FOREWORD

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

We praise God Almighty and are thankful for His mercy and blessings which have enabled us to formulate a National Strategy for the Reduction of Emissions from Deforestation and Forest Degradation (Nastra REDD plus). We could call this an extraordinary event as we were able to complete the draft Nastra REDD+ in a relatively short amount of time, yet we were using an inclusive process. Formulating the Nastra REDD+ was quite a tiring process where technocratic, participatory, *bottom up* and *top down* procedures were blended together all at once, through frequent and highly intensive work.

Formulating the Nastra REDD+ is based on a commitment made by the Government of Indonesia to lower the emission of greenhouse gases (GG) by 26% through its own effort (unilateral) and up to 41% with the support of foreign parties (multilateral) by the year 2020, from the BAU (*business as usual*) rate of emission from development activities conducted without any emission-reducing action. Most of the reduction of GG emission is expected to be in the forestry sector and land sector as these sectors are the biggest sources of emission in Indonesia. The signing of the *Letter of Intent* between the Government of the Republic of Indonesia and the Government of Norway was an important momentum in the framework of formulating an inclusive national strategy.

Indonesia has a very unique role and position in relation to the issue of climate change. On the one hand, Indonesia is one of the countries producing greenhouse gas emission that has contributed significantly to climate change,

but on the other hand Indonesia as an archipelagic nation where most of the large cities are located in coastal areas, is highly vulnerable to the impact of global warming. Climate change causing higher earth temperature has resulted in a rise of the ocean's water level which has had extraordinary negative impact on Indonesia. In addition, the unpredictable rains, floods, long dry seasons, and frequent natural disasters, the emergence of new diseases, and other negative effects have affected the lives of millions of Indonesian people, in particular the poor living in urban areas and the communities in the hinterlands of Indonesia. It is for this reason that the effort to reduce emission, particularly from the forestry sector and changes in land use, becomes very important for Indonesia, through the REDD Plus (REDD+) scheme. REDD+ is a 'policy approach and positive incentive for issues related to the reduction of emission through reduction of damage to the forests and forest vegetation in the developing countries, the role of conservation, forest management to preserve the forests, and increasing the stock of forest carbon in the developing countries.

These problems have in fact already been anticipated in the National Medium-Term Development Plan of 2010-2014. It mentions that the development of forest resources in the future will no longer be focused on the utilisation of timber only, and should look at other benefits of the forest in order to preserve balance in the hydrological cycle. Therefore, besides applying a concept of sustainable forest development in managing the remaining forests, the efforts to rehabilitate forest areas and critical land and the protection and conservation of forest resources in the river basin areas should be made a national priority. However, we should be aware that the effort to reduce emission of greenhouses gases, particularly from the forestry sector and from changes in land use, should be sharpened and if necessary efforts should be made to improve, perfect and reform various fields so that development can be more focused and priority-based while still taking into sconsideration other aspects viewed comprehensively from the most up-to-date data and information and other incentives, including the National Action Plan for reduction of greenhouse gases (NAP REDD).

Nastra REDD+ will become an integral part of the Government's efforts to anticipate global warming. In the long run, Nastra REDD+ will also contribute to the achievement of the nation's vision to create a just, prosperous, secure, peaceful and contented society.

The strategies offered in the Nastra REDD+ can be implemented by fulfilling the pre-conditions for application of REDD+, by improving and strengthening the enabling conditions, and by intervention in the framework of improving and enhancing the management of the main sector which is forestry (production forest, protection forest, and conservation forest) and the supporting sectors (plantation and agriculture, mining), and by mainstreaming the strategy and action plan in all institutions at the national, provincial, and district levels as well as in management units. It is our hope that these strategies will be followed up with the formulation of a realistic, concrete action plan and the achievement of success indicators. This way the implementation of REDD+ in Indonesia can run according to expectations and contribute to handling the problems related to climate change as well as the implementation of sustainable development.

