DRAFT
National Strategy for REDD+
Revised on 18 November 2010

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Preface

Vice Minister of National Planning and Development/ Vice Chairman of the National Development Planning Agency (BAPPENAS)

Praise and gratitude to Allah Almighty, because of God's mercy and blessing, a draft National Strategy for Reducing Emissions from Deforestation and Forest Degradation (National Strategy for REDD+) has been completed properly. It can be categorized as extraordinary, as development of the National Strategy for REDD + has been completed in a relatively short period of time, but has gone through processes which were inclusive, transparent and credible. Actors, experts and stakeholders from various sectors have been involved and have gone through consultation stages of processes, at the regional, national and international levels.

Preparation of the National Strategy for REDD+ is based on the Government of Indonesia's commitment to reducing emissions of greenhouse gases (GHG) by 26 percent with its own efforts (unilateral) and up to 41 percent in 2020 if other countries contribute to provide full support to Indonesia in achieving the target from the level of emissions Business as Usual (BAU) development activities performed without emission reduction measures. Most of GHG emission reduction is expected through the contribution of the forestry sector and land-use based development because these sectors are the largest sources of emissions of Indonesia. Signing of the Letter of Intent (LoI) between the Government of the Republic of Indonesia and Norway was one of the momentum in the framework of developing a national strategy which is inclusive, transparent and credible.

Indonesia's position and role is very unique related to climate change issues. On the one hand, Indonesia is one of the largest producers of greenhouse gas emissions that significantly contributes to climate change, on the other hand, Indonesia as an archipelago and with most of its large cities in coastal areas, becomes highly vulnerable to global warming impacts. Climate change leads to rising world temperatures and resulting increase in surface sea water that will generate tremendous negative impacts on Indonesia. This is the reason why efforts to reduce emissions in particular from forestry and other land-use based developments happen to be very important to Indonesia through REDD Plus scheme (REDD +).

As a forestry management strategy, particularly in the context of reducing emissions from deforestation and degradation, the National Strategy for REDD+ will be part of efforts to reduce greenhouse gas emissions.

Therefore, the National Strategy for REDD+ is part of the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GHG) and also part of the National Forestry Plan (RKTN) 2011-2030[1]. Within the context of a broader development, the National Strategy for REDD+ and RAN GHK is part of the National Medium Development Plan (RPJMN) 2010-2014 as well as the National Long Term Development Plan (RPJPN) 2005-2025 in order to realize the Development

Mission 2025.

In the context of national GHG emission reduction and considering the high emission rate from forestry and peat lands as well, the Indonesian Government gives special attention to the best efforts to the implementation of REDD + in Indonesia through maintaining balance benefits of reducing emissions from forestry and land through REDD +, as well as aspects of economic growth and community's welfare through various development efforts in other sectors.

Strategies provided in the text of the National Strategy for REDD+ will be carried out through (i) Improving planning and utilization of space in a balanced manner with intention of reducing deforestation while maintaining national economic growth; (ii) Increasing Control and Monitoring); (iii) Improving effectiveness of forest governance; (iv) Involving stakeholders and their participation, especially indigenous community and community living in surrounding of forests, in reducing GHG emissions; and (vi) Enhancing and strengthening legal base of forest management. This strategy is expected to be a good momentum for emission reduction in order to improve quality of sustainable development, and great for developing green economics.

Finally, we would like to thank all parties who have helped BAPPENAS in coordinating the development of the text of the National Strategy for REDD+, particularly the Ministry of Forestry, Ministry of Agriculture, UN-REDD Programme Indonesia, and other parties: experts, local governments, indigenous communities, Partnership, TNC (The Nature Conservancy) and the Writing Team.

Jakarta, November 2010

Vice Minister of National Planning and Development/Vice Chairman of the National Development Planning Agency (BAPPENAS)

Lukita Dinarsyah Tuwo

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1 RKTN 2011-2030 is being finalized.

List of Abbreviations

A

AFP :   ASEAN Forest Partnership
AFOLU :   Agriculture, Forestry, and Other Land Use
AMDAL :   Environmental Impact Analysis
APBD :   Local Budget
APBN :   State Budget
APL :   Land for Other Purposes
AusAid :   Australian Government's Overseas Aid Program

B

BAP :   Bali Action Plan
BAU :   Business as Usual
Bappenas :   National Planning and Development Agency
BIN :   State Intelligent Agency
BPKH :   Ministry of Forestry's planning unit at provincial level

C

COP :   Conference of Parties
CI :   Conservation International
CSR :   Corporate Social Responsibility

D

DA :   Demonstration Activities
DAS :   Watershed
DKI :   State Capital City Jakarta
DIY :   Special Province of Yogyakarta

F

FAO :   Food and Agriculture Organization
FCPF :   Forest Carbon Partnership Facility
FLEGT :   Forest Law Enforcement, Governance and Trade
FORCLIME :   Forest and Climate Change Program
FPIC :   Free Prior Informed Consent
FRIS :   Forest Resource Information System
FSC :   Forest Stewardship Council

G

Gerhan :   Ministry of Forestry's program on forest rehabilitation
GIS :   Geographic Information System
GNRHL :   Ministry of Forestry's program on forest and land rehabilitation
GRK :   Green House Gas

O
ORES :   One Roof Enforcement System

P
PAD :   Local Revenue
PHLN :   Grant from Donor Country
PDB :   Gross Domestic Products
PMH :   Eradicating of Law Mafia
POLRI :   Indonesian Police
Pokja :   Working Group
PPATK :   Center of Financial Reporting and Analysis
PPP :   Public Private Partnership

R
RAN :   National Action Plan
REDD+ :   Reducing Emission from Deforestation and Forest Degradation +
REL/RL :   Reference Emission Level
RKTN :   Forest Planning at National Level
RPJMN :   Mid-term National Development Plan
RPJPN :   Long-term National Development Plan
RPPLH :   Environmental Management and Protection Plan
RTRW :   Spatial Planning

S
Satgas :   Task Force
SDM :   Human Resources
SFM :   Sustainable Forest Management
Stranas :   National Strategy
SVLK :   Timber Legality Verification System

T
TNC :   The Nature Conservancy

U
UKP4 :   Presidential Working Unit for Supervising and Controlling Development
UNDP :   United Nations Development Program
UNFCCC :   United Nations Framework Convention on Climate Change
UN REDD :   United Nations on Reducing Emission From Deforestation and Forest Degradation

UNODC :	United Nations Office on Drugs and Crime
USA :	United States of America
UUPLH :	Law Concerning Environmental Protection and Management

W

| WWF : | World Wildlife Fund |

Executive Summary

Increased emissions or release of greenhouse gases (GHG) into the atmosphere, mainly in the form of Carbon dioxide (CO_2), Nitrogen dioxide (NO_2), and Methane (CH_4) gases, by a variety of human activities have triggered temperature alteration and increased sea water level resulting in very extreme climate variability on the earth. Forests turn out to be one of the important themes in climate change. Decrease of forest area or deforestation[2] and quality of standing forest or forest degradation[3] in tropical countries, such as Indonesia, Brazil, Congo and others, are suspected having high contribution to global GHG emissions from the forestry sector. According to IPCC (2007) forestry sector contributes to 17.4 percent of the total global emissions[4], which contribution is part of the figure of 30% of the sector of land use change and forestry (LUCF). In the Government of Indonesia's report to the United Nations Convention on Climate Change (UNFCCC), it was stated that Indonesian GHG emissions was 1.4 Gton CO_2e in 2000, of which 821 Mt of CO_2e or 58 percent came from the forestry sector (MoE, 2009).[5]

Managing deforestation problems has been discussed in 2005 during the 11th Conference of Parties (COP-11) UNFCCC in Montreal. Later in 2007 at the UNFCCC COP 13 in Bali, the COP resulted in the Bali Action Plan as a follow up to the reduction of emissions from forestry activities through activities of Reducing Emissions from Deforestation and Forest Degradation + (REDD +), which includes components of handling deforestation, forest degradation, conservation, sustainable forest management and increase of carbon stocks. REDD + is a policy and incentive scheme for activities to protect and improve quality of forests. The Copenhagen Accord resulting from the UNFCCC COP 15 in Copenhagen in 2009 strengthened the Bali Action Plan and participating countries are expected to establish preparatory activities (REDD readiness), develop infrastructure for REDD +, identify causes of deforestation and forest degradation, and formulate policies as outlined in the national policies for REDD+ by each country.

Growing global awareness about REDD is a momentum for the Government of Indonesia to increase and accelerate control of deforestation.

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[2]See complete definition in Section 1.4 Definition

[3]See complete definition in Section 1.4 Definition
[4]IPCC (2007), *Climate Change 2007: Synthesis Report, Summary for Policymakers*
[5]MoE(2009). *The Second National Communication to the UNFCCC*

The President of the Republic of Indonesia in the G20 forum meeting in 2009 conveyed Indonesian Government's commitment to reduce national GHG emissions by 26 percent in 2020 with self effort (unilateral) and 41 percent with support from other countries. In addition to expecting positive incentives from REDD +, Indonesia keeps maintaining benefit balance between reducing emissions from the forestry and land use sectors through REDD+, and economic growth and welfare of the community through various development efforts in other sectors.

The **objective** of developing the National Strategy for REDD+ is to provide a basic strategy and guidelines for implementation of REDD+ in Indonesia. Meanwhile the scope of the National Strategy for REDD+ includes: i) Identifying problems within REDD + ; ii) Identifying opportunities and challenges that exist in the preparation of the implementation plan for REDD+; and iii) Basic strategy in supporting REDD+ to achieve the target in reducing greenhouse gas emissions 26 - 41 percent.

As one of the forestry management strategies, particularly in the context of reducing emissions from deforestation and forest degradation, the strategy of reducing emissions from deforestation and forest degradation is part of efforts to reduce greenhouse gas emissions.

Therefore, developing the National Strategy for REDD+ is part of the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK). Furthermore, the National Strategy for REDD+ is also part of the National Forestry Plan (RKTN) 2011- 2030.[6] Within the framework of broader development, National Strategy for REDD+ and RAN GHG is part of the National Medium Term Development Plan (RPJMN) 2010 - 2014, and the National Long Term Development Plan (RPJPN) 2005 - 2025 for implementing Development Vision of 2025.

The national strategy will combine a national target rate of economic growth of 7 percent and Indonesia's commitment to the world to reduce emissions by 26 to 41 percent.

[6] RKTN 2011-2030 is being finalized.

Based on general conditions, opportunities and challenges in forest management and in particular in reducing emissions from deforestation and forest degradation (REDD+), the national strategy are as described below:

V i s i o n. Implementation of REDD+ in Indonesia has a vision that relies on the implementation of sustainable and equitable forestry, and to support climate change mitigation efforts.

M i s s i o n. The missions of implementation of REDD+ in Indonesia are: 1) Reducing deforestation rate; 2) Reducing forest degradation through applying good and proper Sustainable Forest Management (SFM) practices; 3) Maintaining carbon availability through forest conservation; 4) Increasing forest carbon stock; 5) Improving community's welfare and their life quality; and 6) Increasing investment and land utilization based on principles of green economics.

Objectives of REDD+. Emissions of greenhouse gases (GHG) from forestry sector is reduced by a minimum of 14 percent of the national commitment of 26 percent through self efforts and 41 percent with international support in 2020.

Based on the developed vision, mission and objectives and taking into account the general conditions, opportunities and challenges that exist, the national strategy for reducing emissions from deforestation and forest degradation (REDD +) consists of: (i) Improving planning and utilization of balanced space with an intention of reducing deforestation while maintaining national economic growth; (ii) Increasing Control and Monitoring); (iii) Improving effectiveness of forest governance; (iv) Involving stakeholders in reducing GHG emissions; (vi) Enhancing and strengthening legal base of forest management (Chart 2).

Strategy 1: Completion of planning and balanced utilization of space in an effort to reduce deforestation while maintaining national economic growth. This Strategy includes: 1) Delay/ moratorium of new permits for conversion of forests and peatlands, as well as reduction of other emission sources and protection/maintenance of carbon stocks; Integrating development in various sectors, particularly forestry, agriculture and mining, towards green economy that utilizes low-carbon.

Strategy 2. Increased Control and Monitoring. This Strategy, includes: 1) Improving data and spatial information, especially biophysical and socio-economic data, 2) Developing simple, accurate and updated instruments for monitoring and evaluation; 3) Developing national standards for measuring GHG emissions in line with international protocols and good practices; and 4) establishing national independent institutions for measuring and reporting GHG emissions from forestry sector.

Strategy 3: Improving Effectiveness of Forest Governance. There are 3 (three) essential elements in improving effectiveness of forest management namely: (i) Effective forest administration; (ii) Good governance; and (iii) Completeness of legal policy.

