

Institute for Global Environmental Strategies



# DEVELOPING NATIONAL REDD-PLUS SYSTEMS: PROGRESS CHALLENGES AND WAYS FORWARD

INDONESIA AND VIET NAM COUNTRY STUDIES





INSTITUTE FOR GLOBAL ENVIRONMENTAL STRATEGIES

**IGES**

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Editor: Henry Scheyvens

September 2010



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# FOREWORD

With the understanding that deforestation, especially in the tropics, contributes to about 20 per cent of global anthropogenic greenhouse gas emissions, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have been exploring ways to mobilise support for developing countries to improve the management of their forest sectors and conserve forests that might otherwise be degraded or converted to other land uses. This requires not only new resources to compensate for the opportunity costs incurred by not allowing forests to be converted to other forms of land use with higher economic returns, but also significant reform of forest governance. Added to this is the need for forest carbon monitoring and accounting systems to provide verified long-term emissions reductions and/or enhancement of forest carbon stocks (REDD-plus).

As a total package, the building of a national REDD-plus system presents a huge and unprecedented undertaking for forest protection, management, restoration and establishment, and adds to this the technical challenges of establishing national architecture to accurately measure, monitor, and report national forest carbon stocks, and emissions and removals. Developing countries are starting from a difficult position as, inter alia, their national inventories were never intended for the purpose of forest carbon accounting and the evidence that past initiatives have contributed to reducing national rates of deforestation is uncertain.

The Institute for Global Environmental Strategies (IGES) is monitoring the development of national REDD-plus systems in selected countries and this report presents part of the output of this work. The report provides a description and review of national REDD-plus readiness challenges, activities, and progress in Indonesia and Viet Nam, two countries that offer important contrasts for analytical inquiry with respect to forest resources, forest management, and drivers of deforestation and degradation. I would like to congratulate the authors for succeeding in bringing together this report which I anticipate will be useful to people working on REDD-plus issues from local to international levels.

**Hideyuki Mori**  
IGES President

September 2010



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The authors are solely responsible for any omissions or errors of fact in this report.

**Henry Scheyvens**  
**Lavinia Poruschi**

September 2010





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# EXECUTIVE SUMMARY

- © Parties to the United Nations Framework Convention on Climate Change have acknowledged that improvement of forest management in tropical developing countries to protect and enhance forest carbon stocks is essential to mitigate climate change. While the 15th Conference of the Parties in Copenhagen in December 2009 was unable to agree on a legally binding instrument to define the future climate regime, the need for developed countries to assist developing countries to reduce their emissions from deforestation and forest degradation, conserve and enhance their forest carbon stocks, and to promote sustainable management of forest (a concept referred to as REDD-plus) was highlighted in the non-legally binding Copenhagen Accord (which over 130 countries have now “associated” with) and in the text to facilitate the negotiations prepared by the chair of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention.
- © One issue that negotiators have been attempting to reach agreement on is whether REDD-plus should be a national or sub-national approach. The architecture for a sub-national approach would be easier to construct as the demands for data and human and financial resources are not as great, but the negotiations favour a national approach because it would account for in-country emissions displacement. About 40 countries are now working towards developing their national REDD-plus systems. Independent monitoring and review of their REDD-plus readiness strategies and experiences will provide useful lessons for learning across countries and to guide the international negotiations.
- © There are a number of elements that a national REDD-plus system must include to be able to provide a credible claim of national reductions in forest sector emissions. These are: (i) a national REDD-plus strategy consisting of effective policies for reducing emissions; (ii) the necessary organisations and institutions to implement the national REDD-plus system; (iii) a national reference emission level or reference level; (iv) a credible system to measure, monitor, report and verify the reductions in carbon emissions; and (v) a payment system to compensate those who have incurred opportunity costs in implementing REDD-plus. As no international agreement on REDD-plus exists, there are no agreed modalities and procedures for REDD-plus that countries can refer to when constructing their national systems. Decision 4/CP.15 provides some guidance, albeit limited, on methodological issues concerning REDD-plus, and the Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories and Good Practice Guidance for Land Use, Land-Use Change and Forestry are also important references.

- ◎ This report contains separate studies on the development of national REDD-plus systems in Indonesia and Viet Nam, which reveal similarities and contrasts in challenges, approaches, and progress in the two countries. Their contexts exhibit significant differences with Indonesia experience high rates of deforestation of roughly 1 million ha/year, whereas total forest cover has been increasing year by year in Viet Nam because of its massive tree planting programmes.
- ◎ Both countries are receiving support from the World Bank's Forest Carbon Partnership Facility (FCPF), the UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) and a range of international governmental and non-governmental agencies. Local research institutes and civil society organisations are also contributing, though complaints have been expressed that fuller engagement of indigenous people is required.
- ◎ A major difference is that Indonesia established a process prior to the 13th COP in December 2007 that laid the analytical groundwork for a preliminary REDD-plus strategy that fed into later REDD-plus strategy documents, such as its Readiness Preparation Proposal for the FCPF. The Ministry of Forestry has retained strong control over REDD-plus development and the input of the FCPF and UN-REDD has not been so influential in shaping the REDD-plus readiness strategy. In contrast, in Viet Nam, while the Department of Forestry is very much involved, the development of REDD-plus readiness is primarily being organised through the UN-REDD Programme and, while the provisional components of the national REDD strategy have been identified, Viet Nam is yet to develop these into a full-fledged Readiness Preparation Proposal for the FCPF.
- ◎ In both countries the responsibility of REDD-plus readiness is held by forestry agencies: in Indonesia, the Ministry of Forestry; in Viet Nam, the Department of Forestry under the Ministry of Agriculture and Rural Development. Existing divisions have been tasked with responsibilities and new bodies have been established. For example, in the Ministry of Forestry (Indonesia) the Working Group on Climate Change was established to advise the Minister and to evaluate proposals for REDD-plus demonstration activities, and the Directorate of Planning is responsible for developing the Forest Resource Inventory System that will include forest carbon accounting. In Viet Nam, the Ministry of Agriculture and Rural Development established the national REDD Network under the co-ordination of the Department of Forestry.
- ◎ To be effective a REDD-plus strategy requires coordination between government departments, different levels of government and the support of major forest stakeholders. In Viet Nam, through the UN-REDD Programme the Department of Forestry collaborates with several stakeholders on REDD-plus readiness. A challenge that now must be met is for the two ministries responsible for the management of forests and forestland, i.e. the Ministry of Natural Resources and Environment and the Ministry of Agriculture and Rural Development, to work together more effectively. In Indonesia, a National REDD Working Group is planned with high level officials from 11 ministries, other national bodies, local government where REDD-plus activities are located, and civil society representatives. The Working Group could have a critical role to play in formulating a cross-sectoral policy to protect forest carbon stocks and to improve communication between national and sub-national levels of government. Regarding the former, at the same time that it is promoting REDD-plus, the government is allowing forest land to be "opened up" for

development of oil palm plantations, timber plantations, mining, oil exploration, etc., which could release huge volumes of CO<sub>2</sub>. The challenges here are to establish REDD-plus as a national priority, alongside other policies such as poverty, employment, health and education, and to formulate a cross-sectoral policy and administrative framework that ensures each ministry works towards REDD-plus. A related challenge is to identify ways in which REDD-plus can complement rather than compete with existing national priorities. Regarding the latter, provincial governments such as Central Kalimantan, Papua and Aceh are taking initiatives on REDD-plus, including establishing their own working groups and institutions. More regular contact between national and sub-national governments is needed to ensure that these initiatives are guided by the national policy and that any lessons learnt are fed into the national policy.

- ⊙ The meaningful engagement of forest stakeholders in the formulation of REDD-plus policy is important for ownership and equity. In Indonesia, there have been some complaints from indigenous people's organisations that opportunities for consultation provided by the Ministry of Forestry need to be better organised to allow for their input. Concerns have also been raised that the input of civil society organisations into the planned National REDD Working Group will be limited. Viet Nam has taken a different approach that may be instructive. It has established the REDD Network as an open-ended organisation that counts among its members government agencies, international development partners, international NGOs and local NGOs, and has the mandate of designing an action plan for a national REDD system with all the elements in place. Although significant involvement of indigenous people in the REDD-plus readiness process is yet to be seen, the informational activities carried out at this preparatory stage could open the doors for greater participation by civil society groups.
- ⊙ Indonesia has progressed further than Viet Nam in terms of analysing national policies for reducing emissions and enhancing forest carbon stocks. However, its scenario analysis has been conducted by several agencies and is not always well coordinated. The different studies use different assumptions and methods, and consequently the policies they prescribe for a national REDD-plus strategy are also different. There are also cases where the scenario analysis appears to be based more on aspiration than realities (i.e. the assumptions are unrealistic), and there is a risk that the analysis may be influenced by political motivations. For example, some of the scenario analysis conducted may have been influenced by a desire to show that the current medium and long term targets of the forest sector will, if fully achieved, provide the expected contribution of the forest sector to the national 26% emissions reduction target set by the President. For Viet Nam, consensus that REDD-plus should be consistent with previous policies exists, but stronger cogent, common visions for REDD-plus goals are a must.
- ⊙ Improving forest governance must be part of the REDD-plus strategies in both Indonesia and Viet Nam. In Indonesia Tim-8 assigned to advise the Minister of Forestry has identified secure forest land tenure, better coordination between the Ministry and sub-national governments to control forest conversion, and acceleration of the establishment of forest management units as critical to REDD-plus. In Viet Nam, proper implementation of the forest land allocation policy is needed to clarify and secure benefits for local stakeholders.
- ⊙ Indonesia was the first country to establish a legal framework for REDD-plus, while Viet Nam's approach is to formulate the necessary regulations closer to 2012, at the end of its



readiness phase. Establishing the legal framework provided some clarity to REDD-plus project proponents in Indonesia about their rights, roles and responsibilities, and gave the Ministry of Forestry some control over sub-national REDD-plus activities. However, the regulations need to be streamlined and inconsistencies and overlaps removed. As yet, none of the many REDD-plus projects in Indonesia have been endorsed through the regulated process, indicating that there may be problems, and the Ministry of Finance is contesting the Ministry of Forestry's attempt to regulate payment distribution. The basic message here is that regulating REDD-plus is likely to be a time consuming process that requires proper intersectoral and multistakeholder consultation and testing of the proposed systems.

- ⊙ Indonesia aims to set national and provincial reference emission levels (RELs) during 2010 and district RELs during 2011, while Viet Nam intends to establish an interim national REL by the end of 2010. The availability, consistency and quality of data are all critical to the development of a credible REL. In Indonesia, there is little to no data available on some of the critical forest carbon pools and while many individual mapping products have been completed, the maps were not designed for use as systematic monitoring products. Viet Nam has several forest data sets but they are not compatible as the definitions of indicators are not consistent or different sets of indicators are used. Inadequacies exist in the data collection, including a lack of co-ordination between ministries, and there are weaknesses in the updating methods. Both Indonesia and Viet Nam lack data on degraded forests. These concerns notwithstanding, both countries have secured a certain amount of financial and technical support for remote sensing and inventory methods to develop their RELs.
- ⊙ Both countries are participating in various programmes to improve forest cover monitoring and their estimation of forest carbon stocks. They both have an extensive network of permanent sample plots, but these networks will have to be adjusted for the purposes of carbon monitoring, which requires that monitoring focuses on areas most likely to experience changes in forest carbon stock.
- ⊙ Designing a national REDD-plus payments system involves decisions about financial transfer mechanisms at different scales, revenue allocation, forms of payment and timing, legal and other institutional structures, and risk management options. In Viet Nam, a team of specialists under the leadership of the Department of Forestry has proposed a system in which the revenues obtained from the sale of certified carbon credits are pooled into a national REDD fund and then distributed to provincial REDD funds. Viet Nam has experience with payment distribution under other programmes, though this has not always been performance based and cases of diversion have been reported. Monitoring, auditing, and exposure to public scrutiny will be crucial. In Indonesia, the necessary oversight could be achieved through the involvement of the supreme auditor, the Financial Intelligence Unit, the Anti Corruption Unit and NGOs such as Indonesian Corruption Watch.
- ⊙ Both Indonesia and Viet Nam need to encourage and regulate demonstration activities to ensure they provide maximum opportunities for learning and capacity building. Nine demonstration activities have been formally endorsed by the Government of Indonesia and two by the Government of Viet Nam. The demonstration activities provide important contrasts with respect to forest types, forest tenure and use, proponents, local institutions, drivers of deforestation and degradation, proposed countermeasures, methods to estimate





emissions and removals with and without project, etc. A process is now needed that can draw out and share the lessons accumulated by these activities/projects amongst different levels of government and other forest stakeholders. In Viet Nam, the geographic scope and content of the demonstration activities is limited. There is now a need to encourage potential proponents to develop demonstration activities in the various “REDD hotspots” and to test a variety of approaches. For both Indonesia and Viet Nam, demonstration activities should be used to build the capacity of government and non-government stakeholders. There is a risk that the technical aspects of these projects, such as the carbon calculations, will be contracted to international consultants and that there will be little transfer of expertise. Both governments have an important role to play in ensuring that demonstration activities include significant capacity building components.

- © As a final word, the challenges that are facing the development of REDD-plus systems as described in the two country studies suggest that the common assumption that the costs of REDD-plus carbon offsets will be lower than offsets from other sectors needs further scrutiny. The transaction costs associated with constructing a credible national REDD-plus strategy with a broad support base (requiring meaningful consultation between sectors, different levels of government and all forest stakeholders), setting up REDD-plus organisations and institutions, projecting a national reference emission level, establishing the architecture for monitoring, reporting and verification, and putting in place systems for REDD-plus payment distribution are yet to be properly assessed. The experience of Indonesia and Viet Nam is that these processes are costly, generate a lot of debate, and are often not smooth.



# ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AFOLU	agriculture, forestry and other land uses
A/R	afforestation/reforestation
AusAID	Australian Agency for International Development
AWG-LCA	Ad Hoc Working Group on Long-term Cooperative Action (under the UNFCCC)
BAPPENAS	Badan Perencanaan Pembangunan Nasional (Indonesia National Development Planning Agency)
BAU	business as usual
CDM	Clean Development Mechanism (of the Kyoto Protocol)
CERDA	Centre of Research and Development in Upland Area
CIFOR	Centre for International Forestry Research
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
COP	Conference of the Parties (UNFCCC)
DNPI	Dewan National Perubahan Iklim (Indonesia National Council for Climate Change)
DoF	Directorate of Forestry (Viet Nam)
DoP	Department of Planning (Viet Nam)
DPO	Detailed Project Outline
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
NFMA	National Forest Monitoring Assessment
FCPF	Forest Carbon Partnership Facility
FIPI	Forest Inventory and Planning Institute (Viet Nam)
FLEGT	Forest Law Enforcement, Governance and Trade
FLITCH	Forest for Livelihood Improvement in the Central Highlands (Viet Nam)



FOMAS	Forest Monitoring and Assessment System (Indonesia)
FOMIS	Forest Sector Monitoring Information System (Viet Nam)
FORMIS	Management Information System for Forestry Sector (Viet Nam)
FORDA	Forest Research and Development Agency (Indonesia)
FPD	Forest Protection Department (Viet Nam)
FMU	forest management unit
FSIV	Forest Science and Research Institute of Vietnam
FSSP	Forest Sector Support Partnership (Viet Nam)
FRIS	Forest Resources Information System (Indonesia)
GEF	Global Environment Fund
GHG	greenhouse gas
GOI	Government of Indonesia
Gt	giga tons
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH
ha	hectares
HKm	hutan kamasyarakatan (social forestry)
HPH	hak pengelolaan hutan (forest concession)
HPK	hutan produksi konversi (conversion forest)
HTI	hutan tanaman industri (industrial timber plantations)
HTR	hutan tanaman rakyat (community timber plantation)
ICCSR	Indonesia climate change sectoral roadmap
IDR	Indonesian rupiah
IFCA	Indonesia Forest Climate Alliance
INC	initial national communication
INCAS	Indonesia's National Forest Carbon Accounting System
ICRAF	World Agroforestry Centre
IFSAR	interferometric synthetic aperture radar
IPCC	Intergovernmental Panel on Climate Change
IUPHHK-HA	Wood Use License for Natural Forest
IUPHHK-HT	Wood Use License for Plantation Forest
IUPHHK-HTR	Wood Use License for People's Plantation Forest
IUPHHK-RE	Wood Use License for Ecosystem Restoration Area
JICA	Japan International Co-operation Agency
JPD	joint programme document
KfW	Kreditanstalt für Wiederaufbau Banking Group
KHDTK	special purpose forest area

KPH	kesatuan pemangkuan hutan (FMU)
LMDG	Like Minded Donor Group (Hanoi based informal group of donors)
LOI	letter of intent
LUCF	land use change and forestry
MARD	Ministry of Agriculture and Rural Development (Viet Nam)
MODIS	moderate resolution imaging spectroradiometer
MoE	Ministry of Environment (Indonesia)
MoF	Ministry of Finance (Viet Nam)
MoFor	Ministry of Forestry (Indonesia)
MONRE	Ministry of Natural Resources and Environment (Viet Nam)
MPI	Ministry of Planning and Investment (Viet Nam)
MRV	monitoring, reporting, and verification
Mt	million tons
m <sup>3</sup>	cubic metre
NAMAs	Nationally Appropriate Mitigation Actions
NFA	National Forest Assessment initiative (Viet Nam)
NFI	National Forest Inventory (Indonesia)
NFIMAP	National Forest Inventory, Monitoring and Assessment Programme (Viet Nam)
NGO	non-governmental organisation
NPD	Vietnam UN-REDD National Programme Document
NTP-RCC	National Target Programme to Respond to Climate Change (Viet Nam)
PALSAR	phased array type l-band synthetic aperture radar
PanNature	People and Nature Reconciliation
PES	payment for environmental services
RCFEE	Research Centre for Forest Ecology and Environment
RECOFTC	Regional Community Forestry Training Centre for Asia and the Pacific
RED	reducing emissions from deforestation
REDD	reducing emissions from deforestation and forest degradation
REDD-plus	REDD plus conservation of forest carbon stocks, sustainable management of forest, and enhancement of forest carbon stocks
REDDI	Reducing Emissions from Deforestation and forest Degradation in Indonesia
REDD-ALERT	Reducing Emissions from Deforestation and Degradation through Alternative Landuses in Rainforests of the Tropics



REL	reference emission level
RHL	rehabilitasi hutan dan lahan (Indonesia forest and land rehabilitation programme)
RL	reference level
RPJMN	National Medium-Term Development Plan (Indonesia)
R-PIN	readiness plan idea note
R-PP	readiness preparation proposal
SBSTA	Subsidiary Body for Scientific and Technological Advice
SRD	Centre for Sustainable Rural Development
SNC	second national communication
SNV	Netherlands Development Organisation
t	ton
TAP	Technical Advisory Panel
TBI-VN	Tropenbos International Viet Nam
TFF	Tropical Forest Foundation
UK DFID	United Kingdom Department for International Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
USAID	United States Agency for International Development
VFU	Vietnam Forestry University
VND	Vietnamese Dong
WRI	World Resources Institute
WWF	World Wide Fund for Nature
yr	year

# DEVELOPING NATIONAL REDD-PLUS SYSTEMS

# 1

## CHAPTER

Henry Scheyvens

## 1.1 Introduction

Nobel Laureates and other leading scientists met at St. Jame's Palace on 26-28 May 2009 to discuss the global climate crisis. The memorandum of this symposium uses the expression the "fierce urgency of now" to draw attention to the need for immediate and far reaching action to mitigate climate change. It calls for a "great transformation" to decarbonise economies, identifying as key requirements an effective and just global agreement on climate change, low-carbon energy infrastructure, and tropical forest protection, conservation and restoration. The inclusion of action on forests in the memorandum reflects a growing awareness that deforestation<sup>1</sup> and forest degradation, particularly in the tropics, must be reduced if dangerous climate change is to be avoided. In a major review of financing to reduce forest loss and its associated impacts on climate change, Eliasch (2008) concluded that "urgent action to tackle the loss of global forests needs to be a central part of any future international deal on climate change", and that "without tackling forest loss, it is highly unlikely that we could achieve stabilisation of greenhouse gas concentrations in the atmosphere at a level that avoids the worst effects of climate change."

The concept of reducing emissions from deforestation in developing countries (RED)

was not included in the Kyoto Protocol because of concerns over the uncertainty of emissions estimates, the potential for emissions displacement (i.e. reducing deforestation in one area could lead to or accelerate deforestation in another) and the risk of non-permanence (i.e. forest carbon stocks could be released into the atmosphere at any time through natural and anthropogenic disturbances). However, Costa Rica and Papua New Guinea were able to mobilise enough support for RED to be introduced into processes under the United Nations Framework Convention on Climate Change (UNFCCC) by the Conference of the Parties (COP) at its 11<sup>th</sup> session in Nov./Dec. 2005. The Bali Action Plan, agreed two years later at the 13<sup>th</sup> COP, aimed to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action in order to reach an agreed outcome and adopt a decision at its 15<sup>th</sup> session, by addressing, inter alia, enhanced national/international action on mitigation of climate change. The Bali Action Plan specified that to achieve enhanced national/international action on mitigation, consideration should be given to "policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in

1. Decision 11/CP.7 defines deforestation as the direct, human-induced conversion of forested land to non-forested land, whereas degradation would represent a measurable, sustained, human-induced decrease in carbon stocks, without a change in land use taking place.

developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.” By the time of the 13<sup>th</sup> COP, a second “D” had been appended to RED (Reducing Emissions from Deforestation and forest Degradation – REDD) and the concept had essentially been further expanded to REDD-plus (REDD plus conservation of forest carbon stocks, sustainable management of forest, and enhancement of forest carbon stocks).

At the 13<sup>th</sup> COP, the Parties also reached a decision on “Reducing emissions from deforestation in developing countries: approaches to stimulate action” (Decision 2/CP.13), which encouraged Parties to build capacities for i) data collection, ii) emissions estimations and monitoring, and iii) to undertake demonstration activities. It provided a set of indicative guidance for the implementation and evaluation of demonstration activities, and encouraged Parties to apply the Intergovernmental Panel on Climate Change (IPCC) Good Practice Guidance for Land Use, Land-use Change and Forestry (Penman et al. 2003) for estimating and reporting forest emissions and removals.

The outcomes of the 13<sup>th</sup> COP raised expectations that REDD-plus would be included in a future global climate framework and spurred numerous, wide ranging initiatives to prepare developing countries for REDD-plus. Although still in their early stages, these initiatives already offer important lessons for both the establishment of national REDD-plus systems and for the global climate negotiations.

For example, the challenges of establishing national REDD-plus systems have been discussed in the international negotiations mostly in terms of the need for capacity building. Observations of REDD-plus readiness activities in the Asia-Pacific region indicate that the challenge is more than one of capacity; inclusive, transparent processes that build a sense of ownership and commitment to REDD-plus amongst the various forest stakeholders are critical.

A large number of developing countries are now designing their REDD-plus strategies (Obersteiner et al. 2009).<sup>2</sup> This report presents the experiences of two countries – Indonesia and Viet Nam – in developing their national REDD-plus systems. Indonesia and Viet Nam were selected for the study because they offer important contrasts with respect to forest resources, forest management, and drivers of deforestation and degradation (Table 1.1). The objectives of this research exercise are to:

- ⊙ Provide an accurate description and assessment of REDD-plus preparations, progress and challenges in Indonesia and Viet Nam;
- ⊙ Through this assessment, to provide a set of recommendations for how the two study countries can more effectively move forward in constructing their national REDD-plus systems.

This introductory chapter provides an overview of the REDD-plus debate, describes two international support frameworks that could be particularly influential in shaping REDD-plus readiness activities, and explains the conceptual framework used for the country studies.

2. The World Bank lists 37 countries as participants selected for support under the Forest Carbon Partnership Facility (Bosquet and Andrasko 2010).



TABLE 1.1 © Forest resources, carbon stocks and deforestation and degradation drivers in Indonesia and Viet Nam

	INDONESIA	VIET NAM
Forest resource	» 88.5 million ha forests (49% land area) (FAO 2009)	» 12.9 million ha forests (40% land area) (FAO 2009)
Carbon in forest biomass	» 4,154 – 8,037 Mt C (Gibbs et al. 2007) » 5,897 Mt C (FAO 2009)	» 774 – 1,642 Mt C (Gibbs et al. 2007) » 1,174 Mt C (FAO 2009)
Change in forest area	» 2000-2005: -1.871 million ha/yr (FAO 2009)	» 2000-2005: +241,000 ha/yr (FAO 2009)
Deforestation and forest degradation drivers	» Proximate drivers include illegal logging, establishment of oil palm plantations, conversion of forests to agricultural lands by smallholders, mining and oil extraction (World Bank 2006; Nawir et al. 2007). » Underlying drivers include market failure, policy failure or changes, and weak governance (ibid.).	» Proximate drivers include conversion for agriculture, aquaculture, salt production, etc., over-exploitation for timber and fuelwood, shifting cultivation, and forest fires in dry areas (Do Dinh Sam et al. 2007). » Underlying drivers include lack of social awareness of forest functions, increasing population and migration (ibid.).

## 12 The REDD-plus debate

The proponents of REDD-plus provide at least four reasons for why this concept should be included in the global climate regime. First, the scale of emissions from deforestation and forest degradation is too immense to ignore. In its 4<sup>th</sup> Assessment Report, the IPCC concluded that the forest sector is responsible for around 17% of global emissions (IPCC 2007), while Gullison et al. (2007) have estimated that reducing deforestation rates by half by 2050 and maintaining them thereafter would contribute up to 12% of the total emission reductions required to stabilise atmospheric CO<sub>2</sub> levels at 450 parts per million through 2100. Second, REDD-plus is thought to be a relatively low cost mitigation option that would lower the economic costs of achieving global emissions reductions (Stern 2006), though the observations in Indonesia and Viet Nam (see following chapters) suggest that this assumption needs to be revisited. Analysis conducted for the Eliasch Review concluded that including the forest sector in a global carbon trading system could reduce the costs of halving global carbon emissions from 1990 levels by as much as 50% (Eliasch 2008). Third, because of the large volume of credits that could be generated and their anticipated cost competitiveness, REDD-plus would allow for more ambitious emission reductions targets. Fourth, reducing deforestation and forest degradation rates could provide a number of co-benefits, including employment and income generation,

biodiversity and watershed conservation, provision of timber and fibre, and aesthetic and recreational services (IPCC 2007), that mitigation activities in other sectors cannot offer.

REDD-plus supporters provide several propositions for why they believe REDD-plus could succeed where other approaches to protect and improve the management of forests have failed. First, by channelling significant financial resources to developing countries, REDD-plus offers the promise of changing the economic drivers that currently promote the liquidation of forest assets. Second, because of the perceived financial benefits, REDD-plus will generate strong interest at the national level, which is necessary for the development of cross-sectoral approaches needed to tackle the drivers of deforestation (e.g. clearance of forests for agriculture). Third, REDD-plus will encourage the alignment of multiple constituencies that will be strong enough to counter the alliances responsible for forest destruction. Fourth, REDD-plus finance will be performance-based, meaning that payment will only take place when real reductions in emissions are verified.

However, there are also clearly risks with REDD-plus. The perceived risks include:

- © **Scale and price of reductions:** REDD-plus could provide a large pool of cheap offsets that would serve as a disincentive

for developed countries to invest in technologies to reduce their industrial emissions.

- ⊙ **Non-permanence:** Emissions avoided through REDD-plus activities could occur at some time in the future due to natural or anthropogenic disturbance.
- ⊙ **Additionality:** Determining whether the REDD-plus activity led to emissions avoidance or the enhancement of carbon stocks involves uncertainty.
- ⊙ **Emissions displacement (leakage):** REDD-plus activities in one locality, without reducing demand for forest resources or forest land, could prompt deforestation or degradation elsewhere;
- ⊙ **Rights, livelihoods and equity:** REDD-plus could encourage fortress-style conservation that would deny local communities access to forests, forcing them to endure greater economic hardship and to resort to extralegal activities. An escalation of social conflict, and distorted payment distribution that favours more powerful actors, are other anticipated outcomes.
- ⊙ **Moral hazard:** REDD-plus could provide the greatest rewards to forest owners and managers with the worst performance records, i.e. those with the highest rates of deforestation and forest degradation.

While the debate over REDD-plus continues, there is now strong support among UNFCCC Parties for REDD-plus to be part on any future global mitigation arrangement. The Bali Action Plan (Decision 1/CP.13) mandated the COP at its 15<sup>th</sup> session to reach a decision on a future regime to enable the full, effective and sustained implementation of the Convention. Although the COP was unable to agree on this decision, meaning that a global agreement on REDD-plus is yet to be reached, it agreed to “take note of” an the “Copenhagen Accord,” an agreement drafted by the US and a small number of other Parties that stresses the importance of REDD-plus to climate mitigation. Over 130 Parties have subsequently agreed to (“associated with”) the Accord.

Article 6 of the Copenhagen Accord reads, “We recognize the crucial role of reducing emission from deforestation and forest degradation and the need to enhance removals of greenhouse gas (GHG) emission by forests and agree 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.” The Accord states that scaled up, new and additional, predictable and adequate funding will be provided to developing countries for enhanced action on mitigation, including REDD-plus. Through the Accord, developed countries commit to providing US\$ 30 billion in new and additional resources for mitigation and adaptation for the period 2010-2012. Special mention is made of the forestry sector as a target for this assistance. Developed countries also commit to mobilising US\$ 100 billion a year by 2020 for “meaningful mitigation actions and transparency on implementation” in developing countries. The Accord states that the Copenhagen Green Climate Fund shall be established as an operating entity of the financial mechanism of the Convention to support projects, programme, policies and other activities in developing countries related to mitigation including REDD-plus.

There is a lot of uncertainty over the Copenhagen Accord as there is a lack of clarity of how the actions agreed will be conducted; as it is not a UNFCCC decision it has no “home.” Nevertheless, the Accord attests to the growing international support for REDD-plus. This support is also evident in the negotiation text prepared by the Chair of the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) under the Convention, which has evolved further since Copenhagen. Annex VI of the negotiation text is on REDD-plus. It states that developing countries should contribute to mitigation activities in the forest sector by undertaking REDD-plus activities; that these activities should, inter alia, facilitate sustainable development and reduce poverty,

and be results based; and that when undertaking REDD-plus a number of safeguards should be promoted and supported, including transparent and effective national forest governance structures, respect for the knowledge and rights of indigenous peoples and members of local communities, and their full and effective participation, and that actions should be consistent with the conservation of natural forests and biological diversity.