Jakarta, September 2010

Vice Minister for National Development Planning/
Vice Chairman of the National Development Planning Agency

Lukita Dinarsyah Tuwo

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Executive Summary

The commitment of Indonesia toward the climate change and REDD+ National Strategy

The climate change that is caused by the Greenhouse Gas emission has brought impacts in form of flood, long dry season, storm, and increase of the seawater level, which directly threatens the life of human beings and other living creatures. The main Greenhouse Gas emission (generally in form of carbon and methane) sources are the deforestation and forest degradation. Therefore, the actions to reduce the Greenhouse Gas emission, which impacts are also globally affecting, need to be immediately carried out, particularly in the forestry sector.

President Susilo Bambang Yudhoyono has expressed the determination to reduce the Greenhouse Gas emission with 26% in 2020 from the emission level based on the BAU (*business as usual*) data or the development activities that are implemented without emission reduction actions of 2,9 Gton CO_2e in 2020.[1] It is realized that although the tropical forest in Indonesia is ranking the third widest in the world after Brazil and the Democracy Republic of Congo, its forest loss is relatively very rapid due to the high deforestation and degradation. As such, Indonesia has a very important position in making successful the program of emission reduction from deforestation and forest degradation plus (*Reducing Emissions from Deforestation and Forest Degradation Plus* or abbreviated REDD+). The addition of plus (+) is meant as the participation of the conservation role, sustainable management of forest resources, and increase of the forest carbon stock, in addition to the reduction of deforestation and forest degradation.

The REDD+ National Strategy contains the identification of the causes of deforestation and forest degradation and the formulation of strategy that is needed to suppress those causes in the framework of reducing emission and increasing of the carbon absorption and stock from the activities of forest conservation, conserved

[1] Speech of President Susilo Bambang Yudhoyono at the G20 meeting in Pittsburgh, USA on 25 September 2009.

forest management, restoration of the ecosystem, and various efforts to increase to productivity of the production forest and plant forest.

Identification of the Deforestation and Forest Degradation Main Causes in Indonesia

The problem analysis of this deforestation and forest degradation in the framework of the REDD+ application is intended to provide data, information and knowledge concerning the phenomenon or symptoms that are considered as the deforestation and forest degradation problems so that the solution alternatives can be determined for the decision making. Based on the *fishbone* analysis, several main problems that cause the deforestation and degradation can be identified such as the weak spatial structure, not effective forest management unit, weak governance, tenure problems, and weak legal base as well as law enforcement.

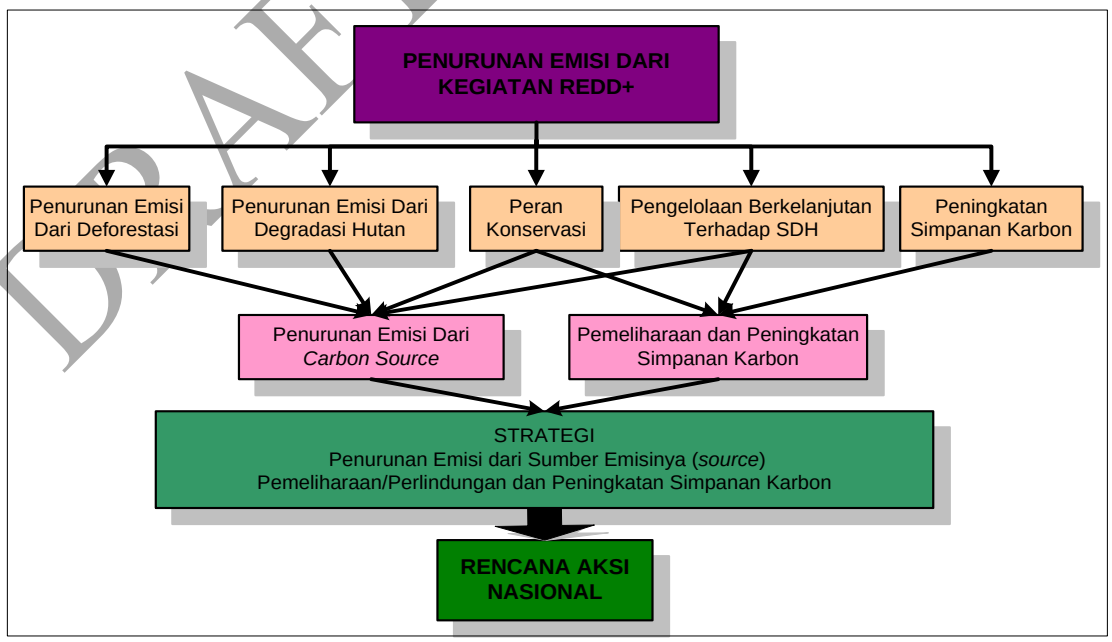
Category of Problems	**Components of Problems**
Weak Spatial Planning	Weak legal and accurate Data and Information Non-integrated sector planning Weak participation in the spatial planning and land use
Problem with Tenure	Lad conflicts are never settled Unclear forest area status and boundaries The tradition community has no formal right Land based culture and livelihood pattern Limited income source alternatives
Ineffective Forest Management	Collapsed production forest, threatened protection forest, vulnerable conservation forest Low forest management organization performance Low forest management integrity and capacity
Weak Governance	Unfair benefit distribution from the forestry sector Weak coordination between the sectors and between the central and regional levels Low transparency, participation and accountability Low effectiveness and efficiency of the activity and budget management Corruption and collusion
Weak Law Enforcement and Basis	The legal base contents are contra-productive and unclear Overlapping of legal bases Weak law enforcement, including the existence of the law mafia

