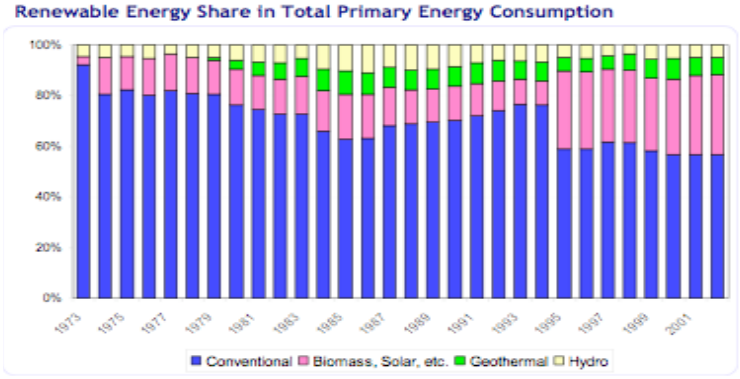
The FRA results showed the total above ground biomass in Philippine forests for 2003 at 3,611,978,558 tons, distributed as follows:

Forest land - 1,725,681,529 tons
Other wooded land - 299,733,041 tons
Other land - 1,508,960,507 tons
Inland water - 29,842,915 tons

In forest lands, the average above-ground woody biomass was calculated at 240.93 tons per hectare. Trees outside forest lands had an average above-ground woody biomass of 82.36 tons per hectare.

As part of the country's commitment to FAO, the FMB is preparing a new Forest Resources Country Report for 2010 based on 1987 and 2003 data, using linear interpolation. Initial figures show a net gain of 54,700 hectares of forest per year but this is still subject to validation and calibration, in order to correspond to previous FAO statistics. The report contains updated figures on forest biomass, which may be used in future carbon inventory calculations.

The IACCC is currently preparing the country's 2nd national communication to the UNFCCC, which is due for submission in December 2009. This is based on 2000 data, and it will be presented in a public consultation before COP 15 in Copenhagen. According to Goco, the initial finding of the report is that the Philippines is a carbon sink, which means that it emits less and absorbs more greenhouse gases. This is not entirely surprising, considering that 40% of the Philippines' energy requirements comes from renewable sources, primarily biomass and solar energy. *(See graph below)*



Source: Department of Energy website

Part III. Mapping REDD

If the official figures are correct, the Philippines is in a good position to obtain a share in the forest carbon market, provided that sound forest management is included in a REDD agreement. The country has kept emissions low while retaining a potential mitigation source for Annex 1 countries.

Out of the country's 30 million hectares of land, more than half or about 15.8 million hectares are legally classified as forest lands, according to the FMB-DENR. However, much of this land has been converted to other uses, even though they remain in the public domain and cannot be privately owned unless covered by new legislation. The latest statistics show that less than half of classified forest lands still retain substantial crown cover, while some forests are located in privately owned land.

In the current debate on REDD, one of the sticking points is the definition of forests. The FAO carries the following definition (from FRA 2005), which is followed by member countries including the Philippines:

> Forest - 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 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, as are areas normally forming part of the forest area which are temporarily un-stocked 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 tracks, 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 meters; plantations primarily used for forestry purposes, including rubber wood plantations. It also includes bamboo, palm, and fern formations (except coconut and oil palm).

However, the Marrakesh accords gives a more flexible definition of forests for afforestation and reforestation projects under the CDM:

> "Forest" is a minimum area of land of 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30 per cent with trees with the potential to reach a minimum height of 2-5 metres at maturity in situ. A forest may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground or open forest. Young natural stands and all plantations which have yet to reach a crown density of 10-30 per cent or tree height of 2-5 metres are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of

human intervention such as harvesting or natural causes but which are expected to revert to forest."

There is substantial debate among various sectors on how forests should be defined under the REDD mechanism; most environmentalists argue that biodiversity should be part of the definition and oppose the inclusion of tree plantations, which has been pushed by the powerful lobby of timber companies.