In summary, the concept of REDD-plus has garnered strong international support, though many issues to be resolved remain and, as yet, no international agreement on REDD-plus exists. This creates a state of uncertainty for developing countries that are working towards establishing their REDD-plus systems, but there is a sense of optimism, buoyed by the technical and financial support mobilised to assist developing countries in preparing for REDD-plus (see below), that REDD-plus will be part of the post-2012 global climate regime.

### 1.2.1 Sub-national, national or nested approach?

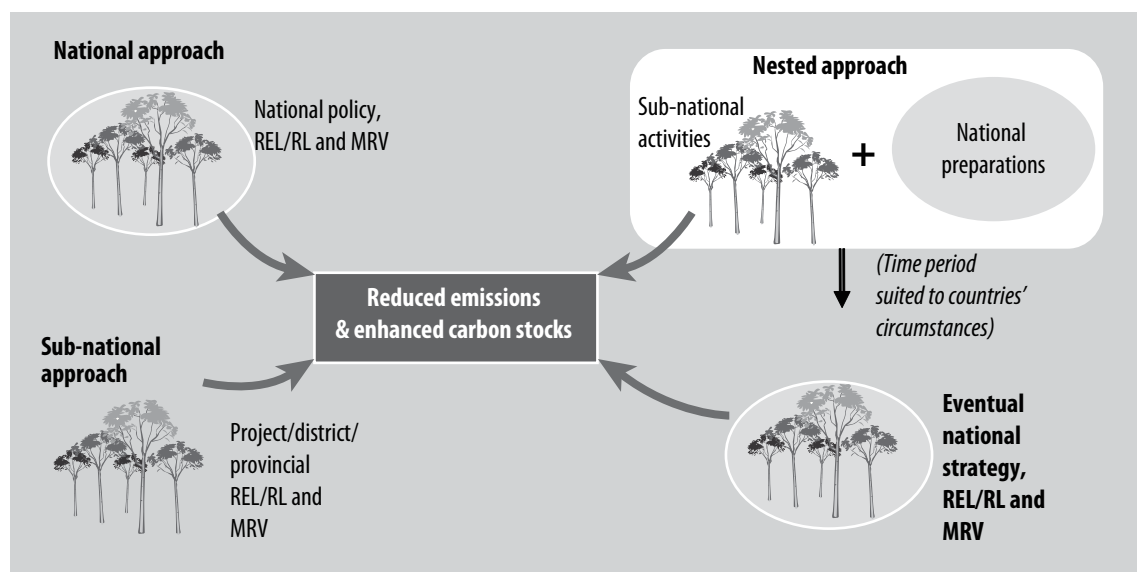
One of the many outstanding issues to be resolved is whether a future global REDD-plus

mechanism will support a sub-national approach, a national approach, allow for either, or for a combination of both (nested approach). This issue is especially relevant to this study as it examines the development of national REDD-plus systems on the assumption that any global REDD-plus mechanism that is agreed will encourage developing countries to establish national strategies to reduce emissions, to set a national reference emission level or reference level, and to establish a national framework for monitoring, reporting and verification (MRV).

Under a national approach, governments would be rewarded for reducing emissions below their reference emission levels (RELs) or reference levels (RLs).<sup>3</sup> Under a sub-national approach, a sub-national REL/RL for the area where the activities to reduce emissions and/or enhance forest carbon stocks is taking place would be established. This could conceivably be at project, district, provincial or other levels. A nested approach would allow carbon credits to be generated using sub-national RELs/RLs during a specified transition period before a country has implemented a national accounting and monitoring system (Fig. 1.1).

The negotiations are leaning towards a national approach that is achieved through phases. The

FIGURE 1.1 © Sub-national, national and nested approaches



3. The difference between RELs and RLs is explained below.

“Text to facilitate negotiations among Parties” prepared by the Chair of the AWG-LCA for its 10<sup>th</sup> session in Bonn, June 2010, states that developing country Parties should contribute to mitigation actions in the forest sector through REDD-plus activities, and that, in aiming to undertake these activities should develop:

[A national forest reference emission level and/or forest reference level, or if appropriate, sub-national forest reference emission level[s] and/or forest reference level[s], taking into account decision 4/CP.15 and any further elaboration of those provisions agreed by the Conference of the Parties;]

[A robust and transparent national forest monitoring system for the monitoring and reporting of the activities referred to in paragraph 3 above[, and the safeguards referred to in paragraph 2 above], with, as appropriate, sub-national monitoring and reporting as an optional interim measure.

Further, the text states that REDD-plus activities should be implemented in phases:

beginning with the development of national strategies or action plans, policies and measures and capacity-building, followed by the implementation of national policies and

measures, and national strategies or action plans and, as appropriate, sub-national strategies, that could involve further capacity-building, technology development and transfer and results-based demonstration activities, and evolving into results-based actions [that shall be fully measured, reported and verified].

The text supports the development of national REDD-plus strategies, RELs/RLs and MRV frameworks, as does Decision 4/CP.15 on “Methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries” reached at the 15<sup>th</sup> COP. For activities relating to Decision 2/CP.13, Decision 4/CP.15 requests developing country Parties to “establish, according to national circumstances and capabilities, robust and transparent national forest monitoring systems and, if appropriate, sub-national systems as part of national monitoring systems.” Strong support for national level approaches exists because the potential of emissions displacement from REDD-plus projects is considered to be high, with most estimates exceeding 50% (Karousakis and Corfee-Morlot 2007).

## 1.3 Support for REDD-plus readiness

Many developing countries, including Indonesia and Viet Nam, are now developing their national REDD-plus systems. Of the numerous initiatives to support REDD-plus readiness,<sup>4</sup> two are particularly pertinent to the development of national REDD-plus systems: the World Bank’s Forest Carbon Partnership Facility (FCPF) and the UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD). As of April 2010, US\$ 115 million was secured for the FCPF

Readiness Fund and US\$ 55 million was pledged to the FCPF Carbon Fund (Bosquet and Andrasko 2010). US\$ 52 million has been donated by the government of Norway to UN-REDD (Daviet et al. July 2009). Indonesia and Viet Nam are both participating in the FCPF and both have been selected as UN-REDD pilot countries.

The significance of the FCPF and UN-REDD lies less in the amount of money they are making (or promising to make) available to

4. See the following chapters for descriptions of donor support for REDD-plus readiness activities in Indonesia and Viet Nam.

participating countries for readiness planning and activities,<sup>5</sup> and more in the structured processes they provide for developing countries to develop their REDD-plus readiness strategy and MRV architecture (criticisms of the implementation of these processes notwithstanding).<sup>6</sup>

### 1.3.1 Forest Carbon Partnership Facility

The World Bank launched the FCPF at the 13<sup>th</sup> COP with the objectives of building capacity for REDD in developing countries and testing a programme of performance-based incentive payments in some pilot countries. The FCPF consists of a Readiness Mechanism and a Carbon Finance Mechanism. The Readiness Mechanism is intended to assist participating countries to develop an FCPF endorsed “Readiness Package”, which confirms eligibility for emission reduction transactions within the FCPF Carbon Fund. The “Readiness Package” consists of three major components: a REDD strategy and implementation framework; a monitoring system; and a published reference scenario.

The FCPF Readiness Mechanism has three phases that countries progress through. In phase I, countries submit a Readiness Plan Idea Note (R-PIN), which requires providing an overview of the country’s interest in the FCPF programme and of land use patterns, causes of deforestation, stakeholder consultation process, and potential institutional arrangements in addressing REDD. If the R-PIN is accepted, the country is then admitted to the Readiness Mechanism and invited to submit a Readiness Preparation Proposal, or R-PP (phase II; R-PPs were formerly referred to as R-Plans). The R-PP is intended as a framework for a country to set a clear plan, budget, and schedule to develop REDD readiness to undertake activities reducing emissions from deforestation and

forest degradation (FCPF 2008). The R-PP has nine components as its basic building blocks and separate plans or terms of references must be designed for each of these. The nine building blocks are:

- ⊙ Land use, forest policy and governance quick assessment
- ⊙ Management of Readiness
  - » Convene National REDD Working Group
  - » Prepare a REDD Consultation and Outreach Plan
- ⊙ Design the REDD strategy
  - » Assess candidate activities for a REDD Strategy
  - » Evaluate potential additional benefits of REDD, including biodiversity conservation and rural livelihood
  - » Trade-offs Analysis
  - » Risk assessment of your REDD strategy
- ⊙ REDD implementation framework
- ⊙ Assess the social and environmental impacts of candidate REDD strategy activities
- ⊙ Assess investment and capacity building requirements
- ⊙ Develop a reference scenario of deforestation and degradation
- ⊙ Design and implement a monitoring, reporting and verification system for REDD
- ⊙ Design a system of management, implementation, and evaluation of Readiness preparation activities (optional).

Grants for implementing each R-PP are a maximum of US\$ 3.6 million, which can include a US\$ 200,000 upfront grant to support R-PP development.

Phase III of the FCPF is the development of the “Readiness Package” through the implementation of studies and activities detailed in the R-Plan. It describes the REDD strategy and implementation framework, the reference

5. To put the amount of money pledged to FCPF and UN-REDD in perspective, the Eliasch Review (2008) estimated that capacity building in 40 forest nations could cost up to US\$4 billion over five years.

6. Some of these criticisms are described in the two country studies.

scenario, and the monitoring system. Once the Readiness Package is endorsed by the FCPF, the respective country is cleared for a potential emissions reduction transaction with the FCPF Carbon Fund.

### 1.3.2 UN-REDD

UN-REDD was launched in 2008 as a collaborative programme between three United Nations agencies (the Food and Agriculture Organization of the United Nations, the United Nations Development Programme, and the United Nations Environment Programme). It has two components: (1) assisting developing countries prepare and implement national REDD strategies and mechanisms, and (2) supporting the development of normative solutions and standardized approaches based on sound science for a REDD instrument linked with the UNFCCC.<sup>7</sup> Areas of support for country actions include scope and alliance

building, capacity support associated with monitoring and assessment for REDD, dialogue, national REDD strategy, implementing REDD measures, and REDD payment distribution. At the country level, the UN-REDD programme is implemented through joint national programmes for country actions, which are described in national Joint Programme Documents (JPDs) developed by the three UN agencies and a resident coordinator. Nine pilot countries have been identified for the development of joint national programmes.

The JPDs provide an overview of forest laws and management and identify major outcomes to be achieved using UN-REDD funds. UN-REDD has established a Programme Technical Secretariat which assesses the submitted JPDs. At the first meeting of the UN-REDD Board on 9-10 March 2009, five JPDs from the Democratic Republic of the Congo, Indonesia, Papua New Guinea, Tanzania, and Viet Nam were approved for funding.

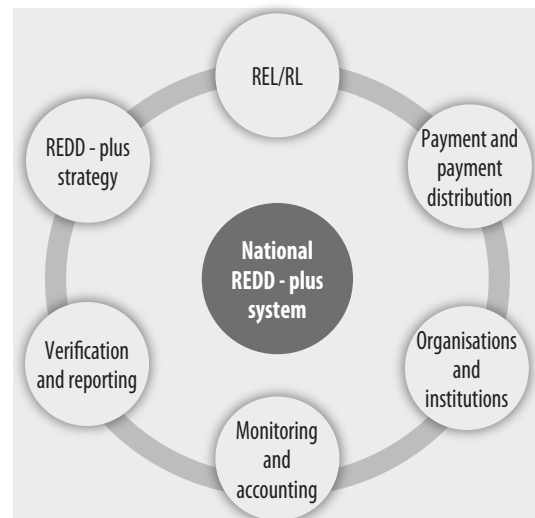
## 1.4 Conceptual framework

The conceptual framework of this report is based on the understanding that developing countries can take the following steps to develop their national REDD-plus systems in preparation for a global REDD-plus mechanism, keeping in mind that flexibility must be incorporated to accommodate any decisions taken by Parties to the UNFCCC (Fig. 1.2):

- ⊙ Establish a national REDD-plus strategy consisting of effective policies for reducing emissions;
- ⊙ Establish the necessary organisations and institutions to implement the national REDD-plus system;
- ⊙ Define a national reference emission level or reference level;
- ⊙ Establish a credible system to measure, monitor, report and verify the reductions in carbon emissions;

- ⊙ Set up a payment system to compensate those who have incurred opportunity costs in implementing REDD-plus.

FIGURE 1.2 ⊙ Elements of national REDD-plus systems



7. [http://www.undp.org/mdtf/un-redd/assistance\\_strategy.shtml](http://www.undp.org/mdtf/un-redd/assistance_strategy.shtml), accessed 15 Aug. 2009.

### 1.4.1 REDD-plus strategy

The term REDD-plus strategy can be used in two ways. First, it can, and most often is, used to describe the strategy of REDD-plus readiness, i.e. the set of actions that countries intend to take to prepare for a future global REDD-plus mechanism. Second, it can be described as the set of actions that countries plan to undertake to reduce emissions and/or enhance their forest carbon stocks (e.g. more effective forest law enforcement, enrichment planting in degraded forests, etc.). In this study, we review both the strategies to prepare for REDD-plus and the proposed strategies for reducing emissions and enhancing forest carbon stocks.

### 1.4.2 REDD-plus organisations and institutions

REDD-plus systems will require both organisations and institutions. REDD-plus organisations are the actors responsible for formulating and managing the national REDD-plus system, while REDD-plus institutions are the laws, rules, regulations, procedures and guidance for implementing REDD-plus activities.<sup>8</sup>

### 1.4.3 REL/RL

Under the Clean Development Mechanism (CDM) of the Kyoto Protocol, the *baseline* is defined as the “the scenario that reasonably represents the sum of the changes in carbon stocks in the carbon pools within the project boundary that would occur in the absence of the proposed A/R CDM project activity” (EB 35 Annex 19, p.9). At the UNFCCC Expert Meeting “Methodological Issues Relating to Reference Emission Levels” in Bonn, 23-24 March 2009, the REL was described as the amount of gross emissions from a geographical area estimated within a reference time period, and the RL as

the amount of net/gross emissions and removals from a geographical area estimated within a reference time period. Therefore, a REL is necessary for measuring the impact of activities to reduce emissions from deforestation and forest degradation (REDD), whereas a RL is necessary to measure emissions from REDD and removals from conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD-plus). In this report for sake of brevity we mostly use the term REL, but the reader should be aware that the discussion about RELs could be expanded to include the additional issues associated with RLs.

A REL is needed to determine whether REDD-plus activities are effective in reducing national emissions from the forest sector. The REL is a function of the change in forest area and the corresponding carbon stocks of the forests being deforested or degraded, and thus requires two types of data: activity data and emissions factors. Activity data are data on the magnitude of human activity resulting in emissions or removals taking place during a given period of time, which for the forest sector is measured in terms of area. An emission factor is defined as the average emission rate of a given GHG for a given source, relative to units of activity (e.g. tons of carbon dioxide, or equivalent, emitted per hectare of land converted).<sup>9</sup>

The estimation of emission factors of the forest carbon pools can be undertaken at various levels of certainty. The higher the level of certainty, the more credible the REL. The IPCC has termed these levels “tiers.” Tier 1 is the most basic method. The amount of aboveground biomass that is removed is estimated by multiplying the forest area converted annually to other land by the average annual carbon content of biomass in the land prior to conversion. Default values for broad continental forest types are used for the carbon content of

8. Institutions are the laws, rules and regulations that structure social interaction to achieve a specific goal through the provision of information, incentives and sanctions (Elster 1989; Knight 1992; Nee 1998).

9. See Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

biomass. Tier 2 uses country-specific data on carbon stocks in initial land uses and carbon losses can be apportioned to specific conversion processes, such as burning or harvesting. Tier 3 is similar to Tier 2 but requires more detailed data, e.g. biomass volumes removed are based on actual inventories and/or model estimations.<sup>10</sup> It is generally understood that the Tier 1 method will not be adequate for the development of RELs because the level of uncertainty associated with the default values is high.

There are essentially three approaches that could be used to establish a national REL:

- © **Average of historical emissions:** Past emissions during a set time period are estimated and the average is taken as the REL. Decisions would have to be made regarding the time period during which emissions are estimated, when the emissions are estimated, and the future time period for which the REL would be used. Concerns about this approach are that it does not provide an incentive for countries with high forest carbon stocks and low historical forest sector emissions to conserve their carbon stocks and that the types and intensity of drivers of deforestation/degradation in the future may differ from those in the past.
- © **Modelling:** A model that identifies and interprets the future effects of drivers such as population growth and economic growth on deforestation is used. Concerns with this approach include that the proxies used to model future rates of deforestation, such as gross domestic product, may not always correlate with actual emissions for some countries, and making projections into the future of factors such as energy security and prices of commodities presents a challenge.<sup>11</sup>
- © **Mixed REL:** A mixed REL uses different methods for the treatment of emissions from unplanned and planned land use. In this case, future projections of where deforestation would likely occur based on

past patterns can be made using spatial modelling, and economic models would be used to project deforestation based on the national planning targets associated with land use change.

International guidance on how a REL should be established is limited. Decision 4/CP.15 states that the Conference of the Parties “Recognises that developing country Parties in establishing forest reference emission levels and forest reference levels should do so transparently taking into account historic data, and adjust for national circumstances, in accordance with relevant decisions of the Conference of the Parties.” This allows for a great deal of flexibility in methods (Tiers), approaches (historical and modelling) as well as in the decision over whether a REL or RL will be set.

#### 1.4.4 Monitoring and accounting

National REDD-plus systems require a national framework for forest carbon stock monitoring and accounting<sup>12</sup> to “quantify the stocks, sources and sinks of carbon and other GHGs in the context of anthropogenic impacts on the global climate” (Watson 2009). The negotiating text developed by the AWG-LCA suggests that REDD-plus is likely to be results based, meaning that periodic monitoring of emissions, and comparing these with the REL, will be necessary. Conventionally, forest inventories have recorded stand structure, age, growth rate, biomass accumulation, and the wood densities of tree species to estimate timber volumes that can be harvested without degrading the long-term timber stock or for national or regional planning purposes, such as creating forest and land use inventories for land-use permits and land-use plans (Watson 2009). The national networks of permanent sample plots that have been established for these purposes may require significant

10. See [http://www.ipcc-nggip.iges.or.jp/public/gpplulucf/gpplulucf\\_files/Chp3/Chp3\\_7\\_Other\\_land.pdf](http://www.ipcc-nggip.iges.or.jp/public/gpplulucf/gpplulucf_files/Chp3/Chp3_7_Other_land.pdf) (accessed 26 June 2010) for further discussion.

11. For further discussion see UNFCCC (2009).

12. Watson (2009) defines carbon accounting as “the practice of making scientifically robust and verifiable measurements of GHG emissions.”





modification for REDD-plus, where the focus of monitoring must be on localities where the likelihood of changes in forest carbon stocks is highest (i.e. “REDD hotspots”).

In terms of how the accounting of forest carbon stock should be conducted, the IPCC refers to specific sources of emissions and removals of GHGs as “Categories” and considers the following categories under the Agriculture, Forestry and Other Land Uses (AFOLU) sector: forest land converted to crop land; forest land converted to grass land; forest land converted to settlements; forest land converted to wetlands; forest land converted to other land. These are all associated with deforestation, whereas a decrease in carbon stocks of forest land remaining forest land is commonly equated with forest degradation.

Which of the forest carbon pools will be monitored must also be decided. The five recognized forest carbon pools are aboveground biomass, belowground biomass, dead wood, litter, and soil.

The international guidance on establishing national forest sector monitoring and accounting for the purposes of REDD-plus is limited. Decision 4/CP.15 requests developing country Parties:

To establish, according to national circumstances and capabilities, robust and transparent national forest monitoring systems and, if appropriate, sub-national systems as part of national monitoring systems that:

- (i) Use a combination of remote sensing and ground-based forest carbon inventory approaches for estimating, as appropriate, anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes;
- (ii) Provide estimates that are transparent, consistent, as far as possible accurate, and that reduce uncertainties, taking into account national capabilities and capacities;
- (iii) Are transparent and their results are available and suitable for review as agreed by the Conference of the Parties.

This guidance is very general, leaving countries flexibility in taking decisions on a range of issues such as how frequently they should monitor, the selection of remote sensing and ground-based inventory methods, and which pools to monitor.

#### 1.4.5 Reporting and verification

Reporting and verification are essential elements of any system of performance-based claims. The latest negotiating text states that REDD-plus should be implemented in phases “evolving into results-based actions [that shall be fully measured, reported and verified],” but there is no guidance on how reporting and verification should be set up at sub-national or national levels, so there are constraints as to how much “readiness” is possible. The current negotiating text has work on developing the modalities for measuring, reporting and verifying emissions and removals by sinks, forest carbon stocks and forest area changes tasked to the Subsidiary Body for Scientific and Technological Advice (SBSTA).

Despite the lack of guidance, in their Readiness Preparation Plan for the World Bank’s FCPF, participating countries must set out how they plan to develop a MRV framework. Moreover, as the next chapter shows, there is nothing to stop a country (in this case, Indonesia) setting rules for reporting and verification, with the understanding that some adjustment will be required to accommodate the modalities and procedures of a future global REDD-plus mechanism.

#### 1.4.6 Payment and payment distribution

The Copenhagen Accord sets financial targets for developed countries to assist developing countries in enhancing their mitigation strategies, including in the forest sector. While funds are being mobilised to prepare developing countries to provide verified national emissions

reductions in their forest sectors, how developing countries will be rewarded for these emissions reductions remains unclear. These rewards are considered necessary because of the opportunity costs of not allowing forests to be converted to other land uses (for example, palm oil, coffee or rubber production). The current negotiating text suggests that market and non-market forms of payment could be used, but this remains a controversial issue, as evidenced by the bracketing of these clauses, as follows:

[Requests that the promotion and implementation of all activities referred to in paragraphs 3, 5, 7 and 8 above, including...

[Provisions for various approaches, including opportunities for using market, to enhance the cost-effectiveness of, and to promote, mitigation actions] [for result-based actions a flexible combination of funds and market-based sources...]

As with reporting and verification, there is nothing to stop countries regulating payment as part of their national REDD-plus systems, though as no compliance market for credits generated through REDD-plus exists, any trading of credits would be restricted to voluntary markets.

## 15 Conclusion

As a total package, the building of a national REDD-plus system presents a huge and unprecedented undertaking for forest protection, management, restoration and establishment, and adds to this the technical challenges of establishing national architecture to accurately measure, monitor, and report national changes in forest carbon stock, and emissions and removals. Developing countries are starting from a difficult position as, inter alia, their national inventories were never intended for the purpose of forest carbon accounting and there is little evidence that past initiatives have contributed to reducing national rates of deforestation. There is reason for optimism that REDD-plus, as a global mechanism for improved forest management,

could succeed where past initiatives have failed, but there are also risks, e.g. it could undermine emissions trading or deny local communities and indigenous people's access to forest resources that are essential for their wellbeing.

With the support of international agencies, about 40 developing countries are now taking steps to set up their national REDD-plus systems. It is important that their REDD-plus readiness strategies are independently monitored, assessed and compared to provide guidance on how robust and equitable national systems can be developed, as well as to ground the international negotiations in the realities of preparing for REDD-plus.

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# DEVELOPMENT OF A NATIONAL REDD-PLUS SYSTEM IN INDONESIA

## 2 CHAPTER

Henry Scheyvens and Agus Setyarso<sup>13</sup>

### 2.1 Introduction

REDD-plus (reducing emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forest, and enhancement of forest carbon stocks), a concept absent from Indonesia's Forestry Long Term Development Plan 2006-2025, has in the short space of a few years become a priority not only for the forestry sector (Box 2.1) but for Indonesia's national climate change strategy. This reflects the immense volume of greenhouse gas (GHG) emissions associated with forest destruction in Indonesia, the relatively low abatement costs that the forestry sector is thought to offer, and the expectation that REDD-plus could generate large financial inflows. The potential for tree planting to increase the nation's carbon sequestration capacity and the potential co-

benefits of REDD-plus, such as bio-diversity conservation, are also reasons for why the concept has attracted so much attention. Mitigation and adaption to climate change are now listed as one of the Ministry of Forestry's eight priorities for the forestry sector for 2010-2014.

The total forested area in Indonesia is estimated to be 137.09 million ha<sup>14</sup> covering approximately 70% of the country (MoFor 2008). Indonesia has the world's third largest area of tropical forest and the most species-rich forests in Asia (World Bank 2006). Forestry has contributed 3-4% of gross domestic product over the past ten years (ibid.) and about 120 million people have been defined as forest-dependent (Ginting 2000 in Down to Earth 2002). However, Indonesia's forest resources are not contributing as they should to poverty reduction, economic and social development, and environmental sustainability. Forests are threatened with degradation, fragmentation and destruction, and a quarter of the state forest area has no tree cover (Contreras-Hermosilla and Fay 2005). Indonesia continues to experience high annual rates of forest loss (Fig. 2.1).

#### BOX 2.1 © Forestry sector priorities, 2010-2014

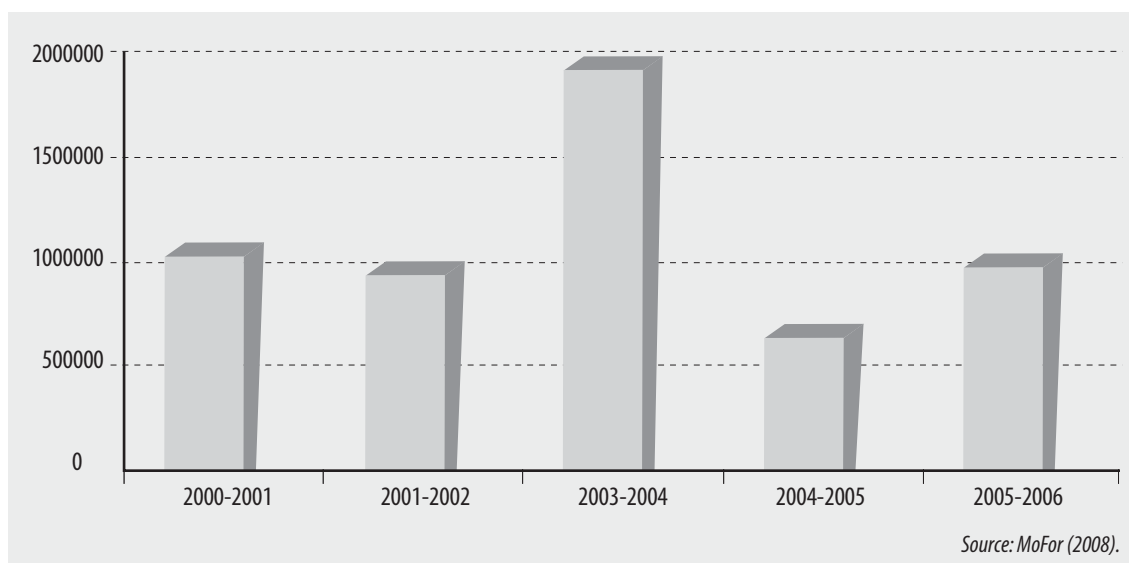
- » Strengthening forest designation to secure forest areas
- » Rehabilitation of degraded forest and (improving carrying capacity of) watershed
- » Forest protection and fire management
- » Conservation of biological diversity
- » Revitalisation of forest utilisation and forest industries
- » Empowerment of indigenous peoples and local communities
- » Mitigation and adaptation to climate change
- » Strengthening forest institutions

Source: Siswanto (2010).

13. Dr. Henry Scheyvens serves as the Director of the Natural Resources Management Group at the Institute for Global Environmental Strategies (Japan). Dr. Agus Setyarso is based at the National Forestry Council of Indonesia as the Commissioner on Forest and Economic issues.

14. This figure includes marine conservation reserves. The terrestrial forest area is 133.7 million ha (MoFor 2008).

FIGURE 2.1 © Deforestation rate, 2000-2005 (ha/yr)



Forest management issues are likely to receive greater attention now that President Susilo Bambang Yudhoyono has made climate change mitigation and adaptation national priorities for Indonesia. Indonesia was one of the 26 countries to sign the Copenhagen accord in December 2009, and in doing so committed itself to submitting an emissions reduction target to the United Nations Framework Convention on Climate Change (UNFCCC) by 31 January 2010. It has set targets of 26% of emissions reductions by 2020, and 41% with international support. In its submission, the Government of Indonesia (GOI) explained that these targets would be achieved through Nationally Appropriate Mitigation Actions (NAMA) on seven issues/sectors – deforestation, peat land, sustainable energy sources, energy efficiency, public transport and waste management – though it expects the major contribution to come from the forest sector (including peat lands), with land use change, forestry and peat fires understood to be responsible for over half of the national GHG emissions (Fig. 2.2). Of the 0.767 giga tons (Gt) of GHG emissions reductions that it estimates as necessary to achieve the 26% target, through the Second National Communication the GOI explains that it expects forestry to provide 0.392 Gt, or about 51% of the total, and peat lands to

contribute 0.280 Gt, or about 36.5% of the total. The new Minister of Forestry, Zulkifli Hasan, who assumed his position on October 2009, has assigned a special think tank team composed of eight experts to advise on actions to contribute to the national 26% emissions reduction target, amongst other issues.

Indonesia has been active in the international negotiations on REDD-plus and has been described as an “epicentre” for REDD-plus activities. In 2009, the GOI confirmed its participation in two international initiatives to support REDD-plus readiness activities: the Forest Carbon Partnership Facility (FCPF) managed by World Bank and the UN-REDD Program. At the national level, various activities are underway to formulate a REDD-plus strategy, a number of departments have taken up the issue of REDD-plus, a legal framework to regulate REDD-plus has been established, and work on a national reference emission level and on establishing a system to monitor GHG removals and emissions from forests is under way. At the sub-national level, several provincial governors are strong supporters of the REDD-plus concept and have issued decrees, established working groups, and encouraged the involvement of external actors to promote REDD-plus activities. REDD-plus

demonstration activities and projects<sup>15</sup> are either in the design phase or at early implementation stages across much of Indonesia. International support for Indonesia's readiness and demonstration activities is strong (see Appendix).