Formulation of the REDD+ National Strategy

This Indonesian REDD+ National Strategy is designed as a systematic, logical, objective and pragmatic direction. By referring to those principles, the emission reduction will be implemented through the integrated (upstream to downstream) and comprehensive (multi-aspect) low carbon development strategy. The principles that are the bases of this strategy formulation are sustainable development principles, namely:

1. Economic development that is supported by responsible decentralization.
2. Maintenance of the ecological function balance.
3. Inter-generation justice.

The emission reduction implementation framework through REDD+ covers: 1) Emission reduction from deforestation, 2) Emission reduction from forest degradation, 3) Strengthening of the conservation role, 4) Strengthening of the sustainable management role toward forest resources, and 5) Increase of the carbon stock through restoration and rehabilitation. Those five important themes will be approached with the emission source reduction approach and increase of carbon stock (*sink*).



Indonesian REDD+ Strategy Scheme

By referring to the various existing problems, the Indonesian REDD+ national strategy is divided in three main parts, namely: (1) compliance of the REDD+ application prerequisite, (2) improvement and strengthening of the enabling condition, and (3) reformation of the sector development, particularly the forestry sector (production forest, protection forest, and conservation forest and other land use sectors (plantation and agriculture, mining as well as infrastructure).

Prerequisite compliance and enabling condition strategy

The prerequisite compliance strategy consists of the program for preparation of regulations related to the implementation of REDD+, program for the establishment of REDD+ methodology, and program for the benefit and responsibility distribution development. The enabling condition compliance strategy consist of the land use sector development planning reformation program, basic reformation and law enforcement program, local economy empowerment strengthening program, stakeholders involvement program, and governance strengthening program. The clarification of the sector development strategy consists of the sustainable development reformation program of the forestry, agriculture, mining sectors and other land use sectors.

Development reformation strategy of several related sectors

The forestry development strategy is supported by the aspects of GRK emission source reduction as well as the carbon stock increase and protection. Several aspects that are covered in the effort of the GRK emission reduction are (1) strengthening of conservation in the formulation of forestry sector development policy and program, (2) sustainable management strengthening of forest resources, (3) improvement of legal enforcement effectiveness in the KPH area, and (4) perfection of the peat management in the forest area. The carbon stock (sink) increase and protection cover eight main activities, namely (1) Management quality improvement of the protection areas (conservation area, protection forest and other protection areas, which will later on be determined in the spatial structure) in the framework of the carbon stock maintenance, (2) improvement of the forest reforestation efforts in the forest areas that are affected by deforestation, (3) development of incentive to increase the carbon stock in the areas affected by degradation and ex fire land, (4) implementation of

enrichment planting) in the areas affected by degradation, (5) implementation of forest restoration at the protection forest, conservation area, and at the IUPHHK-Restoration areas, (6) improvement of the peat land restoration efforts that is affected by deforestation and degradation, (7) improvement of the mangrove forest rehabilitation efforts, and (8) implementation of the former mine land reclamation.