Status of forest mapping in the Philippines

According to officials from the National Mapping and Resource Information Authority (Namria) and the FMB, which are both under the DENR, three national forest inventories and mapping activities have been done in the Philippines in the last 40 years. From the forest cover alone, it would have been easy to draw a conclusion on the decline and recovery of the country's forests, but this would be misleading due to differences in the methods and definitions used for mapping Philippine forests.

In 1969, the then-Bureau of Forestry Development (BFD, now the FMB) undertook the 1st Forest Resource Inventory (FRI) with the support of the United Nations Development Programme (UNDP). Remote sensing was done through aerial photography, and ground truthing was undertaken using plots with tree markers; unfortunately, many areas became logging concessions and the tree markers that should have been followed in subsequent mapping were felled, according to Namria. At that time, a "forest" was defined as a minimum area of one hectare of land at least 60 meters wide, with a minimum of 10% crown cover, according to the 1978 Philippine Forestry Statistics. There was no definition of open or closed canopy forests. The inventory and mapping resulted in the 1st Forest Resource Condition Map with a scale of 1:50,000. The country's forest cover was placed at 10.5 million hectares.

From 1979 to 1987, the BFD and later the FMB conducted the RP-German Forest Inventory to update the country's forest data. This time, remote sensing used a combination of aerial photographs and satellite images from Landsat and SPOT. The definition of forest used was the same as the 1969 inventory, and ground survey was also done. The limitation of this inventory is that there were no permanent plots, no data on plantations, and no data on volume, according to the FMB. A subsequent mapping collaboration from 1988 to 1989 between the Swedish Space Corp. and Namria resulted in an updated forest map. However, the 1987 SPOT satellite images used were limited to major islands and did not include some island provinces such as Batanes, Basilan, and Tawi-Tawi. Nonetheless, the activity was able to produce the 2nd Forest Resource Condition Map on a 1:250,000 scale which put the forest cover at 6.5 million hectares.

(In 1997, the Japan Forest Technicians' Association (JAFTA) concluded a land use and forest cover mapping activity which ran from Phase I to IV between 1993 to 1997. It was supposed to be finished by Namria but the project was never completed, and the statistics from this activity are not used by either FMB or Namria. In one study [Carandang, 2005],

forest cover for 1997 based on experts' opinion, using the 2nd NFI of 1987 as base data, placed the country's forest cover at 5.4 million hectares.)

From 2002 to 2004, the FMB conducted a nationwide inventory with the support of FAO that resulted in the 2005 FRA, which is considered the 3rd FRI. This time, they used the FAO definition of forests and covered a wider set of variables including biomass and carbon stock, management, forest health, use of resources, and biodiversity. The inventory was complemented by a Namria mapping activity[3] 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 increase in forest cover between 1987 and 2003 is attributed to the establishment of tree plantations and the decrease in the coverage of Timber License Agreements all over the country. According to the FRA, timber concessions dropped from 120 covering 4.74 million hectares in 1988, to a low of 16 covering 0.66 million hectares in 2003.

The FMB compared the results of its study with the Namria mapping activity and came up with the following table, using the land use classifications of FAO:

Table 8: Land use/forest cover data (FRA Project vs. NAMRIA, area in hectares)

Land Use	FRA (FMB)	NAMRIA	Variance
Forest	7,162,560	7,168,400	5,840
Other Wooded Land	3,611,204	7,589,260	3,978,056
Other Land	18,423,641	14,943,856	3,181,301
Inland Water	802,595	298,484	504,111

Reference: FRA-Philippines Country Report 2005

While there is not much difference in the forest area, there is significant variance in other land use classes, which was attributed to the inability of the resolution (30m x 30m) of Landsat imagery to capture small land use sections.

Another significant difference between the FRA and Namria results is in the area by major forest type. Under FAO classification, closed canopy forests have 40% to 100% crown cover while open canopy forests have less than that percentage. It is interesting to note that the two agencies had opposite results, as seen in the following table:

Table 9: Area by major forest type (FRA Project vs. NAMRIA, area in hectares)

Forest type	FRA (FMB)	NAMRIA	Variance
Closed canopy forest	4,826,007	2,560,873	2,265,134
Open canopy forest	2,336,553	4,030,588	1,694,035

Reference: FRA-Philippines Country Report 2005

Nevertheless, a comparison between the FRA and the Namria map showed a 90% accuracy rate, according to Jose Cabanayan Jr., assistant director of the remote sensing

[3] 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.

and resource data analysis department of Namria. Due to the discrepancies between the Namria map and the FRA results, however, the data has not been posted in the FMB website. According to the FMB, some of the data is also "calibrated" or adjusted periodically to conform with previous statistics in the database of the FAO, which has noted the discrepancies in Philippine submissions.