Strategy 4: Involving stakeholders and their participation, especially indigenous community and communities living in the surrounding of forests. Involvement of stakeholders may be grouped into 3 (three) categories: (i) Involvement from the beginning between Government and Local Government, (ii) Involvement of non-governmental organizations, (iii) Involvement of private sector fairly, (iv) Involvement of indigenous peoples and communities living in the surroundings of the forests; and (v) Involvement of international community.

Strategy 5: Strengthening of Law Enforcement System. Effective law enforcement requires 3 (three) preconditions in the legal system, namely: (1) Ability to detect; (2) Ability to respond; (3) Ability to punish. Therefore, some necessary steps have to be undertaken which include: 1. Procurement of facilities and infrastructure and strengthening integrity systems and sufficient public control; 2) Firm and consistent administrative law enforcement; 3). Strengthening criminal law enforcement through the establishment of One Roof Enforcement System (ORES); 4) Increasing technical capacity of law enforcers (number and quality); and 5) Strengthening public control towards law enforcement.

Supporting System for implementing the National Strategy for REDD+

Implementation of the National Strategy for REDD+ requires infrastructure development that includes: (i) REDD+ institutions; (ii) REDD+ funding institutions; (iii) Developing methods required for REDD+, especially determination of Reference Emission Level / REL /RL at national level and REL at sub-national level, and system for measurement, reporting and verification (MRV); (iv) Strategy in determining priority province, district for implementing REDD+; (v) Developing/capacity building (human resources) and capability (institutions) for implementation of REDD+, and communications with stakeholders.

Availability of 5 (five) elements of supporting infrastructure is very important for implementation of the National Strategy for REDD+, both at central and local level.

Institution for REDD+. To support the implementation of the strategy, important steps for establishing REDD+ institutions are: 1) Establishment of REDD+ institutions at national and sub national level which are effective, have legal basis, have sufficient authority to coordinate ministries/agencies or local agencies, ease of communication, and sufficient technical capability; 2) Accelerating development of Legal Basis and Guidelines for implementation of REDD+ at national and sub-national level. The National Institution of REDD+ will become the decision maker of local institutions for REDD+, and also to liaise between Indonesia's REDD+ program and REDD+ institutions at global level. Therefore, the functions of the REDD+ institution include accountability of national and international financing instruments, fair distribution of benefits of REDD + program, including incentive and disincentive mechanisms related to achievement of program goals of REDD+.

Funding Institution for Implementation of REDD+. The funding institution of REDD+ has to develop funding mechanism that is transparent, accountable, yet dynamic to be able to follow cooperation model with community, both domestically and abroad, and also cooperation with foreign institutions. Apart from the state national budget and the local budget, it is necessary to establish a joint funding mechanism with the private sector, both domestically and abroad in a form of public - private partnership/PPP or through corporate social responsibility (CSR). Therefore, in establishing the funding institution for REDD+, it is necessary to consider the following issues: 1) Competent in mobilizing funding; 2) Competent in developing criteria and procedures and to implement and allocate disbursement of funds transparently and fairly; 3) Competent in monitoring funds allocation and their uses; 4) Ensuring accountability of funds and fiduciary management of REDD+ funds.

Developing Instruments for Measuring, Monitoring and Verification of REDD+. There are two important instruments in REDD+ that should be developed using definite, valid and accurate methodology, namely Reference Emission Level (REL/RL) and Measurable, Reportable and Verifiable (MRV) system. Determination of REL/RL is unique/different in every country and is highly dependent on the condition of each country. Some principles required to determine REL/RL are: 1) Procedure to establish reference emission levels should use similar criteria in every region to prevent opportunistic behavior; 2) Global principle of additionality, REDD+ program should contribute significantly to the reduction of emissions globally, not just at the level of business as-usual ; and 3) Taking into account past levels of emissions as a starting point, then considering national conditions such as forest transition phase (and revenue level/GDP per capita). There are three options in setting the REL/RL, namely: historical emission, adjusted historical emission and forward looking.

Measurable, Reportable and Verifiable System (MRV). MRV system development should refer to the Intergovernmental Panel on Climate Change (IPCC) requirements and meet the principles of efficient, effective and proper. Measurable implies that used methodology must be credible. Reportable means that the report must be clear, actual and can be undertaken periodically. Verifiable means that each report associated with a reduction in emissions or increase of carbon stock and meet the criteria of transparency, can be verified by an independent party. Scope of measurable, reportable, and verifiable (MRV) includes: (i) Measurement of changes in forest area based on type and available carbon stocks in the forests and measurement of benefit distribution of the implementation of REDD+; (ii) Contribution of the implementation of REDD + towards sustainable livelihood and poverty reduction for forest dependent community; (iii) sustainable development and achievement of good governance goals; and (iv) community involvement in the implementation of REDD+. Implementation of MRV is carried out by an MRV institution which has functions for coordination, measurement and monitoring, reporting and verification which is conducted by an independent institution. MRV institution also has duty to make a registration system for REDD+ activities in Indonesia.

Determining Priority Provinces, Districts/Cities for Implementation of REDD+. Determining provinces or districts/cities for implementation of REDD+ is very important to show presence of demonstration activities. It is also demonstrating a significant setting of priority scales despite the limitations of existing resources. Some issues which need to be considered during the determination process of province and district/city are: 1) Willingness of local government to give high priority for implementing REDD+ strategies within its administration in accordance with national strategies; 2) Assurance of cooperation between the governor and the regent/mayor if location of implementation of REDD+ is under provincial administration; 3) Assurance of cooperation from every institution of each sector in the district/city if location of

implementation of REDD+ is under district administration; 4) Commitment to promote implementation of moratorium ; 5) Willingness to implement the MRV system within the province and district/city administration; 6) Willingness to establish an institution for implementation of REDD+ and MRV at provincial level; and 7) Assurance of multi-stakeholders involvement, including local communities/indigenous peoples.

Capacity building (human resources) and capability (institution) of actors of REDD+ and stakeholders communication

Institutional capacity and capability of human resources play an important role in implementing REDD+. Some institutional facilities and actors which need to be available are: 1) Optimizing existing institutions to establish and support functions of REDD+ institutions, REDD+ funding institution, MRV institution for the purpose of accomplishment of REDD+ targets; 2) Developing transparent and efficient procedures to implement effectively the National Strategy of REDD+ ; 3) Develop coordination and communication system among institutions including their authorities; 4) Provide staff and personnel with relevant technical capacity.

As a new approach, particularly related to forest management, and sustainable management of natural resources in general, REDD+ approach requires proper understanding and application. Statement of the Government of Indonesia in reducing GHG emission as a global commitment is a good momentum for emission reduction in order to improve quality of sustainable development, and a great opportunity to develop green economics. Accordingly, it is necessary to have a special interest in the REDD+ program during the process towards sustainable development at national level, while making benefit from global commitment to accomplish sustainable economic development and maintaining the earth's ecosystems globally.

Some principles of the implementation of the REDD+ program that need attention are: 1) Legal basis to be developed should apply the principles of efficiency and prevent overlapping of laws and regulations; 2) Mechanisms and procedures to be developed should be simple; 3) Dimension for measurement, monitoring and verification should be simple and should not require complicated data to be provided mainly at local level; 4) Reward and punishment system (carrots and sticks) needs to be applied proportionally and fairly; 5) Implementation of the National Strategy will only be effective when it is included in the planning system both at central and local level, and 6) Implementation of the National Strategy for REDD+ eventually should demonstrate improved quality of community's welfare at all levels, especially for those who live in and surrounding the forests.

CHAPTER I

INTRODUCTION

1.1. Background

Increased emissions of greenhouse gases has influenced the quality and sustainability of human life. Increased emission or release of emissions of greenhouse gases (GHG) into the atmosphere, mainly in the form of Carbon dioxide (CO_2), Nitrogen dioxide (NO_2), and Methane (CH_4) gases, due to various human activities have triggered changes in temperature and increasing sea level resulting in very extreme climate variability in some regions on the earth. This has triggered disasters such as hurricanes, floods, long dry season, and loss of biodiversity. Whether it is directly or indirectly, the impacts have obviously affected global environmental quality and availability of natural resources, thus they have threatened sustainability of and quality of human life.

Forest as one of the important ecosystems that serves to sequestrate greenhouse gas emissions and balance global climate has been reduced in extent and quality of stands. Acceleration in the rate of decline of forest cover, that is known as deforestation[7] and forest degradation[8] in the tropical countries, such as Indonesia, Brazil, Congo and others, is allegedly resulting high contribution of GHG emissions from forestry sector globally. The Intergovernmental Panel on Climate Change IPCC (2007) noted that forestry sector contributed to 17.4 percent of total global emissions.[9] When combined with the agriculture sector, contribution of emissions from land use change and forestry/LUCF increased up to 30.9 percent of the total global emissions (IPCC, 2007).

Emissions generated by the forestry sector in tropical forested countries, turn out to be the main contributor to high GHG emissions compared to other sectors such as energy, transportation, agriculture. In its report to the United Nations Convention on Climate Change (UNFCCC), Indonesia stated that it produced 1.4 Gton CO2e GHG emissions in 2000, of which 821 Mt of CO2e or 58 percent of Indonesia's total emissions was produced by the forestry sector (MoE, 2009). Deforestation and degradation of forests and peatlands are the prime factors of high emissions in the Indonesian forestry sector. In addition to threatening the global balance, deforestation and degradation of forests and peatlands in Indonesia became a serious threat to local livelihoods, watershed function, and variety of biodiversity.

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[7]See complete definition in Section 1.4 Definition
[8]See complete definition in Section 1.4 Definition

Concerns towards deforestation issues have grown and Indonesia through the Bali Action Plan has been able to facilitate the global community to implement REDD+. Globally, concern of the importance of handling deforestation problems (or known by avoiding deforestation) has been discussed in 2005 at the UNFCCC Intergovernmental Conference of the Parties (COP) 11 in Montreal. The concern received positive responses from developed and developing countries. In the Bali Action Plan, which resulted from the UNFCCC COP 13 in 2007 in Bali, all member countries of the UNFCCC agreed to follow up activities for reducing emissions from forestry through Reducing Emissions from Deforestation and Forest Degradation Plus (REDD+), which includes components of managing deforestation, forest degradation, conservation, sustainable forest management and increase of carbon stocks. Through REDD+ activities, developing countries are expected to obtain incentives for their efforts to protect and improve forest quality.

The Copenhagen Accord resulted from the UNFCCC COP 15 in Copenhagen in 2009 is strengthening the agreement of the Bali Action Plan. During the COP15 meeting, all Head of States of the UNFCCC agreed to: (a) Implement REDD+ scheme as one of the main activities to reduce GHG emissions from the forestry sector in the period after the expiration of the Kyoto Protocol in 2012; (b) Up to 2012, all developing countries that will participate in the activities of REDD+ are asked to: (i) establish some demonstration activities for lesson learnt in actual implementation of REDD+ after 2012; (ii) develop REDD+ architecture in respective country, which includes identifying drivers of deforestation and forest degradation and various policy options in handling issues that will be addressed by the National Strategy for REDD+ in every country.

Management of deforestation since long time has been undertaken by the Government of Indonesia, and the growing global awareness about REDD has encouraged the Indonesian Government to make it as a momentum to improve and accelerate control towards deforestation. Indonesia as a country that supports the implementation of REDD+ has strong political base in efforts to reduce GHG emissions. The political foundation is reflected in the speech by the President of the Republic of Indonesia, Susilo Bambang Yudoyono, for the G20 forum meeting in 2009, where the President conveyed Indonesian Government's commitment to reduce national GHG emissions by 26 percent in 2020 with self efforts (unilateral). Indonesia's reduction of GHG emission can be increased up to 41 percent with support from other countries to achieve this targets The commitment represents a new breakthrough in the midst of uncertainty of the results of UNFCCC negotiations to reduce global GHG emissions, especially in developed countries.

Indonesia has set an example to the world that every developing country has an interest, and is able to initiate reduction of emissions in each country for national and global importance.

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[9]IPCC (2007), Climate Change 2007: Synthesis Report, Summary for Policymakers
[10]MoE (2009). The Second National Communication to the UNFCCC

Indonesia will implement REDD+ with fixed effort to increase economic growth and community welfare.

With the intention to reduce national GHG emissions, mainly due to high emission rate from forestry and peatlands, the Government of Indonesia has committed to implement REDD+ activities as good as possible in Indonesia. As one of the countries that has one of the largest tropical forests in the world along with Brazil and Congo, Indonesia will protect and maintain area of forest coverage and forest quality function through REDD+ activities. The commitment can be undertaken without sacrificing the development in other sectors. In addition to expecting positive incentives from REDD+ activities, Indonesia seeks to maintain benefit balance between efforts to reduce emissions from forestry and land through REDD +, as well as economic growth aspects and prosperity of communities through some development efforts in other sectors.