The agriculture sector development strategy in facing the climate change is focused on the efforts to minimize the negative impacts of such climate change toward the national food endurance. Along with that, the agriculture development strategy is also directed toward the efforts of intensification and application of effective technology, which avoids the clearing of new land at the areas that still have average to good forest cover. The strengthening of the agriculture sector in the framework of supporting this REDD+ implementation are among others: (1) perfection of the agriculture planning, which avoids the extension at the areas with average to good forest cover as well as the protection of areas with high conservation values in the plantation area; (2) application of the agriculture intensification for food plants, superior variety and people's plantation as well as for cattle breeding; (3) utilization of idle land or abandoned land; (4) application of the *land swap* policy in APL area at the mineral soil of the land with high C stock (>100 t C/ha) to the land with low C stock (<35 t C/ha); (5) application of the *intermittent* irrigation system at rice fields; (6) extension of agriculture land at the mineral and non-forest land; (7) completion of license extending method by considering the carbon emission; (8) providing of incentive to plantation concession holders who transfer the activities from the natural forest land to non-forest land; (9) application of the emission mitigation activities at the cattle breeding sub-sector through the technology improvement of cattle food as well as the utilization of dung into biogas and compost; and (10) improvement of the peat land management through the policy until the technical approach.

The mining sector development strategy is implemented through four main activities, namely: (1) completion of the legislative regulations in the mining sector, which is directed toward the prohibition of extending the KP license at the peat land with the thickness of more than 3 meters, (2) completion of the mining planning, which is directed to avoid the mining exploration and exploitation at the forest area and other areas with forest cover that is still in good condition as well as the protection toward

areas with high conservation values in the mining areas, (3) limitation of licensing and enhancement of mining control through the KP license rationalization until law enforcement, and (4) improvement of former mine forest reclamation.

Meanwhile, the development strategy of other land development sector covers at least two principal aspects, namely: (1) completion of the infrastructure development that is more considering the carbon emission, and (2) strengthening of the development vision that is more considering the carbon emission aspect in the long term.

MRV (measurement, reporting and verification) System development

The participation of Indonesia in the REDD+ requires Indonesia to develop the measurable, reportable and verifiable system or MRV, so that each carbon stock decrease and increase in the forest can be accurately measured. In addition to the measurement of the forest area change based on the carbon type and stock in the forest, the MRV measurement scope also the measurement of the benefit distribution on the REDD+ implementation, contribution of the REDD+ implementation toward the sustainable life, and reduction of poverty for the community, which life depends on the forest.

In order to develop the accountable and transparent MRV system, several prerequisites are needed such as (1) composition of the national standard that is in line with the international protocol and *good practices* to measure the carbon stock change in the forest, (2) Establishment of the independent national institution in order to measure and verify the information, and (3) development of the coordination mechanism and harmonization of the carbon calculation and the cross sector and scale MRV system.

Phases of the REDD+ Implementation in Indonesia

Due to the many aspects that need to be taken account of and in order to maintain the credibility and effectiveness of the REDD+ implementation, in general the REDD+ implementation phases in Indonesia will cover: (1) preparation of the strategy that covers the REDD+ national strategy and action plan; (2) develop the preparedness and implementation of the initial action in form of development of the REDD+

prerequisite infrastructure, compliance of the enabling condition and implementation of the initial activities; and (3) implementation that covers the REDD+ mainstreaming in the development, integration of REDD+ into the RPJMN (National Mid Term Development Plan) and full implementation, particularly in the pilot areas based on the determined criteria.

This REDD+ National Strategy will be effective if it can be integrated into the development planning and policy making process as well as the REDD+ application mechanism development in several areas. In addition, the funding support is also a very important matter in the implementation of the REDD+ activities. So that the implementation of the REDD+ Strategy and Action Plan can be well implemented, it is necessary to draw up the monitoring and evaluation frameworks as the guidelines of the REDD+ National Strategy and Action Plan monitoring and evaluation. The application of the National Strategy will only be effective if it enters the planning system, either at the central or regional level. Therefore, the mainstreaming of the REDD+ national strategy in the planning system is a requirement.