In terms of analysis, however, there is general agreement among academic researchers, policy analysts in government, and non-government organizations about the causes of deforestation in the country. These can be summed up as follows:

1. Commercial logging – the steep decline in forests from 1969 to 1987 is attributed to the export policy under Martial Law; at one point, then-president Ferdinand Marcos placed 10 million hectares or one-third of the country's land area under the control of timber concessionaries (Lasco, 2003)
2. Agricultural expansion – logging companies opened up roads that led to population increase in the uplands and the proliferation of plantations (banana, biofuels, oil palm)
3. Mining – the promotion of mining under the Arroyo government is creating new threats for the remaining forest areas in the country

According to Namria, forest mapping is part of their mandate under the DENR. Their target is to update the forest map every 10 years, but this has not been done due to lack of resources. Often, they are only able to conduct forest mapping whenever there is an opportunity to do so, such as the 2003 mapping exercise. Fortunately, the agency was able to obtain ALOS (Advanced Land Observation Satellite) images from Japan starting last year using regular funds. Namria is currently analyzing the images and is expected to come up with a new Philippine forest map by 2010. This time, Namria will be conducting the ground truthing as well, unlike the 2004 Landcover data when they relied on FMB data for the ground survey.

Two other organizations are coming up with new maps that can be used for REDD:
1. The Environmental Science for Social Change (ESSC), a non-government organization based at the Manila Observatory in the Ateneo de Manila campus, is producing an uplands map by June 2009 that can be used as a planning tool, e.g. for REDD initiatives. It is limited to areas above 18% slope and 100 meters above sea level; however, beach forests and mangroves are included in a separate update. The methodology consists mainly of a comparison of 1987 SPOT with 2002 Landsat images using open source software and three levels of classification; these include 1987 and 2003 categories plus additional items from ESSC e.g. lahar.

2. ICRAF is also coming up with a 2009 national forest map based on FMB data to determine areas that are suitable for carbon projects, including REDD and CDM. This is part of a GTZ-funded project with DENR that will run for five months using FAO forest and land use categories.

Mapping capability in the Philippines

Concerns and other problems on forestry data were expressed in the 1st National Communication of the Philippines to UNFCCC in 1999, as follows:

- 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
- Data on soil carbon

While both Namria and FMB personnel admit that there is not enough national data to come up with historical emission levels, they believe that they have enough technical capabilities to generate reliable forest data and carbon inventories in the future. Namria has 100 personnel in its remote sensing department who are well-trained in mapping, but have little or no background on climate issues. The agency also has adequate hardware and software to analyze satellite images. Meanwhile, FMB started estimating biomass and carbon since 2003 and are updating their data every five years for the FAO.

Outside the government, the ESSC has a mapping expert and policy analysis staff that are able to provide an alternative source of information on forest maps. The group assists local government units in using GIS for land use planning e.g. Bukidnon.

The major source of forest carbon studies in the country are the scientists based at the University of the Philippines in Los Baños, particularly those connected with the College of Forestry. Some of them now work with ICRAF, which has completed several papers about its project sites. One of the groups that it has assisted is the Kalahan Educational Foundation, one of the partner communities of NTFP-EP. According to Dr. Lasco of ICRAF, the UPLB forestry library contains substantial material on carbon studies in Philippine forests, most of which can be downloaded from various websites.

Part IV. Painting the town REDD

During the 13th COP In Bali in 2007, REDD was one of the hottest issues under discussion mainly because it was a major concern of host country Indonesia. It is worthwhile to look back on some of the statements expressed by leaders of richly forested countries about the potential of REDD in addressing forestry issues.