Accordingly, it is necessary to develop a strategy and national policy that can overcome challenges and take advantage of opportunities that are available from the REDD+ scheme and simultaneously supporting the achievement of sustainable development objectives in the sector of land-based development.

1.2.   NATIONAL STRATEGY FOR REDD+: objectives, scope and position

Objectives

Development of The National Strategy for REDD+ or *STRANAS* REDD+ aims to provide foundation and direction in preparation for implementation of REDD+ in Indonesia.

Scope

The scope of *STRANAS* REDD+ :
   a. Identifying problems within REDD+
   b. Identifying opportunities and challenges that exists in the preparation of the implementation plan for REDD+
   c. The basic strategy of REDD+ is to support the achievement of reduction of greenhouse gas emissions by 26 - 41 percent

In the short term, the National Startegy for REDD+ is the guidelines for establishment of infrastructure for REDD+ and development of National Action Plan and Regional Action Plans for REDD+, concretely demonstrating reduction of greenhouse gas emissions. In the medium term, the National Strategy for REDD+ provides direction for altering comprehensive and integrated governance for development of land use based sectors such as forestry, agriculture, and mining. Meanwhile, in the long term, the National Strategy for REDD+ provides direction for accomplishing green economy in Indonesia.

Position of the National Strategy for REDD+ is very important among other strategic documents related to efforts to address climate change. The National Strategy for REDD+ is part of the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK). Furthermore, the National Strategy for REDD+ is also part of the National Forestry Plan (RKTN) 2011 2030.[11] In broader development framework, the National Strategy for REDD+ and RAN GRK is part of the National Medium Term Development Plan (RPJMN), as well as the National Long Term Development Plan (RPJPN) 2005 - 2025 to accomplish the Development Vision 2025.

The wider scope and variety of problems and challenges faced in development of the National Strategy for REDD+ required involvement of actors, experts and stakeholders from various relevant sectors. In addition, the National Strategy for REDD+ has been prepared through consultation processes both at regional and national level.

Involvement of experts in various fields, both at national and international level, was undertaken to improve quality of understanding and obtaining inputs for a variety of aspects regarding management and management of implementation of REDD+. Meanwhile, involvement of actors and stakeholders in the regions is very important to ensure that the policy directions and strategies of the National Strategy for REDD+ will also be implemented in the regions and become an integrated part of overall regional development.

Nevertheless, since the REDD+ Indonesia program is a new issue and considering the dynamic of environmental development, both internally and externally in the forestry sector, as well as the global dynamics, the National Strategy for REDD+ is a living document, which may need to be adjusted. Thus, the National Strategy for REDD+ will be developed into guidelines and basic foundation for REDD+, which is relevant to development and the demands of the time.

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[11]RKTN 2011-2030 is being finalized

CHAPTER II

Condition of National Forest Management

2.1 Condition of Forests and Other Land Use

Indonesia's forest area covers about 71 percent of the total area of Indonesia; therefore, destruction of forests will   significantly disrupt peoples' life. Indonesia consists of 17,508 islands with a total land area of 187.8 million hectares, which is divided into forest area covering 133.6 million ha (71 percent) and areas for other uses (APL) covering 55.4 million ha (29 percent). Largest forest area is located in Papua, covering 42.2 million ha, Kalimantan 40.9 million hectares, Sumatra 27.9 million ha, Sulawesi 12.5 million ha, and the rest are scattered over other islands.

Based on its function, the forest area is divided into: (i) production forest (HP) covering 81.9 million hectares, (ii) protection forest (HL) covering 31.6 million ha, and (iii) conservation forest (HK) covering 19.9 million hectares. Meanwhile, forest area situated in areas for other purposes is in a variety of conditions and it is difficult to estimate its actual coverage because of the fragmentation and management undertaken by the local government. Forests situated in the APL category need serious attention since from 55.4 million ha only 8.4 million ha is in a good condition.

Deforestation and Forest Degradation rate was quite high and is estimated at 1.17 million ha/year during the period of 2000 to 2006. Calculation of deforestation based on interpretation of Landsat 7 ETM+ satellite images in 2002/2003 and 2005/2006 (Ministry of Forestry, 2008) showed that deforestation rate in Indonesia during the period 2000 to 2006 was 3.52 million ha, or on average the annual deforestation rate was 1.17 million ha per year. This figure has decreased quite significantly, compared to the period 1990-1996, when the average rate of deforestation per year was 1.87 million ha. Moreover, during the period 1996 to 2000, it had increased rapidly, reaching 3.51 million ha per year. Based on historical data, the rate of deforestation in Indonesia is projected to be around 1.1 million ha per year. Meanwhile, the average degradation caused by logging activities was 0.626 million ha per year (DG of Forestry Planning, 2010).

Deforestation inside forest area contributed to 64.8 percent (0.76 million ha/yr) and deforestation outside forest area (area for other purposes) to 35.2 percent (0.41 million ha/year). Out of the 64.8 percent of the deforestation inside the forest area, about 52.8 percent (620.2 thousand ha/year) occurred in the secondary forest, while in the primary forest it was only 4.5 percent (52.3 thousand ha/year), and in other forests it was 7.6 percent (88.7 thousand ha/year). Deforestation in areas for other purposes occured mostly in secondary forest with 30.6 percent (359.1 thousand ha), primary forest with 2.1 percent (24.1 thousand ha/year) and in other forests with 2.5 percent (29.7 thousand ha/year).

Illustration of deforestation rate is presented in the graph below:

(Graph)

Deforestation has increased greenhouse gas emissions, reduced biodiversity and life support systems. In addition to providing wood for various purposes, forests also have the role in maintaining environmental quality, hydrological management, soil fertility, climate and air quality and biodiversity (flora and fauna). Forest damage due to deforestation and degradation will lead to negative externalities, such as:

1. **Increased Greenhouse Gas Emissions**. Forests play an important role in global carbon cycle and function as emitter and absorber of emissions. Results of national GHG inventory in 2000 showed that forestry sector is the highest GHG emitter (net emitter), namely 48 percent of the national emission. Quantities of emissions at sub-national level vary from one island to another, and likewise at the provincial and district levels. However, it can be concluded that emissions are generally generated from deforestation, and forest degradation, including peat and forest fires (2nd National Communication, 2009).

2. **Decline in biodiversity**. As one of the countries with megabiodiversity, Indonesia has 10 percent of existing plants in the world, 12 percent of mammals, 16 percent of reptiles and amphibians, 17 percent of birds, 25 percent of fish, and 15 percent of insects. Indonesian endemic wildlife is also special, out of 38 thousand species of plants found in Indonesia, 55 percent is endemic. Approximately of 500 to 600 species of large mammals, 36 percent of them is endemic, out of 35 primates 25 percent is endemic, from 78 crocked beak birds 40 percent is endemic, and out of 212 butterfly 44 percent is endemic (Bappenas). Deforestation directly has caused fragmentation of biodiversity that will be followed by declining quality of ecosystems, population and distribution of species, as well as other genetic richnesses. Some rare, endemic and protected species in Indonesia are also endangered or loose their habitat.

3. **Declining Life Support Systems**. Disruptions of forest integrity will further decrease the carrying capacity to support human life. One of the indicators is the increased frequency and intensity of floods, which is followed by erosion and landslides, and increasingly severe droughts during the dry season. These incidents resulted in casualties, and destroyed the socio-economic infrastructure of community, which is threatening the food security system, and causing shortages of clean water.

4. **Causes of Deforestation and Forest Degradation**. Deforestation and forest degradation in Indonesia is caused by planned activities such as approved forest conversion (RTRW-spatial planning), forest conversion for other purposes, and awarding permit of IUPHHK (timber concession) in natural forests, and permits for mining and estate crop. Unplanned activities include forest encroachment, forest fires and illegal logging and cutting (harvesting beyond the allowable cut).

Table 2.1. Classification of Deforestation and Forest Degradation Activities

Deforestation and Forest Degradation		Activities
Deforestation	Planned	1. Regional division 2. Forest conversion on approved location (RTRW) 3. Forest conversion of APL (area for other purposes) 4. Permit of mining concession in forest area 5. Permit of plantation concession in forest area
	Unplanned	1. Forest encroachment 2. Forest fire 3. Claim on land that led to conversion
Forest Degradation	Planned	1. Permit of IUPHHK HA (forest concession) in natural forest 2. Permit of IUPHHK HTI (plantation permit) in good natural forest
	Unplanned	1. Illegal cutting (harvesting beyond allowable cut) 2. Illegal logging 3. Small forest fire due to natural incidents 4. Small forest fire due to land clearing

Based on identification through fish bone analysis from 7 (seven) regional consultations, causes of deforestation and forest degradation are: (i) ineffective spatial planning and weak land tenure have resulted in unbalanced use of forests; (ii) ineffective forest governance and poor governance, (iii) Weak basic law and law enforcement, and (iv) socio-economic problems and insufficient involvement of stakeholders.

Ineffective spatial planning and vulnerable land tenure. The preparation of spatial planning (RTRW) is aimed at optimizing the use of space, promotion of growth of balanced regional development needs, and environmental carrying capacity (Siagian and Komarudin, 2009). RTRW is developed as a guideline for provincial and district governments to implement long-term utilization of space accommodating the interests of the governments at central provincial, district level, and the private sector, and communities.

However, RTRW has not been effective in accommodating various needs of sustainable development, since availability of data and information is less accurate, and development planning of forest uses is not sustainable and integrated. Consequently, some problems occur such as forest use conflicts with mining, application of agricultural practices which are not environmentally friendly, limited timber production for development. The problems are exacerbated by weak tenurial issues because the status and boundaries of forest areas, lack of recognition of indigenous rights and production practices of the population which is deteriorating by the limited sources of income of the communities who live in the surrounding of the forests. This situation often triggers conflict and protracted land disputes.

Ineffective forest management. Procedures of management planning/forest management is in accordance with the main functions of the forests such as conservation, protection and production, have been properly implemented. However, lack of accurate data and information resulted in bias and incorrect decisions regarding forest management. Limited number of human resources to maintain and control the extent of forest area in Indonesia has also contributed to inadequate forest management. Quality of human resources to manage and control is limited due to lack of competence (skills, qualifications, and knowledge), poor behavior and attitude, and low integrity (work ethics and motivation), and lack of strong leadership of people who work in organizations as the spearheads of forest management in the field.

Figure 2.1. Identifying causes of deforestation and forest degradation using fishbone analysis

The weakness of governance in the forestry sector aggravates deforestation and forest degradation. Transparency in the licensing process and lack of coordination among authorized parties resulted in conflict of interests in forest management. This also triggered injustice (fairness) in utilizing forest and forest products, particularly when benefit distribution mechanisms are in place, both tangible, such as timber and forest products, and non-tangible utilization, such as carbon credits, conservation payments, etc. Deforestation also occurs due to lack of involvement of local community in the process of forest licensing. Local communities are often not aware that land in their surroundings has already been allocated to a forest management company, which creating conflict in the field and irresponsible utilization.

Incomplete and unclear legal basis and lack of law enforcement. The Forestry Act No. 41/1999, which was issued with a reform spirit, made efforts to restore forestry arrangement into a better forest management system. However, the law needs to be revised and included in the arrangements of national and local authorities with the spirit of a responsible

decentralization. Issuance of Law No. 26 /2007, which revised Law No. 24 /1992 on Spatial Planning, has not solved adequately the overlapping issues concerning designation and licensing of forest harvesting in the field. Both these regulations are not tough enough in handling the problems, so that, both regulations have directly or indirectly opened the opportunities for planned deforestation.

With regard to the legal policy context, the condition has created disharmony and problems due to unclear regulations. Horizontal disharmony occurs between regulations in the forestry sector and regulations in other sectors such as agriculture and mining. Furthermore, vertical disharmony also occurs between regulations at central, provincial and district levels. Incompatible regulations has also generated disharmony with the principles of Human Rights and justice that have been recognized in global agreement. Moreover, uncertainty in forest utilization can occur because there is no principle of decentralization in the Forestry Act.

In the context of law enforcement, there is a lack of public trust towards law enforcement institutions. The weakness of law enforcement in the forestry sector occurs both before and after a case occured. Before a case occurred, potential modus includes alteration of the process of forest allocation and function, licensing, until the time of exploitation of forest resources (from permit granting to implementation). When it already became a case, starting from examination, investigation, prosecution until decision making, it is also vulnerable to abuse authority. The weakness of law enforcement has resulted in very small number of convicted cases in forestry crimes, and convicted perpetrators are field actors. Current law enforcement has not been able to bring to the court intellectual actors and/or officials who abused their authority.