Conclusion

All those REDD+ implementation phases are inclusively carried out by involving the stakeholders at the national and sub-national levels, from the government elements (multi-sector and central-regional), competent experts and civil society components that pay attention to the REDD+ implementation and the community groups that have the potential of being affected by the impacts. As such, it is expected that the REDD+ implementation in Indonesia is a national commitment that is supported by all components of the nation.

CHAPTER I
INTRODUCTION

1.1 BACKGROUND

The increase of the Green House Gas emission, which already occurred since the 19th century, provided a very significant impact toward the global warming. The high emission increase caused a very drastic climate change and caused impacts in form of a long dry season, flood, storm, and increase of the seawater level. This caused very large losses to the world population living in the surroundings of the coastal areas and mountain areas in form of the global environment quality decrease as well as threat toward the availability of natural resources in the future.

In accordance with Stern Review (2006), the deforestation and forest degradation provided the contribution of approximately 18% to the global emission and 75% of such amount is from the developing countries. This condition is a serious threat toward the living sources of the local community, function of the river basins as well as the existence of biodiversity. As such, the decrease of the total carbon emission from the forestry sector is important because it is not only supporting the world efforts to limit the increase of the earth temperature of not more than 2 Celsius degree, but it also provides other benefits for the interest of the community, ecosystem and biodiversity.

According to Stern, a quick action to reduce the emission from this sector should immediately be taken. The international support to assist the developing countries in reducing the emission from this sector should also be provided.

The President of Indonesia, Susilo Bambang Yudhoyono, has made the commitment to reduce the green house gas emission of 26% with domestic funding and 41% with international assistance in 2020 from the emission level of BAU (*business as usual*/development activity without emission reduction[2]. A portion of such Green House Gas emission is assumed from the forestry, land use, and land use change sectors, since they are the largest emission sources of Indonesia. The tropical forest in Indonesia is the third widest in the world after Brazil and the Democracy Republic of Congo. However, on the other hand, the forest loss rate is relatively very

[2] Speech of President Susilo Bambang Yudhoyono at the G20 meeting in Pittsburgh, USA on 25 September 2009.

rapid due to the high deforestation and forest degradation. Therefore, Indonesia has a very important position in making the Reducing Emissions from Deforestation and Degradation Plus, or abbreviated REDD+, program successful.

In order to realize the reduction of the green house gas emission in accordance with the above target, it is necessary to prepare various interventions and action plans in accordance with the climate change mitigation program policy at various ministries/institutions and local governments, among others the Coordinating Ministry of Economy, Ministry of Forestry, Ministry of Energy and Mineral Resources, Ministry of Communication, Ministry of Industry, Ministry of Agriculture, Ministry of Public Works, Ministry of Environment, Meteorology, Climatology and Geophysical Agency, Ministry of Marine and Fishery and Ministry of National Development Planning/Bappenas.

The deforestation issue itself occurred under the "Reduction of Emission from Deforestation in Developing Countries (RED)" agenda at the 11th Conference of Parties-COP on the Nations Framework Conventions on Climate Change (UNFCCC) in Montreal in 2005 and was positively responded by many countries. In various forums under UNFCCC, including COP and Subsidiary Body (SB), many parties viewed that the RED scheme should actually involve the participation of all countries. The largest challenge in this issue is how to overcome the national condition differences at each country fairly and proportionally by considering the forestry issue solution approach under the climate convention.

The REDD Plus (REDD+) term occurred at the time of the 13th climate change conference (COP 13) in 2007 in Bali. This term, which is contained in the *Bali Action Plan* paragraph 1 b (iii), was for the first time used in the Ad Hoc Working Group of the Long Term Cooperation Action under the convention at the 6th session in Bonn on 12 June 2009 (footnote of the FCCC/AWGLCA/2009/8 document, 19 May 2009). In this document, the action under paragraph 1 b (iii) *Bali Action Plan* that contains the issue related to the policy and positive incentive approach on issues related to the reduction of emission caused by the reduction of forest and forest cover damage in the developing countries and the importance of the conservation role, conserved forest management and increase of the forest carbon stock in the developing countries are commonly referred to as REDD+. The REDD+ term is also

contained in the *Copenhagen Accord* as the result of the 15th COP meeting in 2009 in Copenhagen.