> "If deforestation causes 20 per cent of global emissions, then it is not unreasonable to call for the allocation of 20 per cent of available resources to address this important source. Tropical rainforests are being cut down because the world is not paying for these services, so communities that depend on forests must make their living in other ways."
> - Prime Minister Michael Somare of Papua New Guinea

> "It is critical that developed countries should engage in much more active partnership with developing countries that protect their forests through creative means of compensation and incentives."
> - Indonesian President Susilo Bambang Yudhoyono

Clearly, there is growing realization among developing countries that they have a major responsibility for mitigating climate change, and the REDD mechanism is seen as one possible solution in seeking payment for ecosystem services that forests provide in absorbing carbon dioxide emissions as well as preventing further emissions. While the original proposal in 2005 focused on the carbon market, discussions have expanded into other forms of compensation including aid funds or a combination of the two sources.

Among multilateral institutions, the World Bank is one of the early players in the REDD market, coming up with an initial amount of $165 million for a new funding window known as the Forest Carbon Partnership Facility (FCPF). A total of $300 million is expected to be made available for supporting a $100-M Readiness Fund in 30 countries and $200-M to buy REDD carbon credits. In Asia, four countries have been accepted into the Facility: Lao PDR, Nepal, Papua New Guinea, and Vietnam. Twenty developing countries in Africa and Latin America have also enrolled in the Facility.

During the launching of the FCPF in Bali, World Bank President Robert Zoellick said: "The Forest Carbon Partnership Facility signals that the world cares about the global value of forests and is ready to pay for it. This can change the economic options for many people who depend on forests for their livelihoods. There is now a value to conserving, not just harvesting the forest."

According to a World Bank press release, the FCPF aims to "reduce deforestation and forest degradation by compensating developing countries for greenhouse gas emission reductions." Among the activities funded under the grant support are the establishment of emissions reference levels, adoption of REDD strategies, and designing of monitoring systems. In addition, the FCPF has launched a $1-M Capacity Building Program that will provide small grants to forest-dependent indigenous peoples and other forest dwellers for REDD activities.

Last December, the Asian Development Bank (ADB) announced the establishment of the Future Carbon Fund that will provide up to $200 million in financing for renewable energy, energy efficiency and other greenhouse gas mitigation projects for developing member countries when the Kyoto protocol commitments expire after 2012. According to an ADB press release, this will help developing countries tap into the global carbon market, which was estimated to be worth $80 billion in 2008.

In a press release, the ADB did not specifically mention REDD as a possible mitigation activity under the Future Carbon Fund. The statement acknowledged, however, that "the forestry sector is the largest contributor to Southeast Asia's greenhouse gas emissions, and has the greatest potential to reduce the region's emissions through reduced deforestation, the planting of new forests and improved forest management."

The new fund will make upfront payments to project developers for carbon credits generated after 2012, and will also provide countries or organizations with emission reduction goals the opportunity to receive carbon offsets for investments in low-carbon projects in the Asia-Pacific region. The ADB is focusing on companies with large emissions such as power utilities, manufacturers and airlines.

Other examples of REDD funds currently available are as follows:

- The UN-REDD was set up by FAO, UNDP and the United Nations Environment Programme to fund pilot projects in six countries. This will focus on sustainable forest management and the flow of resources for avoided deforestation. The fund has an initial $35 million from Norway for REDD readiness activities.
- The Norwegian Climate and Forest Initiative is making up to $600 million available per year for REDD readiness, research, and government programs in countries that are supporting the mechanism. This facility is expected to generate a total of $2.5 billion.
- The Nature Conservancy has $38 million for capacity building and REDD project development.

In the Philippines, the DENR announced the approval of a Php182.5 million grant from Germany for a three-year project starting in 2009 that will address climate change strategies in the country. Project components include an information and education campaign on the effects of climate change, reforestation, and biodiversity conservation.

"Since the Philippines is one of the countries most vulnerable to the impacts of climate change, the strategies that will be developed under the project are expected to increase the communities' resilience to natural disasters, thus preventing huge loss of lives and properties," Environment and Natural Resources Secretary Lito Atienza Atienza said.