2.2. Current Forestry and Environmental Policies

Indonesia has improved and will continue efforts on protection efforts and to safeguard environmental management. Protection and environmental management has been implemented for a long time. Enhanced protection efforts and improved environmental management have been undertaken since the issuance of Law No. 32/2009 on the Protection and Environmental Management (UUPLH). In order to support efforts to reduce deforestation and forest degradation, this law has a few advanced steps. First, an intact policy cycle from the planning stages to the implementation at project level. UUPLH stipulates to undertake an inventory of the natural resources including forests and the entire ecosystem from national to ecoregions level. Inventory of ecoregion areas then serve as guidelines in developing planning such as RPPLH (Management Plan and Environmental Protection).

Second, as a follow-up of the RPPLH is the preparation of the Strategic Environmental Assessment Study (KLHS), which is designed to ensure to take into account of the carrying and environmental capacity as the basis for developing and evaluating the Long Term Development Plan (RPJP) and the National Medium Term Development Plan (RPJMN) at provincial and regency/city levels (Local Development Plan). KLHS is also required to develop policy formulations, plans or programs that have potential impacts or risks on the environment,

including development of Spatial Planning. When the result of KLHS states that the carrying and absorbing capacity is exceeded, then, policies, plans, or development programs have to be adjusted in accordance with KLHS' recommendations, and any businesses or activities that have exceeded the carrying and environmental capacity are prohibited to continue.

Third, at the next policy cycle, which is at the project level, KLHS is the basis for defining criteria for activities which are required to have Environmental Impact Assessment (EIA) which is then attached to the instrument of environmental permits. EIA has a central role in the licensing process in Indonesia, because environmental permit is interdependent from other licenses, including business licenses. The PPLH Law above stipulates that if the environmental permit is withdrawn, then all other licenses will be invalid also.

Indonesia continues its efforts in combating illegal logging and its associated trade as well as engaging in various international cooperation on these issues. Illegal logging practices in Indonesia are estimated to reach 50 million m^3 per year. If the average illegal harvesting of timber is 20 m^3 per hectare, then, the extent of forest areas that have been illegally harvested may possibly cover 2.5 million ha per year. This condition cannot be tolerated. The Indonesian government has increased the operation of combating illegal logging by issuing a Presidential Instruction No. 4/2005 on Eradicating of Illegal Logging from Forest and associated circulation of timber throughout the territory of the Republic of Indonesia. With the new regulation, operations on combating illegal logging were carried out intensively by a joint team which has reduced illegal logging practices. Based on field control carried out by the Ministry of Forestry during the period 2005 - 2008, there were approximately 1572 illegal logging cases with collected evidences such as heavy equipment units as many as 207 ships, 562 trucks, 101 cars, and 26,352 animals which have been collected from 4416 suspected.

In addition, Indonesia also conducted various co-operation to eradicate illegal logging and illegal timber trade, both among government agencies (POLRI, PPATK, MABES TNI, and BIN) as well as with international agencies. Indonesia carries out multilateral cooperation among others proposing to the UN agencies (UNODC) cooperation regarding Trafficking Cooperation in Preventing and Combating Illicit International Trafficking in Forest Products, including Timber, Wildlife and Other Forest Biological Resources. The proposal has been approved during the meeting in Vienna in 2007. At the regional level established cooperations includes ASEAN Forest Partnership (AFP), Illegal Logging Response Centre (ILRC), Forest Law Enforcement, Governance and Trade (FLEGT); Asia Pacific FLEG; and the ASEAN Wildlife Enforcement Network. Indonesia, also conduct bilateral cooperation with: UK, USA, China, Japan, Korea, and Norway. In addition, partnerships were also developed with various non-governmental organizations such as WWF, Green Peace, Greenomics, TNC and CI. Indonesia has also set up and organizes an Illegal Logging Information Centre with ITTO and WWF, as a follow-up of cooperation of FLEG and the United Kingdom.

Indonesia continues to work hard in controlling forest fires and haze. Policy in controlling forest fire is carried out through 3 (three) main areas, namely: (i) technical, (ii) institutional, (iii) increased participation and community empowerment. In order to control forest fires, it is necessary to have institutional system (organization, standard operating procedures and funding) that is transparent for all parties (stakeholders). Therefore, the Ministry of Forestry has established forest fire control organizations at all levels that have authority and ability, supported by facilities, infrastructure and adequate human resources.

Indonesia has undertaken land and forest rehabilitation through various schemes in increasing numbers. Forest and land degradation has led to various impacts that are disadvantagous for national development. The Ministry of Forestry has been undertaking rehabilitation through reforestation and afforestation in 282 priority watersheds with achievement of 77.5 percent in 2007. The accomplishment in undertaking forest and land rehabilitation activities has increased employment during establishment of community plantation forest and community forests.

Box I: Success story of reforestation through community plantation forest in Java Island

Potential of state forests in Java is not too big, especially when compared to state forests outside Java. The island is 131,412 km^2, state forest is covering 2,881,949 ha (about 23% of the land). Nearly half of the forest area has been through deforestation and forest degradation. Referring to data at national emission level, the largest forest degradation and forest deforestation occurred in East Java, Central Java, West Java, Banten, Yogyakarta and Jakarta, respectively.

On the contrary to the conditions in state forests, currently in Java, there is an increasing phenomenon of community plantation forests, which have been established on community owned land . This phenomenon is not happening in other regions outside Java, therefore it can be considered as a success story of community efforts to increase forest carbon stocks.

According to data from BPKH regarding Java and Madura, community plantation forests in Java have reached at least 3 million hectares, with its carbon potential of approximately 45 tons/hectare. The biggest area of community plantation forests are in West Java, Central Java, East Java, Banten and Yogyakarta provinces, with carbon potential of 14.6 million tons, 11.7 million tons, 8.2 million ton, 5.1 million tons, and 878,559 tons, respectively. This phenomenon is considered very important for the development of the National Strategy for REDD +, which did not only include efforts to decrease emissions but also increase in carbon stocks, both through forest conservation and sustainable forest management models.

Yogyakarta Province has small forest area compared to other provinces in Java except DKI. Total area of state-owned forest in Yogyakarta is 18,715.06 ha. However, total area of community plantation forest is three times of the state forest (58,286.95 ha). The comparison shows that Yogyakarta's community is strong in its tradition to maintain quality of their environment through undertaking reforestation efforts.

State forests	
Gunungkidul	14.859,50 Ha
Bantul	1.052,60 Ha
Kulon Progo	1.037,50 Ha
Sleman	1.729,46 Ha
Total	18.715,06 Ha
Community plantation forests	
Gunungkidul	28.414,48 Ha
Bantul	8.282,80 Ha
Kulon Progo	17.511,25 Ha
Sleman	4.078,42 Ha
Total	58.286,95 Ha
State forest management and its managed area	
Forest service of DIY	16.358,60 Ha
Conservation of natural resources agency of DIY	628,08 Ha
National Park (TNGM)	1.728,38 Ha
Total	18.715,06 Ha
Type of state forest managed by the Forestry Service of DIY	
Production forest	13.411,70 Ha
Protection forest	2.312,80 Ha
Forest park	634,10 Ha
Total	16.358,60 Ha

Community's tradition in undertaking reforestation is in line with the REDD+ concept, where SFM and conservation efforts are included in the REDD+ scheme. The REDD+ concept also allows buyers to make direct agreements with the sellers (not necessarily G to G), therefore, the community is in a much stronger position. State forests in Yogyakarta (protection and production forests) are managed directly by the Local Government (Dishutbun-forest and agriculture service), which is different from other provinces in Java, whereas forests are managed by Perhutani, the State-owned enterprise that manages production and protection forests in Java. Thus, it is possible for communities to manage state forests using community's schemes, such as community forest (HKm), community forest plantation (HTR), etc. Community involvement in managing state forests in Yogyakarta not doubted, particularly when witnessing the achievement of community forests in Gunung Kidul, which has successfully obtained certificate of sustainable community forest management from the Indonesian Ecolabeling Institute (LEI) and the Forest Stewardship Council (FSC).

Ministry of Forestry has applied several schemes for recovering of forests and critical land areas through activities such as Gerhan/GNRHL, KMDM, development of community plantation forests, community forests, forest planting. The President has declared on 28 November, 2008 the day as the National Planting Tree Day, while December is declared as the Planting Month.

Table 2.1. Realization of Forest and Land Rehabilitation during the period 2003 to 2008

Activities	2003	2004	2005	2006	2007	2008	Total
Gerhan/GNRHL	295.455	464.470	493.811	97.155	339.446	368.137	2.058.474
Perum Perhutani	81.614	83.982	103.898	121.416	210.323	177.501	718.734
HTI/R	124.691	131.914	163.125	163.851	447.942	367.449	1.398.972
HHP	115.605	115.191	144.792	71.805	281.830	51.518	750.741
Shorea forest	1.400	1.650	2.000	1.850	4.000	2.320	13.220
Intensive silviculture	-	13.500	5.300	7.700	30.000	6.075	62.575
DAK DBH	29.419	25.634	3.527	-	22.791	49.039	130.410
DAK Forestry	-	-	-	-	-	4.182	4.182
Total	648.184	838.092	649.647	446.984	1.827.758	965.234	5.136.321

Continuous improvement of controlling violations in forest areas. The Ministry of Forestry and the Task Force for Combating Law Mafia (PMH Task Force) has established a Working Group (WG) consisting of the Ministry of Forestry, PMH Task Force and UKP4 which has the duty to arrange ministerial meetings to discuss issues related to the extent of violations in forest areas and propose comprehensive solution to the problem. The Working Group was formed through the Minister of Forestry Decree No. 478/Menhut-II/2010. In particular, the Working Group is charged to investigate and propose solutions in handling violations occurring in certain provinces (modeling approach) and also suggest revisions of certain regulations that have led to such violations. The Working Group planned to complete its work in late November 2010. Recommendations from the Working Group will be developed into programs, whereas the monitoring of its implementation will be carried out by the Presidential Working Unit of Supervision and Control of Development (UKP4).

2.3. Improving Forest Management Policies for REDD+

In order to know the status of readiness of the implementation of REDD+, in 2007, the Agency for Forestry Research and Development (FORDA) in collaboration with stakeholders, both national and international, under the framework of the Indonesian Forest Climate Alliance (IFCA) conducted a comprehensive analysis on the aspects of understanding deforestation, forest degradation and institutions. IFCA analysis has divided forest uses and changes into five categories as follows: (1) oil palm plantation; (2) conversion of natural forest into timber plantations for pulp and paper/forest plantations (HTI); (3) management of natural production forests; (4) management of conservation and protection forests; (5) peat/ forest land. The study has shown that emissions occurred from the forests and some strategies to reduce the emissions (FORDA, 2008).

REDD+ as an international mechanism which will be implemented in Indonesia requires special attention on some issues which will become the requirements for the mechanisms to be implemented. The requirements were generated from the agreed mechanisms at international level as well as of policies, situation and internal conditions of Indonesia. Based on recommendations from the IFCA study of 2007, three main issues are required for development of negotiations and national policy for the implementation of REDD+ in Indonesia, namely: 1) fulfillment of enabling conditions for synergism of development across sectors; 2) reform of sector development based on land use; and 3) development of supporting infrastructure for implementation of REDD+ .

Fulfillment of enabling conditions for synergy development across-sectors. REDD+ is basically a policy approach and actions carried out through handling the drivers of deforestation and forest degradation as well as activities that generate emission reductions, improvement and stabilization of forest carbon stocks. The success rate of policy intervention and action in handling sources of drivers of deforestation and forest degradation and from carbon sink issue, will reflect the level of generated enabling conditions. Intervention policies and actions required to create enabling conditions are as follow:
a. Reform of land-use planning that includes spatial planning, land use planning, forestry planning, and planning at village level;
b. Basic reform and law enforcement;
c. Strengthening local economic empowerment;
d. Involving stakeholders; and
e. Strengthening governance or government of the forestry sector

Reform of Land-based development. Reform of land-based development is the core of REDD+. However, the action will not be effective unless other measures are in place. Generally, the actions are divided into five REDD+ activities namely:
a. Decreasing deforestation as a source of emissions,
b. Decreasing forest degradation as a source of emissions,
c. Strengthening conservation as an effort to maintain the stability of carbon stock,
d. Sustainable management of forest resources as an effort to improve quality of forest management practices so that on one hand forests are not sources of emissions, and on the other hand forest or land can increase its capacity in carbon sequestration and storage, and
e. Carbon sequestration through rehabilitation and reforestation activities

Developing regulation for implementation of REDD+. For the purpose to support implementation of REDD+ in Indonesia, some regulations and concepts have been issued, such as:
1. Minister of Forestry decree No.P.68/2008 on Implementation of demonstration activities for reducing emissions from deforestation and forest degradation.
2. Minister of Forestry decree No.P.30/2009 on procedure for reducing emissions from deforestation and forest degradation (REDD).