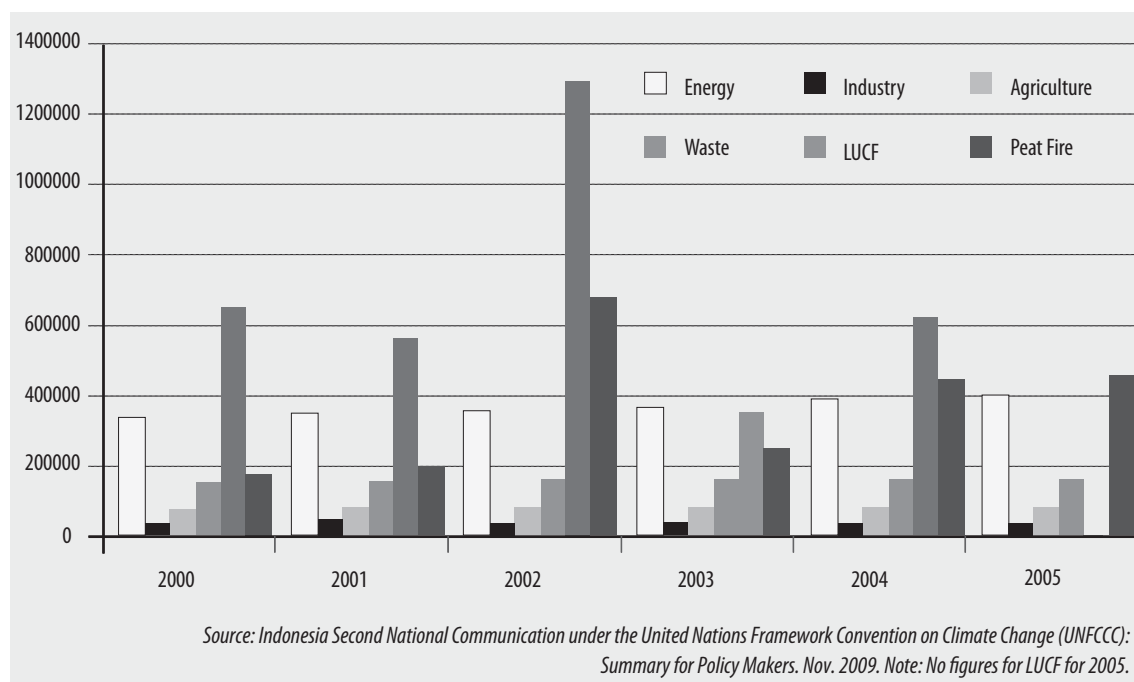
This paper focuses on the development of the national REDD-plus system in Indonesia. It describes and analyses the progress that has been made on various aspects of this system and some of the outstanding challenges that must be met for Indonesia to be able to claim that it is achieving real, long-term emissions reductions and carbon stock enhancement in the forest sector. This paper covers the development of the REDD-plus strategy, REDD-plus organisations and institutions, reference emission level, architecture for monitoring/accounting, reporting and verification, and REDD-plus payment and payment distribution. The objective of this paper is to provide a comprehensive yet succinct description of the development of the national REDD-plus system, as well as the

challenges it faces, and to identify critical issues that now require attention. A limitation of this paper is that REDD-plus activities in Indonesia are now so varied and numerous, taking place at both national and sub-national levels, that not all can be described in detail.

The information analysed in this paper was gathered through a literature review and through interviews with officials, both at national and sub-national levels, representatives of non-governmental organisations (NGOs), and other forest stakeholders in Indonesia conducted by the authors during the course of their work.

For readers not familiar with the international negotiations on REDD-plus, attention should be drawn to the fact that the negotiations on "REDD" have been expanded to "REDD-plus" and this expanded concept is supported by the GOI. This paper uses both terms – REDD and REDD-plus – according to how the activities that are reviewed were/are intended.

FIGURE 2.2 © National GHG emissions for year 2000, Indonesia (CO<sub>2</sub>e)



15. We make a distinction between "demonstration activities" (REDD-plus projects formally endorsed by the Ministry of Forestry as demonstration activities) and REDD-plus "projects" (projects not formally endorsed as demonstration activities).

## 2.2 REDD-plus strategy

This section describes the evolution of Indonesia's REDD-plus strategy and identifies some of the challenges that must be met. Recent scenario analysis, which can contribute to the development of a national REDD-plus strategy by identifying the relative importance of policy interventions in terms of mitigation potential and abatement costs, is also reviewed.

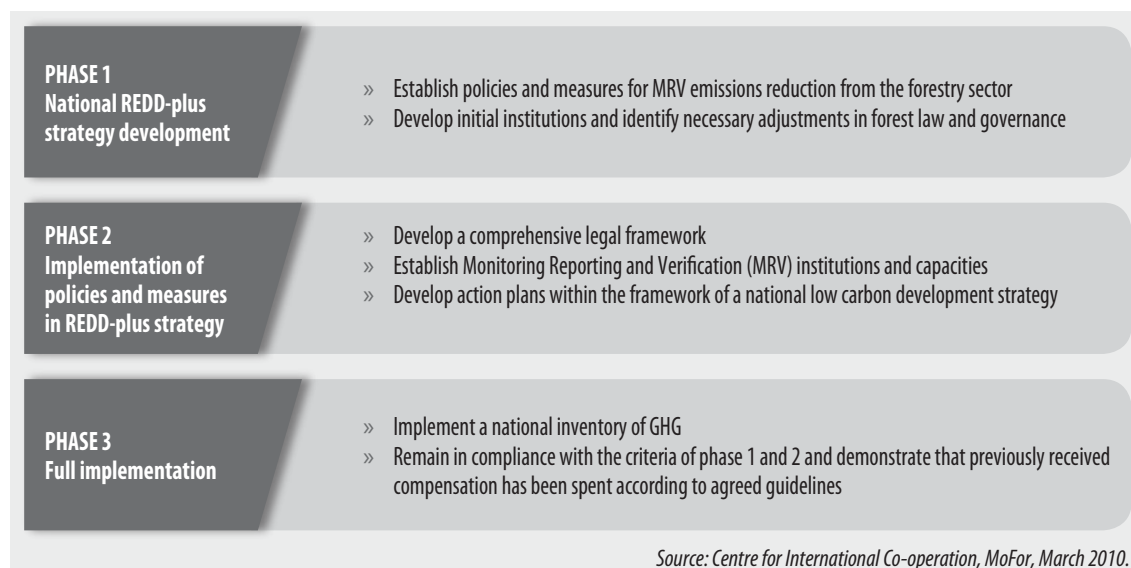
Reflecting its mandate to govern the nation's state forest lands, the Ministry of Forestry (MoFor) has the main responsibility for developing the national REDD-plus strategy in Indonesia, though this responsibility now seems to have been taken over by the National Development Planning Agency. In 2007, MoFor developed the concept of REDDI (Reducing Emissions from Deforestation and forest Degradation in Indonesia) and, at a parallel event at the 13<sup>th</sup> Convention of the Parties (COP) to the UNFCCC in December of the same year, officially launched Indonesia's REDD (now REDD-plus) roadmap, which includes readiness and transition (capacity building, demonstration activities, and other initiatives) from 2007 to 2012, and full implementation once a global REDD-plus mechanism is in place (Fig. 2.3).

Early analytical work to provide inputs into the development of a national REDD-plus strategy was conducted by the MoFor-led Indonesia Forest Climate Alliance (IFCA) in the lead up to the 13<sup>th</sup> COP. IFCA continued its work into 2008, but thereafter the Working Group on Climate Change under MoFor appears to have taken charge of developing the strategy. The Working Group developed Indonesia's Readiness Preparation Proposal (R-PP; formerly referred to as R-Plan), which the GOI submitted to the FCPF in 2009. Other initiatives relevant to the development of the REDD-plus strategy are the National Action Plan Addressing Climate Change, the Second National Communication, the sectoral roadmap for mainstreaming climate change prepared by BAPPENAS, the more recent proposals for reducing emissions elaborated by MoFor, and Indonesia's Technology Needs Assessment for Climate Change Mitigation.

### 2.2.1 Indonesia Forest Climate Alliance

IFCA was established by MoFor in July 2007 as a forum for communication, coordination and

FIGURE 2.3 © REDD-plus development phases



Source: Centre for International Co-operation, MoFor, March 2010.



consultation of stakeholders working on forest and climate change in Indonesia (IFCA 2007). Its most important contribution has been analytical work. With funding from the UK, Australia, Germany and the World Bank, in 2007 IFCA brought together MoFor staff and over 40 advisors from Indonesia and abroad to conduct studies on REDD methodology, architecture and strategies. The purpose of these studies was to address the elements of the supply chain necessary to produce carbon credits from REDD project activities in Indonesia. The research process included an

analysis of available data on carbon stocks and land-use change, priorities for action in respect of the key drivers of deforestation and degradation, mechanisms for engaging with the carbon markets and for managing REDD payments, and opportunities within the current legal and policy framework to take action (IFCA 2007). Priority strategy recommendations for reducing emissions from deforestation and forest degradation in four areas – protected areas, production forests, oil palm and peat land – were identified (Table 2.1).

TABLE 2.1 © Recommended strategies for addressing deforestation and degradation

FOREST FUNCTION	RECOMMENDED STRATEGY
<b>Protected Areas</b>	<ul style="list-style-type: none"> <li>» Develop a revised national conservation strategy.</li> <li>» Develop a professional and sufficient management structure.</li> <li>» Confirm boundaries and complete the legal gazettal process.</li> </ul>
	<ul style="list-style-type: none"> <li>» Review production forest function units to accommodate changes in the areas of forest vegetation in support of decentralised government responsibilities, including:               <ul style="list-style-type: none"> <li>• Review ecological conditions associated with each forest unit to determine its continuing conformity with the original function;</li> <li>• Review condition of <i>open access</i> production forest land;</li> <li>• Review opportunities to secure land access among local people and potential for collaborative land use involving HTR projects.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>» Reduce flow of illegal logs into the market, by:               <ul style="list-style-type: none"> <li>• Enforcing laws against illegal logging;</li> <li>• Creating alternative log supply;</li> <li>• Re-structuring wood products sector.</li> </ul> </li> </ul>
<b>Production Forests</b>	<ul style="list-style-type: none"> <li>» Review management practices in production forest units to optimise REDD opportunities, by:               <ul style="list-style-type: none"> <li>• Providing incentives to achieve stipulated <i>outcomes</i> of management rather than compliance to prescribed actions;</li> <li>• Performance bonding;</li> <li>• Providing incentives for practices reducing carbon emissions;</li> <li>• Supporting adoption of accountable 'sustainability targets';</li> <li>• Supporting collaborative management arrangements between forest concession companies.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>» Capitalise on the opportunity of the REDD market instrument to realise planned strategic reform of the pulp and paper industry to achieve a sustainable forest plantation sector, by:               <ul style="list-style-type: none"> <li>• Strengthening the criteria for approval of new plantations in Production Forest;</li> <li>• Increasing the cost of using mixed tropical hardwood and/or restrict its use for pulp production;</li> <li>• Regulating the export of wood chips and pulpwood logs;</li> <li>• Encouraging carbon-positive pulp and plantation projects by improving due diligence in the financial sector.</li> </ul> </li> </ul>
<b>Oil Palm</b>	<ul style="list-style-type: none"> <li>» Consolidate policy and approval criteria for releasing HPK (<i>Hutan Produksi Konversi</i>, Conversion Forest) for oil palm developments.</li> <li>» Review spatial plans to optimise degraded lands.</li> <li>» Intensify production per unit of land.</li> <li>» Require zero burning.</li> </ul>
<b>Peat land</b>	<ul style="list-style-type: none"> <li>» Regulate and restore water tables.</li> <li>» Prevent fire.</li> <li>» Build coordination and consistency across government jurisdictions and sectors to control cross boundary impacts of fire (control of sources and control of spread).</li> <li>» Regulate further conversion of peat lands and revise and enforce rules for management of existing peat land plantation sites.</li> <li>» Implement land swaps where possible to retain high carbon value forest and peats while allocating alternative land for new plantations.</li> </ul>

Source: IFCA (2008, xxii-xxiii).

The IFCA studies in 2007 were published in *REDDI: Reducing emissions from deforestation and degradation in Indonesia. REDD methodology and strategies: Summary for policy makers*, which was launched in conjunction with the 13<sup>th</sup> COP. This early work of IFCA provided a strong analytical basis for the further elaboration of Indonesia's REDD(-plus) strategy and had a large influence on later MoFor REDD strategy documents.

### 2.2.2 National Action Plan Addressing Climate Change (November 2007)

As with the first IFCA report, the National Action Plan Addressing Climate Change was timed for release at the 13<sup>th</sup> COP. It explained that during the period 2005-2009 the five policy priorities that had been identified in the forestry sector would contribute to mitigation as follows:

- ⊙ Preventing illegal logging would result in reduced GHG emissions;
- ⊙ Forest and land rehabilitation would increase carbon absorption capacity and conserve carbon stocks, and increase resilience and adaptability to extreme climate related events;
- ⊙ Restructuring the forestry sector, particularly the industry, and accelerating the development of planted forests, would increase forest carbon absorption capacity;
- ⊙ Empowerment of communities around the forest would contribute to their improved awareness of climate change issues and their capacity to adapt to climate related events;
- ⊙ Strengthening the determination of forest areas by clarifying forest status, boundaries and institutions would contribute to the reduction of emissions and conservation of carbon stocks by reducing illegal activities.

The National Action Plan explains that this "mitigation effort" is strengthened by the

government's policies on: incentive and disincentive mechanisms for local governments to increase forest cover; monitoring and evaluation; tackling and preventing forest fires; and sustainable peat land management. Three main areas for supporting the mitigation effort in the forestry sector are identified: emissions reductions and increased capacity to absorb carbon; implementation of incentive mechanisms (including REDD); and supporting policies (spatial planning, law enforcement, poverty alleviation, research and development, capacity building, preparation and social engineering).

While the National Action Plan acknowledged the importance of REDD, unlike the IFCA work, it did not contribute directly to the development of REDD(-plus) strategies. Whereas the IFCA work attempted to set out the steps necessary to deliver high quality REDD credits, the National Action Plan was more concerned to show how the forestry sector would contribute to climate change mitigation through the *existing policies*.

### 2.2.3 Readiness Preparation Proposal (R-PP)

IFCA work continued into 2008 and resulted in the publication of *IFCA consolidation report: Reducing emissions from deforestation and forest degradation in Indonesia*. Efforts to develop the national REDD-plus strategy then shifted to MoFor, which had begun to prepare the Readiness Preparation Proposal (R-PP) for the World Bank's FCPF; the FCPF's governing body, the Participants Committee, had decided that Indonesia did not need to submit a Readiness Plan Idea Note (R-PIN) but could proceed directly to a R-PP because of the IFCA work.

Along with Panama and Guyana, in early 2009 Indonesia was one of the first three countries to submit its R-PP. The R-PP was reviewed by a Technical Advisory Panel (TAP) and based on the feedback it received MoFor undertook

revisions and resubmitted the R-PP in May. This was again reviewed by a TAP and both the revised R-PP and the results of the review were discussed at the third meeting of the FCPF Participants Committee in June 2009. The Participants Committee authorised the Bank to complete its due diligence on the proposals with a view to entering into Readiness Grant Agreements with the three countries, whereby they would be able to access up to US\$ 3.6 million to carry out the work provided for in their R-PPs.

The second review of the R-PP found that significant progress had been made in strengthening the document, concluding that:

Over-all, the R-Plan [R-PP] is consistent and presented as a well integrated package. The document is substantive and demonstrates serious effort and progress towards conceptualisation, initial strategy formulation and planning for REDD. Drawing on the strengths of the Ministry of Forestry-led IFCA major study of REDD potential in Indonesia, the R-Plan is comprehensive and well reasoned from the perspective of the principal drivers of deforestation and proposed responses. Its framework enjoys robust ownership in particular from the Ministry of Forestry. The R-Plan provides convincing argumentation regarding the alignment of the known drivers of deforestation with the appropriate set of responses that might emerge from a successfully implemented REDD strategy in Indonesia....

The R-Plan includes several well-advanced TORs for many of the R-Plan components. The proposal to link action at multiple levels with distinct methodological, policy and institutional requirements is refreshing (TAP 2009).

Several areas that required improvement were also identified:

A key issue observed by several TAP members is that the consultative processes need to be broadened sector-wise, and expanded geographically, particularly those with indigenous peoples and forest dwellers. Currently, the R-Plan's ownership primarily rests with the Ministry of Forestry. In order to be able to address issues that are covered by other government ministries, national, provincial and local, a systematic procedure for their engagement will be crucial.... Monitoring and particularly verification responsibilities need to be sorted out to enable robust and equitable distribution mechanisms to emerge.... One feature that is not explicitly addressed in the R-Plan is the treatment of agroforestry and peat lands which can become large sources of carbon emissions. The processes and mechanisms to be put in place to address conflicts that can arise from REDD-related activities also need to be designed. Specific attention should be given to the dynamics of a prominent type of land use in Indonesia represented by oil palm plantations (TAP 2009).

TABLE 2.2 © Budget request from MoFor to FCPF

R-PP COMPONENT	ACTIVITIES	REQUESTED BUDGET (US\$)
1	Background studies (follow up of IFCA studies) including further studies on drivers of deforestation and degradation and ways to address them	138,000
2	Management of REDD, consultation, communication, participation	491,000
3	Design REDD strategy: Evaluate opportunity costs, risks, evaluate demonstration activities	652,000
4	REDD implementation framework: Assist institutional setting including national registry, institutional capacity building, etc.	469,000
5	Assessment of environmental and social benefits, and other co-benefits	342,000
7	Development of REL/RL [reference emission level/reference level], data acquisition, background studies (coordinated activities: Australia – UN-REDD – FCPF – others)	719,000
8	Design MRV [monitoring, reporting, verification] system (coordinated activities: Australia – UN-REDD – FCPF – others)	285,000

While MoFor had provided some opportunities for public consultation in the formulation of the R-PP, some organisations felt that these were inadequate. In a letter to the Minister of Forestry dated 15 May 2009, the Secretary General of Aliansi Masyarakat Adat Nusantara and the Executive Director of Sawit Watch, two Indonesian NGOs, expressed concerns over a lack of key information in early drafts of the R-PP, which limited the possibility for indigenous peoples to engage in an informed, effective and self-determined discussion; a lack of effort to comply with key requirements of the FCPF Charter; questionable ability of Indonesia to comply with its applicable international obligations in the near term with respect to the FCPF; and a dearth of information

regarding consultations generally and more specifically with indigenous peoples to date, matched by the absence of information about consultation processes with respect to indigenous peoples in the future. Concerns of the FCPF's Participant's Committee for broader stakeholder participation were also evident.

At the 4<sup>th</sup> meeting of the Participants Committee in October 2009, MoFor presented a budget request to the FCPF (Table 2.2) but at the time of writing (May 2010) there is no evidence that Indonesia and the FCPF have signed a Readiness Grant Agreement to release funds.

Table 2.3 lists the elements of the REDDI strategy, as outlined in the R-PP. The main

TABLE 2.3 © Main elements of REDD (plus) strategy

NATIONAL LEVEL	
<b>Tackling drivers of deforestation and degradation</b>	Protected Areas: Develop more effective conservation and management of Protected Areas
	Production Forest
	Develop more effective management of Production Forests
	Options for forest harvesting and management to supply the requirements of pulp and paper industry
	Oil palm: Options for supplying requirements of oil palm industry
Peatlands: Testing strategies for restoration of peatlands	
REDDI REGULATION: DEVELOPMENT OF TECHNICAL AND INSTITUTIONAL GUIDANCE TO IMPLEMENT REDDI	
<b>Methodology</b>	Establishment of REL at the national level
	Establishment of national level MRV system
<b>Institution</b>	Establishment of National Registry
	Institutional setting to implement REDDI
	Setting incentive/payment distribution mechanism
	Stakeholders communications/coordination/consultations
	Capacity building and institutional strengthening
SUB-NATIONAL LEVELS – PROVINCE AND DISTRICT	
<b>Methodology</b>	Establishment of REL at the provincial/district level
	Establishment of provincial/district level MRV system
<b>Institution</b>	Stakeholders communications/coordination/consultations
	Capacity building and institutional strengthening
<b>Demonstration Activities</b>	<b>Provincial level:</b> Enhance demonstration activities to represent different biogeographical conditions
	<b>District level:</b> Implement demonstration at district level or management unit level
	Enhance capacity of community groups, including <i>adat</i> communities to engage in forest management through REDD activities
<b>Analysis</b>	Analyse costs of alternative land uses
	Analyse environmental and socio-economic impacts of REDD
	Evaluate potential additional benefits of REDD
	Assess trade-offs and risks to sustainable development
	Assess risks of the REDDI strategy

Source: Indonesia draft R-PP, May 2009.

features of Indonesia's REDD-plus strategy are: (i) policies to reduce emissions from the forest sector will be developed by the national authorities, (ii) REDD-plus activities will be regulated at the national level, including incentive mechanisms and payment distribution, (iii) methodology and institutions will be developed at national and sub-national levels to generate high quality REDD-plus credits; (iv) demonstration activities will be implemented at district or forest management unit level; (v) all levels of government are responsible for stakeholder consultation; and (vi) identification of further studies.

Table 2.3 illustrates Indonesia's approach to REDD-plus, which is to establish a national system for monitoring, assessment, reporting and verification, but to implement REDD-plus strategies at a sub-national level. The explanation for this approach is that although MoFor retains a high level of administrative power, responsibilities for forest and land use have been devolved and are now shared by all levels of government.

## 2.2.4 Scenario analysis reported in the Second National Communication

The Ministry of Environment (MoE) is responsible for the national communications to the UNFCCC. The Second National Communication (SNC) is currently being drafted but MoE made some information available on its content through the release of *Indonesia second national communication under the United Nations Framework Convention on Climate Change (UNFCCC): Summary for policy makers* in November 2009. The production of this document was timed for distribution at the 15<sup>th</sup> COP and appears hurried, with some of the information presented difficult to interpret. Some information on the draft content of the SNC has also been made available through presentations by MoE.<sup>16</sup>

For the forestry sector, the SNC uses historical data to set the business as usual (BAU) baseline. Emissions from biomass removal due to deforestation is projected at a constant rate of ~0.898 Gt CO<sub>2</sub>/yr. The SNC projects the rate of sequestration to increase from 0.505 Gt CO<sub>2</sub>/yr in 2005 to 0.753 Gt CO<sub>2</sub> in 2020, as a result of regeneration of secondary forests, land rehabilitation (afforestation and reforestation), and regrowth of woody vegetation.

The SNC assessed two scenarios: (i) increasing the rate of planting from 196,000 ha/yr to 500,000 ha/yr; (ii) a progressive target with the rate of planting of between 1.6 and 2.2 million ha/yr. Under the latter scenario the SNC projects that the forestry sector will become a net sink after 2015.

To achieve the 26% emissions reduction target set by the President, the SNC advocates the following measures for the forestry sector:

- ⊙ Rehabilitation of land and forests in watersheds;
- ⊙ Development of community and village forests;
- ⊙ Establishment of timber plantations and private forests;
- ⊙ Restoration of production forest ecosystems;
- ⊙ Development of partnership forests;
- ⊙ Fire management and combating illegal logging;
- ⊙ Avoid deforestation;
- ⊙ Community empowerment.

## 2.2.5 BAPPENAS Sectoral Roadmap

In December 2007, the National Development Planning Agency (or BAPPENAS: *Badan Perencanaan Pembangunan Nasional*) published *National development planning: Indonesia responses to climate change* (revised in July 2008), with the aim of strengthening the RPJMN (National Medium-Term Development Plan) 2004-2009

16. See <http://csoforum.net/attachments/Presentasi%20Bu%20Nelly%20KLH%20-%20NAMAs.ppt> (accessed 28 May 2010).

and to provide inputs for the RPJMN 2010-2014 in the context of integrating climate change. In December 2009, BAPPENAS released *Indonesia climate change sectoral roadmap: Synthesis report* (hereafter referred to as ICCSR) in an attempt to develop a coherent plan that can be supported by line ministries to mainstream climate change into their medium-term development plans. As of 01 June 2010, climate change roadmaps of several sectors had been finalised and released, but not that of forestry.

To identify priority actions for the land use change and forestry (LUCF) sector, ICCSR assessed the BAU and three mitigation scenarios, coming to the following conclusions:

- ⊙ The approach to mitigation will be inefficient and expensive if efforts are directed at land rehabilitation and investment in industrial plantations, with no change in natural forest management (SC1).
- ⊙ The approach of efforts directed at land rehabilitation and investment in industrial plantations, with no change in natural forest management, only results in a modest gain in mitigation (SC2).

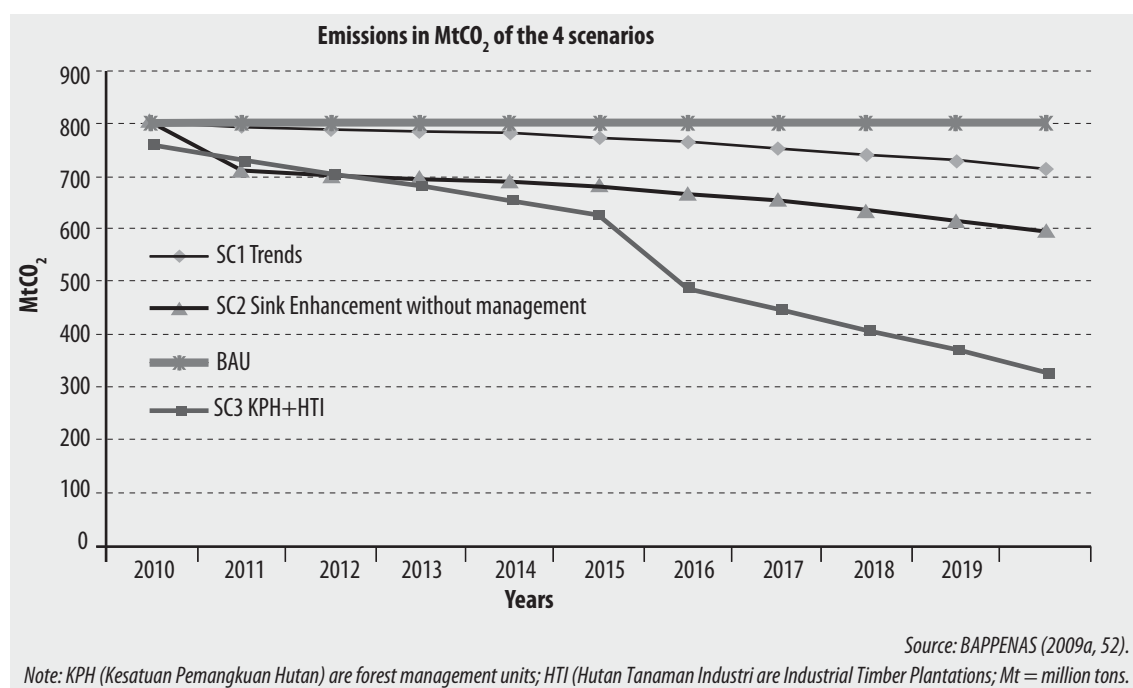
- ⊙ The approach with the greatest mitigation potential and lowest abatement costs has planting for rehabilitation and timber supply managed by forest management units (FMU), with the establishment of FMU contributing significantly to better management of natural forest, less illegal logging and fire (SC3).

The results of the analysis are depicted in Figure 2.4.

SC1 was found to be the most expensive and inefficient as trees that are planted are not properly managed. SC2 provided only modest gains for mitigation because of the absence of major improvements in forest management institutions. SC3 had the lowest abatement costs and highest mitigation potential, mostly due to improvement of forests in areas management by FMUs. The study concluded that:

- ⊙ The development of FMUs should be prioritised as a mitigation strategy;
- ⊙ Activities for reducing emissions from deforestation and degradation, including peat land degradation, are the most promising mitigation measures;

FIGURE 2.4 ⊙ BAPPENAS scenario analysis for LUCF sector



- ⊙ The initial focus for increasing sequestration capacity should be on industrial plantations, rather than land rehabilitation programs, because of their higher survival rates and lower cost to the state.

The assumptions used for the analysis include:

- ⊙ **BAU scenario:** deforestation rate ~1 million ha/yr; forest rehabilitation rate ~1 trillion IDR/yr; HTI development = 150,000 ha/yr; 800 million tons CO<sub>2</sub> annual emissions (based on SNC data for 2000-2005).
- ⊙ **SC1:** Survival rate for rehabilitation after 3 years = 40%; mean annual growth at 10 years = 8m<sup>3</sup>/ha/yr.
- ⊙ **SC2:** Industrial plantation mean annual growth = 30 m<sup>3</sup>/ha/yr at 10 years.
- ⊙ **SC3:** Better management of production, protection and conservation forests under FMU = emissions reductions of 11.4 t CO<sub>2</sub>/ha/yr.

The BAPPENAS study concludes that with a reasonable increase in operational budget the forest sector could reduce GHG emissions by 300 million tons of CO<sub>2</sub>/yr by 2020 (BAPPENAS 2009a, 54). However, ICCSR provides limited discussion on the assumptions used and it is unclear how a “reasonable increase in operational budget” could produce the anticipated emission reduction. Based on the Strategic Plan 2010-2014 of the Ministry of Forestry, the budget needed to establish an FMU is about 5 billion IDR. The budget proposed by MoFor for FMU establishment for 2010-2014 is between 60 and 70 billion IDR per year, which only allows for the establishment of 12-14 FMU per year. By projecting this same funding up to 2020, only about 120-140 new FMU will be established by the end of this period. If the assumption used in SC3 is that all 600-plus FMUs are established by 2020, then the abatement cost may not be as low as suggested.<sup>17</sup>

## 2.2.6 BAPPENAS peat lands scenarios

In December 2009, BAPPENAS released the preliminary results of a study on the potential of reducing emissions from Indonesia’s peat lands that it had commissioned to a team of Indonesian scientists, economists and legal specialists (BAPPENAS 2009b). Scenario analysis was used to identify which set of policy options offered the greatest mitigation potential. Using methods equivalent to Intergovernmental Panel on Climate Change (IPCC) Tier 2 standards, the study estimated that emissions between 2000 and 2006 from fire, peat oxidation and loss of above ground biomass were 903 Mt (million tons) CO<sub>2</sub>/yr. Using land use and land cover data from 2000-2006 and published emissions factors, the team estimated that emissions from oxidation were 220 Mt CO<sub>2</sub>/yr. Based on past rates of deforestation and carbon stock in peat swamp forests, emissions from the loss of above ground biomass were estimated to be 210 Mt CO<sub>2</sub>/yr. For emissions from fires, the team used the figure of 470 Mt CO<sub>2</sub>/yr from van der Werf et al. (2008) disaggregated into controlled and uncontrolled burning. Based on trends, a business as usual scenario was estimated to result in emissions of 1,387 Mt CO<sub>2</sub> by 2025.