According to the IACCC, the GTZ Project on "Adaptation to Climate Change and Conservation of Biodiversity in the Philippines" will create a Biodiversity Fund that will support projects that address adaptation concerns and promote conservation of biological diversity. It is led by the DENR's Foreign-Assisted Special Projects Office (FASPO) in coordination with the EMB, PAWB, and other concerned agencies. Terrestrial biodiversity, especially in lowland forests, is one of the key concerns of environmental groups that are looking at REDD as a potential support mechanism.

At the project level, the research group ICRAF has been studying the potential of avoided deforestation in improving the economic conditions of forest dwellers in selected sites. These include the Manupali watershed in Bukidnon, and the Ikalahan ancestral domain and community managed forest in northern Luzon.

In the Manupali watershed, the study showed that forest dwellers had moved from clearing for agricultural expansion towards more profitable land uses such as coffee production. The employment of farmers in banana plantations has also resulted in more areas lying fallow, presenting a significant potential for carbon sequestration at no cost.

In the Ikalahan ancestral domain, ICRAF started supporting the indigenous community in 2003 through the a project called RUPES (Rewarding Upland Poor for Ecosystem Services). Through the Kalahan Educational Foundation (KEF), the upland residents had started collecting data on tree growth since 1994 and had made records for 10,000 hectares of production forests. Scientists from ICRAF helped the KEF to analyze the data on carbon stock measurements and train new community members.

In mid-2008, KEF signed an agreement with the Mitsubishi UFJ Securities Co., Ltd. for a carbon sequestration project in at least 900 hectares of production forests in Nueva Vizcaya and Nueva Ecija Provinces as an Afforestation/Reforestation project under CDM. Mitsubishi will help KEF develop the Project Design Document and cover the transaction costs, while retaining the option to purchase all the certified carbon credits earned by the project until December 31, 2012 at US$8 per ton.

Part V. Towards CoDe REDD

Although it is still in the discussion stage, the REDD proposal has elicited many concerns and even opposition among environment and human rights groups. The World Bank, in particular, has been severely criticized for reportedly rushing to promote a market-based REDD mechanism at the expense of forest dwellers. A report released last December by FERN and Forest Peoples Programme found that nine out of 25 national concept notes presented to FCPF for REDD financing were "implicitly linked to a market based REDD, dominated by central governments, and has so far involved little or no consultation with indigenous peoples, local communities or civil society organisations."

The following is a summary of the most common concerns expressed by various organizations:[4]

On the funding mechanism for REDD

ISSUES
The primacy of an economic focus when implementing REDD activities could take precedence over cultural, social, spiritual and environmental issues.
(Global IP on REDD)

Carbon trading is not working to reduce global emissions of greenhouse gases, and so it would be a mistake to try to fund REDD through this mechanism. (FERN)

[4] (Global IP on REDD) stands for the Global Indigenous Peoples Consultation on Reducing Emissions from Deforestation and Forest Degradation held in Baguio City, Philippines on 12-14 November 2008 with about 40 participants; (Global IP on Climate Change) stands for Indigenous Peoples' Global Summit on Climate Change held in Anchorage, Alaska from 20-24 April 2009 with 400 participants; Accra Caucus stands for the Accra Caucus on Forests and Climate Change representing 27 organizations worldwide

We challenge States to abandon false solutions to climate change (including) market based mechanisms such as carbon trading … and forest offsets. We oppose the commercialization of forests and life.
(Global IP on Climate Change)

Offset market-based approaches to financing REDD will not really contribute to the overall reduction of carbon emissions. It will mostly benefit investors, brokers and private corporations, and not indigenous people and forest dependent communities.
(Accra Caucus)

ADVOCACY
Create a global fund for forests and climate as a funding mechanism for REDD.
(Accra Caucus)

A forest climate agreement should not be included in any trading mechanism linked to the Kyoto Protocol. A fund-based mechanism should be considered instead to support the initial work in securing forests. (FERN)

Dual i.e. both market and non-market mechanisms should be used for REDD. Short- and medium-term non-market funds for capacity building and other transaction costs, and long-term market solutions for actual carbon emission reduction. (Greenpeace)

REDD money should only be given to governments that have signed and implemented human rights and environmental conventions such as the Declaration on the Rights of Indigenous Peoples and the Convention on Biological Diversity. (FERN)