3. Minister of Forestry decree P. 36/2009 on Licensing Procedures for business of carbon sequestration and/or Storage of Carbon in Production and Protection Forests
4. Reducing Emissions from Deforestation and Forest Degradation in Indonesia (REDDI): Readiness Strategy 2009-2012.
5. Minister of Forestry decree No. 64/2010 on establishment of the Working Group on Forests and Climate Change, which will provide policy inputs and facilitate processes of preparation for implementation of REDD+ ,
6. Roadmap Mainstreaming Climate Change in National Development Planning: Management Climate Change in Forestry Sector,
7. Draft of National Forestry Strategy for REDD+ which was compiled by FORDA and has been submitted to Bappenas.

Box II: Success Stories of Policy Pro REDD+

> Malinau Regency in East Kalimantan has declared its area as a Conservation District. Meaning that they have stopped logging activities and will maintain the territory as conservation district, to protect biodiversity and forests. Therefore, GHG emissions in this region will decrease, while the absorption of carbon will increase.
>
> Since timber market in Java is very good, the community planting activities increased rapidly. During the last five years, community forests in Java have increased by more than 100%, and currently it is covering more than 2.9 million ha. Improvement of seed quality is continuously carried out, so that productivity of plantation forests also increased. Consequently, carbon absorption will rise and people's income and welfare will also increase.
>
> Aceh has implemented moratorium on logging since the new Governor was installed. In theory the effort will provide an opportunity to the forests to be able to rehabilitate, and increase carbon sequestration.

Developing REDD+ method. Two major components that should be prepared for implementation of REDD/REDD+ is the determination of system development for REL/RL and MRV. The Ministry of Forestry shall prepare the method for REDD+ through cooperation with international partners, as follows:

1. Cooperation with Australia: establishment of the Forest Resource Information System (FRIS) and the Indonesia National Carbon Accounting System (INCAS). INCAS is an integrated system, using the entirely data from Land Use, Land Use Changes and Forestry (LULUCF) or Agriculture, Forestry, and Other Land Use (AFOLU), to obtain a profile of Greenhouse Gas (GHG) emissions, using remote sensing data, forest and land management data, soil and climate data, as well as data on growth and plant biomass. Development of INCAS covers a wide range of activities including: (a) Processing of remote sensing data to analyze changes in forest cover, (b) Analysis of changes in land use associated with changes

in biomass and carbon stocks, as well as review of relevant studies, (c) Training and technical exchanges of experts of Indonesia and Australia.

2. Collaboration with ICRAF: completing/filling the gap for development of systems for MRV, with focus on obtaining credible estimation of carbon stock and its changes (to reduce the uncertainty level) in order to be able to use level 3 approach (Tier 3; the lowest uncertainty level)

3. Cooperation with JICA: completing/filling the gap for development of systems for MRV with focus on improving measurement and monitoring systems using techniques and satellite data that can be used to estimate biomass and carbon.

4. Cooperation with the UN-REDD: completing/filling the gap for development of systems for MRV, with focus on reviewing standards and methodology for MRV and facilitating the development of the National Strategy for REDD+.

5. Cooperation with the FCPF: completing/filling the gap for development of systems for MRV, with focus on establishment of permanent plots for measuring carbon through ground-based inventory in accordance with the direction of the UNFCCC (Dec 4/CP 15). Development of permanent plots and estimation of carbon stocks and changes will be undertaken primarily in areas where gaps between data of carbon stocks and changes still occur. Data of the gap will be obtained from the review conducted within the framework of INCAS.

6. Domestic funding: completing/filling the gap for development of systems for MRV, undertaken by LAPAN, DG Forestry Planning and Forestry Research and Development Agency (FORDA).

7. The Ministry of Forestry's Web GIS is a geographic information system, a spatial data network that was launched by the Minister on 30 July 2010. The Web GIS shows forest cover changes for every period, is useful to improve data quality, supports forestry data/information exchange and dissemination. Spatial data used is the result of measurements, recordings and satellite images which lays below, on or above the earth's surface, with reference to the national coordinate system No. 85/2007 of the National Spatial Data Network.

Institutional Arrangement. Currently the Government is preparing an institutional arrangement for REDD+, which includes institutions for MRV and Funding. As part of institutional responsibility, the Ministry of Forestry has established a working group in charge to provide inputs related to REDD+ policy and facilitating stakeholders. Besides institutions at national level, some provinces/districts have established REDD+ working groups to coordinate activities related to REDD+ in their respective administration. The local REDD+ institutions also serve as hub for communication with relevant agencies at national

level. Local REDD+ working groups that have been established include: (i) Province level in East Kalimantan, Central Kalimantan, Papua, West Papua, Aceh, South Sumatra, (ii) District level in Berau and Musirawas. International cooperation has also facilitated development of institutions, among others UN-REDD (facilitation of institutional processes at national and provincial/Central Sulawesi level), the FCPF (management of readiness), FORCLIME, ITTO, and Norway.

Demonstration Activities. In accordance with mandate of COP-13 (COP-13 decision on REDD), developing countries are encouraged to develop demonstration activities as tool of learning and applying trial of developed methodologies and institutions for implementation of REDD +. Responding to the mandate, Indonesia since 2008 together with bilateral and multilateral partners have started establishing REDD/REDD+ demonstration activities in some regions of Indonesia with different scale and scope of activities. Some demonstration activities are ongoing, and some others are still being prepared, however, they have already funding commitments from international partners.

Table 2.2 REDD/REDD+ Demonstration Activities(DA) in Indonesia until August 2010

No	Demonstration Activities/DA	Remarks
1	Collaboration with the AusAID in Central Kalimantan (KFCP) and Jambi (SFCP) : *District Level DA*	Central Kalimantan (implementation stage) Jambi (preparation stage)
2	Collaboration with KfW Germany (FORCLIME) in 3 districts (Kapuas Hulu, Malinau and Berau): *District Level DA*	Preparation stage
3	Collaboration with ITTO in Meru Betiri National Park, East Java: *Project Level DA*	Implementation stage, (2010-2013)
4	Collaboration with TNC in Berau District (Berau Carbon Forest Program) : *District Level DA*	Implementation stage
5	Collaboration with KOICA in East Mataram: *Project Level DA*	Preparation stage
6	Collaboration with GTZ in Merang South Sumatra: *Project Level DA*	Implementation stage
7	Collaboration with UN REDD in Central Sulawesi: capacity building	Preparation stage
8	Collaboration with FCPF: facilitating *baseline data preparation for* implementation of REDD+ in 5 districts	Preparation stage

Source: Ministry of Forestry, 2010

Developing capacity and capability and communications of stakeholders.
Development/capacity building and communication with stakeholders is a continuous process that is needed not only during the preparation stage (readiness) but also during the full implementation stage. Indonesia conducts these activities through bilateral and multilateral cooperations, as well as through allocation of state budget funds.

2.4.   Challenges and Opportunities

The main challenge in efforts to reduce emissions from forestry sector and land uses is to maintain the growth targets of national economy which should not be effected, particularly concerning local revenues and increased welfare of communities living in surrounding of forest areas. Some challenges in detail are as follows:

a. Declined timber production will generate wood supply gap that may encourage illegal logging.
b. Disruption of food security, particularly rice production and palm oil (cooking oil) that may interfere with community welfare, particularly of the poor.
c. Increased concerns regarding destruction of forests and its ecosystem due to development of bio-energy sources (biofuels) derived from palm oil.

However, available opportunities are also potential for undertaking improvement of a range of aspects in the management of natural resources and environment to conform with the principles of sustainability and green economics. Opportunities for improvement in various aspects of management of natural resources and environment are as follows:

a. Improving sustainable forest management,
b. Improving spatial structure of forest utilization for various interests, including wise and balanced use of tangible and non-tangible products.
c. Improving data collection and measurement as well as various instruments to encourage production of timber and low forest carbon, incentive instruments for production process of low carbon emissions,
d. Increased legal policy in forestry sector and more effective law enforcement

Meanwhile, opportunities for developing a green economy in addition to application of production processes to lower carbon emissions which is more sustainable include:

a. Developing market and market instruments to encourage non-tangible use of forests. In the current situation, supply of non-tangible forest products is still low due to unavailability of markets and incentives for non-tangible products.
b. Developing methods of measurement and valuation of non tangible products from forestry sector, so that market mechanisms can be conducted in objective, transparent and fair manner.
c. Developing green technology products that may open larger economic opportunities, particularly for biodiversity utilization.

Supporting factors. Opportunities may well be realized when community awareness has increased for utilization of non-tangible forest products, global commitment, national and sub-national levels related to climate change and its impact on the quality of human life and sustainability, the earth and her ecosystems. Driven factors are as follows:

a. **Awareness and Global Commitment on Climate Change**. International community's attention to the phenomenon of global warming as an impact of GHG emissions continue to rise. Accordingly, awareness and collective commitment to make effective efforts in mitigating climate change are also continuously being discussed to achieve more concrete concept, respected and adhered to by all parties. Internationally, the REDD+ framework has not been established, experts and policy makers from the UNFCCC member countries continue to discuss the best concept that can be accepted and adhered to by all parties. Efforts to reach an international agreement needs to continue until the compliance level mechanism. These are the opportunities and challenges that need to continue to strive for obtaining assurances with regard to carbon scheme at the international level.

Most of these positive conditions have already been accomplished, as shown through bilateral and multilateral commitments for cooperation to assist Indonesia in the framework of preparation (REDD Readiness), studies and demonstration activities, such as Australia, Germany, and UK, as well as multilateral agencies such as UNDP and the World Bank. Opportunities to improve the readiness for implementation of REDD+ also comes from the United States of America who has begun to open cooperation with developing countries in preparing the implementation of REDD+. Finally, there is a bilateral agreement for the implementation of REDD+ between the Government of Indonesia and the Kingdom of Norway, to further improve implementation of REDD+ in Indonesia.

b. **National Commitment on Climate Change Mitigation.** The Indonesian government is committed to reduce greenhouse gas (GHG) emissions by 26 percent with domestic funding and 41 percent with international support in 2020, compared with emission level of business as usual (BAU). Based on base year 2000, the forestry sector contributed the highest national GHG emissions with 48 percent. Accordingly, to reduce emissions by 26 percent from BAU in 2020 (2.95 Gton CO_2e), the forestry sector have to contribute at least 14 percent, while the remaining (about 12 per cent) will come from other sectors such as agriculture, transportation, and energy. The commitment must be followed up with real actions that can be measured, reported and verified. Without the seriousness, the implementation of REDD+ will not meet the expected results.

c. **Spirit of Implementation of REDD+ at sub-national level**. In the spirit of regional autonomy, regional development has also managed to obtain maximum local revenues (PAD) through the most appropriate utilization of natural resources. Development in the region is mostly focused on extraction of natural resources and land, for example, wood extraction, large-scale plantation development, and mining. These focuses are often overlapping spatially and become the biggest challenge to the implementation of REDD+ in Indonesia. However, on

the other hand, results from REDD+ regional consultations conducted in 7 (seven) regions involving stakeholders from 33 provinces, showed that local governments and stakeholders are interested and enthusiastic to implement REDD+ in the area. In some provinces discussions and institutionalization of REDD+ is already quite advanced, and some provinces such as Papua, Aceh, Riau, West Kalimantan and East Nusa Tenggara have established working group on REDD+. The positive responses from local governments need to be expanded and accompanied by a system of incentives and disincentives that is clear and transparent for the implementation of REDD+ to achieve results and objectives.

CHAPTER III

NATIONAL SRATEGY FOR REDD+

Indonesian national strategy for REDD+ was developed based on readiness that has been completed by the Government of Indonesia by ratifying the UNFCCC agreement. Referring to the UNFCCC principles, the emission reductions from BAU in 2020 will be implemented in line with efforts to achieve the economic growth target on an average of 6-7 percent, as described in the National Action Plan for Greenhouse Gases (RAN-GRK). The national strategy will combine the national target level of an average economic growth of 6-7 percent and Indonesia's commitment to the world to reduce emissions by 26 - 41 percent. Based on general conditions, opportunities and challenges in forest management and in particular reducing emissions from deforestation and forest degradation (REDD), the national strategy is as described below:

3.1. Vision, Mission, Objective of REDD+, and Main Performance Indicators

Vision
Development focuses on implementation of sustainable and equitable forests and supports climate change mitigation efforts.

Mission
1. Reducing rate of deforestation.
2. Reducing forest degradation through application of Sustainable Forest Management (SFM) principles.
3. Maintaining carbon stocks through forest conservation.
4. Increasing forest carbon stocks.
5. Improving welfare and quality of peoples life.
6. Increasing investment and land uses based on green economics principles.