The study team assessed the mitigation potential of three policy sets. Its main findings were:

- ⊙ Legal compliance and best management practices in existing land under production could provide 338 Mt CO<sub>2</sub> emissions reductions by 2025;
- ⊙ Peat land rehabilitation and prevention of uncontrolled fires could provide 430 Mt CO<sub>2</sub> emissions reductions by 2025;
- ⊙ Revision of land allocation, forest conservation and land swaps that direct future development away from peat land could provide 513 Mt CO<sub>2</sub> emissions reductions by 2025.

More detailed results are presented in Table 2.4.<sup>18</sup>

17. This discussion was provided by Dr. Rizaldi Boer during the review of this paper.

18. A BAPPENAS presentation file date 26 November 2009 provides details of the calculations.

TABLE 2.4 © Mitigation options, emission reductions and policy scenarios for peat land in Indonesia

POLICY	MITIGATION ACTION (CUMULATIVE)	POLICY SCENARIO							EMISSION REDUCTION	COST TYPE
		1	2	3	4	5	6	7		
Best practice	» Compliance <3m	√	√	√	√	√	√	√	F, Ox, AD	T
	» No burning & improved water management		√	√	√	√	√	√	F, Ox	I,T
	» Ameliorant			√	√	√	√	√	Ox	I,T
Peat rehab.	» Peat land rehabilitation				√	√	√	√	F, Ox, AGB	I,T
Land allocation & permits	» Conserve forest in non-forest development area					√	√	√	Avoided (F, Ox, AGB)	O,T
	» Protect unlicensed peat land						√	√	Ox, AGB	O,T
	» Land swap used licenses to mineral land							√	F, Ox, AGB	O,I,T
Emissions in 2025 (Mt CO <sub>2</sub> /yr)		1351	1117	1049	619	372	175	106		
% incremental emissions reductions from BAU		2.6	16.9	4.9	31.0	17.8	14.2	5.0		
% cumulative emissions reductions from BAU		2.6	19.5	24.2	55.4	73.2	87.4	92.4		

Source: Interim report of multidisciplinary team, Dec. 2009, p.9.

Note: F=fire, Ox=oxidation, AGB=above ground biomass, AD= avoided deforestation and degradation, O=opportunity cost, I=intervention cost, T=transaction cost.

Since the preliminary results were published, the emission factors and assumptions have been revised resulting in a slight change in the estimates. BAPPENAS is expected to publish the new figures shortly.

## 2.2.7 MoFor roadmap for mainstreaming climate change in the forestry sector

As part of the BAPPENAS initiative to develop a national climate change roadmap, several sectors, including forestry, are required to develop sectoral roadmaps. MoFor has assessed three scenarios to develop the roadmap for forestry: (i) BAU, (ii) BAU plus an increase in plantation establishment of 500,000 ha/yr, (iii) Full achievements of the targets set out in the National Forest Plan. The scenario analysis appears to have accounted for Community Forest, Forest Village, Forest and Land Rehabilitation in Critical Watersheds, Forest Estates, Forest Plantation, Ecosystem Restoration, Forest People's Partnership, forest fire prevention, prevention of encroachment, illegal logging and deforestation prevention and community empowerment and control of

forest conversion, which are all part of the RENSTRA.

Using the following assumptions, MoFor provides estimates of CO<sub>2</sub> absorption/storage for some of the targets (Table 2.5):

- © Forest plantation (HTI, HTR (*Hutan Tanaman Rakyat*, or Community Timber Plantation), HR (*Hutan Rakyat*, or Private Forest) with 10 year rotation absorbs ~8 t C/ha/yr or ~29.3 t CO<sub>2</sub>/ha/yr;
- © Production forests store ~200 t C/ha (~736 t CO<sub>2</sub>/ha);
- © Undisturbed protection and conservation forest store about 400 t/C/ha (~1,467 t CO<sub>2</sub>/ha).
- © Forest rehabilitation in conservation and protection forest not included because of no available data.

The results of MoFor's scenario analysis for 2020 are:

- © **Scenario 1:** BAU: forestry sector emissions = 1.24 Gt CO<sub>2</sub>e, absorption = 0.71 Gt CO<sub>2</sub>e, thus the forestry sector is a net emitter of 0.53 Gt CO<sub>2</sub>e.
- © **Scenario 2:** Additional planting of 500,000 ha/yr: forestry sector absorption = 0.89



TABLE 2.5 © Forestry sector targets

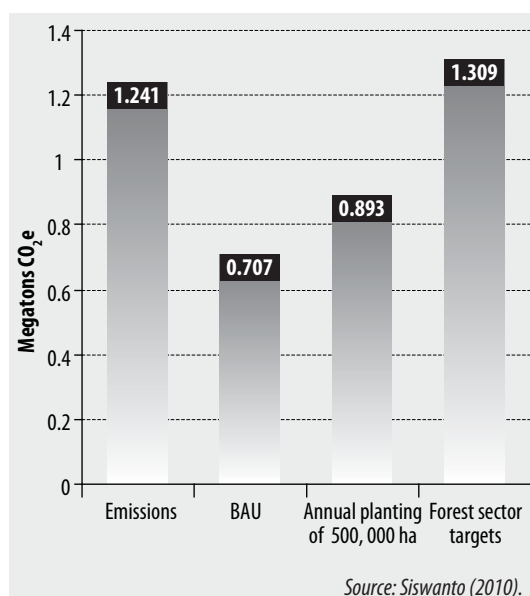
PROGRAMME	CUMULATIVE AREA (MILLION HA) AND CO <sub>2</sub> ABSORBED/STORED (MILLION T) <sup>19</sup>				
	2007-2009	2010-2014	2014-2020	2021-2025	2025-2030
<b>Sink enhancement</b>					
<i>Forest plantation</i>					
HTI	3.6 (105.5)	7.5 (219.75)	8.4 (246.12)	9.3 (272.8)	9.7 (284.2)
HTR	3.6 (105.5)	5.6 (164.1)	7.3 (213.9)	9.0 (263.7)	9.8 (287.1)
HR	2.0 (58.6)	4.6 (134.8)	6.3 (184.6)	8 (234.4)	8 (234.4)
Gerhan	1.68				
Intensive silviculture	0.25	0.75	1.50	2.00	2.50
Planting of 1 million trees	0.003	0.1	0.2	0.3	0.4
<i>Forest rehabilitation</i>					
Protection forests	0.5 (733.5)	2.5 (3,667.5)	3.8 (5,574.6)	5.0 (7,335.0)	7.6 (11,149.2)
Conservation forests	0.5 (733.5)	2.5 (3,667.5)	3.8 (5,574.6)	5.0 (7,335.0)	6.3 (9,242.1)
<b>Emission reduction: Management and improvement of natural forest</b>					
Production forest (HPH)	23.12 (3.39)	23.12 (3.39)	23.12 (3.39)	23.12 (3.39)	23.12 (3.39)
Protection forest	13.39 (19,643.1)	15.15 (22,225.0)	17.27 (25,335.1)	19.39 (28,445.1)	21.77 (31,936.5)
Conservation forest	10.24 (15,022.1)	16.16 (23,706.7)	18.28 (26,816.7)	20.39 (29,912.1)	20.64 (30,278.8)

Source: Early draft of MoFor climate change roadmap.

Gt CO<sub>2</sub>e, thus the forestry sector is a net emitter of 0.35 Gt CO<sub>2</sub>e.

- © **Scenario 3:** Implementation of the RENSTRA Programme 2010-2020: forestry sector absorption = 1.31 Gt CO<sub>2</sub>e, thus the forestry sector is a sink with a net absorption of 0.07 Gt CO<sub>2</sub>e (Fig. 2.5).

FIGURE 2.5 © MoFor forestry sector carbon scenarios for 2020



## 2.2.8 Indonesia's Technology Needs Assessment for Climate Change Mitigation

Indonesia is participating in the Technology Needs Assessment project funded by the Global Environment Facility and implemented by the United Nations Environment Programme. Indonesia completed the first round of the Technology Needs Assessment in 2007-8 and, with funding from GTZ, prepared a second Technology Needs Assessment focusing on mitigation in seven sectors in 2009. The second Technology Needs Assessment was prepared under the coordination of Ministry of Environment and the Ministry of Research and Technology, who brought together over 50 people from various ministries, including forestry, and other organisations to complete this task.

The assumptions used in the second Technology Needs Assessment are the same as those used by MoFor in its roadmap for mainstreaming climate change. The Technology Needs Assessment estimates the emissions potential

19. This table appears in SNC: Summary for policy makers which provides million t/ha as the unit for CO<sub>2</sub> absorbed/stored. It is assumed that this is an error and that the unit should be million t.

of the forestry sector programme but does not assess alternative scenarios. It prioritises the following technologies for mitigation in the forestry sector: silvicultural technology for plantations; growth and yield modelling technology; advanced tree improvement; pest, disease, weed and fire management: site – species matching; carbon related measurement and monitoring for sequestration and reduced emission activities; reduced impact logging; use of molecular biology for chain of custody; and zero burning technology.

## 2.2.9 Latest developments

### 2.2.9.1 Recommendations by Tim-8

As noted in the introduction of this paper, under Ministerial Decree the Minister of Forestry has assigned eight experts (*Tim-8*) as a special think tank team to advise him, *inter alia*, on the national target of 26% GHG emissions reduction by 2020. *Tim-8*'s work began in Feb 2010 on (i) the macro situation of forestry, (ii) a matrix for forestry reform, (iii) institutional reform, (iv) policy briefs, and (v) special coaching to the Minister. This work has resulted in six policy briefs submitted to the Minister, including one on REDD. *Tim-8* recommended the following measures:

- ⊙ Tighten control on forest conversion and implementation of best management practices in concessions;
- ⊙ Increase establishment of new forest stands, including industrial timber estates, small-scale plantations, community forests on state forest land, village forests, private forests, and forest rehabilitation.

The following facilitating conditions for these measures were identified:

- ⊙ Secure forest land tenure, which may be attained through synchronisation between forestry planning and general regional planning, and resolving conflicts related to land rights;
- ⊙ Accelerated establishment of forest management units;

- ⊙ De-regulation/simplification of regulations related with permitting and licensing;
- ⊙ Positive relationships between the centre (MoFor) and other organisations in order to strengthen community capacity for forest management;
- ⊙ Better relationships between MoFor and local governments, particularly to manage the conversion of forest land areas.

*Tim-8*'s recommendations are drawn from its own scenario analysis. It analyses the BAU scenario as well as two mitigation scenarios under which the government issues a policy to decrease the conversion of production forest by 75% and 50%, respectively. Similar to the BAPPENAS work, *Tim-8* emphasises forest management units as a means to reduce deforestation and degradation, and to improve the performance of planting programmes.

The BAU and Mitigation Scenario-1 used by *Tim-8* assume that only 30% of the total 700 FMUs that Indonesia requires will be established by 2025. Under the BAU it is assumed that the FMUs will not work effectively due to budget limitations and improper selection of locations for establishing the FMUs. Under Mitigation Scenario-1, it is assumed the required budget is provided and that the locations selected for establishing the FMUs are appropriate (i.e. forest areas with high risk of deforestation and degradation). It is also assumed that the decrease in the rate of deforestation and degradation (due to a decrease in the rate of illegal logging) and the increase in survival rates of planted trees in land rehabilitation programmes are linearly correlated with the increase of FMU establishment. In Mitigation Scenario-2, it is assumed that by 2025 all the 700 FMUs will be established and that the rate of planting will follow the RENSTRA programme.

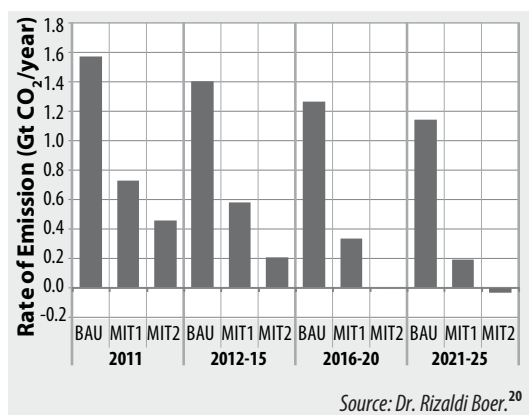
The results of *Tim-8*'s scenario analysis for 2025 are:

- ⊙ **Scenario BAU:** forestry sector emissions = 1.751 Gt CO<sub>2</sub>e, absorption = 0.609 Gt CO<sub>2</sub>e;

thus the forestry sector is a net emitter of 1.143 Gt CO<sub>2</sub>e.

- ◎ **Mitigation Scenario-1:** forestry sector emissions = 1.114 Gt CO<sub>2</sub>e, absorption = 0.924 Gt CO<sub>2</sub>e; thus the forestry sector is a net emitter of 0.191 Gt CO<sub>2</sub>e.
- ◎ **Mitigation Scenario-2:** forestry sector emissions = 1.027 Gt CO<sub>2</sub>e, absorption = 1.064 Gt CO<sub>2</sub>e; thus the forestry sector is a sink with a net absorption of 0.037 Gt CO<sub>2</sub>e (Fig. 2.6).

FIGURE 2.6 ◎ *Tim-8 forestry sector carbon scenarios*



### 2.2.9.2 Indonesia – Norway Letter of Intent

Indonesia and Norway have signed a Letter of Intent (LOI) under which Norway intends to provide US\$ 1 billion to support Indonesia's REDD-plus efforts. Specific activities that Norway will support include completing the national REDD-plus strategy, establishing the framework of an independent institution for MRV, and implementing a province scale REDD-plus pilot. The largest of Indonesia's nine government endorsed demonstration activities and 27 voluntary REDD projects that current exist are at district-scale; hence, the proposed province scale pilot under the LOI is an ambitious endeavour. The Minister of Forestry has proposed Kampar, in Riau, as the preferred site for the implementation of the project, which is slated to begin from January 2011 (detik.com, 6 June 2010).

Another striking feature of the LOI is that it includes a two-year suspension on all new concessions for conversion of peat and natural forest, starting from Jan. 2011. This will represent the first national mitigation strategy in the forest sector which is additional to existing plans and targets. MOFR has attempted to show that the expected contribution of the forest sector to the 26% national emissions reduction target can be achieved by implementing its current strategies, as described in RENSTRA 2010-2014. These strategies were never intended as climate change mitigation strategies, but have climate benefits. For example, rehabilitation programmes are intended to restore watershed functions in critical lands, but their primary activity of tree planting provides a climate benefit in the form of CO<sub>2</sub> absorption. In contrast, the moratorium specified by the LOI is climate specific and is additional. Implementing the moratorium will place pressure on MoFor and some ministry officials have expressed disquiet that they were not adequately consulted during the process of agreeing the LOI. MoFor has identified approximately 104.8 million ha of forest that will be affected by the moratorium. Of this, 21.07 million ha of peat forest, 43 million ha of primary forest and 48.5 million ha of secondary forest will be protected from business activities (Kontan, 01 06 2010). However, existing concessions will remain valid. Also, according to the Chief Economic Minister, the moratorium on clearing natural forests will apply to the forestry and mining sectors, but it will not apply to developers of strategic infrastructure, such as geothermal power and other renewable energy projects (Forexpro, 01 06 2010).

The Indonesian government plans to establish three institutions to make the LOI operational, namely a financial institution, an MRV institution, and a REDD-plus institution (Antara News, 13 08 2010). UKP4 (the President's Working Unit for Development Supervision and Control) has been appointed to coordinate the implementation of the LOI and to facilitate the development of MRV.<sup>21</sup>

20. The information on the scenario analysis conducted by Tim 8 was provided by Dr. Rizaldi Boer during the review of this paper.

21. Information provided by Dr. Rizaldi Boer during the review of this paper.

### 2.2.9.3 From REDD to REDD-plus

The latest statement by the MoFor Working Group on Climate Change indicates that Indonesia is supporting the concept of REDD-plus. The statement explains that (i) reducing emissions from deforestation and forest degradation, (ii) conservation, (iii) sustainable management of forests, and (iv) enhancement of carbon stocks, will be the fundamental rationale of the national policy on REDD-plus. The Working Group has also stated that, as a consequence, all forestry activities could basically be covered under REDD-plus. The activities that Indonesia would in principle recognise under REDD-plus are listed as:

- ⊙ Reducing emissions from deforestation through avoiding/reducing forest conversion to other uses and avoiding/reducing forest encroachment which leads to permanent land use change;
- ⊙ Reducing emissions from forest degradation through reduced impact logging and other sustainable forest management measures, curbing illegal logging, forest encroachment, and avoiding forest fires;
- ⊙ Maintaining forest carbon stocks through forest conservation and carbon stock management;
- ⊙ Enhancing carbon stock through plantations (timber estate, small-scale plantations, rehabilitation planting, community forests, enrichment planting in natural forests, and other social forestry approaches);
- ⊙ Increasing the role of conservation through enhancing the effectiveness of the management of conservation areas.

These basic principles are to be adopted into the implementation of the REDDI (R-PP) roadmap.

### 2.2.10 Reflection

Over the past three years various initiatives have been undertaken that provide useful inputs for the development of a national REDD-plus strategy. The analytical work by IFCA, for example, provided MoFor with

sufficient material to draft and submit one of the earliest R-PPs to the World Bank's FCPF. Two challenges to the finalisation of the national REDD-plus strategy identified by this paper are (i) the need to ensure broad, meaningful participation of forest stakeholders in the design process, and (ii) the need for credible REDD scenarios with a clear instruction on which organisations are responsible for developing these.

Regarding the first challenge, local NGOs working on indigenous people's issues feel that greater effort needs to be made to share information and provide opportunities for meaningful consultation, which will require resources and time. A statement supported by 23 Indonesian NGOs and eight foreign NGOs on the need for more effective publication consultation was submitted to MoFor shortly after its event "Socialisation and public consultation of REDDI-Readiness through FCPF (Forest Carbon Partnership Facility) programme of World Bank" held on 18 May 2010. The statement describes the event as not providing an opportunity for meaningful consultation, being too short and dominated by presentations by Ministry officials, and with a lack of representatives from civil society organisations.

Regarding the second challenge, there are examples of disconnects between the work of MoFor, MoE and BAPPENAS (Table 2.6). Co-ordination between the various initiatives could be stronger, as evidenced by the different carbon scenarios they have produced and the mitigation strategies that they advocate. The SNC used information from MoFor, but apparently did not take note of MoFor's frequent update of data/information. MoFor, on the other hand, combined the roadmap activities produced by IFCA with a roadmap of carbon balance driven by plantation activities. BAPPENAS, in contrast, used different assumptions that provide less optimistic figures for carbon sequestration, a different set of assumptions for reduced emissions from standing forests under FMU

management, and included peat lands in the baseline calculation. As a result, BAPPENAS produced a different preferred mitigation scenario that places more emphasis on

strengthening forest management. Further efforts to overcome these differences are needed.

TABLE 2.6 © REDD and forestry sector NAMA scenario analysis

Scope	R-PP (MOFOR)	SNC (MOE)	FORESTRY SECTOR ROADMAP (MOFOR)		ICCSR (BAPPENAS)		TIM-8	
	REDD	All sectors	REDD and NAMA		All sectors		REDD	
<b>Mitigation strategy advocated for forestry</b>	Uses the recommendations of IFCA for mitigation strategies	Avoided deforestation and degradation, and plantation establishment	Strong promotion of plantations		Focuses on institutions, i.e. establishment of FMUs, and industrial plantations		Focuses on institutions, i.e. establishment of FMUs, and implementation of the RENSTRA planting targets	
<b>Baseline</b>	No scenario analysis	Emissions from biomass removal due to deforestation projected to be constant at 0.898 Gt CO <sub>2</sub> /yr. Sequestration projected to increased to 0.753 Gt CO <sub>2</sub> in 2020.	Emissions projected at ~1.24 Gt CO <sub>2</sub> /yr. Sequestration projected to be 0.71 Gt CO <sub>2</sub> in 2020		Emissions for peat and forest land use change = 1.33 Gt CO <sub>2</sub> /yr. Rate of absorption = 660 Mt CO <sub>2</sub> /yr.		Forestry sector emissions = 1.751 Gt CO <sub>2</sub> e, Absorption = 0.609 Gt CO <sub>2</sub> e	
<b>Mitigation scenarios analysed</b>	No scenario analysis	Scenario 1: Increase rate of planting from 196,000 ha/yr to 500,000 ha/yr.	Scenario 1: Increase rate of planting from 196,000 ha/yr to 500,000 ha/yr.	sequestration increases to 0.893 Gt CO <sub>2</sub> in 2020	Scenario 1: Focus on land rehabilitation, some investment in industrial plantations, no change to forest management	2010-2019, avoided annual emissions=106 Mt CO <sub>2</sub>	Scenario 1: 30% of 700 FMUs established by 2025, required budget for FMUs provided, appropriate locations for FMUs selected	forestry sector emissions = 1.114 Gt CO <sub>2</sub> e, absorption = 0.924 Gt CO <sub>2</sub> e; forestry sector is net emitter of 0.191 Gt CO <sub>2</sub> e
		Scenario 2: Progressive target with planting of between 1.6 and 2.2 million ha/yr	Scenario 2: Progressive target with planting of between 1.6 and 2.2 million ha/yr following Strategic Plan	sequestration increases to 1.309 Gt CO <sub>2</sub> in 2020	Scenario 2: Greater emphasis on industrial plantations, no change in forest management	2010-2019, avoided annual emissions=195 Mt CO <sub>2</sub>	Scenario 2: 700 FMUs established by 2025, planting follows RENSTRA programme	forestry sector emissions = 1.027 Gt CO <sub>2</sub> e, absorption = 1.064 Gt CO <sub>2</sub> e; thus the forestry sector is a sink with net absorption of 0.037 Gt CO <sub>2</sub> e
					Scenario 3: Focus on establishment of FMUs for management of natural and planted forests	2010-2019, avoided annual emissions=304 Mt CO <sub>2</sub> ; By 2019, emission reduction of 727 MtCO <sub>2</sub> /yr		

## 2.3 REDD-plus organisations and institutions

### 2.3.1 Organisations

The following discussion on organisations focuses on government bodies, though NGOs, research institutes, financiers, local communities, brokers and many others are also involved in REDD-plus activities.

#### 2.3.1.1 National Council for Climate Change (DNPI)

In 1990, the GOI established the National Committee on Climate Change through State Minister for Environment Decree No. 07/MENKLH/1/1990. Two years later, the Committee was dismissed and replaced by the Working Group for National Committee on Climate and Environment (Kepmen No. 35/MENKLH/8/1992). In April 2003, the same State Minister established the National Committee and Technical Team on Climate Change (Kepmen No. 53/2003) to organise stronger coordinating power for policies, strategies and programmes addressing climate change. More recently, the President established the National Council for Climate Change (*Dewan Nasional Perubahan Iklim – DNPI*) through Presidential Decree (Perpres) 46/2008 to more effectively coordinate the implementation of climate change control and to strengthen Indonesia's position in various international forums. Its mandate includes:

- ⊙ Developing and coordinating national policies, strategy and activities to combat climate change;
- ⊙ Coordinating climate change related activities including mitigation, adaptation, technology transfer and funding, of the national ministries and industrial sectors;
- ⊙ Developing and coordinating carbon trade mechanisms and procedures;
- ⊙ Monitoring and evaluating the implementation of policies related with combating climate change;
- ⊙ Strengthening Indonesia's position to encourage developed countries to be more responsible for combating climate change.

The DNPI is an additional government structure that directly reports to the President. It is chaired by the President and the Coordinating Ministers for People Welfare and for Economy are assigned as the Vice Chairs. Membership of the executing body includes the State Secretary, Cabinet Secretary, State Minister for Environment, Minister of Finance, Minister of Internal Affairs, Minister of Foreign Affairs, Minister for Energy and Mineral Resources, Minister of Forestry, Minister of Agriculture, Minister of Public Works, State Minister for National Development Planning/Head of BAPPENAS, Minister of Marine and Fishery, Minister of Trade, State Minister of Research and Technology, Minister of Transportation, Minister of Health, and the Head of Meteorology and Geophysics. The DNPI has a Secretariat and Working Groups that cover adaptation, mitigation, technology transfer, funding, post Kyoto, forestry and land use change issues. It is required to organise quarterly meetings and meetings on request. In the plenary meeting on 25 January 2010, six decisions were agreed, namely:

- ⊙ Support the decision made by the Indonesia Delegation to Copenhagen on the socialisation of the Accord;
- ⊙ Assign the State Minister for Environment to harmonise the input into the Second National Communication;
- ⊙ Assign BAPPENAS to finalise the Action Plan on GHG emission reduction to be signed by the President;
- ⊙ Strengthen the coordination function of DNPI by moving the Secretariat under the Coordinating Minister for People's Welfare.
- ⊙ Assign the Secretariat to further explore the possibilities of establishing a regional centre for climate change
- ⊙ Assign the Secretariat to assist operationalisation of the funding mechanism through the Indonesian Climate Change Trust Fund or other funds such as the Indonesian Green Investment Fund.

Due to the overlapping mandates of DNPI and other organisations, the presidential instruction on the mandate of DNPI is now being revised.<sup>22</sup>

### 2.3.1.2 **Ministry of Forestry**

MoFor has asserted itself as the lead agency to develop and regulate REDD-plus in Indonesia. A significant step was MoFor assigning the Forest Research and Development Agency (FORDA) in 2007 to be the focal point for mobilising IFCA. A secretariat was established at FORDA to address climate change in forestry and later REDD. The secretariat facilitated the preparation of the R-PP for the FCPF. More recently, under Ministerial Decree SK.455/Menhut-II/2008 (later revised by SK.13/Menhut-II/2009), MoFor established the Working Group on Climate Change (also referred to as the "REDD Commission").<sup>23</sup> The tasks of the Working Group are:

- ⊙ Provide inputs to the Minister of Forestry on policies, strategies, programs and activities on climate change;
- ⊙ Assist the Minister of Forestry in conducting the duties of controlling climate change consisting of adaptation, mitigation and transfer of technology activities in MoFor;
- ⊙ Assist the Minister of Forestry in evaluating policies on climate change control consisting of adaptation, mitigation and transfer of technology activities in MoFor;
- ⊙ Manage data and information on climate change control consisting of adaptation, mitigation and transfer of technology activities in MoFor;
- ⊙ Facilitate stakeholders' initiatives in mitigation, including Clean Development Mechanism and Reducing Emissions from Deforestation and Forest Degradation activities.

The review of proposals for demonstration activities was later added as a task of the Working Group on Climate Change.

MoFor lists its REDD-plus activities under three areas, namely (i) NAMA, (ii) UN-REDD, and (iii) FCPF. MoFor anticipates that there will soon be another group of activities under the World Bank's Forest Investment Programme. In addition to the work on the national REDD-plus strategy described above, work on REDD-plus conducted by MoFor includes the issuance of regulations and development of the Forest Resource Information System (both discussed below).

### 2.3.1.3 **BAPPENAS**

BAPPENAS is responsible for the coordination and synchronisation of sectoral plans. With respect to climate change, BAPPENAS has the following functions:

- ⊙ Preparing the national strategy on climate change;
- ⊙ Preparing the sectoral roadmap on climate change;
- ⊙ Coordinating funding and financial planning, including international funds;
- ⊙ Endorsing the state budget fund for climate change projects proposed by the sectors.

Climate change issues are under the Deputy Minister for Natural Resources and Environment and developing the Climate Change Sectoral Roadmap has been tasked to the Director of Environmental Affairs.

### 2.3.1.4 **Ministry of Environment**

Since establishing the National Committee on Climate Change in 1990, MoE has been a key actor on climate change issues. Law No. 32/2009 concerning environmental protection and management states that the government should (i) develop GHG inventories at national, province and city level (art. 63. i), and (ii) develop and implement policies on climate change and protection of the ozone layer (art. 63.j). These activities should be implemented and/or coordinated by the Minister for Environment (art. 64). MoE is thus responsible for coordinating GHG emission reporting

22. Information provided by Dr. Rizaldi Boer during the review of this paper.

23. The Working Group is currently headed by Wandojo Siswant.

under the national communication. MoE is now in the process of establishing the National System for GHG Inventory (or SIGN).<sup>24</sup>

### 2.3.1.5 **Planned National REDD Working Group**

The MoFor Working Group on Climate Change is now drafting a regulation to establish the National REDD Working Group, a requirement of the FCPF readiness package, which will deal mainly with strategic issues and is to consist of high level officials from 11 ministries, other national bodies, local government where REDD-plus activities are located, and civil society representatives. It seems that the planned National REDD Working Group is the “special agency reporting directly to the President to coordinate the efforts pertaining to the development and implementation of REDD-plus” that the LOI with Norway states will be established.

### 2.3.1.6 **Sub-national governments**

REDD-related activities initiated or supported by sub-national governments can be observed in many provinces and districts. In particular, the provinces of Aceh, Papua and Central Kalimantan have developed strong communication with international actors. Using Central Kalimantan to illustrate the types of initiatives that are underway, on 16 November 2009 the Governor issued Decree No. 188 to provide support for all aspects of REDD development, and he established the provincial REDD Commission (not to be confused with the REDD Commission within MoFor), with himself as the chair. The REDD Commission is now in the process of formulating the regional climate change council, which is to be the umbrella organisation of all climate change initiatives in Central Kalimantan. The REDD Commission is mostly focusing on REDD demonstration activities by supporting facilitation, socialisation and consultation. The Kalimantan Forests and Climate Partnership project in the northern part of the Ex-Mega

Rice Project area<sup>25</sup> is an official demonstration activity and other REDD projects are underway. The provincial government has recruited McKinsey and Co. to assist with the development of a low carbon development strategy for the province.