In order to anticipate the global negotiation at UNFCCC, particularly that is related to REDD+, the Government of Indonesia has established the cooperation with several partners in various sectors, either methodology, institutional, as well as the development of REDD Demonstration Activities (DA). The Government of Indonesia feels that it is necessary to draw up the REDD+ National Strategy as the base in preparing, implementing, monitoring and evaluating of programs and activities related to REDD+.

1.2 VISION AND OBJECTIVE

Vision:

Sustainable development based on sustainable and fair forestry implementation and that supports the climate change mitigation efforts.

Objective:

The REDD+ National Strategy in the mid term (until 2010) is intended for the:

- Increase and perfection of the planning, particularly that is related to the spatial structuring, land use, and spatial utilization licensing process at the provincial and regency/city levels.
- The reduction of the Green House Gas emission, particularly from the forestry sector and land use change through the reduction of deforestation and forest degradation, and to create a foothold for a more substantial reduction of emission with further investment.
- Maintenance and improvement of *carbon stock* through the activities of forest conservation, preserved forest management, ecosystem restoration and forest rehabilitation.
- Improvement of the community welfare by enhancing the participation role and involvement of the community, living inside and in the surroundings of the forest area, in the management of the forest area.
- Improvement of the biological natural resources management through the conservation of the ecosystem with high value, protecting the biodiversities and preserving the river basin function

- Capacity improvement of the institution and human resources and its funding at the national, provincial and regency/city levels, particularly in the conserved forest management program and conservation of the protected area
- Improvement of the investor's trust to implement activities/business in Indonesia. Particularly the forest use based sector.

1.3 LEGAL BASE

The legal base that is used to draw up the National Strategy and National Action Plan for REDD+ consists of:

1. Article 4 paragraph (1) of the 1945 Constitution of the Republic of Indonesia;
2. Law Number 6 of 1994 concerning the Ratification of the United Nations Framework Convention on Climate Change;
3. Law Number 41 of 1999 concerning Forestry;
4. Law Number 17 of 2003 concerning State Finances;
5. Law Number 17 of 2004 concerning the Ratification of the Kyoto Protocol on the United Nations Framework Convention on Climate Change;
6. Law Number 25 of 2004 concerning the National Development Planning System;
7. Law Number 18 of 2004 concerning Plantation;
8. Law Number 17 of 2005 concerning the Long Term Development Plan (RPJP) of 2005-2025;
9. Law Number 31 of 2009 concerning Meteorology, Climatology and Geophysics;
10. Law Number 32 of 2009 concerning Environment Protection and Management;
11. Law Number 41 of 2009 concerning Sustainable Food Land Protection;
12. Government Regulation Number 2 of 2006 concerning the Method of Loan Procurement and/or Grant Receipt and Passing On Of Foreign Loan and/or Grant;
13. Government Regulation Number 26 of 2008 concerning the National Spatial Plan;
14. Government Regulation Number 10 of 2010 concerning the Method of Change of Forest Area Allocation and Function;
15. Government Regulation Number 15 of 2010 concerning Implementation of Spatial Structuring;
16. Government Regulation Number 24 of 2010 concerning Forest Area Use;

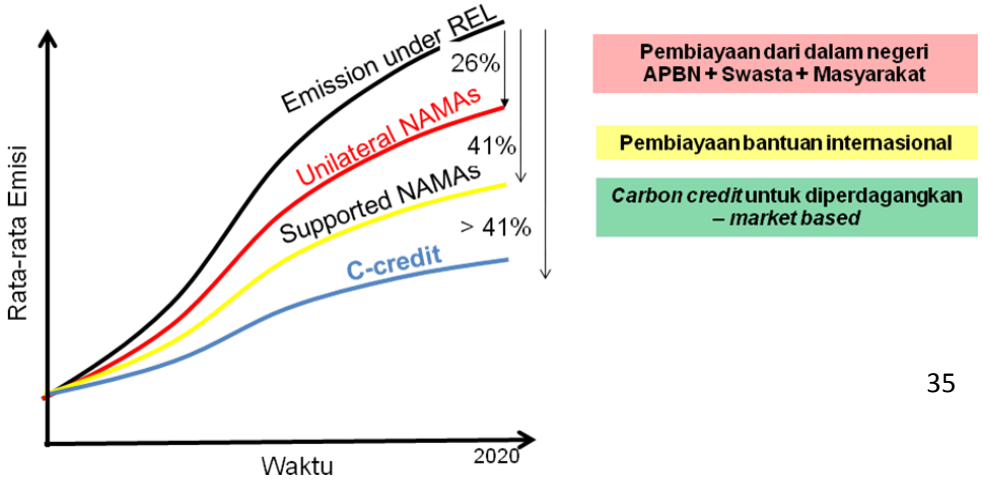
17. Presidential Regulation Number 5 of 2010 concerning the National Mid Term Development Plan (RPJMN) of 2010-2014;