Objective of REDD+:
Greenhouse gases (GHG) emissions from the forestry sector will be reduced by a minimum of 14 percent of the national commitment of 26 percent with national efforts and 41 percent with international support, in 2020.

3.2. Performance Indicators

As an energy, REDD+ must have standards for its successful implementation. In general, successful performance indicators of REDD+ are as follows:
1. Increased commitment from key stakeholders
2. Increased community participation
3. Increased percentage of land cover

4. Increased economic value of forest
5. Increased achievement of funds and supports from partners
6. Increased understanding and support, especially from local government
7. More simple institutions for handling of REDD+ and reduced conflicts between institutions

Relevance of the vision, mission and objective of the National Strategy for REDD+ is illustrated in Chart 1

Chart 1.   Vision, Mission and Objective of STRANAS REDD+

3.3. National Strategy

Based on the vision, mission and objectives that have been defined and taking into account the general conditions, available opportunities and existing challenges,   the national strategy for reducing emissions from deforestation and forest degradation (REDD+) consists of: (i) Completion of planning and space utilization in an integrated and balanced manner for land utilization to reduce deforestation and forest degradation while maintaining national economic growth, (ii) Improving Control and Monitoring;   (iii) Improving effectiveness of forest governance, (iv) involvement and participation of stakeholders, especially indigenous peoples and communities living in the surrounding forests, in the reduction of GHG emissions; (vi) Improving and Strengthening the Legal Basis of Forest Management (Chart 2).

Chart 2. The 5 (five) National Strategies for REDD+

Strategy 1: Completion of planning and space utilization in an integrated and balanced manner in an effort to reduce deforestation and forest degradation while maintaining national economic growth

"Spatial planning and utilization of forests and land in an integrated and balanced manner is a top priority to achieve low-carbon development, starting with postponing new permits for forest and peatland conversion for a certain period, which is supported by preparation of integrated and accurate maps."

Current spatial planning of forest utilization tends to favor economic utilization which is tangible and utilization for the supply of carbon and carbon stocks and the environment as a trade off. Utilization for high economic results felt in the short term because the importance of utilization for the environment. As a result, economic utilization, as forest utilization for timber

production, agricultural cultivation and plantation and mining have been excessive and exceeded the carrying capacity of the ecosystems.

Some activities in order to reduce emissions are as follow:

1. Postponing/moratorium of new permits for conversion of forests and peatlands, including permit for changing designation and/or functions of forests. The postponement of new permit/moratorium is prepared based on strong basic rules. The regulations should also stipulate the duration of the moratorium, within a specified time period that can be extended if necessary. But, the postponement/moratorium will not apply for current license holders. Similarly, the postponement will not apply for already approved conversion permits, also will not apply for areas which are released for the purpose of national strategy, for example, for development of geothermal, electricity, and production of oil and natural gas that are essential to maintaining national energy security and overall economic growth. Implementation of the regulations should consider principles of transparency and justice.

2. Preparation of forest and land use maps in integrated, accurate and effective way for preparation of spatial planning (RTRW). Utilization of land and forests for various purposes should be carried out with (i) the same base map produced from data and spatial information, especially biophysical and socio-economic data, which have high quality, transparent, and valid; therefore, it would be easy to harmonize and prevent any conflicts or disputes between forest and land-based developments; (ii) analysis of conformity of land designation based on carrying capacity and capability; and (iii) considering protection of areas with important ecological values to be consolidated in protected areas which are interconnected with natural or semi-natural corridors. With regard to the mentioned issues, the current or being developed spatial plan (RTRW) needs to be reviewed.

3 Integrated development in various sectors, particularly forestry, agriculture and mining, towards green economy, which utilizes low-carbon through:

a. Forestry development is directed to sustainable forest management by (i) reducing emission sources, which includes strengthening of forest management unit (KPH), strengthening conservation, and strengthening of Sustainable Forest Management; (ii) promoting and protecting/maintaining carbon stocks (sink) through improving quality of protected area management, increased reforestation efforts in deforested areas, implementation of forest restoration in protected forests, conservation areas, and restoration areas (IUPHHK-Restorasi), increase peatland restoration efforts which are deforested and degraded through hydrologic rehabilitation, and improvement of mangrove forest rehabilitation efforts.

b. Development of agriculture and estate crops which are conducted with low emissions without reducing productivity and does not cause loss of benefits to the farmers. The steps include: (i) Improvement of agricultural planning covering projections for expansion of agriculture and granting licenses in non-forest areas and other areas (forest area for other purposes), which still has good forest cover (potential carbon stocks more than 100 tons/ha),

improved planning of areas with high conservation values, such as estate crops and peatlands, and strengthening monitoring and evaluation system of oil palm plantation development.   (ii) Implementation of land swap policy of APL on mineral soils from land with high C stock (> 100 t C/ha) to low C stock land (<35 t C / ha), (iii) Awarding incentives to plantation concessionaires who have moved their activities from natural forest to non-forested area (land swap), (iv) Improving management of peatlands which includes arrangement of Permentan No.14/2009 regarding the use of peatlands for palm oil expansion, controlling methods of peat burning and use of ameliorant.

c. Development of low-emissions mining through (i) improvement of legislations in the mining sector, including prohibition of mining concession (KP) permits on peatlands which has a thickness of more than 3 m and protection of peatlands in mining areas, as well as obligations of implementation of reclamation and post-mine reclamation; (ii) improving mining planning by avoiding exploration and exploitation in forest areas and other areas that still have good forests, protection of high conservation value areas, and strengthening the monitoring system. (iii) Improving licensing and supervision of mining, including awarding mining permits in forest areas through establishment of emission limits and responsibility to increase carbon stock in ex-mining area, as well as compliance with the designation plan of forest and peatlands which have been established and is supported by law enforcement; (iii) Improved forest reclamation of ex-mining area.

4. Determination of areas as center for economic activity and awarding investment permits to comply with the principle of utilization of natural resources in a sustainable manner within the framework of the concept of low-carbon economic development and green economy, and taking into account activities in items 1, 2 and 3 above.

5. Developing data and measurement methods for carbon emissions so that carbon emission reduction can be measured economically for reward that would be given in accordance with opportunity cost generated from emission reduction.

6. Settlement of land tenurial issues such as: (i) unclear forest status and boundaries , (ii) Indigenous peoples do not have formal rights in forest management, (iii) unresolved land conflicts.

7. Establishment of mechanisms for coordination and synergy of spatial utilization with regard to forests which can result in integrated decisions for utilizing forests for economic purposes.

8. To reduce the rate of forest degradation apply: (i) Implementation of Reduced Impact Logging (RIL), (ii) Certification of sustainable forest management and timber legality verification system (SVLK). For the purpose of maintaining carbon availability in conservation forest area, undertake among others (i) protecting conservation areas from illegal logging and forest fires, (ii), sustainable management of conservation areas. Promotion and protection of carbon stocks can be carried out by way of (i) improving the quality of protected area management, (ii) developing incentives to increase carbon stocks in degraded areas.

9. Mainstreaming the development of low carbon and green economy in development planning at national, provincial and district/city levels.

Success indicators for the implementation of the first strategy of REDD+ are as follow:
1. Utilization of better governance and administration for granting forest utilization permits;
2. Land use conflicts are decreased and licensing of forest and land uses are more orderly conducted;
3. Decreased forest and land fires and other disasters such as floods and landslides;
4. Decreased rate of deforestation and forest degradation, and proportion of land cover increased;
5. Increased stakeholders' commitment to implement low-carbon development.

Strategy 2. Increased Control and Monitoring

Availability of accurate and up to date monitoring systems and monitoring of progress of emission reductions from implementation of REDD+ is an important requirement for the success of REDD+ program. Achieving emission reduction requires supervision/control and monitoring/monitoring of progress for the realization of emission reduction for the purpose of achieving justice in implementation of national strategies for REDD+. Supervision and monitoring can only be applied when available data and information is accurate and up to date and can be used for making decision and law enforcement. Accordingly, some activities to be carried out in this strategy include:
1. Completing data and spatial information, particularly biophysical and socio economic data, which is of high quality, transparent, and valid, including peatlands;
2. Development of measuring tools for monitoring and evaluation which are simple, accurate and updated so that it can be used transparently and accountably;
3. Development of national standards for measurement of GHG emissions, to be in line with international protocols and good practices for measuring changes of carbon stocks inside and outside forest area, including peatlands.

Establishment of national independent institutions for measuring and reporting GHG emissions from forestry sector which is supported by: (i) coordination mechanisms for carbon measuring system and periodic field surveys, and (ii) reporting mechanism to relevant institutions at national and international level and providing relevant information to carbon market actors.

Success indicators of the second strategy are as follows:
1. Availability of accurate data and information on forest and land use, which can easily be accessed by key stakeholders.
2. Developed measuring instruments for monitoring and evaluation of emissions which is credible and accurate.
3. Established special institution for measuring emissions, monitoring and evaluation of the conditions for emissions of the forestry sector.

Strategy 3: Enhancing effectiveness of forest and peatland governance

Forest governance which is effective, transparent and accountable will reduce carbon emissions and contribute to reduction of carbon emissions from deforestation and degradation (REDD +). Emission reduction can also be undertaken with increased effectiveness of forests and peatlands management. With effective forest management, forests continue to provide economic values from tangible use and sustainable supply and non-tangible use of forest ecosystems. There are 3 (three), essential elements in improving effective management of forests and peatlands, namely: (i) effective forest administration, (ii) Good governance, (iii) Comprehensive legal policies.

1. Enhancing effective forest administration through: (i) applying sustainable forest management, and (iii) improving capacity and integrity of forest managers.
2. Good forest governance is undertaken through, among others, by increasing transparency in: (i) developing laws and regulations, (ii) decision-making process, (iii) licensing process in the forestry sector, (iv) transparent involvement of central government, local government, and potentially affected communities, (v) provide effective conflict resolution mechanisms to accommodate different views and interests. Transparency and participation are specifically increased for potentially affected people to focus on vulnerable groups such as indigenous peoples, the poor, women and children.
3. Improve the completeness of legal policy through: (i) Improving Forestry Act No. 41/1999 , especially with regard to aspect of distribution of authority in accordance with decentralization principles, complement existing derivatives and application of legal instruments, increase legal sanctions, and develop mechanisms and instruments to promote forest conservation management and community; (ii) Improve and harmonize laws and regulations for land-based development (mining, agriculture and land use), (iii) Amendment and/or formation of legislations related to peatland's protection in all sectors (mining, forestry, agriculture, infrastructure, and industry), among others by including peatlands in developing criteria to determine changes and designation of forest areas, and prohibit open mining in peatlands to avoid significant increase of GHG emissions from peatland conversion; and (iv) Improve technical rules to ensure the mechanisms of checks and balances are constructive for violators of forest and peatland utilization.

Indicators of success for applying the third strategy are:
1. Enhanced capacity and integrity of forest managers;
2. Availability of adequate laws and regulations for implementing forest governance and land use;
3. Implementation of an effective governance and forestry administration generate conducive conditions for appication of sustainable forest management.

Strategy 4: Enhancing stakeholders participation, particularly indigenous peoples and communities living in the surrounding forests in the reduction of GHG emissions

Involving stakeholders in forest management, especially indigenous peoples and communities living in the surrounding forests, should be evident to increase the benefits of forests for all stakeholders in equitable ways and avoiding conflicts, so that it may support achievement of a more sustainable emission reduction.

Forest management and utilization involve many parties, such as government, non government organizations, communities, and forest businessmen. Therefore, for the purpose of the successful implementation of REDD+ and to improve stakeholders' welfare, it is important to involve stakeholders from the beginning in a manner which is obvious and proportionel. Involvement of stakeholders can be grouped into 3 (three) groups: (i) Involvement in the beginning between Government and Local Government, (ii) involvement of nongovernmental organizations, (iii) involvement of business in a fair manner, (iv) involvement of indigenous peoples and communities in the surrounding forests.

Involvement of Local Government. In the era of decentralization, authority of forest management is not a monopoly of the central government; but some authorities have been delegated to the regions. Accordingly, for the purpose of decreasing GHG emissions from deforestation and forest degradation, it is necessary to involve the Local Governments. The involvement must be carried out since the beginning, from the planning stage until the implementation and monitoring of REDD+ results. In addition, the engagement must be transparent and proportional, so that the national target of REDD+ will be achieved with the implementation and full support from the local government, because they are not only involved during the implementation but also will get results/rewards proportionally.

Community involvement, consists of: (i) community doing business in forest management, (ii) society grouped in non-governmental organizations, (iii) indigenous peoples in the surroundings of the forests and communities affected by REDD+ efforts, and (iv) international community. Involving stakeholders in forest management is very important because they are forest managers to "transform" the use/utilization of forest into financial and economic values. Involvement in a transparent manner accompanied with the size and weight measurements, which generating/reducing emissions and benefits upon result/reward or penalty/punishment will be able to share the load and results/reward which is transparent and proportional. Therefore, businesses will voluntarily decrease their emissions because they will benefit directly and indirectly from the undertaken emissions reductions. In this regard, market for transactions between the load and results/rewards should be clearly and accurately created, so that balanced transaction mechanism will be in place, hence, emission reduction will be encouraged even faster.