With the process of the decentralisation of natural resource management in Indonesia remaining unfinished, sub-national governments have sometimes responded to REDD-plus in ways that do not parallel the expectations of the central government. MoFor explains that consultations with stakeholders in some provinces – South Sumatra, Riau, East Kalimantan, South Sulawesi – were conducted in April 2009 during the formulation of the R-PP, but these appear inadequate. While some sub-national governments consulted the central authorities during the process of developing their REDD-plus initiatives, others undertook initiatives that were relatively unregulated.

### 2.3.1.7 **Reflection**

Communication between the central and sub-national governments on REDD-plus has been undertaken mostly through formal medium (public consultation, workshops, symposiums, seminars). Bilateral consultations between sub-national and national authorities mostly only took place when problems on legal issues arose. Overall, it is clear that the communication on REDD-plus between national and sub-national levels of governments has been insufficient, which may partly be a consequence of unsynchronised and incomplete instructions/guidance from the national authorities – DNPI, BAPPENAS, MoFor, MoE.

## 2.3.2 **REDD-plus institutions: The legal framework**

Rather than attempt to develop one comprehensive piece of legislation to govern REDD-plus activities, which would have been

24. Information provided by Dr. Rizaldi Boer during the review of this paper.

25. See <http://redd-database.iges.or.jp/redd/download/project?id=9> for a profile of this demonstration activity.



time consuming and difficult, MoFor chose to regulate REDD-plus by successively drafting separate regulations and decrees, each with a restricted scope. Table 2.7 lists the regulations in this framework in the order in which they were issued.

**TABLE 2.7 © Indonesia's legal framework for REDD-plus as of August 2009**

REGULATION OR DECREE	DATE ISSUED
Ministry of Forestry Regulation No: P.68/Menhut-II/2008 on the Implementation of Demonstration Activities on Reduction of Emission from Deforestation and Degradation	11 Dec. 2008
Ministry of Forestry Decree establishing the Ministry of Forestry Working Group on Climate Change/WG-FCC (SK.13/Menhut-II/2009)	12 Jan. 2009
Ministry of Forestry Regulation No. P.30/Menhut-II/2009 on Reducing Emissions from Deforestation and Forest Degradation	01 May 2009
Ministry Of Forestry Decree Number: P. 36/Menhut-II/2009 Regarding Procedures for Licensing of Commercial Utilisation of Carbon Sequestration and/or Storage in Production and Protected Forests	22 May 2009

### 2.3.2.1 *Ministry of Forestry Regulation No: p.68/Menhut-ii/2008 on the implementation of demonstration activities on reduction of emission from deforestation and degradation*

This regulation clearly explains the need for demonstration activities with reference to the decisions of the 13<sup>th</sup> COP. It lists the possible proponents as government, forest timber product utility license holders, holders/managers of right forests,<sup>26</sup> managers of customary forest, and heads of forest management units responsible for the implementation of demonstration activities. Partners may be government, international organisations, private entities and individuals. Demonstration activities are implemented by proponents who may be assisted by partners. The aim of the demonstration activities is specified as testing and developing methodologies, technology and institutions of sustainable forest management that endeavour to reduce carbon emission through controlling forest deforestation and degradation. The

objective is specified as obtaining forest management design related to the achievement of this aim.

The application and approval procedure begins with the proponent submitting a written application to the Minister with a plan of the demonstration activity including status and location with location map of the proposed area, form and period of cooperation, estimation of activity values, risk management and plan of revenue distribution allocation. The application is reviewed by the MoFor Working Group on Climate Change (established under a separate decree) and based on its findings the Minister makes a decision on approval. The maximum period for a demonstration activity is five years.

The scope of this regulation is thus quite limited and it does not regulate carbon trading as part of demonstration activities. This limited scope must be understood in terms of the public consultations that were taking place in the second half of 2008 and into 2009 over a much broader draft regulation that covered REDD implementation procedures (MoFor Regulation No. P30/Menhut-II/2009).

### 2.3.2.2 *Ministry of Forestry Regulation No. P30/Menhut-II/2009 on Reducing Emissions from Deforestation and Forest Degradation*

This regulation, referred to as the "REDD Regulation", defines the purpose of REDD activities as twofold: (1) to prevent and reduce emissions from REDD in the effort to strengthen forest governance, and (2) to restrict the occurrence of deforestation and forest degradation. The regulation specifies a wide range of forest categories in which REDD activities can be undertaken and opens the possibility for national and international entities to be the "REDD implementer." Regional governments can also propose and coordinate the REDD activities when they have agreement with national entities.

26. A rights forest is defined as forest on land where a land right is imposed.

REDD requirements for different forest categories are specified and mostly consist of legal documentation, evidence that the location criteria specified are met and that a REDD implementation plan has been developed. A recommendation from regional government is required for REDD activities in customary forest, rights forest and village forest, with guidelines for the recommendation and REDD implementation plan, and criteria for REDD location provided in appendices.

The application, verification and approval process involves an application to the Minister by the REDD implementer, an assessment of the application by the REDD Commission, decision by the Minister on approval within 14 days of receiving the assessment results, and commencement of the REDD activities by the implementer within 90 days of receiving approval. Guidelines for the assessment are provided in an appendix. The implementation period of the REDD activity is 30 years, extendable. The REDD implementer has the right to trade REDD credits until 2012. Various obligations of the REDD implementer are specified, including the reporting of monitoring results to the Minister. Within 14 days of receiving the report, the REDD Commission is required to assign an independent assessor that has been accredited by the National Accreditation Committee to verify the report. If all requirements are met, within 30 days after receiving the verification report the REDD Commission publishes tradeable carbon emissions reduction certificates.

Allowance is made for adjusting the system in accordance with a future global REDD mechanism. REDD implementation prior to a global mechanism is defined as demonstration activities, capacity building, technology transfer, and voluntary carbon trading.

Appendix 2 lists the REDD site selection criteria as (1) data and information, (2) biophysics and ecology, (3) threats to the forest resources, (4) social, economic and cultural, (5) economic

feasibility, and (6) governance. The elaboration of these criteria is limited. For example, the social, economic and cultural criteria is elaborated only as "dependence of community to resources on the site; presence/absence of conflicts; involvement of other parties in the management of the forest; and clarity of poverty reduction dimension." This guidance is clearly lacking in detail and clarity. For example, free prior and informed consent of indigenous people is not included amongst the criteria and what precisely should be considered with respect to "involvement of other parties in the management of the forest" is not clear. The guidelines for the REDD implementation plan provided in appendix 3 are similarly broad in scope but lacking in detail. Hence, the REDD Commission, which is required to assess the applications according to their fulfilment of the documentary guidelines in appendixes 2 and 3, will find a lack of indicators to guide their assessments. The verification activities as described in appendix 6 cover not only climate related issues (REL, accounting, emissions reduction, emissions displacement), but also transparency and fairness in the distribution of incentives and contribution to sustainable national development, though, again, the guidance lacks detail (see section below on Challenges Ahead).

On technical issues, appendix 5 states that RELs are to be set at the national, sub-national and project (REDD site) levels. The project RELs need to be confirmed with the RELs at the sub-national and national levels, though how this confirmation will take place has not been specified. Changes in forest cover and carbon stocks are to be measured according to the IPCC Guidelines or the IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry, with the approaches and levels of accuracy (tiers) left to the implementer to decide. Monitoring must be conducted by the implementer, the regional government and MoFor at least every five years, except for the period up to 2012 when monitoring is to be conducted annually.

**2.3.2.3 Ministry Of Forestry Decree  
Number: P. 36/Menhut-II/2009  
Regarding Procedures for Licensing  
of Commercial Utilisation of Carbon  
Sequestration and/or Storage in  
Production and Protected Forests**

The explanation for this decree was that earlier regulations had specified sequestration and storage of carbon in production and protected forests as one form of environmental service and that a license for the exploitation of this service in these forest types is required.<sup>27</sup> It describes the business of carbon sequestration and/or carbon storage as one form of commercial utilisation of environmental services in production and protected forests. It specifies types of business activities for sequestration (e.g. tree planting) and storage (e.g. lengthening of cutting rotation, increasing protection and conservation areas) separately for production and protection forests. It details the process for license requests, providing the format for the application, stipulating the required accompanying documents, and identifying who the application must be submitted to. This process is described for both areas with and without pre-existing licenses.

Depending on the existing license that is held by the applicant, the application is made either to the Head of District/City, the Governor, or the Minister. In all instances, an evaluation team is formed (with the members prescribed in the decree) to judge the technical aspects of the proposal, and their findings must be lodged within a specified period. A levy is charged and must be paid by the applicant within a year; else the license will be annulled. In all instances, a working area map and concept for the decision is to be developed by the specified government bodies.

In Chapter IV the decree regulates how project development and the marketing of carbon take place. It specifies that the project developer can be either the manager of production forest or a permit holder. It defines the types of

collaboration that are possible between a project developer and an investor: "selling and payment, maintenance and development of forest resources, capacity development of local community and project development/replication for the surrounding areas." Marketing of carbon in the national (scheme yet to be developed) and international market is permitted. When targeting the international market, the project developer must propose valuation and verification using existing independent valuation institutions. The valuation process must include the participation of national consultants or independent national valuation organisations. In designing the project, the project developer can work with local government, state-owned enterprises, local government-owned enterprises, Indonesian private enterprises, and NGOs.

To gain a certificate of verified emissions reductions, the project developer must register with the National Registration Body (*Badan Registrasi Nasional*) or with registration bodies that are active in the international voluntary carbon market. The decree also regulates the distribution of the income from selling carbon credits (Table 2.8). The government shares are to be divided proportionately, with the central government receiving 40%, the provincial government 20%, and the district government 20%. Funding for the community is to be managed by a trust fund, according to good governance principles, by the local community together with the village government. The good governance principles are not defined.

The only consideration given to the issues of leakage and permanence is that (1) project development is to be facilitated by the local forestry extension officer for security in the forest area, and (2) the project developer can choose to insure the project. Other important points are that after 2012 validation will have to comply with the established compliance mechanism procedure and that the selling and buying agreement for storage (REDD) projects

27. Government Regulation 6/2007 authorises provincial and district governments to issue environmental services licenses (IUPJL), which can include permits for storing and absorbing carbon both in production and protection forests.

TABLE 2.8 © Distribution of income from the sale of carbon credits according to forest category

PERMIT HOLDER / DEVELOPER	DISTRIBUTION		
	GOVERNMENT	COMMUNITY	DEVELOPER
IUPHHK-HA (Wood Use License for Natural Forest)	20%	20%	60%
IUPHHK-HT (Wood Use License for Plantation Forest)	20%	20%	60%
IUPHHK-RE (Wood Use License for Ecosystem Restoration Area)	20%	20%	60%
IUPHHK-HTR (Wood Use License for People's Plantation Forest)	20%	50%	30%
<i>Hutan Rakyat</i> (People's Forest)	10%	70%	20%
<i>Hutan Kemasyarakatan</i> (Community Forest)	20%	50%	30%
<i>Hutan Adat</i> (Customary Forest)	10%	70%	20%
<i>Hutan Desa</i> (village forest)	20%	50%	30%
KPH (Forest Management Unit)	30%	20%	50%
KHDTK (special purpose forest area)	50%	20%	30%
<i>Hutan Lindung</i> (Protection Forest)	50%	20%	30%

will be renegotiated. The maximum project length is 25 years, extendable.

### 2.3.2.4 Reflection

In March 2010, the Ministry of Forestry announced that it intended to undertake a review of national laws governing REDD-plus, specifically Decree No. 36 and Regulations No. 30 and No. 68 (Reuters, 19 March 2010). The review aims to identify and remove overlapping and contradictory elements of the legal framework, and will include a reassessment of the revenue distribution system.

In conducting the review, the intention of MoFor is to clarify and streamline the legal framework to increase participation. There are shortcomings in the current legal framework for REDD-plus that should be addressed in this review. For example, there is a general lack of clarity and detail regarding stipulations in the regulations specific to communities. Regulation No. 30 describes improving community welfare as one objective of REDD, but the current guidance provided for the assessment of the

location, the project design and the verification, with respect to community welfare, is weak. A similar lack of detail is found in Decree No. 36 with respect to specification of the good governance principles that are to be used for managing the trust fund in which the community portion is deposited. The REDD-plus regulatory framework also lacks provisions for conflict resolution, accepting and handling grievances, implementing the principle of free, prior and informed consent, and for the release of information. Another problem is that MoFor may not have the authority to regulate how the financial benefits on REDD-plus should be distributed, as it has done through Decree No. 36. This authority may lie with the Ministry of Finance, which sent a letter to MoFor asking it to revise the decree, claiming that it was against the Constitution (The Jakarta Post, 14/04/2010). The head of the working group on fiscal policy for climate change at the Finance Ministry has stated that the Ministry will decide on the types of payment flows, groups entitled to payments, and distribution (ibid.), precisely what MoFor has done in Decree No. 36.

## 2.4

## Reference emission level

Differences in emissions estimates produced by different studies suggests that establishing a national reference emission level for Indonesia

supported by general consensus within the scientific community is going to be a challenging analytical exercise. In reviewing previous

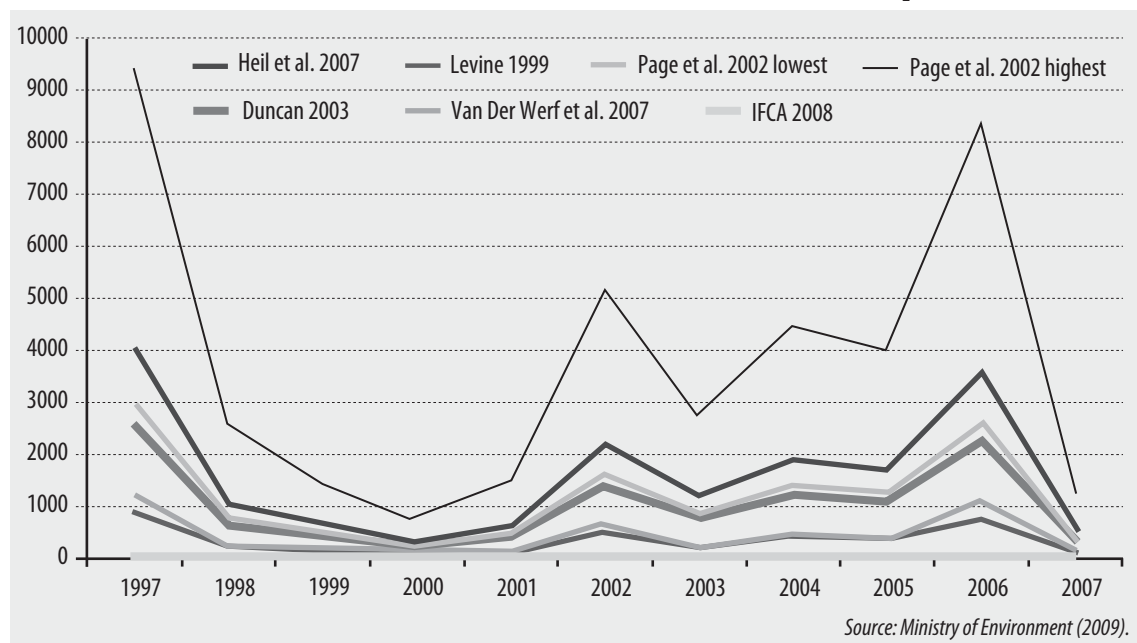
emissions studies, the SNC notes that large differences in national emissions estimates appear to be mainly due to differences in estimates of LUCF sector emissions, especially from peat fires. Figure 2.7 illustrates how extensive these differences in estimates for peat fire emissions are. Improving emissions estimates for peat lands is recognised as a priority and, according to the SNC, in addition to the study commissioned by BAPPENAS described above, various activities are already underway: the Ministry of Agriculture is undertaking studies to calculate emissions factors for different land-use scenarios in Central Kalimantan; MoFor is working to improve emissions factors for both mineral soils and peat lands; MoE is involved in calculation of emissions from peat lands in West Kalimantan and Riau Provinces (Ministry of Environment 2009, 9).

The availability, consistency and quality of data are all critical to the development of a credible national REL. In Indonesia, there is little to no data available on some of the critical carbon pools. In particular, data on soil carbon and the draining and burning of peat is lacking. Further, BAPPENAS points out that for land rehabilitation programmes no monitoring of tree growth after three years takes place and that only the number

of hectares planted is reported, with no differentiation between plantations, enrichment planting and agroforestry, making it difficult to precisely estimate mitigation benefits (BAPPENAS 2009a, 50). The IFCA Consolidation Report argued that Indonesia could reap significant financial rewards by reducing emissions from forest degradation resulting from timber production, but noted that Indonesia does not have data and estimates of the historic emissions for this activity.

To calculate GHG emissions or removals from forest lands, both activity data (forested area) and emissions factors (changes in carbon stocks) are required. With respect to activity data, while many individual mapping products for Indonesia have been completed (i.e. MoFor forest maps of 1986, 2000 and 2003), the maps were not designed for use as systematic monitoring products (MoFor 2008). Adding to this problem is a history of complex forest administration with a wide range of reporting requirements and sources of information, and a decentralisation process that has compromised the reporting lines from districts through to MoFor. That Indonesia experiences both planned and unplanned (illegal) deforestation across numerous islands adds further to the challenge of developing a credible national REL.

FIGURE 2.7 © Estimates from different studies of national emissions from peat fires (Mt CO<sub>2</sub>)



Within this setting MoFor is seeking external support for in-depth analysis to determine the most suitable approach to developing a REL. It aims to set the national and provincial RELs during 2010 and the district RELs during 2011. Drawing on the work of IFCA, the R-PP proposes three options for the analysis of approaches to REL development: historical trend, modelling future projection, and hybrid approach (mixed modelling). IFCA (2008) argued that the third approach would be the most appropriate for Indonesia because of the planned and unplanned deforestation that it experiences, and because the proportions of each are likely to vary between the islands because of their different biophysical and socio-economic conditions. For 2010-2011, MoFor expects that US\$ 450,000 can be secured from UN-REDD for the establishment of REDD methodology and that capacity will be built through support from the Australian Government Overseas Aid Programme (AusAID) (Centre for International Co-operation, MoFor 2010).

In a recent presentation, the Directorate of Forestry Inventory and Mapping explained that for activity data to develop the national REL, MoFor has Landsat 5, Landsat 7, and ETM+ image sets for 1990, 1996, 2000, 2003, and 2006. Further, AusAID is providing support for the analysis of complete, consistent land cover image sets from 1998 until the present. The analysis will be a massive task as there are around 400 scenes per year to process, or approximately 4,800 scenes in total. Capacity building and training is an important element of this endeavour.

Extensive cloud coverage over Indonesia poses a problem; MoFor plans to review over 10,000 scenes to identify the best images. Landsat data is being sourced from multiple receiving stations (United States Geological Survey, Geo-informatics and Space Technology Development Agency (Thailand), Australian and Lapan archives).

MoFor is planning to redesign the National Forestry Inventory (NFI) to calculate emissions

and removal factors. For growth and yield models, MoFor hopes to use data from the NFI sample plots. The number of sample plot clusters (5 km X 5 km or 10 km X 10 km grids) used for the NFI is: 1990-1996, 2,735 cluster plots; 1996-2000, 1,145 cluster plots; 2000-2006, 485 cluster plots; 2006-2010, 2,997 cluster plots. Literature reviews of existing information on biomass carbon stocks and of existing information on soils are being undertaken, and protocols for soil and forest biomass sampling are being developed.

For emissions projections, MoFor will rely on support from the Japan International Co-operation Agency (JICA) to build capacity on spatial analysis and on the FCPF for analysis of drivers of deforestation, analysis of mapping of nature and effect of land use on terrestrial carbon cycles, and development of a time series analysis of the primary social, economic and policy aspects of land use change (Centre for International Co-operation, MoFor 2010).

MoFor is drafting a regulation for the REL, though it may not be ready for issuance in 2010. Elements of the REL calculation to be reflected in the regulation include:

- ⊙ The REL will cover all five forest carbon pools: above ground biomass, below ground biomass, dead wood, litter, soil;
- ⊙ The REL will be reviewed at least every five years;
- ⊙ Monitoring of emissions reductions at national and provincial levels will take place every three years;
- ⊙ The provincial level REL will be based on a "quota" taken from the national REL;
- ⊙ The issue of emissions displacement at international, national, sub-national and project levels will be addressed;
- ⊙ Public consultation, wide participation and equity will be important principles for the REL (Rahman 2010).

For defining the national REL, MoFor is reviewing the following estimates and assumptions:

- ⊙ Annual deforestation rate = 1.125 million ha/yr, based on average rate for 1990-2006;
- ⊙ Future deforestation rate is constant until 2020;
- ⊙ Forest degradation from logging activities = 626,000 ha/yr;
- ⊙ Biomass Conversion and Expansion Factor = 1.67 (referring to IPCC 2006), thus average biomass growth in natural forest = 2.9 t/ha, or 5.32 CO<sub>2</sub>e/ha;
- ⊙ Average biomass growth in plantation forests = 20 t/ha, or 36.7 CO<sub>2</sub>e/ha;
- ⊙ (ibid.).

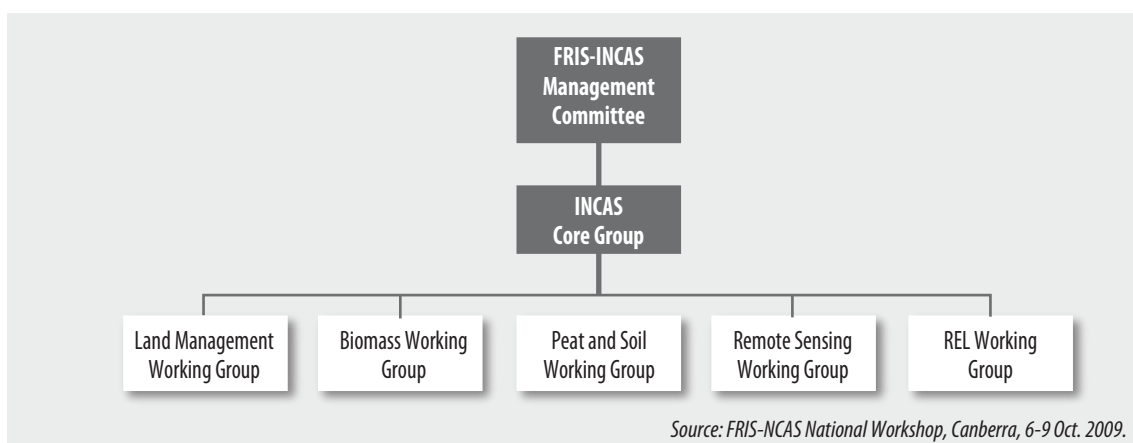
Development of the national REL is but one component of a larger endeavour to create the Forest Resources Information System (FRIS) and Indonesia's National Forest Carbon Accounting System (INCAS) (see Fig. 2.8). The FRIS, which will be under the responsibility of the Directorate General for Forestry Planning, will generate information not only to support sustainable forest management (e.g. productivity, yield and growth, harvesting rates, age class, species, forest area) but also information that can be used to establish the REL (e.g. deforestation, land use and land use change data). It will involve a remote sensing programme, a ground based measurement programme, a geo-database, a data sharing and exchange component, and a decision support component (Forest Planning Agency undated).

The INCAS is intended to provide a "comprehensive and credible account of Indonesia's land based emissions profile and sinks capacity" (ibid.). The FRIS will provide critical input into the INCAS as 70% of Indonesia's lands fall within the forest estate. MoFor has formulated the "grand designs" for both systems with assistance from AusAID. Within each of the two grand designs, implementation steps have been identified and donors will be invited to contribute to the achievement of these steps. MoFor estimates that US\$ 16,395,000 is needed to further develop and begin operating the INCAS and FRIS (MoFor 2009).

### 2.4.1 Reflection

At its 31<sup>st</sup> session, the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA) considered and agreed on a draft decision on "Methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries". The COP adopted this decision at its 15<sup>th</sup> session as 4/CP.15. The decision provides developing countries with some guidance, albeit limited, on how they should develop their national forest sector REL. Two relevant statements in the decision are:

FIGURE 2.8 ⊙ **Organisational structure for development of FRIS and INCAS**



...developing country Parties in establishing forest reference emission levels and forest reference levels should do so transparently taking into account historic data, and adjust for national circumstances, in accordance with relevant decisions of the Conference of the Parties.

To use the most recent Intergovernmental Panel on Climate Change guidance and guidelines, as adopted or encouraged by the Conference of the Parties, as appropriate, as a

basis for estimating anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes.

While Indonesia faces problems with data availability, quality and consistency to develop a national REL following the guidance in 4/CP.15, these do not appear insurmountable. Indonesia has garnered significant donor support to build its data sets and technical capacity.

## 2.5 Monitoring, accounting, reporting and verification

Both the INCAS and FRIS will be important not only for developing the national REL, but also for monitoring emissions and removals (discussed below). Nationwide forest resources monitoring and assessment has periodically been undertaken since 1986 under the NFI project and its successor, the Forest Monitoring and Assessment System (FOMAS). The NFI established 2,725 sample plots for collecting and monitoring commercial volumes of trees and forest growth (MoFor undated). The FOMAS built upon the data and information collected by the NFI project and focused on establishing the conditions necessary to implement a workable open and accountable information system to support improved and sustainable forest management (ibid.). A methodology was also developed under NFI using Landsat data to monitor forest cover and forest cover change. In 1997, forest resource assessment was undertaken using hardcopies of Landsat images for 1994-1997 (images were resampled into 128 meters of spatial resolution to be presented at the scale of 1:500,000). Updating was done in 2000 using Landsat 7 ETM+ (Enhanced Thematic Mapper) digital images with spatial resolution of 30 meters, and in 2003 using 2002 and 2003 data. A three year monitoring system was established (the years

covered were 2000, 2003 and 2006), including the interpretation of medium resolution (Landsat, SPOT (*Satellite Pour l'Observation de la Terre*) 4) satellite images, field checks, compilation by central and regional offices, and presentation of digital data ready for printing at a scale of 1:250,000 (Forest Inventory and Mapping Centre undated). SPOT 5 images are also used for monitoring. The coverage is Kalimantan, 56 scenes; Sumatra, 43 scenes; Sulawesi, 30 scenes; some scenes for Papua and other provinces.<sup>28</sup>

MoFor is participating in various programmes to improve forest cover monitoring. It has collaborated with South Dakota State University to monitor forest cover using low-resolution satellite images (Moderate Resolution Imaging Spectroradiometer, or MODIS) and with Wageningen University using SPOT-Vegetation satellite images. It reported that a pilot project using airborne interferometric synthetic aperture radar (IFSAR, 125 meter resolution) is underway. There is a lack of interpretation expertise within the Ministry, and this pilot project should contribute to building its capacity.<sup>29</sup> JICA is providing support for PALSAR (Phased Array type L-band Synthetic Aperture Radar) use.<sup>30</sup>

28. Interview Dr. Ir. Hermawan Indrabudi, Jan. 2009.

29. Ibid.

30. PALSAR is an active microwave sensor for cloud-free and day-and-night land observation.



MoFor is hoping to secure US\$ 950,000 from UN-REDD to review standards and methodologies for monitoring, reporting and verification, with the aim of designing a forest carbon inventory system reflecting UNFCCC reporting requirements. JICA is providing US\$ 720,000 in assistance for 2008-2011 for the improvement of monitoring and assessment through the use of satellite images and the capacity to estimate biomass and carbon. For 2009-2010, the World Agroforestry Centre (ICRAF) is undertaking a €1.123 million study on credible estimates of the dynamics of carbon stocks at the national level over the past 20 years that complies with the IPCC Tier 3 approach (Centre for International Co-operation, MoFor 2010).

All these activities will contribute to the INCAS, which is intended as a highly integrated system that will compile information from Indonesia's forestry and agricultural sectors to provide a robust emissions profile using remotely sensed land cover change data, land use and management data, climate and soil data, growth and biomass data, and spatial and temporal ecosystem modelling. AusAID, as the key donor assisting Indonesia in developing the INCAS, is providing support for government management teams and equipment to support the INCAS, models adopted, calibrated and further developed by the GOI to estimate emissions from land use change, wall-to-wall land cover change analysis and compilation of land use and management information as well as existing ground based measurements, and capacity development of the GOI to operate an effective data management system (Centre for International Co-operation, MoFor 2010).

One other initiative relevant to the monitoring of forest emissions and removals is the plan to change the land cover classification currently used to that advocated by the IPCC (Table 2.9). For forest carbon inventories, forests need to be classified into classes that have significance for carbon measurements and that can be distinguished from or linked to satellite or aerial imagery.

TABLE 2.9 © Intended changes to land cover classification

MOFOR LAND COVER CLASS	IPCC CLASS
1. Primary dryland forest	1. Forestland
2. Secondary dryland forest	
3. Primary swamp forest	
4. Secondary swamp forest	
5. Primary mangrove forest	
6. Secondary mangrove forest	
7. Plantation forest	
8. Dry land agriculture	2. Crop land
9. Shrub-mixed dryland farm	
10. Transmigration area	
11. Rice field	
12. Estate crop plantation	3. Grass land
13. Grassland	
14. Bush/shrub	4. Wetland
15. Swamp	
16. Swamp shrub	5. Settlement
17. Settlement area	
18. Barren land	
19. Fishpond	
20. Airport	
21. Mining area	
22. Water	
23. Cloud covered	6. Other land

Source: Directorate General of Forest Planning, MoFor, 2010.

Another development worth mentioning is that to support REDD-plus, the INCAS and the development of the REL, the Directorate General for Forest Production is preparing Director General level guidelines on measurement, reporting, and verification of activities for forests managed as concessions. The draft guidelines state that the performance of concessionaires must be measurable, reportable, and verifiable. The guidelines aim to increase the security of business investment and to support government interests in monitoring investment, generating jobs, poverty alleviation and improving the quality of the environment. The Directorate anticipates that the measurement, reporting, and verification could be used by the concession holders and the government to complement REDD-plus initiatives.

## 2.5.1 Reflection

Decision 4/CP.15 provides some instruction for the development of monitoring systems for REDD-plus. The relevant text in the decision is:

developing country Parties... to take the following guidance into account for activities relating to decision 2/CP.13:

(d) To establish, according to national circumstances and capabilities, robust and transparent national forest monitoring systems and, if appropriate, sub-national systems as part of national monitoring systems that:

- (i) Use a combination of remote sensing and ground-based forest carbon inventory approaches for estimating, as appropriate, anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes;
- (ii) Provide estimates that are transparent, consistent, as far as possible accurate, and that reduce uncertainties, taking into account national capabilities and capacities;
- (iii) Are transparent and their results are available and suitable for review as agreed by the Conference of the Parties.