Funds should not only be offered to those with a history of deforestation. (FERN)

Low deforestation countries should be included in REDD. (Greenpeace)

Market payments and demand for "high biodiversity" REDD credits may be done under several scenarios, including preferential purchases by governments.
(EcoSecurities report for CBD Secretariat)

On forest governance and forest peoples' rights

ISSUES
None of the REDD plans deal with the critical issues of governance, human rights, land tenure reforms and Free, Prior and Informed Consent.
(Forest Peoples Programme)

Problems with land tenure and recognition of traditional territories exist in most countries. (Global IP on REDD)

In the absence of clear tenure rights for forest peoples, the increased 'carbon value' of forests could lead to a land-grab and dispossession of already very poor people. (FERN)

Rewarding logging companies leads to perverse incentives for drivers of deforestation (Ecosystems Climate Alliance)

Understanding and respect is lacking for traditional knowledge and practices, such as shifting cultivation and seasonal burning. Some groups experienced discrimination for pursuing traditional practices, and on occasion were blamed by Governments for causing or contributing to climate change.
(Global IP on REDD)

Displacement from traditional territories could result from REDD mechanisms that do not consider the rights of indigenous peoples and local communities as has been experienced with protected areas, biofuel schemes, etc. (Accra Caucus)

ADVOCACY
All initiatives under REDD must secure the recognition and implementation of the human rights of Indigenous Peoples including security of land tenure, ownership, recognition of land title according to traditional ways, uses and customary laws and the multiple benefits of forests for climate, ecosystems, and Peoples. (Global IP on climate change, shared by FERN and Forest Peoples Programme)

Implementation of REDD must not lead to displacement of Indigenous Peoples and local communities from their territories and lands. (Accra Caucus, Ecosystems Climate Alliance)

Suspend all REDD initiatives and carbon market initiatives in Indigenous territories until such time that Indigenous Peoples' rights are fully recognized and promoted.
(Global IP on Climate Change)

To attain sustainable forest and climate initiatives, forest peoples must be fully consulted about their design. International donors must also ensure that human rights and forest sector reforms are guaranteed before any international funding is released to developing countries. (Forest Peoples Programme)

REDD mechanisms must not provide opportunities for big businesses to exploit rainforest nations that participate in REDD schemes, or benefits to corporations that contribute to deforestation and forest degradation
(Accra Caucus)

On equity and benefit-sharing

ISSUES
Equity issues have not been resolved, such as the likelihood that benefits will not reach the communities preserving the forests, unfair payment levels, etc.
(Global IP on REDD)

Countries and communities that already successfully address deforestation may not benefit from REDD.
(Global IP on REDD)

Indigenous communities are not adequately represented at national and international levels in the REDD discussions. Awareness of REDD remains limited in indigenous peoples and local communities.
(Global IP on REDD)

ADVOCACY
Indigenous Peoples and local communities should benefit from their conservation efforts and revenues from REDD should be equitably shared between Parties and forest communities, and between and within communities, especially among vulnerable groups and women. (Global IP on REDD Accra Caucus)

Civil society, Indigenous Peoples and local communities must be involved at all stages of decision-making about REDD. Implementation of REDD, at both national and project levels, should obtain free, prior and informed consent from Indigenous Peoples and local communities if their territories are used. (Accra Caucus)

REDD finance must be managed in a transparent and participatory manner by all stakeholders including representatives from local communities, Indigenous Peoples and civil society organizations. (Accra caucus)

Indigenous Peoples and local communities should be the primary and direct beneficiaries of financing mechanisms for REDD where their lands, territories and resources are concerned. (Accra caucus)

On the role of REDD in mitigating climate change

ADVOCACY
Rich nations should not use REDD to offset their increased emissions. It must be accompanied by deeper commitments from industrialized countries to reduce their own emissions. (Accra Caucus)

REDD should give strong, equitable and transparent incentives for avoiding the degradation of terrestrial carbon stores and for rehabilitating degraded land, as well as for more attention to strong forest governance, robust monitoring and demand-side policies.
(Ecosystems Climate Alliance)

Natural terrestrial ecosystems should be kept intact and their carbon out of the atmosphere, in an equitable and transparent way.
(Ecosystems Climate Alliance)

Parties must not see forests as a platform for mitigation only, but as a critical factor in the world's adaptation to climate change. (Accra Caucus)

Potential Benefits

Some groups do recognize the possibility that REDD can contribute positive outputs. Tom Griffiths, Coordinator of the Responsible Finance Programme for the Forest Peoples Programme, said: "If measures to respect the rights of forest peoples are at the heart of efforts to combat deforestation, then forest and climate policies could do some good."