Involvement of NGO is important for check and balances, so that current market will have effective and transparent mechanism. NGO involvement is also significant for awareness raising

collaboratively with government, advocacy and facilitation in order to ensure that REDD+ programs are conducted by all parties, hence, developing into a national movement.

Involving indigenous peoples and forest communities who live in the surrounding forests is essential for socio-cultural conditions in a diverse society such as Indonesia. Different socio-cultural conditions often have local knowledge in utilizing forests in sustainable ways. In the context of the community and modern rules, local knowledge, with all its informal rules, becomes less consistent and less compatible with modern rules which are equipped with indicators and measurement mechanisms which facilitate the transaction mechanism/market place. Accordingly, local knowledge with its customary laws must be recognized and internalized into the modern legal system. It is important to accommodate local knowledge into the system of modern rules without losing the strength and spirit of informal traditions or losing the noble values in it. It is important to maintain the local knowledge, so it will not be eroded, but can be implemented as a unit, so that actors of local knowledge would obtain results/rewards which are proportional to the forest utilization carried out by anyone. Involving these groups in forest management and utilization needs to consider the principle of consent of local communities (free prior informed consent/FPIC).

Furthermore, involvement of forest communities is very important to avoid and prevent them from becoming strangers in their own region, and even become negatively affected by forest utilization activities carried out by parties. Involvement of forest communities is also necessary for emission reduction processes, and moreover, if there is local knowledge which is applied as a normal rule; they then will obtain results/rewards from the use of instruments they have created. Therefore, indigenous peoples and communities in the surrounding of forests will become important actors and responsible users.

Involvement of international community is also important in order to share information about various techniques and new technologies, and with the intention to communicate the results of the implementation of REDD+. This step is important because the problem of emission is a problem that is transboundary, so the actions or reactions of a country can easily be spread to other places. With regard to REDD+, involvement of international institutions is also a bridge for transaction mechanism of environmental products at global level, which require skilled labor, accurate measurement techniques and is updated.

Related to this, the involvement of stakeholders in the planning process, implementation and monitoring of REDD+ strategy will be done through, among others:

1. Enhancing capacity of regional governments, NGOs, community and business actors and potentially affected people from the implementation of REDD+, so that involvement of stakeholders is based on sufficient and effective understanding. On the other hand, to improve understanding of decision makers at national and sub-national levels the involvement of stakeholders   will be important in order to make decisions more objective and qualified because it is based on sufficient information and to minimize conflict of interests in policy making.

2. Establish effective conflict resolution mechanisms to accommodate a variety of different views and interests in the processes of stakeholders' involvement.

3. Development of a comprehensive agenda (cross-sector) related to recognition and legal protection of people.

4. Developing a national system and mechanism to identify and collect data with active involvement of communities concerning the presence of communities and indigenous peoples including their rights and traditional knowledge in and around forest areas.

5. Strengthening current institutions to develop and facilitate for local communities and indigenous peoples who have system of sustainable forest management to be able to participate in the REDD+ scheme independently (self-managed).

6. Provision of instruments for the protection and empowerment of traditional knowledge of indigenous peoples.

7. Development of systems and mechanisms for community involvement so that community and indigenous peoples who live in and around the forests will not be negatively affected by the implementation of REDD+. The first steps which already have been done in some areas are:

(I) Presence/representation of public and/or indigenous peoples in the institution/program of REDD+, and (ii) allocation of sufficient resources for capacity building and knowledge of communities and indigenous peoples for participation in the overall process.

Indicators of success in implementing the fourth strategy are:

1. Increased participation of stakeholders, especially local governments, indigenous peoples and NGOs involved in sustainable forest development.

2. Maintained local knowledge that supports land and forest conservation.

3. Increased capacity of local governments, NGOs, business actors and indigenous peoples in various efforts in implementation of REDD+.

4. Establishment of effective and fair conflict resolution mechanisms in accommodating various different views and interests of stakeholders' involvement.

5. Increased public access to forest management and FPIC principles are applied.

Strategy 5: Strengthening Law Enforcement System

Law enforcement is the supervisor of the process of reduction of GHG emissions and increase in carbon stocks which are fair to all parties in accordance with the prevailing laws and regulations.

Legal basis for implementation of REDD+ is still weak and to a certain degree has led to ineffective law enforcement in the forestry sector. Meanwhile, the legal policy aspect is important to be improved in order to apply a more effective forest management then law enforcement will improve the process of achieving reduction of GHG emissions proportionally and fairly.

Effective law enforcement requires 3 (three) prerequisite in the legal system, namely: (1) ability to detect, (2) ability to respond to the result of detection, (3) ability to impose penalties (ability to punish).

Accordingly, the necessary steps needed are:
1. Procurement of equipment and infrastructures, capacity development (number and quality) of law enforcers, strengthening the integrity of the system and adequate public control and coordination of implementation of the three abilities which were mentioned above have to be fulfilled to achieve effective law enforcement.

2. Administrative law enforcement is firmly and consistently applied against violations committed by concession holders such as IUPHHK HT/HA who do not comply with regulations with regard to implementation of sustainable forest management and other obligations in accordance with prevailing regulations.

3. Strengthening the enforcement of criminal law, which include among others: (i) Strict enforcement of criminal law which is consistently applied for forestry criminals to create legal assurance and deterrent effect, (ii) Establishment of law enforcement agencies under one roof (One Roof Enforcement System/ORES), whose agents are transparently selected from existing law enforcement agencies, based on integrity and sufficient understanding of sustainable development paradigm.
4. Establishment of special judges who will make decision on cases related to environmental issues, including forestry (Green Bench) and will be selected based on integrity and excellent understanding of the paradigm of sustainable development, including its application in the forestry sector.
5. Increased technical capacity of law enforcement personnel (quantity and quality) in order to understand the various rules and methods of inquiry and investigation which can be used in combating forest crimes.
6. Strengthening public oversight of law enforcement process, among others through enhancing access to information related to law enforcement in the forestry sector.

Indicators of success of implementation of the fifth strategy are:
1. Availability of facilities and legal institutional infrastructure including law enforcers, in order to preserve sustainability of land and forests from negative impacts of development.
2. Impartial law enforcement is in place for implementation of forestry and land development.
3. Incentive system in place for preventing violations in utilization of land and forest resources.
4. Creation of monitoring system which involves community in the implementation of forestry development.

CHAPTER IV

SUPPORTING SYSTEM FOR IMPLEMENTATION OF NATIONAL STRATEGY FOR REDD+

Implementation of National Strategy for REDD+ requires that a support system is in place, including: (i) Institution for REDD+; (ii) Funding institution for REDD+; (iii) Development of methods needed for REDD+, especially for determination of Reference Emission Levels/REL/RL at national and sub-national levels, and system for measurement, reporting and verification (MRV); (iv) Strategy for determination of priority province, district for implementation of REDD+ ; (v) Developing/capacity building (human resources) and capability (institutional) for REDD+ actors and communication with stakeholders. The presence of the 5 (five) elements as supporting infrastructure is very important for implementation of National Strategy for REDD+, both at central and local levels.

4.1. Institution for REDD+

For supporting the implementation of strategies, which have been described in Chapter III, the most important steps in establishing institutions for REDD+ are:

1. Establishment of REDD+ institutions at national and sub-national levels.
2. Accelerating the establishment of Legal Basis and Guidelines for implementation of REDD+ at national and sub-national levels which are clear and simple, and will be easy to implement in the field.

There are several principles that need to be considered in establishing effective Institutions for REDD+, namely: (i) has a clear legal umbrella; (ii) possessing sufficient authority for implementation, including coordinating with all relevant sectors involved in REDD+ and other important stakeholders; (iii) possesses ability to communicate easily at national and regional levels and between regions; (iv) having sufficient strength and technical ability, hence, will not create burden for the regions.

Since REDD+ institutions will be national level institutions for implementation of REDD+, therefore, it will have dual functions, namely: (i) a decision maker in the regional institution for REDD+ so that the institution and the personnel in it must have the capacity and capability to coordinate and synergize various interests of the regional institution for REDD+ ; and (ii) it must be capable of being a liaison between the REDD+ program Indonesia and with REDD+ institutions at global level.

Thus, the scope of duties of REDD+ institution includes: accountability of national and international financing instruments, fair distribution of the benefits of the REDD+ program, including mechanisms for incentives and disincentives associated with achievement of REDD+ objectives. Accordingly, the institute of REDD+ has to be equipped with: (i) standard, size and measurement, (ii) availability of simple and easy instruments to be applied in the field, (iii) has a

coordination system with the regions and capacity of personnel in the institution with comparable ability, considering the implementation of REDD+ most likely will be carried out in the regions.

In order to have an effective REDD+ institution, its implementation must be supported by system reforms and legal basis for implementation of REDD+, namely: regulatory framework to intervene, legal framework for public service, and financing and funding mechanisms. These should be simple, easy and can be immediately implemented. Some steps that need to be carried out are as follow:

a. Reviewing and improving current laws and regulations related to REDD+ based on tasks and functions of the new institution for REDD+ which will be established.

b. Accelerating establishment of an effective and robust legal foundation and guidelines for implementation of REDD+ at national and regional levels through participatory approach, for example: (i) setting-up institutions to be responsible for REL, undertake GHG inventory and registration of projects for REDD+; (ii) making arrangement related to priority provinces and learning mechanisms for development of REDD+ at national scale; (iii) relevant regulations related to verification mechanisms which are recognized internationally and its reporting to the UNFCCC with emphasis on national expertise in conducting monitoring and reporting.

c. Developing effective, transparent and fair benefit distribution mechanism for all stakeholders involved in the implementation of REDD+, and its legal basis for implementation in the field is clear, easy and quick. In connection with this mechanism, it should also establish mechanisms for "punishment" as its stick.

4.2. Funding institution for implementation of REDD+

In line with the reduction target of GHG emissions by 26 percent with national effort and 41 percent with international support, then the sources of funding for the implementation of REDD+ will come from and make use of the domestic (government and public/private) and foreign fundings (government and international community). Accordingly, establishment of a funding institution for implementation of REDD+ includes financing institution for REDD and completion of supporting regulations for management of funding for REDD+ .

The funding institution of REDD+ needs to establish funding mechanism, which is transparent, accountable, yet dynamic with ability to follow cooperation models with the community, both domestically and abroad, and also cooperation with international institutions. Also an assessment is needed of the budget constraints in current APBN funding mechanisms which often slowing down actions or dynamic responses.

In general, management of grants from abroad has been regulated by Government Regulation No. 2/2006 on Procurement Procedures for Loan and/or Resumption of Foreign Grant and Loan (PHLN). Furthermore, mechanisms of financing by the private sector both within and outside

the country in the form of public-private partnership (PPP), particularly non-infrastructure, and through corporate social responsibility (CSR) still need to be complemented and improved.

Considering the above issues, development of funding institution for REDD+ shall be:
a. Able to mobilize funding,
b. Able to develop criteria and procedures and allocation and disbursement of funds which is transparent and equitable.
c. Able to monitor allocated and utilized funds.
d. Ensure accountability of funds and fiduciary management of the REDD+ funds.

4.3. Developing instrument for Measurement, Monitoring and Verification for REDD+

4.3.1. Reference Emission Level (REL/RL)

Reference emission level (REL/RL) is unique/different in every country and is highly dependent on each country's condition. Determination of REL has a big influence on the effectiveness of climate chage, cost efficiency and distribution of funds between countries. Total funds for REDD+ will depend on the value of the net benefit of REDD for a country (REDD + rent) and the real cost of implementation of REDD+ (opportunity and transaction costs for implementation of REDD+).

Thus, determination of REL should consider these factors, so that later REL/RL will effectively attract participation so that the benefits of REDD+ can be achieved nationally and globally. Some principles that need to be considered in determining REL/RL are:
  a. Procedure to establish reference emission level is undertaken across regions based on the same criteria to prevent opportunistic behavior.
  b. By considering the global principle of additionality, the REDD+ program has to contribute significantly towards reduction in global emissions, not only at business as usual level.
  c. Recognizing past emission levels as a starting point, and then considering the national conditions such as forest transition phase (forest cover) and the level of revenue/GDP per capita.

Accordingly, it is necessary to develop methods, models and quantitative analysis to determine effectively reference levels and implication of distribution at different reference levels, including considerations and weighting towards development of forest and land cover conditions, development of community's income level, and other local issues and non-quantitative ones, which will influence the effectiveness of REL/RL.