For the development of national forest monitoring systems, 4/CP.15 also states that developing country Parties should take note, if appropriate, of the guidance on consistent representation of land in the Intergovernmental Panel on Climate Change *Good Practice Guidance for Land Use, Land-Use Change and Forestry* (ibid.). The FRIS and INCAS, if established as planned, would enable Indonesia to comply with these requirements.

This section has focused on monitoring, with less discussion on reporting and verification. Some aspects of reporting and verification have been regulated under MoFor Regulation 30 and MoFor Decree 36 for demonstration activities and projects for the licensing of commercial use of carbon sequestration and storage in production and protection forests. However, the provisions are difficult to interpret with Regulation 30 requiring the “REDD Commission” to assign an independent assessor before issuing tradeable carbon emissions reduction certificates, and the Decree 36 requiring the project developer to use existing independent valuation institutions for verification. Inconsistencies such as these should be ironed out during MoFor’s review of the legal framework for REDD-plus.

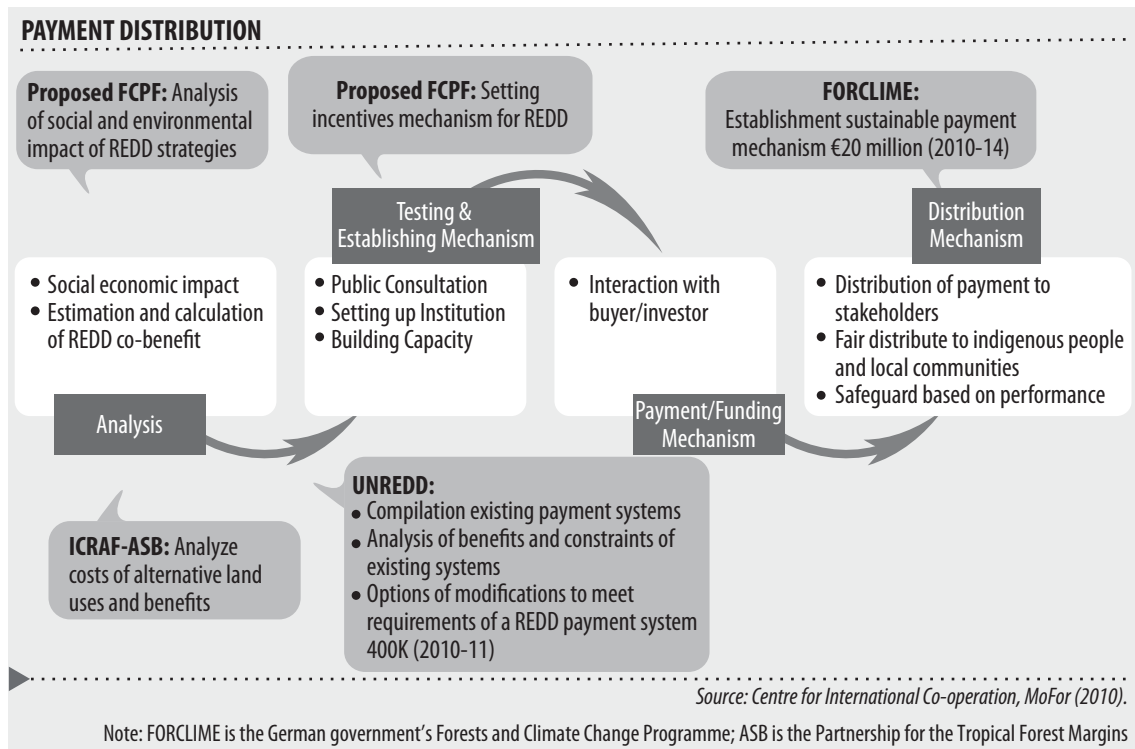
## 26

## Payment and payment distribution

As discussed above, MoFor has regulated both financing and payment distribution for REDD-plus demonstration activities and forestry projects that aim to generate tradable carbon offsets. The regulations determine who can finance REDD-plus projects and who will receive payment from the sale of carbon offsets and the proportions to be assigned to each recipient. MoFor has outlined the process for finalising the payment system and has identified where it hopes to secure funding from (Fig. 2.9). The payment distribution system will be included in the review of the REDD-plus legal framework, which will need to clarify whether the authority for regulating payment distribution lies with MoFor or the Ministry of Finance.

Designing a national REDD-plus payments system in Indonesia will involve decisions over financial transfer mechanisms at different scales, revenue allocation, forms of payment and timing, legal and other institutional structures, and risk management options. Monitoring, auditing, and exposure to public scrutiny for the management of REDD-plus finance are absent from the current regulatory framework. IFCA recommends that the necessary oversight could be achieved through the involvement of the supreme auditor, the Financial Intelligence Unit, the Anti Corruption Unit and NGOs such as Indonesian Corruption Watch (IFCA 2008).

FIGURE 2.9 © Process to finalise the REDD-plus payment distribution system



## 2.7 Challenges ahead

Developing a strategy to achieve measurable, reportable and verifiable national reductions in forest sector emissions is an immense undertaking. It requires a thorough review of existing institutions for land and forest administration, meaningful stakeholder participation to build a broad national constituency for REDD-plus, and a national framework for monitoring, reporting and verifying emissions and removals. Meeting these challenges requires a major unprecedented coordinated effort across various administrations and a major capacity building effort supported by long-term commitments. Of the various challenges to establish a national REDD-plus system in Indonesia identified by this review, the following stand out.

### **Creating an inter-sectoral policy and administrative framework to achieve national forest sector emissions reductions**

Outside of the REDD-plus dialogue and

activities in Indonesia, decisions are being made that will open up forests to further exploitation. Examples of decisions taken that will likely impact forest carbon stocks include:

- In February 2009, the Ministry of Agriculture ended a moratorium on clearing peat lands for plantations.
- About five million ha of land have been allocated for oil palm development in Kalimantan. If all the forested land within this area was cleared and converted to oil palm, up to 255 million tonnes of carbon could be released into the atmosphere from the loss of above-ground biomass stored in the forests alone (IFCA 2007). Indonesia's oil palm sector is poised for further rapid growth and could expand by another 5-6 million ha by 2020 (ibid.).

Spatial planning is a particular area of concern with some provinces proposing significant

changes to the state forest area. For example, currently, almost all of the 15.3 million ha of land in Central Kalimantan is designated as forest land. The Governor has proposed that 44% of this land be allotted to non-forest uses and 56% to forest uses.

It is thus of no surprise that gap analysis conducted by the UN-REDD programme found that the non-forest ministries (mining/agriculture) are claiming forest land for conversion forests and claiming forest lands for non forest use, and called for a clear REDD-plus mandate driven by sound impact analysis of REDD-plus on spatial planning and industry development. The challenges here include establishing REDD-plus as a national priority and formulating a cross-sectoral policy and administrative framework that ensures that each ministry works towards this objective.

The role of BAPPENAS, as the key agency for facilitating the mainstreaming of climate change in the sectors, is critical. The proposed National REDD Working Group with Director General representation from 11 ministries, as well as representation from the National Land use Agency, DNPI, local government and civil society, could also, if sufficiently resourced, play an important role in promoting inter-departmental coordination as well as improving communication between the central and sub-national governments. The DNPI has not been directly involved in the development of REDD-plus policy, but its role in coordination could also be significant. To achieve "Outcome 1: Strengthened multi-stakeholder participation and consensus at national level" of the UN-REDD programme in Indonesia, participants at the UN-REDD Inception Workshop agreed that the DNPI should be strengthened to enhance coordination amongst the different REDD-plus initiatives.

#### **Conducting an in-depth review of the performance of existing forest management policies**

Strategy documents from within and outside MoFor lay out various policies for reducing

forest carbon emissions and enhancing forest carbon stocks. Effort has gone into assessing the mitigation potential and abatement costs of the various policy options, but much less attention has been paid to the performance of existing policies, causes for underperformance, and the fundamental changes required to improve forest management. For example, in Indonesia the record of tree planting programmes, especially for rehabilitation of critical watersheds, with respect to survival rates, timber quality for industrial purposes and appropriateness of planting sites, is weak (Nawir et al. 2007). Nevertheless, some of the recent scenario studies assume a seedling survival rate of 100% and uncritically apply existing estimates for mean annual biomass increment. Scenario analysis needs to be based on a sound understanding of past policy performance and a realistic appraisal of the degree to which policy performance could be improved, how, and at what expense. *Tim-8* has wisely recommended to the Minister a national review of the performance of timber plantation schemes (HTI and HTR), and the Minister has instructed the Secretary General to provide a fund for this review.

Whether MoFor has the capacity to achieve the targets set out in the RENSTRA (Table 2.10), as the means by which forestry will contribute to the 26% emissions reduction target, also requires analysis. The RENSTRA sets ambitious annual targets for tree planting programmes, yet the lack of capacity of the provincial and district forestry offices to implement land rehabilitation programmes is still to be addressed. If rehabilitation programmes are to be placed under forest management units as BAPPENAS and *Tim-8* recommends, then sufficient resources will have to be mobilised to accelerate the establishment of the over 600 forest management units that will be needed to manage Indonesia's forest resources. As of Dec. 2009, only 13 forest management units in production and protection forests outside of Java and 10 conservation forest management units had been established (MoFor database).

TABLE 2.10 © Planting targets and costs

COST (TRILLIONS RP.)	COMMUNITY AND VILLAGE FOREST (HKM, HUTAN DESA) (HA)	REHABILITATION OF CRITICAL WATERSHEDS (RHL) (HA)	FOREST PLANTATION DEVELOPMENT (HTI+HTR) (HA)	RESTORA- TION (RESTORASI HPH) (HA)	PARTNER- SHIP FOREST (HA)	TOTAL (HA)
2010	500,000	300,000	450,000	300,000	50,000	1,600,000
2011	500,000	300,000	550,000	350,000	50,000	1,750,000
2012	500,000	300,000	500,000	450,000	50,000	1,800,000
2013	500,000	350,000	600,000	650,000	50,000	2,150,000
2014	500,000	350,000	550,000	750,000	50,000	2,200,000
2015	500,000	300,000	450,000	300,000	50,000	1,600,000
2016	500,000	300,000	550,000	350,000	50,000	1,750,000
2017	500,000	300,000	500,000	450,000	50,000	1,800,000
2018	500,000	350,000	600,000	650,000	50,000	2,150,000
2019	500,000	350,000	550,000	750,000	50,000	2,200,000
2020	500,000	350,000	500,000	750,000	50,000	2,150,000
Total (Ha)	5,500,000	3,550,000	5,800,000	5,750,000	550,000	21,150,000
Cost (trillions Rp.)	33	21.35	69.6	28.75	3.35	156.05

Source: MoFor presentation file dated 07 Dec. 2009.

### Achieving equity and transparency

The legal framework for REDD-plus is now undergoing review. This provides an important opportunity to ensure fuller public consultation in its formulation. Amongst the most contentious issues are the rights and interests of indigenous people and local communities. In effect, these rights and interests can be disaggregated into two sets of inter-related issues: (i) participation, i.e. the opportunity and capacity of indigenous people and local communities to participate in and benefit from REDD-plus, (ii) consultation, i.e. consultation to ensure that, at a minimum, no harm is done, and that the rights of indigenous people and local communities are recognised. Relevant to the former, COP Decision 4/CP.15 on methodological guidance for REDD-plus recognises the need for full and effective engagement of indigenous peoples and local communities in, and the potential contribution of their knowledge to, monitoring and reporting of activities. Relevant to the latter, the latest negotiating text produced by the Ad Hoc Working Group on Long-term Cooperative Action under the UNFCCC states that when conducting REDD-plus activities "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" should be promoted and supported.

Pertinent to the ongoing review of the REDD-plus legal framework is the fact that the negotiating text includes the statement: "Requests developing country Parties, when developing and implementing their national strategies or action plan, [or subnational strategies] to address, inter alia, drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations and the safeguards identified in paragraph 2 above, ensuring the full and effective participation of relevant stakeholders, inter alia, indigenous peoples and local communities". If this part of the negotiating text is accepted as part of a global agreement on REDD-plus, then attention on the performance of the GOI with respect to the effective participation of indigenous peoples and local communities in the design of its national REDD-plus strategy can be expected to further increase. The complaints raised by NGOs representing indigenous people's interests

about previous consultations will need to be taken more seriously by MoFor officials. The UN-REDD programme, which is stressing the importance of free, prior and informed consent in the conduct of its REDD-plus activities, could play an important role in assisting MoFor to interpret and implement this concept.<sup>31</sup>

The UN-REDD programme intends to establish a REDD Civil Society Advisory Group to provide a structure within which on-going national level consultation can take place for UN-REDD activities in Indonesia. The Advisory Group will thus advise only on UN-REDD activities and will not be linked formally to the government bodies working on REDD. The planned National REDD Working Group will have three representatives from civil society organisations, but will be dominated by high level officials. While finalising the regulation for the establishment of the National REDD Working Group, MoFor should consider alternatives for ensuring effective participation of indigenous peoples and local communities in the Working Group.

The issue of transparency is particularly relevant to how REDD-plus payment distribution will be handled. In their present form, the REDD regulations include no provisions to ensure oversight. As IFCA has suggested, this could be achieved by involving the supreme auditor, the Financial Intelligence Unit, the Anti Corruption Unit, etc.

#### **Co-ordinating REDD-plus work**

Work relevant to REDD-plus is not always well co-ordinated, with the risk of duplication and less than optimal use of available resources. The recent work on carbon scenarios is particularly illustrative. The differences in the forest sector mitigation strategies advocated by the different studies appear due to: different data to construct baselines; differences in the details of the mitigation measures advocated; different assumptions to create the carbon

scenarios; different methods to calculate carbon emissions; and different methods to calculate abatement costs. The co-ordinating bodies, i.e. the planned National REDD Working Group, DNPI and BAPPENAS, should take initiative to ensure a well co-ordinated national work programme on REDD-plus.

#### **Building capacity through REDD-plus demonstration activities**

A final comment is that the various REDD-plus demonstration activities and projects sprinkled throughout much of the archipelago will offer important lessons for the development of the national REDD-plus system on issues such as RELs, monitoring, reporting and verification, measures to counter drivers of deforestation and degradation, and ways of engaging with indigenous people and local communities. The government appears to be proposing a REDD-plus national knowledge and learning network, which could have an important role to play in drawing out these lessons and bringing them to the attention of the architects of the national REDD-plus system.<sup>32</sup> Better use of demonstration activities is required to maximize learning and there is scope to link them more closely with national initiatives, e.g. the establishment of national forest carbon accounting systems.

There is also a need to utilise the demonstration activities to build the capacity of MoFor and other stakeholders on REDD-plus. There is a risk that because highly specific expertise is required to estimate emissions and removals that this work will be mostly undertaken by foreign experts and that, for projects that are output oriented, the option of building the capacity of Indonesian nationals to undertake this work will not be considered. When approving demonstration activities, MoFor should ensure that capacity building of Indonesian nationals is set as one objective, and that this is reflected in the timelines and activities of the projects.

31. For further information, see the UN-REDD presentation "Consultations with communities and FPIC in Indonesia" delivered at the UN-REDD Inception Workshop, 30-31 March 2010, Jakarta ([http://www.dephut.go.id/files/5.UN-REDD\\_local-communities\\_0.pdf](http://www.dephut.go.id/files/5.UN-REDD_local-communities_0.pdf), accessed 03 June 2010).

32. See [http://www.dephut.go.id/files/2.KLN\\_Donor\\_Mapping\\_0.pdf](http://www.dephut.go.id/files/2.KLN_Donor_Mapping_0.pdf) (accessed 03 June 2010).

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## Appendix 2.1: International co-operation for climate change specific projects under MoFor

PROJECT NAME	INTERNATIONAL AGENCY	EXECUTING AGENCY	PERIOD	TOTAL US\$
Improving Governance, Policy and Institutional Arrangement for Reducing Emission from Deforestation and Degradation (REDD)	ACIAR - Australia	Balitbang	2008-2012	191,000
The Project for Support on Forest Management through Leveraging Satellite Information	JICA	DG of Planning	2010-2013	720,000
Joint Project for Adaptation and Mitigation of Climate Change in Forestry through A/R CDM and REDD	KOICA	Litbang	2009-2013	3,906,000
Global Initiative of Forests and Climate Assistance to Indonesia	AusAID	DG of Planning	2007-2012	35,360,000
Indonesia-UN-REDD Joint Programme	UN	DG of Planning	2009-2011	5,650,000
Tropical forest conservation for Reducing Emission from Deforestation and Degradation and Enhancing Carbon Stock in Meru Betiri	ITTO	Litbang	2010-2013	815,000
Linking Communities in Southeast Asia to Forestry-Related Voluntary Carbon Market	FAO	Secretary General	2009-2011	474,000
<b>Total funding CC specific programmes</b>				43,210,000
Total international co-operation				145,423,000
% of total international co-operation for CC				29.71

Source: Data from Bureau of Forest Planning.



# PROGRESS TOWARDS NATIONAL REDD-PLUS READINESS IN VIET NAM

# 3

## CHAPTER

Lavinia Poruschi<sup>33</sup>

### 3.1 Introduction

Since the early 1990s, Viet Nam has made progress in forest management in terms of reducing the national levels of deforestation as well as registering actual growth in its forest stocks. It has also moved relatively fast in involving different stakeholders, particularly community actors, in forest management through its Forest Land Allocation (FLA) Programme. Very recently, Viet Nam has propelled itself to the forefront of the race to capture international support for its Reducing Emissions from Deforestation and forest Degradation (REDD)<sup>34</sup> preparedness activities, in contrast to its initial more passive position in negotiations under the United Nations Framework Convention for Climate Change (UNFCCC) process. After having been selected as a participant country of the World Bank's Forest Carbon Partnership Facility (FCPF) and the UN-REDD Programme, Viet Nam is aiming to develop a Readiness Preparation Proposal (R-PP, formerly known as R-Plans) under the FCPF process and implementation steps for the detailed version of the national Joint Programme Document under the UN-REDD readiness process. Viet Nam intends to be "REDD-ready", i.e. to have in place the national framework envisioned as necessary to participate in a

global REDD scheme, by 2012, yet issues still to be resolved could delay the process beyond this date.

REDD, and especially REDD-plus, could make an important contribution to Viet Nam's climate mitigation efforts. Based on scenario analysis covering forest protection, natural regeneration, plantation of protection forest and special use forest, plantation of short-term production forest, plantation of long-term production forest, and planting scattered trees, the Initial National Communication (INC) to the UNFCCC reported that the total greenhouse gas (GHG) mitigation potential of these six measures is 3221.6 million tonnes (Mt) CO<sub>2</sub>e. Forestry was found to have the largest mitigation potential among the different sectors (INC 2003).

The data gathering and analysis for this paper included a literature review and interview surveys of the major actors in the REDD-readiness process in Viet Nam in March and November 2009. The interviews were used as an opportunity to corroborate or clarify information gathered from a review of secondary materials. The cross-checking of

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34. The discussion on forest sector mitigation activities in Viet Nam has mostly employed the term REDD, rather than REDD-plus, so the former term is used throughout this chapter. The reader should keep in mind that much of the discussion is equally relevant to the enhancement of forest carbon stocks as it is to reducing emissions.

answers from various actors was conducted to validate information.<sup>35</sup>

This paper discusses the dynamics of building the REDD system, the actors in the REDD readiness process, and the progress and challenges in Viet Nam associated with reference emission levels; forest carbon accounting; monitoring, reporting and

verification; payment and payment distribution; and demonstration activities. It finds that keys to establishing an effective national REDD system, i.e. one that can provide credible claims of real, long term national forest sector emissions reductions, are better co-ordination of the various efforts that are currently underway and diversification of demonstration activities, in terms of both location and content.

## 3.2 National REDD Programme (strategy)

In the context of Viet Nam, the term “National REDD Programme” is used instead of REDD strategy as the country has formulated a national Forestry Development Strategy for the period of 2006-2020 and any initiative falling within the framework of this strategy is considered a programme. The national REDD programme will need to be integrated with the existing forestry and climate policies, in particular the National Target Programme to Respond to Climate Change (NTP-RCC),<sup>36</sup> the Ministry of Agriculture and Rural Development’s Action Programme on Climate Change,<sup>37</sup> and the National Forestry Development Strategy (NFDS) (Pham Manh Cuong 2009a).

The national REDD programme aims to provide direction for Viet Nam to prepare itself for a future global REDD mechanism. Beginning with the initial components of the national REDD programme listed in Table 3.1, Viet Nam intends to develop REDD as a national-based programmatic initiative that is able to avoid in-country leakage, allowing at the same time for project-based options and market-based implementation (Pham Manh Cuong 2009a).

TABLE 3.1 © Provisional Components of the National REDD Programme

COMPONENTS
» A reference scenario for both national and regional levels
» Involvement of stakeholders at various levels
» Assessment of benefits and impacts from REDD
» Development of a participatory carbon stock monitoring, reporting and verification system
» Design of the payment system
» Design of the roadmap, institutional arrangement and management system
» Capacity building for stakeholders

Source: Pham Manh Cuong (2009a, 2009b).

The development of the national REDD programme is tasked to the Directorate of Forestry (DoF) under the Ministry of Agriculture and Rural Development (MARD).<sup>38</sup> Various international organisations and initiatives have expressed interest in supporting DoF in developing the national REDD programme, including the UN-REDD Viet Nam Programme and the World Bank’s Forest Carbon Partnership Facility (FCPF). The progress of the development of the national REDD programme under each of these initiatives is described below. The contribution of the REDD Network

35. Documents quoted throughout the text are available in the public domain. The statistical data referred to is mainly from the General Statistics Office of Viet Nam or the Forest Protection Department. Data on deforestation in Viet Nam has been taken from a review by the Regional Community Forestry Training Centre for Asia and the Pacific (RECOFTC). Because of language barriers, some of the data was indirectly collected with the help of Vietnamese peers.

36. The NTP-RCC was approved by the Prime Minister in December 2008 and addresses both mitigation and adaptation strategies for all ministries in the form of action programmes.

37. In its forest sub-sector action programme MARD has included a national REDD readiness strategy.

38. The Directorate of Forestry officially began functioning in 15 March 2010.

to the national REDD programme is also discussed, as are the measures for reducing emissions and enhancing carbon stocks advocated by the Initial National Communication.

### 3.2.1 The UN-REDD Viet Nam Programme

Viet Nam was selected to participate in the UN-REDD Programme based on the acceptance of its National Programme Document (NPD) prepared by the United Nations Development Programme (UNDP), the Food and Agriculture Organisation of the United Nations (FAO), the United Nations Environment Programme (UNEP) and the Vietnamese government. A budget of US\$ 4.5 million was approved for actions in Viet Nam in March 2009.

The objective of the UN-REDD Programme in Viet Nam is to assist the government to develop an effective REDD regime and to contribute to the reduction of the regional displacement of emissions. The broader goal is that Viet Nam will be “REDD-ready” by 2012 and will be able to contribute to reducing emissions from deforestation and forest degradation nationally and regionally (NPD 2009).

The NPD focuses on building national level government capacity for co-ordination and management in setting up the REDD mechanism, building local capacity through activities in two districts in Lam Dong province (Fig. 3.1), and building regional level co-ordination on leakage issues. An extended version of the NPD was produced in the form of the Detailed Project Outline (DPO), which has been reviewed by the Ministry of Natural Resources and Environment (MONRE), the Ministry of Planning and Investment, and the UN-REDD bodies, and reached the Prime Minister’s desk in June 2009. After its approval by the Prime Minister in September 2009, the UN-REDD Inception Workshop was held on

15-17 September 2009 to launch the UN-REDD Programme in Viet Nam. Implementation began in October 2009 with the recruitment of personnel and in November a local inception workshop was held in Lam Dong province.

The UN-REDD Viet Nam Programme officially began in September 2009 and has a life of 20 months. The approved US\$ 4.5 million budget of the Programme targets the following outcomes: construction of a national co-ordination mechanism; interim reference scenario; needs assessment for the development of the national REDD strategy; participatory carbon stock monitoring; district level forest issues awareness development plan; equitable and transparent benefit sharing systems; payment for ecosystems services (PES) at district level through sustainable development, planning and implementation; leakage quantification; and discussion of regional solutions.

FIGURE 3.1 © Viet Nam Provinces map with selected pilots<sup>39</sup>



39. Map retrieved from the World Geographics project ([www.world-geographics.com](http://www.world-geographics.com), accessed 15 July 2010).

Actions set out in the NPD are grouped under three outcomes as follows:

**Outcome 1:** Improved institutional and technical capacity for national coordination to manage REDD activities in Viet Nam

- ⊙ **Output 1.1:** National coordination mechanism for REDD implementation
- ⊙ **Output 1.2:** National reference scenario for REDD
- ⊙ **Output 1.3:** National REDD Programme Framework (Strategy)
- ⊙ **Output 1.4:** Performance-based, transparent benefit sharing payment system from national to local levels
- ⊙ **Output 1.5:** Communications materials for sharing lessons internationally

**Outcome 2:** Improved capacity to manage REDD and provide other payment for ecological services at provincial and district levels through sustainable development planning and implementation

- ⊙ **Output 2.1:** REDD potential mainstreamed in provincial and district-level forest land-use plan
- ⊙ **Output 2.2:** Participatory C-stock (volumes of carbon in different forest stocks) monitoring system
- ⊙ **Output 2.3:** Equitable and transparent benefit sharing payment systems
- ⊙ **Output 2.4:** Awareness-raising at provincial, district and local levels

**Outcome 3:** Improved knowledge of approaches to reduce regional displacement of emissions

- ⊙ **Output 3.1:** Quantification of regional displacement of emissions risk
- ⊙ **Output 3.2:** Regional dialogue on displacement of emissions risk
- ⊙ **Output 3.3:** Analysis of opportunities for linkage with non-REDD initiatives to reduce cross-border flow of illegal timber

The NPD includes a first year work plan and a detailed risk log that ranks the obstacles that might prevent the readiness process from achieving its goals. The highest perceived risks are differences in commitment levels between national and sub-national authorities and inadequate donor coordination.

The REDD Technical Working Group (see discussion on REDD Network below) is currently working on the preliminary analysis for the reference scenario (Output 1.3). Consultants have been contracted for the governance and policy analysis. Various actions related to the national co-ordination mechanism (Output 1.1), the national REDD programme framework (Output 1.3), the benefit sharing payment system (Output 1.4 and Output 2.3) have been underway since August/September 2009.<sup>40</sup> The establishment of the sample plot system is yet to begin.

A team of specialists under the leadership of DoF has analysed the prerequisites for the creation of a benefit distribution system compliant with REDD principles and presented its conclusions at the 15<sup>th</sup> Conference of the Parties (COP) of the UNFCCC.<sup>41</sup> Testing of the participatory carbon stock and benefit distribution mechanisms as well as all other UN-REDD Programme activities are targeted for completion by the end of 2010.

A process of seeking the free, prior, informed consent (FPIC) of indigenous people and local communities is being piloted in two districts (Lam Ha and Di Linh) in Lam Dong province. The piloting began in January 2010 and was scheduled to end in June. At the time of writing, FPIC processes had been completed in 78 villages in the two districts, and independent evaluation and verification of the results was being carried out by the Centre for Forests and

40. UN-REDD Programme website, Viet Nam Country Actions (<http://www.un-redd.org/UNREDDProgramme/CountryActions/Vietnam/tabid/1025/language/en-US/Default.aspx>, accessed 10 Sept. 2009).

41. The document is entitled Design of a REDD-compliant benefit payment distribution system for Viet Nam. At the time of writing the executive summary was publicly available (see MARD 2009b).

People (RECOFTC). The Centre for International and Environmental Law (CIEL), the Global Canopy Programme, the Woods Hole Research Centre, the Forests Dialogue, the UN Permanent Forum on Indigenous Issues, and regional and national indigenous people's networks are involved in the pilot.

The UN-REDD Viet Nam Programme is also supporting the capacity development of individuals and organisations at the national level by providing training and equipment. The organisations targeted include state administration agencies (DoF, Forest Protection Department (FPD), etc.), research institutions, and forestry technical advisory entities (Forest Inventory and Planning Institute (FIPI), Forest Science and Research Institute of Viet Nam (FSIV), etc.).

### 3.2.2 World Bank Forest Carbon Partnership Facility

For their Readiness Plan Idea Notes (R-PINs), the World Bank asks countries to evaluate current data on forests, causes for deforestation and degradation, monitoring capacity, data on forest dwellers, and the challenges and benefits that a REDD scheme would bring. Viet Nam submitted its R-PIN in March 2008, in which it identified MARD as the focal point of the REDD readiness process and DoF and the Forest Sector Support Partnership (FSSP) as having important roles in the development of the national REDD programme.

The next step under the World Bank's FCPF process is the development of the Readiness Preparation Proposal (R-PP). Personnel shortages in the Viet Nam branch of the World Bank led to a slow-down of the process and consequently Viet Nam was unable to apply for the US\$ 200,000 upfront grant for the development of the R-PP (FCPF 2009). The World Bank has only been able to move forward with the preparation of a R-PP in Viet Nam since May 2010. A study on the drivers of deforestation and forest degradation is being

undertaken and consultations with various stakeholders at national and local levels have been conducted. A meeting was held in early July 2010 to discuss the findings and initial recommendations from the study. The R-PP is scheduled for completion by August 2010 (MARD 2010).

The R-PINs are reviewed by the FCPF Technical Advisory Panel and these reviews provide some insight into the state of REDD-readiness. R-PINs were also assessed in an independent study conducted by the World Resources Institute (WRI), which provides some additional insights (Davis et al. 2009). Both the FCPF review and the independent WRI review of Viet Nam's R-PIN advise that there is a need for co-ordination and consultation across sectors and amongst partners to establish an efficient legal framework and to ensure meaningful representation of indigenous peoples. Specifically, the FCPF review calls for: better reporting of forest data, coherence in presentation and inclusion of connected industrial activity data; clarification of the term "indigenous peoples," their tenure and access rights to production forests, and their meaningful representation in the REDD plans; better explanation for why a selective focus on areas affected by deforestation and degradation is applied; a legal framework addressing deforestation and forest degradation; and co-ordination of efforts and their integration with other related programmes. The WRI appraisal found a lack of clarity of the level of consultation with local communities in the formulation of the R-PIN, and directs attention to the need for: legal and policy reform; detailed solutions for land tenure equitability; and description of methods for linkages and cross-sector coordination. The WRI review assessed positively the emphasis in the R-PIN on transparency and efficiency for the REDD payment distribution system. Both reviews suggest that the ineffectiveness of laws appears to be the main barrier to the achievement of real, long-term emissions reductions as well as fair benefit distribution under REDD.