During the global indigenous people's consultation on REDD held in Baguio City last November, among the benefits identified that are relevant to the Philippines are the following:

- Indigenous peoples have an opportunity to influence how REDD is designed and implemented, and provide inputs to UNFCCC.
- Concessions for forestry and extractive industries may be avoided.
- Forests may be protected with government support. Laws and policies at the national level may be modified.
- There is a significant opportunity to refocus attention and policies on forest conservation to include indigenous issues.
- There is an opportunity to reap additional benefits for biodiversity and livelihoods.

Support for biodiversity in forest environments is particularly critical, considering that the Philippines has the highest number of endangered endemic species in the world, according to the International Union for the Conservation of Nature.

At this point, many forest communities require basic inputs on REDD and a working knowledge of the climate change negotiations in order to make informed decisions about this issue. Their capacity in monitoring and reporting forest land use change also needs to be enhanced, so they can participate knowledgeably in the climate change debate, especially the REDD proposal which has a direct impact on their lives.

Current efforts among civil society groups to develop a CoDe REDD (Community development through REDD) advocacy initiative may lead to a better understanding of the complex issues surrounding the proposal. Although REDD is expected to be part of an international climate treaty, NGOs can still influence national policy and provide inputs for the negotiations. Civil society groups may not have the voting power, but they can still put forward realistic principles and proposals to promote a pro-community REDD mechanism.

REFERENCES

Accra Caucus on Forests and Climate Change. Statement for COP 14 representing 27 organizations. December 2009. Poznan, Poland

Alvarez, Heherson T. (2009) "Global warming & creeping climate change: Reducing your carbon footprint." Office of the Presidential Adviser on Climate Change. Manila

Angelsen. A. (ed.) 2008. Moving ahead with REDD: Issues, options and implications. CIFOR. Bogor. Indonesia

Carandang, Antonio P. (2005) National forest assessment: Forestry Policy Analysis, Philippines.

CIFOR (2008). Simply REDD. CIFOR's guide to forests, climate change, and REDD

DENR press release. Feb. 13, 2009. "German-funded project to mitigate impact of climate change"

EcoSecurities Limited. February 2009. Challenges for a business case for high-biodiversity REDD projects and schemes.

Ecosystems Climate Alliance. 5 February 2009. Submission to the UNFCCC: http://unfccc.int/resource/docs/2008/smsn/ngo/083.pdf

Forest Management Bureau (2005). Forest Resource Assessment-Philippines Country Report.

Global Canopy Foundation (2008. The Little REDD Book.

Lang, Chris. (4 May 2009). "Indigenous Peoples reject carbon trading and forest offsets" REDD-Monitor.org

Lasco, Rodel D. and Pulhin, Florencia 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, R.D. et al. (2009) The economics of abating carbon emissions through avoided deforestation: the case of Manupali watershed, Philippines.

Meridian Institute (2009). Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report Prepared for The Government of Norway.

Preferred Energy Inc. (2004). Implementation of the Clean Development Mechanism in the ASEAN Energy Sector: Exchanging experiences and regional institutional capacity building (CDM-ASEAN). Republic of the Philippines.

REDD Monitor. "World Bank's forest and carbon fund is failing forests and peoples."

UNFCCC press release. August 30, 2007. "Kyoto Protocol Parties move closer to trading emission allowances."

UNFCCC (2001). The Marrakesh Accords & The Marrakesh Declaration.

Verchot L.V. et al (2007) Implications of country-level decisions on the specification of crown cover in the definition of forests for land area eligible for afforestation and reforestation activities in the CDM. Climatic change 81:415-430

World Bank press release. October 24, 2008. "FCPF expanded to 30 countries."