For the conditions in Indonesia, with an approach of national and sub-national implementation, there are 3 (three) options of REL/RL that can be used, namely:

1. Historical Emission. It is assumed that future emissions without any REDD effort will be equal to the rate of emission in earlier period.
2. Adjusted Historical Emission. It is assumed that future emissions with REDD+ program will follow the emission of the past with some adjustments (e.g based on changes in population density, demand for land for agriculture purposes, the GDP (Amano *et al*, 2008).
3. Forward looking. Future emission is estimated by considering driving factors and barriers for occurrences of deforestation or land expansion in the future if there is no special effort for REDD+ (either with or without consideration of past emission).

4.3.2. Measurement, Reporting and Verification (MRV) system

Participation of Indonesian fund for REDD+ requires Indonesia to establish a system of measurement, which can be reported (reportable) and can be verified (verifiable). With this system, every reduction and increase of carbon stocks in forests can be measured accurately, and can be used as basis to provide "rewards" for achieved performance.

Therefore, it is necessary to develop a road map for the MRV system according to the requirements of the Intergovernmental Panel on Climate Change (IPCC) and follow the principles of being efficient, effective and proper. Terminology of "measurable" in MRV means that the used methodology must be credible. Terminology of "reportable" means that the report should be clear, actual and can be conducted periodically, while terminology of "verifiable" means that every report related to reduction or increase of emissions of carbon stock meet the criteria of being transparent, and verifiable by an independent party.

Scope of MRV. In the context of the National Strategy for REDD+, the scope of measurement, can be reported, and can be verified (MRV) will include: (i) measurement of changes in forest area by forest type and existing carbon stocks in the forests and also measurement of distribution of benefits over implementation of REDD+; (ii) contribution to implementation of REDD+ towards sustainable livelihood and poverty reduction for peoples whose livelihoods depend on forests, (iii) sustainable development and achievement of the goals of good governance, and (iv) community involvement in the implementation of REDD+ .

To develop an accountable and transparent MRV system, some prerequisites should be fulfilled, namely:
a. Developing national standards which is in line with international protocols and good practices for measuring changes in carbon stocks in the forests;
b. Establishing independent national institution to conduct measurement and verification of information;
c. Development of mechanisms for coordination and harmonization of carbon accounting system across sectors and scales;
d. Development of non carbon MRV, including social and environmental safeguards
e. Development of a transparent system by using available and coordinated technology to manage information, and ensure that all relevant information, both spatial and non spatial are available regularly and can be accessed by all stakeholders

f. Development of reporting mechanism for institutions at national and international levels which are relevant and provide relevant information to the players on the carbon market.

With regard to verification and safeguards, there is a need to have an independent agency to undertake auditing and approving the result and submit it to the public as part of the accountability process and transparency through mechanisms which have been ...***words are missing in Bahasa!!!!......??***
a. The implementation of MRV is not only for REDD+ activity but also for emissions from other sources and other co-benefits.
b. Supervisions of MRV for carbon is conducted based on national and international standards.
c. Verification or certification of emission reduction may be given a "reward" from the international funding.
d. Supervision of the implementation of some social and environmental safeguards.
e. Implementation and controlling procedures for handling complaints

Institutional Framework for MRV. In the implementation of the National Strategy for REDD+, the capacity of the institution that conducts MRV must be developed to run MRV forest carbon activities in an efficient and sustainable way. Therefore, the framework of the national institution of MRV has to comply with the following requirements:

a. **Coordination**: capable to build mechanism for cooperation and high-level coordination at national level related to MRV of forest carbon and national policies for REDD+ and determine roles and responsibilities of MRV institutions at national and sub-national levels and co- benefits and other monitoring efforts
b. **Measurement and monitoring**: should be included in the protocols and technical units to analyze data related to forest carbon both at national and sub-national levels. Scope of the authority of the national institution in charge of MRV at national level is to monitor national indicators, while the authority of the MRV institution at sub-national levels covering clarification/ground checking of the results at the national level.
c. **Reporting**: The MRV institution need to have a unit that is responsible for collecting relevant data into a central database, for undertaking national estimates, and international reporting according to the IPCC GPC, perform uncertainty assessment, and improvement plans.
d. **Verification**: an independent institution is required to verify the effectiveness of the implementation of REDD+ in the long term at different levels and actors. The presence of an institution that register REDD+ can be considered to be merged with the National Commission for Clean Development Mechanism which has been expanded into the National Commission on Climate Change

4.4. Determining Priority Province, District/City for implementation of REDD+

Determination of province or district/city for implementation of REDD+ is very important to show the presence of demonstration activities. Indonesian territory consists of 33 provinces

and more than 500 districts/cities with limited budgets and manpower, and with still inadequate capacity, is stimulating the need to determine 5-10 locations as priorities for implementation of REDD+.

Determination of priority locations in addition to demonstration activities, as well as limited funding and capacity at present, is also a step to experiment with the National Strategy for REDD+ and an action plan to be developed. Through this trial, it will be expected to obtain results of the implementation of the REDD+ program which was developed by means of various agencies and legal basis in order to reduce carbon emissions.

Site selection process needs to refer to several criteria and indicators developed by a team involving various stakeholders, such as: (i) governance related to harmonizing the regional economic program with REDD+, which is transparent, effective and efficient; (Ii) biophysical conditions (total area of peatlands and forests, threats of deforestation and degradation of forests by illegal logging and forest fires); (iii) socio-economic aspects of the region (economic values of forests, dependence of forest community); and (iv) availability of data and capacity of human resources related to REDD+.

In addition to meeting these criteria, the selected location must be assessed for being able to provide the highest contribution to national emission reduction efforts as reference to implementation of REDD+ in the next stage. Selected locations will obtain some benefits from the activities, among others financial support from the implementation of REDD+ and the association of various stakeholders including donors and investors because of the increased transparency in forest management and decreased emissions and increased carbon stocks. In addition, locations for implementation of REDD+ will also benefit from the transfer of knowledge with capacity building for involved human resources, and ability to implement spatial planning system, measurement, reporting and verification (MRV), and data base development.

Some issues to be considered during the process of determination of province/district include:
a. Willingness from the provinces and districts to provide high priority in implementing REDD+ strategies under their territorial administration shall be in line with the national strategy.
b. Assurance of cooperation between the Governor and Regents and Mayors if the REDD+ location is located within the provincial administration.
c. Assurance of cooperation of every sectoral institution at district/city level if the REDD+ location is located within the district administration.
d. Commitment to encourage implementation of a moratorium.
e. Willingness to implement the MRV system across the province and district administrations.
f. Willingness to establish institutions for REDD+ and MRV at provincial level.
g. Assurance of multi-stakeholders involvement, including local communities/indigenous peoples.

4.5. Development of capacity (human resources) and capability (institutions) for REDD+ actors and communication with stakeholders

During implementation of the National Strategy for REDD+, institutional capacity and human resource capabilities play an important role. The presence of credible institutions and reliable and professional human resources for implementation of REDD+ will prove the seriousness and real contribution from Indonesia in reduction of GHG emissions. Some institutional elements and actors which are required to be in place are:

a. It requires to be established and/or functioning an institute for REDD+, for REDD+ funding, an MRV institution to achieve the REDD+ targets. To make the institutions functioning or established, it is required to consider the current decentralized development conditions, and prioritize the use of the existing institutions.
b. Every institution should develop the framework and working procedures which are transparent and efficient in order to provide effective support to the implementation of the National Strategy for REDD+.
c. It is required to develop a system for coordination and communication among institutions and authorities of every institution so that communication can operate smoothly, efficiently and effectively.
d. The established institutions need to be completed with staff and personnel together with necessary technical skills required for every function, as well as facilities and equipment that meet the working standards of the institutions in accordance with the conditions at national and regional (sub-national) levels, however, it still follows the international rules and principles.

In accordance with the above needs, and in addition to the need of establishment/functioning of institutions, it is also important to prepare Institutional Development and Human Resources Plans for implementation of REDD+. The plans should be implemented gradually in accordance with existing conditions.

CHAPTER VI

CONCLUSIONS

The REDD+ Programme is one of the important components in climate change mitigation efforts. As a new approach related to forest management in particular and sustainable natural resources management in general, the approach requires comprehension and proper application.

Realizing that Indonesia's statement to reduce GHG emissions is a global commitment, which constitute a good momentum for emission reduction in order to improve quality of sustainable development, and a great opportunity to develop green economics. Therefore, the programme of REDD+ should get special attention and it is obvious that it should be mainstreamed in the process towards sustainable development at national level, as well as take advantage of the global commitment to achieve sustainable economic development and maintain the earth's ecosystem globally.

Some principles in implementing REDD+ programs that need attention are:

a. Various legal basics are required to apply the principle of efficiency, however, it is not necessary to have many regulations to avoid overlapping legislations.
b. Various mechanisms and procedures should be developed which must be simple and easy to understand with an intention to facilitate coordination, synergy and communication among stakeholders.
c. Various dimensions for measurement, monitoring and verification should be simple and should not require difficult data to be provided, particularly at local level.
d. Reward and punishment systems (carrot and stick) need to be applied proportionally and fairly, so that it will encourage voluntary behavior instead of forcing it.
e. Implementation of National Strategy will only be effective when it is included in the planning system, both at central and local levels. Therefore, harmonizing the National Strategy of REDD+ in the planning system is essential.
f. Implementation of the National Strategy for REDD + eventually should demonstrate improvement of the quality of welfare of all levels of the society, particularly peoples who live in and in the surrounding of forests.

Glossary

Considering the various definitions related to implementation of REDD+, the document of the National Strategy for REDD+ needs to define working definitions to be used. Although some of these definitions are still tentative and wait for confirmation of the definition that will be agreed in the UNFCCC negotiations. In the future it is expected that the developed definitions may perhaps be used as temporary reference to the National Strategy for REDD+. Some related REDD+ terms are as follows:

REDD+

is a policy approach and a positive incentive on issues related to reducing emissions from deforestation and reduction of forest cover in developing countries, the role of conservation, sustainable forest management and increasing forest carbon stocks in developing countries (source: Bali Action Plan paragraph 1 b (iii)).

Forest

is a unit of the ecosystem in the form of land comprising of biological resources dominated by trees in their natural environment, the one from the other cannot be separated (source: Forestry Act No. 41/1999)

Forest area

are certain areas that are designated and or stipulated by the government to maintain its existence as a permanent forest (source: Forestry Act 41/1999).

Deforestation

is an alteration of forest land for other purposes or a reduction of tree canopy below the minimum standard of 10% for the long term with a minimum tree height of 5 m (in situ) and a minimum area of 0.5 ha (source: FAO).

Degradation

is the change of forest that generate negative impacts to the structure or function of the stand or forest land, reducing capacity of forest to provide services/products. In the context of REDD +, degradation can be interpreted as forest carbon stock degradation (source: FAO and Indonesian submissions to the UNFCCC Secretariat in March 2008).

Peatland

is an area whose soil-forming elements of remaining residual organic material are buried for a long time (source: Presidential Decree No. 32/1990 on Management of Protected Areas). Additional note, peatlands have higher ability to store carbon than other soil minerals due to its

soil morphological characteristics. Carbon content found below the peat surface may possibly reach between 300-6000 tones C per hectare. The deeper the peatland, the higher is the amount of carbon stored. Peatlands in Sumatra and Kalimantan tend to be deeper compared to Papua, (BAPPENAS, 2010).

REL/RL

REL

REL (Reference Emission Level) is the basis for measuring emission reductions from deforestation and forest degradation within a geographic boundary and over a certain period of time, it is determined based on historical data, taking into account the potential emissions resulting from future development activities (source: interpretation of decision 4/CP 15 UNFCCC).

RL (*Reference Level*)

is the basis for measuring the emission/transfer generated from activities of conservation, sustainable forest management and increase in carbon stocks within a geographical boundary and over a certain period of time, it is determined based on historical data, taking into account the potential emissions resulting from future development activities (source: interpretation of decision 4/CP 15 UNFCCC).

MRV (*Measurable, Reportable and Verifiable*)

is part of a monitoring and evaluation system for various actions related to climate change mitigation that is reported by every UNFCCC member country to the COP UNFCCC (note: until now there is no official definition of MRV through the UNFCCC negotiations). As one part of climate change mitigation activities, REDD+ also has to have a MRV system that is part of an integrated system of monitoring and reporting of national GHG emissions.

Leakage or Displacement of emission

is an increase or decrease of GHG emissions that cannot be anticipated by one of the activities of REDD+ and going beyond geographical boundaries of such activities (source: IPCC, 2000).

Benefit sharing
is an agreement among multi-stakeholders such as businesses, local communities, governments and non-government organizations, towards equitable benefit distribution due to incentives resulting from the REDD+ activities (source: IUCN, 2009).