### 3.2.3 Initial National Communication – climate change mitigation strategies for forestry and land use change

Some idea of the strategies for reducing emissions and enhancing forest carbon stocks that Viet Nam's national REDD programme might focus on is provided by the Initial National Communication. The INC assessed six options for forest and land use change based on mitigation potential and abatement costs (Table 3.2).

The INC concludes that active protection of about three million ha of forest, including national reserve gardens, rare wood forest, watershed protection forest, and important reservation areas, has the highest mitigation potential. Ranked second and third in terms of mitigation potential are the planting of 1.3 million ha of long-term rotation production forest and 1.6 million ha of short-term rotation production forest, respectively. The other options assessed – restoration, delineation for regeneration, the planting of scattered trees, etc. – have similar mitigation potentials. The activities with the lowest abatement costs are short-rotation reforestation and silviculture, and delineation for forest regeneration.

### 3.2.4 Reflection

The basic elements of the REDD system have been identified. The readiness strategy has been outlined by MARD and actions scheduled under the UN-REDD Programme can serve as a partial action plan. Early submission of the R-PIN did not lead to early drafting of the R-PP; the development of the R-PP has only begun recently.

The NPD addresses the development of a first set of elements for the REDD system through a list of actions designed to support the co-ordination and the building of management skills at central level and at district level through two local pilot projects. Progress is observable, e.g. the completion of the assessment of the prerequisites for the creation of a REDD benefit distribution system and actions to seek out FPIC among local stakeholders in pilot areas of the REDD-readiness process. Some indication of the actual measures that have potential to reduce forest sector emissions and enhance forest carbon stocks is provided by the Initial National Communication, though this is based on the 1994 inventory and is thus somewhat dated.

Reviews of Viet Nam's R-PIN highlight that the national REDD readiness strategy now has

TABLE 3.2 © Mitigation potential and costs for forestry and the land use change sector

OPTION	AREA (million ha)	EMISSION MITIGATION POTENTIAL/ENHANCEMENT OF ABSORPTION SINKS (TgCO <sub>2</sub> )	COST EFFECTIVENESS		NET PRESENT VALUE (NPV)	
			\$/tCO <sub>2</sub>	\$/ha	\$/tCO <sub>2</sub>	\$/ha
Forest protection	3.0	1,302.6	.21	92.10	0.07	31.28
Combination of forest nursing and delineation for regeneration	1.0	372.6	.11	40.60	0.25	93.72
Planting of protective, specialised forest	1.0	325.8	.26	83.49	0.60	193.58
Short rotation reforestation	1.6	445.8	-0.15	-27.70	0.85	159.17
Long rotation reforestation	1.3	496.1	.20	76.14	0.61	235.43
Scattered trees planting (~1.6 million ha)	4 billion trees (~1.6 million ha)	278.7	2.56	409.12	0.29	46.21

Source: INC (2003). Note Tg = teragrams, or million tonnes.



to address the need for (i) better co-ordination and consultation among partners, (ii) a legal framework, and (iii) substantial involvement

of indigenous peoples. Criticisms of a selective focus on specific activities and a lack of detail of these activities has been made.

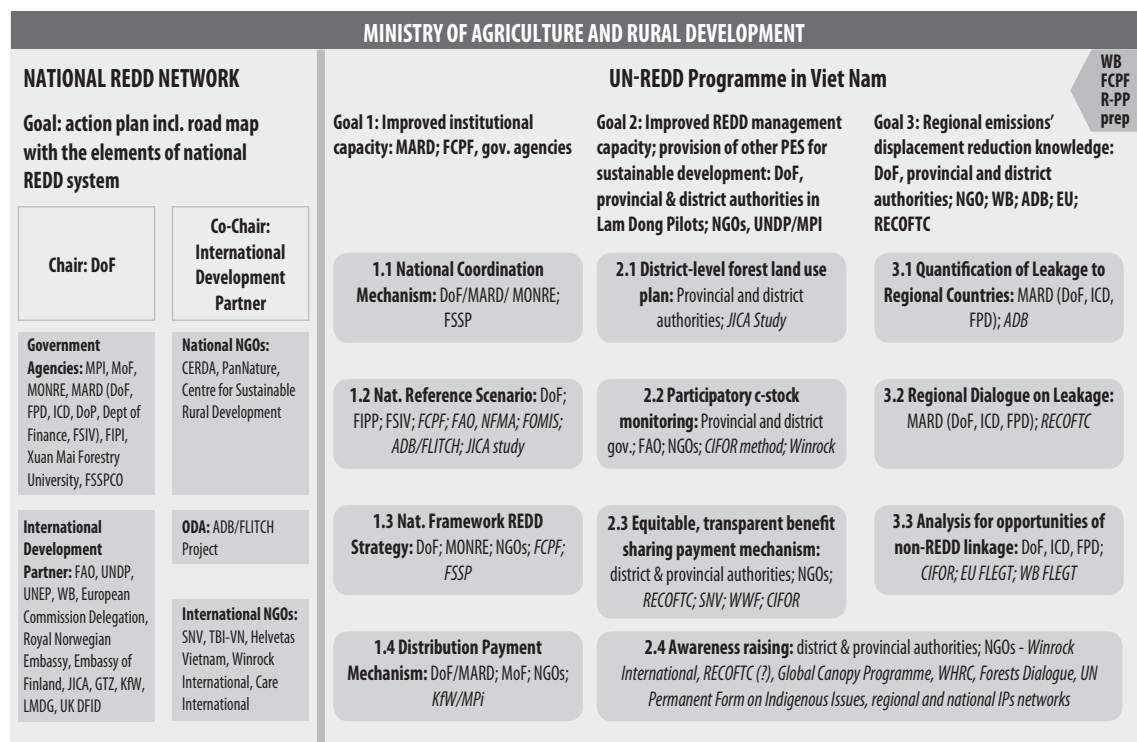
## 3.3 REDD organisations and institutions

Figure 3.2 summarises the organisation of the REDD-readiness process in Viet Nam. It depicts MARD leading the process and describes the goals of the two major initiatives – the UN-REDD Programme and the REDD Network. Implementing partners under the UN-REDD Programme are in plain font and partners with related activities are in italics. The gap depicted between the REDD Network and the UN-REDD Programme shows the absence of an official connection.<sup>42</sup>

### 3.3.1 MARD

MARD, as the body that is responsible for the administration and management of the state's forest resources, has been appointed as the lead agency for REDD. MARD was appointed as the *government executing agency* and the new established Directorate of Forestry (DoF) under MARD was appointed as the *focal implementing agency* for the UN-REDD Programme. Other agencies with roles in implementing the

FIGURE 3.2 © Administration of REDD Readiness Process in Viet Nam<sup>43</sup>



42. A question mark was placed by activity 2.4. as it is not clear to the author whether the international organisations involved in the UN-REDD work on FPIC were officially recognised as related activity partners.

43. See list of acronyms for full titles of organisations. Figure 3.2 was drawn by the author based on the NPD list of actions under the UN-REDD Programme in Viet Nam (NPD 2009) and the FSSP online portal ([http://www.vietnamforestry.org.vn/list\\_news.aspx?ncid=115](http://www.vietnamforestry.org.vn/list_news.aspx?ncid=115), accessed 13 March 2010).

national REDD programme include several offices of MARD,<sup>44</sup> local agencies (Lam Dong Provincial People's Committee and Lam Dong Department of Agriculture and Rural Development) and the UN bodies implementing UN-REDD (FAO, UNDP, UNEP).

All activities of the UN-REDD Programme have to be sanctioned by MARD and the Programme's headquarters were transferred to the MARD compound for ease of access. MARD has appointed the Director of DoF's Department of Science, Technology and International Cooperation as the *national focal point* for REDD and an expert from the same department to assist the focal point on operational issues and technical aspects, and to ensure that REDD-related activities and projects are integrated with and respond to the National Forest Development Strategy. DoF is thus now in charge of both major REDD initiatives in the country: (i) the REDD Network (see below), which it chairs, and (ii) the UN-REDD Programme.

MARD has accumulated considerable experience with climate change and ecosystem services projects, but it has many agencies under its control and as the executing government agency for the UN-REDD Programme will have the considerable task of coordinating all of the involved parties. The R-PIN explains that DoF and the FSSP will both play central roles in the development of the national REDD strategy, just as with the development of the Forest Protection and Development Strategy. However, friction between the FSSP and MARD may have arisen over the decision to place the UN-REDD Programme under MARD, rather than the FSSP (NPD 2009). The FSSP acts as the Secretary of the REDD Network, but has not been assigned a role in the UN-REDD process.

For protection of the interests of the ethnic

minorities, the R-PIN (MARD 2008) delegates responsibility to the National Committee on Ethnic Minorities.<sup>45</sup> This committee is responsible for providing consultation and advice to the government of Viet Nam with regard to all issues pertaining to ethnic minorities (NPD 2009). Particulars of the role under the REDD-readiness process for this committee have not been elaborated in the NPD.

### 3.3.2 Relationship between MARD and MONRE

An important point to consider regarding the governance of the REDD readiness process is the roles of MARD and the Ministry of Natural Resources and Environment (MONRE). Whereas MARD is the key organisation for REDD, MONRE is the key organisation for climate change related actions. Thus, if actions are not specifically connected to REDD but fall into the sphere of climate change, they are under the jurisdiction of MONRE. Forestry, agriculture and rural development are all under MARD administration and are coordinated by the respective vice ministers (MARD 2008), but the land on which forests exist is under the authority of MONRE.

MONRE was founded in November 2002 with the role of formulating nation-wide land allocation plans and managing land-allocation, and with the ultimate responsibility for all state lands (Socialist Republic of Viet Nam 2002). Therefore, while MARD through DoF oversees land-use planning in agriculture and forestry matters (MARD n.d.), MONRE through the General Department of Land Administration is in charge of approving these plans and issuing certificates.

Several studies point out that difficulties have existed between the agencies of MARD and

44. The International Co-operation Department, the Standing Office of the Steering Committee for Climate Change, Forest Inventory and Planning Institute, and Forest Science and Research Institute of Viet Nam.

45. The government officially recognises 53 "ethnic minority" groups (totalling about 16 million people), each with its own language, lifestyle and cultural heritage (UN-REDD Programme 2010). There are currently around 25 million people living inside and adjacent to forest and the majority of them belong to ethnic minorities (NPD 2009).



those of other ministries which have resulted in a lack of concerted decision-making. Implementation of the forest land allocation policy appears to be facing difficulties partially due to problems of co-ordination between the General Department of Land Administration (under MONRE) and the two agencies under MARD – DoF and FPD – that are in charge of forest land allocation and forest protection contracts (Neef and Schwarzmaier 2001). The NPD attributes problems in forest allocation to local communities to insufficient funding and the overlapping mandates of MARD and MONRE. Do Dinh Sam, Hoang Son Lien, and Le Quang Trung (2007) argue that forest management in Viet Nam is affected not only by the obscurity of the roles of the two ministries in relation to each other, but also due to poor co-ordination between the departments specialising in forestry and other departments in MARD.

### 3.3.3 The REDD Network

The REDD Network was established by MARD with the purpose of coordinating stakeholders to design an action plan and road map to implement and construct the elements of the national REDD system. The Network functions as an open-ended organisation and counts among its members government agencies, international development partners, international NGOs and local NGOs.<sup>46</sup>

The REDD Network has been placed under the co-ordination of the DoF and is equipped with a technical assistance body – the Technical Working Group.<sup>47</sup> The FSSP Co-ordination Office is acting as the secretariat for both the REDD Network and the Technical Working Group. These two bodies play a steering role in the REDD process, coordinating with stakeholders to organise and implement

activities related to their assigned functions and tasks. The terms of reference of the REDD Network state that the DoF and a donor will act as the chairs, but it does not explain the role of the REDD Network *vis-à-vis* the actions under the UN-REDD Programme (MARD 2009a).<sup>48</sup>

At its first meeting, held in February 2010, the REDD Network decided to update the donors' REDD-related interests matrix developed under the UN-REDD Programme. At the second meeting, held in July 2010, the REDD Network agreed to hold regular (quarterly) meetings and that better coordination is needed to possibly divide work on REDD to four thematic sub-groups.

### 3.3.4 Reflection

The Directorate of Forestry under MARD is effectively the key organisation for the REDD process in Viet Nam, being responsible for the administration of both the UN-REDD Programme and the REDD Network. However, while MARD is responsible for administering forests and is in charge of REDD activities as the focus point for REDD, MONRE is responsible for all other climate change activities and for forest land allocation. Any difficulties in their relationship could delay the REDD readiness process, especially as they administer separate forest databases. Several studies indicate that there are co-ordination problems between various government agencies, and between the MARD and the FSSP, which diminishes the prospects for quick progress in establishing an effective national REDD system.

On a positive note, enthusiasm amongst MARD officers and others exists for the readiness process and the opportunities that REDD could bring to Viet Nam, not only in terms of increasing

46. Centre of Research and Development in Upland Area (CERDA), People and Nature Reconciliation (PanNature), Centre for Sustainable Rural Development (SRD).

47. Other responsibilities are described in MARD Decision 2614, 16 September 2009 ([http://www.vietnamforestry.org.vn/view\\_news.aspx?ncid=115&nid=225](http://www.vietnamforestry.org.vn/view_news.aspx?ncid=115&nid=225), accessed 30 November 2009).

48. The donors acting as chair are rotated. The Norwegian Embassy is the first chair.

the effectiveness of forest protection, but also in speeding up reforms in land allocation, forest governance and forest monitoring. Many of the international organisations on the REDD stage

in Viet Nam and local NGOs are eager to take part in the process and actively support the government's efforts to build the national REDD architecture.

## 3.4 Reference emission level and accounting

An *interim* national reference emission level (REL) is targeted for completion under the UN-REDD Programme in Viet Nam by the end of 2010. The development of the interim REL will be based on a review of existing methodologies, analysis of the opportunity costs of land use, and the identification of additional data needs. No deadline or schedule has been set for the drafting of the *final* national reference scenario.

Minimum requirements for the establishment of a REL are accurate, consistent forest data sets for at least two different points in time. Viet Nam faces problems with the types of data, data accuracy as well as data consistency. With respect to types of data, the Forest Inventory and Planning Institute (FIPI) does not collect data for computing forest biomass and forest carbon stocks, therefore accurate estimates of CO<sub>2</sub> emissions from deforestation and forest degradation cannot be made. The R-PIN finds that emissions estimates for forests measured in tonnes of CO<sub>2</sub>/yr provided to the Intergovernmental Panel on Climate Change (IPCC) cannot be considered accurate enough for REDD. Also, the categories of forest data vary from one dataset to another, so the necessary consistency for the development of a national REL is lacking.

### 3.4.1 Existing datasets

The main official source of deforestation data is the National Forest Inventory, Monitoring and Assessment Programme (NFIMAP) managed by the FIPI, which has used progressively more advanced satellite imagery to obtain forest data in each of its five-year

cycles over the last 20 years. Forest cover maps of the entire country in hard copy and digital format, with scales ranging from 1:1,000,000 for national level, to 1:250,000 for regional, and to 1:100,000 for provincial level were produced by FIPI under the NFIMAP for 1990, 1995, 2000 and 2005 (FAO 2007). The fourth cycle of the NFIMAP, 2006-2010, is obtaining images at a resolution of 2.5m x 2.5m which contribute to maps of a maximum resolution of 1:25,000 (GOFC-GOLD 2009).

Sample plots for the NFIMAP have existed since 1990, but their number has fluctuated. There were 1,800 plots for the first cycle in the first cycle of the NFIMAP, 3,300 in the second and 4,200 in the third (FAO 2007).

Viet Nam has several sets of indicators for gathering forest data. Data is collected every six months or annually from MARD by the General Statistics Office (under Ministry of Planning and Investment) for the national statistical indicator system, which was specified by Prime Ministerial decision (305/2005). The indicators used include:

- ⊙ Area of newly-concentrated planted forest and type of forest by province/city;
- ⊙ Gross output of wood and other forestry products and type of forestry product by region;
- ⊙ Rate of forest coverage by province/city;
- ⊙ Area of fired and destroyed forest and type of forest by province/city;
- ⊙ Rate of maintained forest area for special use by region.

Another dataset issued by MARD in 2006 has 18 indicators related to forest cover, destroyed forests, timber and non-timber forest products

volume, planted areas, areas of land left for natural regeneration, and areas of land with regenerated forests. The responsibility for collecting the data is shared by FPD and DoF. Yet another set of indicators was developed by FSSP; data was collected for 55 out of a total of 72 indicators for the Forestry Sector Monitoring and Information System (FOMIS), which represents the common database for forest data. This set has a broader scope than the forestry sector but contains one sub-set of indicators on sustainable forest management and forest protection, biodiversity conservation and environmental services (FIPI 2009). In addition, Viet Nam is taking part in the FAO National Forest Assessment (NFA) initiative to strengthen knowledge on the status, trends, uses and benefits of forest resources, and is in an early formulation stage of the NFA.<sup>49</sup>

One of the most accurate and comprehensive publicly available sets of forest data at province level has been compiled by RECOFTC (Nguyen Ba Ngai et al. 2009). This study did not collect primary data but rather pieced together province level data categories for four years – 1992, 1999, 2002, 2004. The only categories of data that were found to be the same for all four years were natural forest area and non-forested area. From the categories surveyed in the study, it appears that forest data collected by official sources was approached from the industrial perspective of timber volume; no reference is made to biomass data that might help establish RELs.<sup>50</sup>

Changes in the definitions of indicators and accounting methodology have made it harder to keep straight records of forest resources. For example, the R-PIN explains that for 2000-2005 including limestone forests resulted in an estimated forest cover increase of 196,000 ha/yr, whereas their exclusion resulted in an estimated decrease of 6,000 ha/yr. The indicator sets discussed above have been used only after 2005

and thus consistent data gathering on the same categories of forests has started only recently.

Not only are the absence and consistency of data issues that need to be addressed, but the quality of forest cover data is also poor. A FIPI report on monitoring, assessment and reporting discusses how collection of data for forest resource inventories is faulty and how inaccuracies are amplified through faulty statistics and through using surveys that update the inventory, instead of collecting an entirely new set of data (FIPI 2009). The report also finds that the accuracy of forest inventory data suffers from administrative drawbacks and that current budgets are inadequate to secure high-resolution data (ibid.).

Inadequate co-ordination on data collection by MONRE and MARD is another issue of concern (Nguyen Ba Ngai et al. 2009; FIPI 2009). The two ministries have failed to reach agreement on the classification of forests and forest lands. Further, data collection occurs in several departments, different definitions are used and data accessibility is poor (see FIPI 2009). Within MARD, both DoF and FPD conduct monitoring of forest and forest land changes, and other affiliated bodies – FIPI, FSIV and the Viet Nam Forestry University (VFU) – host their own databases.

Despite the paucity of data, some attempts at estimating carbon stocks have been made. To produce the GHG Inventory for the forest and land use change sector, the Initial National Communication relied on data from FIPI, the Forest Science Institute, the Agricultural Economic Institute and the Viet Nam Statistical Yearbook. For FAO's *Global forest resources assessment 2005*, biomass was estimated from the data on growing stock collected by FIPI through inventories in the 1991-1995 period and 1999, and IPCC default emission factors were mostly used to convert this to carbon

49. This action is supported by JICA and Finland (<http://www.fao.org/forestry/nfma/47655/en/>, accessed 19 November 2009).

50. The study collected data from national and provincial sources on the forestry sector and poverty in Viet Nam, namely MARD departments (FPD, DoF, the Information Centre, the Board for Enterprise Reform), FSSP, FIPI, Department of Land Registration and Statistics of MONRE, General Statistics Office, Ministry of Planning and Investment, Viet Nam World Bank Information Centre, FAO library, and National Library of Viet Nam.

stocks. The country tables in the *Global forest resources assessment 2005* report contain national estimates of biomass stock in above and below-ground biomass, total living biomass and dead wood for 1990, 2000 and 2005 for the country as a whole.

In terms of carbon inventory costs, a UN Technical Paper estimates for Viet Nam a one-off cost of US\$ 142,000 for an IPCC Good Practice Guidance Tier 2 level approach for a scenario with an existing land cover map, and for Tier 3 level carbon inventories (including degradation) US\$ 477,000 in the first year followed by a yearly US\$ 110,000 for annual re-measurements in permanent sample plots (UNFCCC 2009).

### 3.4.2 Initiatives that could contribute to the development of the national REL

The problem of data synchronisation has been identified as a priority issue in Viet Nam by the Forestry Development Strategy for 2006-2020. Efforts to build a bilingual Forest Sector Information Portal to bring together FOMIS and other data within and outside MARD are being supported by FSSP. The portal is scheduled to become functional in 2010.<sup>51</sup>

The Finnish government is supporting the development of the Management Information System for Forestry Sector project (FORMIS) which aims to build an information system for forestry sector management that can be scaled up to the national level. Forest data collection, processing and distribution are based on the FORMIS indicators in three provinces – Thanh Hoa, Thua Thien Hue, Quang Ninh. The integration of FOMIS and FORMIS systems is planned for 2010 and the aim is to finalise the entire project by the end of 2012. The specific actions planned are:

- ⊙ Establish regulations and procedures for managing, updating, and sharing information between forestry units as a basis for operating and for linking forestry information systems;
- ⊙ Carry out the design and implementation of forestry information databases and software;
- ⊙ Conduct training needs assessment, prepare training materials, collect data and conduct information and community technology training courses in the selected provinces and at central level;
- ⊙ Provide equipment (hardware, network, data collection equipment) and software (FORMIS 2010).

FORMIS is implemented by DoF and is expected to be the platform for managing REDD information in DoF. The FORMIS project is also involved in a REDD-plus reference scenario study financed by the Embassy of Finland and the resulting database is expected to be integrated into FORMIS.

There are several other initiatives that could contribute to the development of the national REL. Under the UN-REDD Programme, different technical options for defining RELs, possibly supported by sub-national scenarios based on administrative and/or ecological divisions, are to be analysed. The NPD states that the *interim* reference scenario, targeted for completion by the end of 2010, can be developed based on available data.<sup>52</sup> Within the UN-REDD framework, the FAO plans to undertake a review of methodologies for establishing baselines, an analysis of the opportunity costs of land use, and other activities to contribute to the establishment of the REL.<sup>53</sup> The Asian Development Bank Forest for Livelihood Improvement in the Central Highlands Sector Project (FLITCH) aims to provide provincial and commune level forest inventories for five Central Highlands' provinces and Phu Yen province (ADB 2005).

51. This portal may not be open to the public ([http://www.vietnamforestry.org.vn/list\\_news.aspx?ncid=3](http://www.vietnamforestry.org.vn/list_news.aspx?ncid=3), accessed 17 November 2009).

52. There is no description in the NPD of actions to collect further data for the interim reference scenario, rather only of actions to compile available data.

53. For more details see Livelihood improvement and ethnic minorities' development plan for the forests for livelihood improvement in the Central Highlands. (<http://www.adb.org/documents/indigenouseoples/vie/liemdp-flitch.pdf>, accessed 5 Jan. 2010).

### 3.4.3 “Destroyed” forests

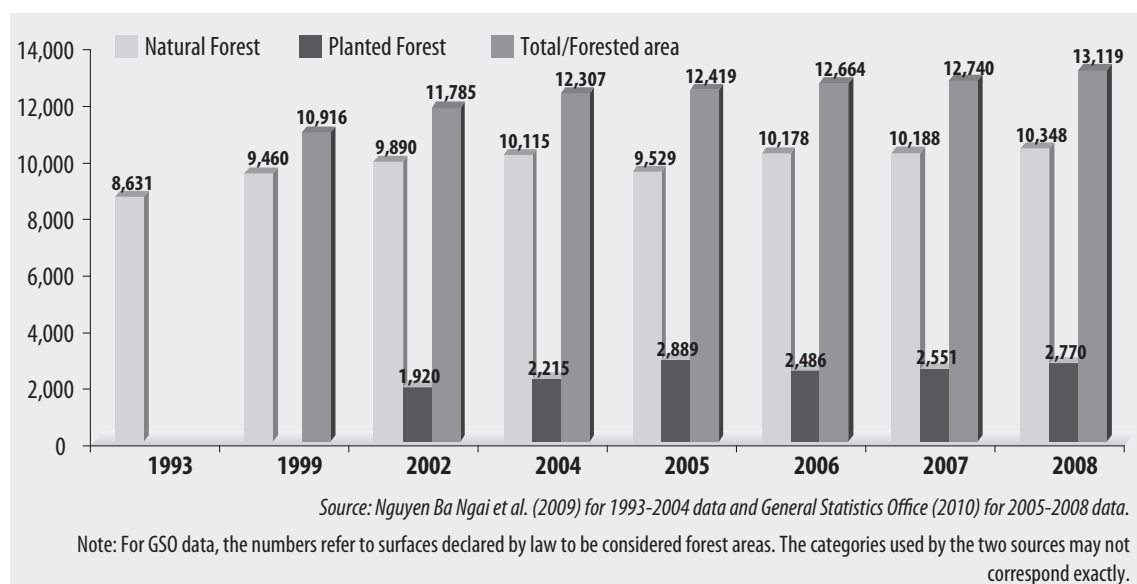
Although data on destroyed forest exists, this is not considered sufficient to report on forest degradation under a REDD mechanism.<sup>54</sup> The Statistical Handbook (2008) reports data on destroyed forests and includes in this category the sub-categories of fired forest<sup>55</sup> and destroyed forest. According to the FSSP study *Viet Nam forest sector indicators and 2005 baseline data report*, damaged forests are forest areas damaged mainly by forest harvesting, forest fire, insects, and deforestation for non-forestry purposes, especially for land use conversion. Under this category, biomass loss is not measured; hence there is no possibility of assessing carbon losses accurately. Viet Nam is thus at an early stage of gathering forest degradation data for the development of the national REL. Considering that Viet Nam’s potential to participate in REDD is enhanced by the inclusion of the regeneration of degraded forests or avoidance of further degradation, this is a critical issue for the development of the national REDD system. Another important element for the establishment of RELs is to have a definition of forest degradation, which Parties to the UNFCCC are yet to agree on.

### 3.4.4 Transitions in forest cover

Decision 4/CP.15 “Methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries” of the Conference of the Parties to the UNFCCC stipulates that in establishing their REL, developing country Parties should take into account historic data. Therefore, in Viet Nam the developers of the REL will have to reflect the fundamental changes taking place in the composition and area of the country’s forests in their calculations.

MARD statistics show an increase in the total forest area in Viet Nam, reaching 13.1 million ha (38.7% of land area) in 2008, comprising 10.3 million ha of natural forest and 2.8 million ha of planted forest (NPD 2009) (Fig. 3.3). At 241,000 ha/yr, Viet Nam is one of the ten countries with the largest annual projected net gains in forest area for 2005 to 2010 (FAO 2006). The net growth in forest area can largely be attributed to national reforestation programmes, such as the 327 Programme (1993-1997) and the

FIGURE 3.3 © Viet Nam Forest Area for the 1993-2008 period (1,000 ha)



54. Interview, MARD official, 9 November 2009.

55. The Statistical Handbook does not explain the term “fired forest”.

Five Million Hectares Reforestation Programme (1998-2010) (Programme 661).

In contrast, the area of primary forests decreased in the period 1990-2005 by about 78% (FAO 2006). The main drivers behind the forest loss are conversion of land for agriculture, migration, and unsustainable forest management, partly resulting from a lack of co-ordination between agencies leading to excessive exploitation of timber resources (NPD 2009). Areas most affected by deforestation and forest degradation are shown by the NFIMAP to be the Central Highlands (Kon Tum, Gia Lai, Dak Lak, Dak Nong and Lam Dong), the Eastern part of the Southern region, and the Central Coastline provinces.

Also relevant to the REL is the fact that two-thirds of Viet Nam's forests are categorised as poor quality or recovering, while only 4.6% are in the rich forest category (World Bank 2005). At the end of the 1980s, 10 million of the 19 million ha of forest lands were classified as "barren" (Do Dinh Sam, Hoang Son Lien, and Le Quang Trung 2007). A study at the Louvain University quoted by the R-PIN indicates a decrease in average biomass per hectare between 1980 and 1990s. The NFIMAP shows that in 1995 regenerated forests do not have high carbon stocks and that for recovery of these up to a timber volume of above 90 m<sup>3</sup>/ha, at least 50 years are needed. Other data shows that the quality of forests is continuously changing, with the area of primary forest declining from 3.84 million ha in 1990 to 0.84 million ha in 2005, at an average rate of 29,900 ha/yr (Pham Manh Cuong 2009a).

### 3.4.5 Emissions displacement

The NPD states that carbon accounting work will be based on existing systems and will be implemented by DoF, FIPI and the Forest Science and Research Institute of Viet Nam, as the national implementing partners, and the

FCPF, the FAO National Forest Monitoring and Assessment project and FOMIS, as other partners with parallel activities. US\$ 616,000 has been allocated for the two years of the project (US\$ 462,000 for the first year and US\$ 153,000 for the second).

For Viet Nam to develop a robust national forest carbon accounting system, it will need to capture both international and in-country emissions displacement. Meifroidt and Lambin (2009) calculate that 39% of the country's needs for wood are satisfied through imports from neighbouring countries, out of which illegal trade supplies 48% of the wood, demonstrating large international emissions displacement. They also estimate that the total imports of wood for the period 1987-2006 offset 23% of the accumulation of wood in Viet Nam's forests (*ibid.*).

Viet Nam is attempting to establish a Mekong REDD Commission with the purpose of creating an inter-governmental partnership of Mekong River countries to avoid the risk of emissions displacement under REDD. A project concept note for the creation of a technical support body with this aim was drafted and submitted to the 2nd Meeting of the Participants Committee of the FCPF in Panama in March 2009. Discussions have continued but agreement has not yet been reached between the four potential members – Cambodia, Viet Nam, Lao PDR and Thailand.<sup>56</sup> In May 2010, a regional workshop was organised in Hanoi with participation from government and non-governmental entities from the Lower Mekong River countries. The workshop discussed regional REDD-plus issues and the national REDD-plus readiness status of the concerned countries, and identified gaps in their capacity with the aim of supporting their existing programmes and fostering further regional cooperation on REDD. It was generally agreed during the workshop that cooperation in the region should occur at a technical level to make use of the existing regional mechanisms and programmes.

56. Interview, MARD official, 9 November 2009.



To measure leakage risks, the UN-REDD Programme aims to quantify displacement probability across country borders through compiling and analysing existing data (Output 3.1., see Fig. 3.2). The UN-REDD Programme is also aiming to reduce the risk of emissions displacement through regional dialogue (Output 3.2.).

### 3.4.6 Reflection

As part of REDD preparedness, the harmonisation of definitions and the elimination of errors in data collection is required. Even with full use of the available datasets, a credible national REL will be difficult to establish. The data sets are not compatible as the definitions of indicators are not consistent or different sets of indicators are used. Inadequacies in the data collection and updating methods also exist.<sup>57</sup> Moreover, the data was never intended for estimating carbon

stocks; hence, without additional data there is limited possibility of using IPCC GPG higher tier methods that could satisfy the likely requirements for carbon offsetting under a global REDD mechanism. The success of initiatives such as the FORMIS is thus particularly critical for REDD.

Given Viet Nam's strong demand for industrial wood, the potential for international emissions displacement from REDD is high. This needs to be reflected in the national forest carbon accounting system and its implications for the national REL need to be studied. Constraints on forest use from REDD could also result in in-country emissions displacement. Piloting would be a useful way to study the potential for in-country leakage and to develop countermeasures; however, the two UN-REDD Programme demonstration activities in Lam Ha and Di Linh have not been designed to study this issue.

## 3.5 Monitoring, reporting and verification

As it is in charge of the National Forest Inventory, Monitoring and Assessment Programme, which is implemented each five years, FIPI was assigned as the lead national institution for REDD forest monitoring and inventories. Viet Nam has forest cover data for the years 1990, 1995, 2000 and 2005, when the NFIMAP was undertaken, with the exception of remote forests. To produce forest cover data, the NFIMAP uses a measurement method combining remote sensing and field surveys using permanent sample plots, as well as regular reporting from forest rangers at commune, provincial and national levels.

Issues that will need to be addressed before national emissions from deforestation and forest degradation can be estimated accurately are:

- ⊙ Lack of clarity as to how verification of data accuracy is undertaken;
- ⊙ Insufficient treatment of the issue of degradation (MARD 2008);
- ⊙ Only living biomass is covered (GOFC-GOLD 2009);
- ⊙ Available data is inconsistent (see previous section and GOFC-GOLD 2009);
- ⊙ Lack of harmonised definitions and classifications (NPD 2009).

Now required are: initiatives, including the use of plots, to measure degradation and monitor biomass in further detail (GOFC-GOLD 2009); improved integration and co-ordination between different sectors, and increased harmonisation with regional and international initiatives (R-PIN 2008; NPD 2009); initiatives

57. There are some initiatives to gather data on forests in a standardised format that exist outside the REDD process that could contribute to the development of the national REDD system, e.g. the FSSP initiative to unify data into an inclusive and bilingual portal.

to build technical capacity for data processing and forest resources change monitoring (GOFC-GOLD 2009) and for using mapping programmes; the development of a systematic approach to update the information from FIPI (R-PIN 2008; NPD 2009); efforts to improve data management and data sharing policy among information providers and users (R-PIN 2008; NPD 2009); and better flow of information between local and national levels (GOFC-GOLD 2009).

There are a number of initiatives that could contribute to meeting these challenges. Outside the REDD process, Finland and the Japan International Co-operation Agency (JICA) have been working towards improving the NFIMAP through the development of a Forest Information Monitoring System, where data collection occurs at provincial level and is afterwards centralised. FAO has disbursed US\$ 2.5 million for this activity. National efforts to improve the NFIMAP consist of using increasingly more advanced technology each occasion the forest inventory is compiled (NPD 2009). The project on Strengthening Monitoring, Assessment and Reporting on Sustainable Forest Management seeks to tackle obstacles to information management, and aims to install a ground receiving station to acquire SPOT 5 and other remote sensing imagery. JICA is undertaking two major REDD studies in Viet Nam: “Screening Potential Lands for A/R CDM and REDD in Viet Nam” and “Application of Remote Sensing in Carbon Stock Estimation and its Change”. The first of these is to run for 20 months from September 2009 and will cost US\$ 2 million. The second will be a detailed version of the Netherlands Development Organisation work (see section on demonstration activities), using 20-30 metres resolution Landsat data.

As described in the REDD Network member’s list<sup>58</sup> and the UN-REDD Programme documents, there are a number of organisations contributing

to the development of the monitoring system in terms of methodology or actual measurements:

- ⊙ Winrock International is conducting baseline measurement for carbon stock estimations for the Da Nhim watershed (Lac Duong district, Lam Dong province).
- ⊙ The Centre for International Forestry Research (CIFOR) is providing a methodology for participatory carbon monitoring, to be tested under the UN-REDD Programme, and training people involved in the demonstration project in the planning and mapping process. The test site is expected to provide carbon stock survey data by the end of 2010.
- ⊙ The Embassy of Finland is providing technical assistance to DoF for the development of the national REDD programme, consisting of collecting information and analysing trends of forest resources and forest carbon stock for the establishment of the interim baseline reference scenarios component. Finland is also funding the FOMIS project, which aims to improve the forest inventory process and put in place a more precise forest stock baseline (NPD 2009).
- ⊙ GTZ is working on inventory methods for carbon stocks in mountainous and mangrove forests ecosystems.
- ⊙ Tropenbos International Viet Nam is working on a methodology for forest dataset analysis (ecological, social information, etc.) and is conducting research and training on the application of Geographical Information Systems for forest management.<sup>59</sup>
- ⊙ The Forestry Agency of Japan has funded the testing of potential uses of forest cover maps and has estimated forest carbon stocks in two provinces through data collected by the Japanese Advanced Land Observing Satellite (ALOS)/PALSAR (NPD 2009).

Although not part of the government’s REDD-readiness process, the Reducing Emissions from Deforestation and Degradation through

58. FSSP website ([http://www.vietnamforestry.org.vn/list\\_news.aspx?ncid=115](http://www.vietnamforestry.org.vn/list_news.aspx?ncid=115), accessed 13 March 2010).

59. FSSP website (<http://www.vietnamforestry.org.vn>, accessed 17 Nov. 2009).

Alternative Landuses in Rainforests of the Tropics (REDD-ALERT),<sup>60</sup> with EU support and in collaboration with the Research Centre for Forest Ecology and Environment, runs from 1 May 2009 to 2011. This project is to be implemented in four countries: Indonesia, Viet Nam, Cameroon and Peru. In Viet Nam, the local partner is the Research Centre for Forest Ecology and Environment (RCFEE). The project sites are located in Bac Kan (in Northern Viet Nam) and in Dak Lak and Dak Nong (in the Central Highlands).

The NPD Logical Framework matrix specifies that by the end of 2010 Viet Nam should be able to generate independently measurable and verifiable REDD carbon credits that will be validated by a “REDD-VN” reporting system. There is little precedent on which this process can build as the previous national PES policy did not have a verification system in place. Under Programme 661, 11,000 households in Lam Dong province received payments in return for their services in protecting 320,000 ha of forest, but little monitoring of the

effectiveness of the service offered by the households was undertaken.

The verification process has not been described in either the UN-REDD NPD or the DPO. The R-PIN states that corruption has infiltrated all levels of the system and that independent verification is problematic in Viet Nam, and proposes a national REDD auditors’ network to be in charge of independent verification. The R-PIN also proposes rewards for monitors who verify the achievement of REDD targets, as a means to offset potential revenue from illegal forest product extraction or land conversion.

The official REDD documents provide a broad outline of activities for building the REDD architecture in Viet Nam, but in order to ensure transparency and accountability, early clarification of details is essential. Early setting of a set of verification rules can also allow for early testing in pilot areas and better enforcement to ensure the long-term viability of the scheme.

## 3.6 Payment and payment distribution

### 3.6.1 Plans for developing a payment distribution system

A team of specialists, under the leadership of DoF, has explored the issue of payment distribution and presented their study *Consideration for designing of a REDD-compliant benefit distribution system for Viet Nam* at the 15<sup>th</sup> COP. This study outlines a system in which the revenues obtained from the sale of certified carbon credits are pooled into a national REDD fund and then distributed to provincial REDD funds (MARD 2009b). It proposes a series of legal, institutional and governance steps for the creation of the benefit distribution system, namely:

- ⊙ Revision of the legal framework, where three priorities are identified: rights to forests and carbon; co-ordination between government agencies (with an emphasis on co-ordination between MARD and MONRE); recognition of all legitimate beneficiaries;
- ⊙ Classification of REDD revenues and the creation of a dedicated fund, for which two options have been identified: (i) a sub-fund of the state-owned Forest Protection and Development Fund,<sup>61</sup> (ii) revenues are managed through a new REDD fund modelled on the Trust Fund for Forests managed by FSSP;
- ⊙ Deciding on the number of levels at which REDD revenues should be managed

60. REDD-ALERT portal, <http://www.redd-alert.eu/>, accessed 9 Feb. 2010.

61. REDD-ALERT portal (<http://www.redd-alert.eu/>, accessed 9 Feb. 2010).

- national, provincial and/or district – with the suggested option to include all three levels in the actual mechanism, although for the piloting phase the provincial level can be left aside;
- ⊙ Monitoring of REDD actions regarding the disbursement of funds to sub-national levels – a list of institutions to participate in a proposed REDD monitoring body are suggested (mainly “Government Inspection”, Ministry of Finance, an independent financial auditing company, FPD, FIPI and Vietnamese civil society organisations);
- ⊙ Determining government revenue from the payment distribution system for administrative costs, where two options were identified – a flat fee or actual costs (the second option is advocated);
- ⊙ Payment structuring that could take into account direct and opportunity costs and include both monetary and non-monetary benefits – an assessment by the government of opportunity costs for different groups of people and/or sites is encouraged;
- ⊙ Decision on the types of forest land owners eligible for REDD benefits – the suggested option gives priority to communities and asks for a review of previous community forestry projects, assessment of legislation reform needs and piloting of community-based REDD;
- ⊙ Law enforcement to reduce illegal logging and encroachment so that REDD activities results are not compromised – the option supported here is to accept there is a diminished value of REDD activities, or to achieve consolidation through, e.g., training, improved management or institutional coordination;
- ⊙ Participatory monitoring, for which a review of the methods with verified achievements is advised;
- ⊙ Establishment of a complaint mechanism, for which two options are identified – (i) entirely managed by government, (ii) inclusion of civil society. Analysis of

the appropriate institutional structure for a participatory recourse mechanism is proposed (ibid.).

The work on designing a payment distribution system is taking place under the UN-REDD Programme. Output 1.4 of the Programme aims at designing a performance-based, transparent, benefit sharing payment system from national to local levels. Output 2.3 aims at an equitable and transparent benefit sharing payment system. Activities under these Outputs began in August/September 2009. Modifications to the 661 Programme mechanism, education of local officials, and testing of the monetary or in-kind mechanism are schedule for completion by the end of 2010 (NPD 2009).

Work proposed under the UN-REDD Programme includes a study of whether the payment distribution system fulfils the expectations of stakeholders and beneficiaries at the local level. A questionnaire survey quantifying the level of satisfaction with the mechanism and analysing its potential to influence the decision-making of communities will be used. Areas where the survey will take place or where the testing will be done are limited to the two districts selected for piloting in Lam Dong province, but several pilot areas to account for variations between locations will be needed for an accurate evaluation of opportunity costs, training costs for participating in a fully fledged REDD system and to provide options for the distribution of payments based on local stakeholder involvement in activities such as forest monitoring (Nguyen Quang Tan et al. 2010). A pilot community forestry programme that has been implemented since 2006 in ten provinces, including areas predicted to have high REDD potential (such as Central Highlands), could provide knowledge that assists in designing an appropriate method for payment distribution.<sup>62</sup>

62. This pilot is funded by the Trust Fund for Forest (TFF) and the design of guidelines has been entrusted to a working group under MARD (see page 9 of the R-PIN).

### 3.6.2 Experience with payment distribution

Viet Nam has experience with payment distribution from the national government to the provincial and district levels from the 661 Programme. Although the intention was that payment under the 661 Programme was to be performance-based, in practice it was not. The NPD asserts that the payments have been subject to diversion because of corruption; the Ministry of Planning and Investment has now developed a system to reflect performance. The lessons that can be taken from the 661 Programme for the national REDD payment distribution system require further study.

Further experience with payment distribution rules at local level is being accumulated under a small-scale Afforestation/Reforestation Clean Development Mechanism (A/R CDM) project in Cao Phong district of Hoa Binh province. This is supported by JICA and is expected to engage 320 farming households in reforestation activities. After the end of JICA's support, local communities are expected to continue to implement the project, with the funds managed by the Forest Development Fund – a new social fund to be developed by the Cao Phong District People's Committee and the Viet Nam Forest University. The distribution of the income from the sale of certified emissions reductions include direct payments to participants. This project could also provide lessons to inform the design of a future REDD payment distribution system.

MARD piloted a PES mechanism in Son La and Lam Dong provinces from 2008 to 2009 (Hoang Minh Ha, Meine van Noordwijk, and Pham Thu Thuy 2008) in response to the requirement of the government to prepare policies related to PES for the forestry sector.<sup>63</sup> Distribution of funds occurred at the local level, but verification of services provided by the local people was not undertaken or was very limited.

### 3.6.3 Implications of forest land and land-use rights allocation

Starting with the Doi Moi reform in 1986, the government has implemented a series of policies and land tenure reforms devolving land-use rights to individuals and other non-state actors for the management of land and forests. The Constitution of Viet Nam states that land and other natural resources are owned by the collective population of Viet Nam and that the state manages these resources on their behalf. The 1993 Land Law names the state as the representative of all landowners. Under the 2001 Law on Forest Protection and Development, the state can allocate forest and forestland to organisations and individuals for long-term protection, development and utilisation. Under revisions in 2004, forest and forestland use rights continue to be leased to individuals and households for long-term use. Government Decree No. 200/2004/ND-CP aims to increase the effectiveness of state forest enterprises or dissolve the completely ineffective ones and reallocate the forestland to communities and individual households. Community-based forest management was introduced in the 1990s and played an important role in the recognition of community land tenure (Land Law of 2003) and community forest tenure, in terms of use rather than ownership (Forest Protection and Development Law of 2004) (Nguyen Quang Tan et al. 2008).

Finalising the process of land ownership and land-use rights distribution to economic entities would greatly benefit REDD payment distribution by clarifying entitlements to rewards. Whether the national REDD system improves livelihoods will depend upon the success of this process (Heimo 2010). By 2006, households were managing 23.2% of the total 3.7 million ha scheduled for allocation to them; the deadline for finalising the allocation is 2020 (de Jong, Do Dinh Sam, and Trieu Van Hung

63. PES mechanism piloting occurred in six provinces – Lam Dong, Dong Nai, Ninh Thuan, Binh Thuan, Son La and Ho Chi Minh City – but forestry related PES was only tested in Son La and Lam Dong provinces.

2006). By 2008, the proportion of land allocated to households had increased to 24% (Fig. 3.4).

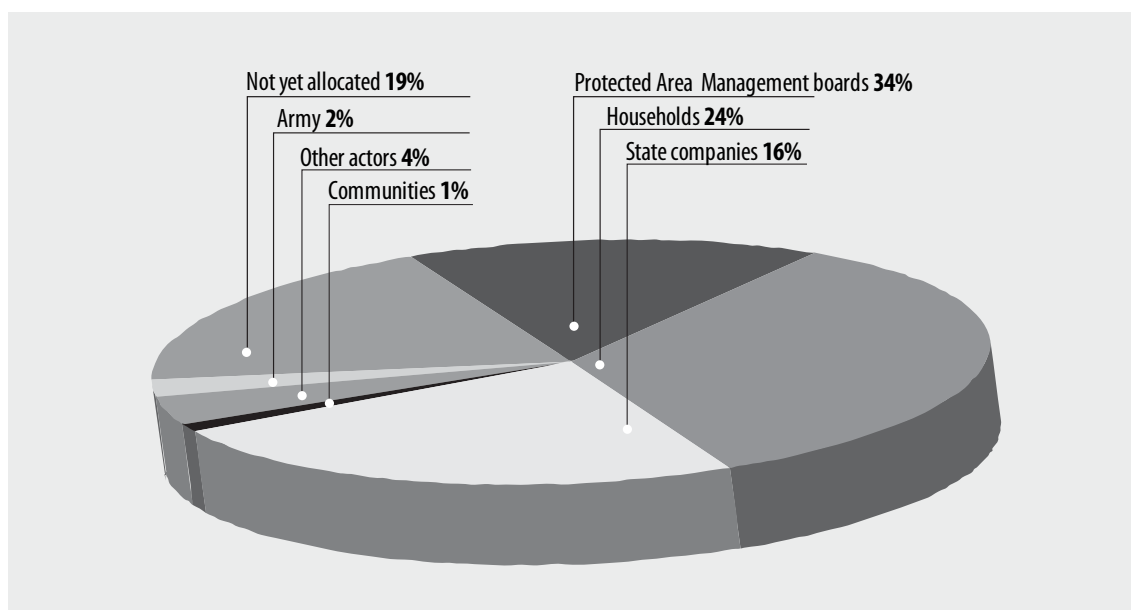
Viet Nam's legal system has evolved and now provides greater clarity regarding land tenure and land-use rights, but implementing the reforms and making them beneficial to the local communities and indigenous people have proved problematic (Clement and Amezaga 2009). Land allocation has been slow, partially due to the strict conditions that come with it (Sikor 2001) and partially due to limited instructions on implementation at field level (Nguyen Quang Tan et al. 2008). Other potential causes are the slow process of reallocating roles between former state forest enterprises and districts, inadequate funding at provincial level (Heimo 2010), and the overlapping mandates of MARD and MONRE (NPD 2009).

Forest areas allocated to communities are small in comparison with households or state companies (Fig. 3.4). The state operated companies and households usually receive forests for long-term management and can

obtain land use certificates to legalise their control, while commune level people's committees (classified in Fig. 3.4 as not yet allocated) are usually in charge of managing forest for an unknown period of time and serve as temporary forest custodians, which does not entitle them to full tenure rights (UN-REDD Programme 2009).

Another reason for dissatisfaction with the policy is the low quality of forestland to be allocated, which includes considerable amounts of barren land and denuded hills. Of the "forests" allocated to communities under the Community Forestry Pilot Programme, 60% are poor forest and 14% are bare land (Nguyen Quang Tan et al. 2010).<sup>64</sup> In northern Viet Nam, local people have been mostly allocated degraded forest land (Clement and Amenazaga 2009), while natural forests have largely been retained under the tenure or management of local government. Overall, forest land allocation was not well planned, disrupting existing land-use systems and leaving expectations unfulfilled (ibid.).

FIGURE 3.4 © Status of forest area allocation to economic entities, 2008



64. The land area allocated to communities under this pilot programme is not the same as that in Fig. 2.

Potential for allocated lands to contribute to REDD exists. Nguyen Quang Tan et al. (2010) argue that communities and households have shown that they are capable of protecting the forests under their management and Tran Ngoc Thanh, Nguyen Quang Tan and Sikor (2003) point out that in Dak Lak villages deforestation rates declined after management rights were transferred from state forest enterprises to households. Moreover, under a global REDD-plus scheme, forest managers could be rewarded through verified enhancement of carbon stocks in degraded forests. An argument that is gaining momentum in Viet Nam is that REDD-plus could benefit households and communities who have only been allocated degraded forest land, provided

that recovery or enrichment of the forests is possible.<sup>65</sup>

### 3.6.4 Reflection

The options for a payment distribution system have been studied and there is now a need for piloting to assess the opportunity costs, options for the involvement of local people in the REDD activities, and modes of payment. Previous and existing initiatives on payment distribution can also provide lessons. Ensuring that forest land and land-use rights allocation is completed efficiently and properly is not only relevant to payment distribution, but is also crucial to the success of Viet Nam's national REDD system.

## 3.7 Demonstration activities

Demonstration activities are still in their initial phases and their total number is small but expanding. Two official pilots are planned in the districts of Di Linh and Lam Ha in Lam Dong province under the UN-REDD Programme. Their purpose is to demonstrate participatory monitoring of carbon stocks, capacity building at local level, benefit distribution and land-use planning. As part of the preparations for the demonstration activities, the UN-REDD Programme in Viet Nam undertook a process to secure free, prior, informed consent of the local communities and indigenous people in Lam Ha and Da Linh between January and June of 2010. The Winrock International – Asia Regional Biodiversity Conservation Programme is responsible for baseline measurement for carbon stock estimations for the Da Nhim watershed (Lac Duong district). A methodology developed by CIFOR will be tested for the participatory carbon stock monitoring. The pilots include technical and institutional capacity building; the training for local authorities and awareness raising activities will be conducted with the support of

CIFOR, Winrock International, RECOFTC, the Netherlands Development Organisation (SNV) and the World Wide Fund for Nature (WWF) (NPD 2009). SNV is working on a REDD pilot project in Cat Tien district, Lam Dong province.

As an example of independent actions that are taking place and can inform the national process, ICRAF (the World Agroforestry Centre) aims to transform a project in Bach Ma that measures carbon sequestration into a REDD demonstration by adding a PES component. It also has a PES initiative in Bac Kan and one scheme on carbon sequestration that will aim to secure funds from the voluntary market.

Regarding other planned pilots and potential sites for pilots, a MARD official suggested that some other demonstration projects might be developed in the north of the country and one in the lower Mekong River Delta area.<sup>66</sup> The R-PIN considers that the Central Highlands and upland areas of the North Central provinces will be the focus of a future REDD

65. See Nguyen Quang Tan et al. (2010) and MARD (2009b).

66. Interview, MARD official, 9 November 2009.

programme. The screening of land for A/R CDM and REDD started in June 2009 (Pham Manh Cuong 2009a).

Regarding locations that have a high potential for REDD piloting, a preliminary study by SNV identifies "REDD hot spots" down to district level based on carbon density and forest cover change for 2000-2005. The provinces with the highest REDD potential (i.e. carbon content larger than 50 t/ha and net deforestation occurs) were identified as the Central Highlands provinces, Ha Tinh and Quang Binh provinces in the North Central Coast, Quang Ninh in the Northeast, and six provinces in the South Central Coast (see Figure 3.1). Medium potential (carbon content less than 50 t/ha and net deforestation occurs) is displayed by the 13 provinces in the Mekong River Delta and another 16 mostly in the Southeast and the Red River Delta. A total of 42 provinces show some

potential for REDD, with 13 of them showing high potential.<sup>67</sup>

### 3.7.1 Reflection

Piloting can provide information on opportunity costs, leakage risks, effective and locally appropriate monitoring methods, strategies to counter the drivers of deforestation/degradation and enhance carbon stocks, and payment distribution. However, the current piloting under the UN-REDD Programme is very limited given the extent of high REDD-potential area identified in the SNV study. Piloting outside Lam Dong, especially in provinces that have not been the focus of previous projects, will contribute new knowledge to inform the national REDD strategy and architecture.

## 3.8 Conclusion

Viet Nam's total forest cover is not declining, but its diversity is being lost through the degradation and loss of its primary forests. REDD, as a novel approach to providing a fuller recognition of the social worth of standing forests, has the support of government departments, international agencies and NGOs. REDD is viewed as a means of solving some of the longstanding problems in the forestry sector by increasing the effectiveness of forest protection and speeding up reforms in land allocation, forest governance and forest monitoring, and as a way to bring greater benefits from forest management to local communities.

Viet Nam faces problems with the types of data, their accuracy as well as data consistency for producing a national REL. The UN-REDD Programme intends that the existing datasets

will be used to produce an interim REL by the end of 2010. The existing sample plots used for the national forest inventory can contribute to the final REL by providing biomass data specific to forest types and locations, but the distribution of these sample plots may not provide accurate forest carbon accounting, which requires that monitoring focuses on areas likely to undergo carbon stock change. For the final REL, harmonisation of definitions, elimination of poor practices in data generation, and collection of data that allows accurate estimation of carbon stocks is required.

The details of the carbon accounting and monitoring methodologies are still to be decided. The use of Landsat data is intended, but this will not capture changes below the canopy, so alternative methods will be necessary for detecting sub-canopy degradation. Viet

67. SNV is also completing an assessment of the financial benefits that can come from REDD or a forest dynamics analysis for the years 2000 and 2005 at district, provincial, national level, using freely available data from MODIS of 500m resolution (coarse resolution data).





Nam has support from a number of international agencies and NGOs to develop the national REL, estimate forest carbon stocks and strengthen forest cover monitoring, suggesting that the obstacles it currently faces are not insurmountable. Viet Nam has benefited from the work of SNV and JICA is assisting in refining the methodology for using remote sensing for carbon stock estimation and monitoring.

Verification of emissions reductions or carbon stock enhancement from REDD activities is another issue that needs attention. In the R-PIN, the government recognises that corruption is a problem. Although the completion of the legal framework for REDD is targeted for 2012, the early design of verification rules and their testing through pilots is desirable.

Progress towards designing a payment distribution system has been made with the drafting of a set of basic principles, and a stakeholder survey on satisfaction with the proposed system is planned. The introduction of a system to reflect performance in Programme 661 may also provide some instruction. However, implementing the system will be challenging as previous experience with payment distribution was not performance-based and cases of diversion because of corruption have been reported. Also, while the land and forest tenure reforms that devolve rights to households, communities and other non-state actors provide some reason for hope for an effective and equitable payment distribution system, the implementation of these reforms has been problematic.

Another issue that requires attention is the high risk of international leakage. Viet Nam's wood industry sector has expanded rapidly in recent years and if REDD reduces domestic wood supply, it could inadvertently drive unsustainable timber harvesting in neighbouring countries. Further studies of cross-border emissions displacement potential are needed, and the proposed Mekong REDD Commission will have an important role to play in fostering dialogue to identify solutions.

Piloting is about to begin and will be important for informing the design of the national REDD strategy and architecture, but the geographical scope of the initial pilots is very narrow, and the activities are limited to participatory monitoring of carbon stocks. Further pilots consisting of a broader set of activities, and with longer timeframes, are required in other areas with high REDD potential. Through the UN-REDD Programme, the government should identify provinces and locations where REDD demonstration activities are likely to offer important lessons, and then elicit interest from donors, NGOs, and others, in developing projects in these areas. The alternative is to allow donors and others to develop pilots in their preferred locations, which may not provide good representation of the range of biophysical and socio-economic dynamics.

A series of challenges must be met before Viet Nam can make a claim of national real, long-term forest sector emissions reductions, beginning with the drafting of a comprehensive national REDD readiness strategy with clear steps and timeframes for each component. The strong initiative displayed by MARD's Directorate of Forestry explains the initial good progress Viet Nam made in winning support from both the UN-REDD Programme and the FCPF. Under the UN-REDD Programme, Viet Nam has started preparing the national REDD program, begun unpacking the readiness process into the elements of a REDD mechanism, and addressing each element.

Various factors that could delay the development of the national REDD system have been described. Above all, a lack of co-ordination between government departments, between national and local levels and between various organisations providing support could result in inefficiencies and a concentration of efforts on a number of "favoured" activities and limited locations. The UN-REDD Programme in Viet Nam and the REDD Network now have an important role to play in directing and coordinating the efforts of government agencies, donors and NGOs.

In short, REDD has garnered strong support in Viet Nam, not just because of the revenues that it could generate, but because of the expectation that REDD could contribute to solving deeply rooted problems in the forestry sector. Keys to establishing an effective national REDD system that can produce credible claims of real, long term national forest sector emissions reductions are better co-ordination of the various efforts that are currently underway and diversification of demonstration

activities, in terms of both location and content. There are major challenges that must be met for Viet Nam to be REDD-ready by 2012, but the efforts to decentralise the management of forests, including entrusting management to local people, to introduce PES, and to increase the country's forest stocks, provide reasons for optimism. The establishment of a national REDD system is, after all, an unprecedented process. Mistakes are to be expected and corrections will be needed.

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## Appendix 3.1: International assistance for REDD-readiness in Viet Nam

### INTEREST OF VARIOUS DONORS AND PARTNERS OF VIET NAM FOR THE UN-REDD PROGRAMME, AS MAPPED IN THE NPD

ACTIVITY	ORGANISATIONS
Co-ordination and management of the process	Government, UNDP
Analysis of land use and forest policy governance	ADB, Global Environment Fund (GEF), GTZ, JICA, SNV, USAID/Winrock, World Bank, EU (REDD-ALERT)
Role of minorities	GTZ, ADB, TFF (Tropical Forest Foundation)
Awareness raising/stakeholder dialogues on REDD	GTZ, ICRAF, SNV, USAID/Winrock, RECOFTC
Design of payment scheme	GTZ, ICRAF, USAID/Winrock, World Bank FCPF
Guidelines and tools for REDD	Australia, World Bank FCPF, JICA
Forest law, governance and trade	EU and World Bank (FLEGT), the Netherlands
Capacity building	Finland, Germany, JICA, the Netherlands, Switzerland, Sweden, USAID, World Bank
Develop field-based REDD pilot activities	Australia and GTZ in Mekong Delta; GEF – not decided; GTZ in Northern and Central Viet Nam; SNV in Central Viet Nam; USAID in central Viet Nam with national pilot policy; World Bank FCPF
Development of baselines	JICA, FAO, World Bank FCPF, GEF, USAID, AusAID
Design of monitoring, verification and reporting system	Finland, FAO, GTZ, USAID
<b>ACTIVITIES DESCRIBED AT ASIA FOREST PARTNERSHIP 8TH MEETING AND DIALOGUE “REDD AND COMBATING ILLEGAL LOGGING”, 27-29 MAY 2009, BALI</b>	
Screening potential land for A/R CDM and REDD for entire country, starting from June 2009	
Community Forest Management pilot programme with participatory forest monitoring	
National Forest Inventory MAP	FAO-Finland Partnership Programme
FOMIS	Finland and TFF
Pilot studies	GTZ-GFA, KfW, Winrock (USAID), Forestry Agency of Japan and JICA, AusAID, TFF, others





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