1.4 SCOPE

The REDD+ National Strategy contains the identification on the causes of deforestation and forest degradation and the required strategy formulation in order to suppress those causes in the framework of reducing emission as well as increasing the carbon absorption and storage from the forest conservation activities, conserved forest management, restoration of the ecosystem, and various efforts to enhance the production forest and plant forest productivity (natural forest and plant forest). In addition, this strategy also includes the reduction of emission from other sectors that use land, namely the agriculture, mining and infrastructure sectors.

The REDD+ National Strategy is also the guidance for the ministries/institutions and local governments as well as other stakeholders to prepare the programs that support the implementation of REDD+.

The REDD+ National Strategy is the guideline of the REDD+ implementation in its relation with the emission reduction efforts of 26%, 41% and more than 41% compared to BAU of 2020. If it is related to the mandate of the Bali Action Plan, then the emission reduction target of 26% may be categorized as the *unilateral* "*Nationally Appropriate Mitigation Actions (NAMA's)*", 41% as the *supported NAMA's* (with international fund support), and more than 41% if added with the market mechanism (*carbon credit*) (see Picture 1). At the implementation of those three categories, the capacity building and technology transfer activities are activities that should be continuously carried out and supported by international grant funding.



Graph 1 Picture of the emission reduction target option through REDD+ in the national emission reduction target

The REDD+ National Strategy is basically an inseparable part of the National Mid Term Development Plan (RPJMN) of 2010-2014 and the National Long Term Development Plan RPJPN) of 2005-2025 and National Level Forestry Plan (RKTN) of 2011-2030. This REDD+ National Strategy is then clarified into the REDD+ National Action Plan as a working document, which is the base for various Ministries/Institutions and Local Governments in the preparation, implementation, monitoring and evaluation of the program and activity of emission reduction from the forestry and land use sectors.

1.5 DEFINITIONS

Considering the existence of various definitions related to REDD+, it is necessary that the REDD+ National Strategy and National Action Plan documents determine the work definitions that are used. It is expected that this specified interpretation becomes the reference in the preparation of the strategies, programs and activities in the REDD+ National Strategy and National Action Plan. A number of interpretations related to REDD+ are as follows:

- **REDD+**. The REDD Plus (REDD+) definition is based on the Bali Action Plan paragraph 1 b (iii), namely the policy and positive incentive on issues related to the reduction of emission caused by the decrease of the forest and forest cover damage in the developing countries, conservation role, conserved forest management and increase of forest carbon stock in the developing countries.

- **Forest**

  According to Law Number 41 of 1999, the forest is an ecosystem unity in form of land spread containing biological natural resources, dominated by trees in their association with the environment nature, one and the other are inseparable.

- **Forest Area**. Forest area is a certain area appointed and or determined by the government to maintain its existence as a permanent forest (Law Number 41 of 1999 concerning Forestry).
- **Deforestation**

  Deforestation is the diversion of forest into land for other objectives or the reduction of trees below the minimum threshold of 10% for a long term with minimum tree height of 5 m (*in situ*) and minimum area of 0.5 ha (FAO).
- **Degradation (FAO and Indonesian submission to the UNFCCC Secretariat, March 2008)**

  Degradation is the change in the forest that has negative impacts on the structure or function of stand or forest land, so that it reduces the forest capacity to provide forest services/products. In the REDD+ context, degradation may be interpreted as the forest *carbon stock degradation*.
- **Peat Area** is an area where most of its soil formation elements are in form of remaining organic materials that are piled up for a long time (Presidential Decree Number 32 of 1990 concerning the Protection Area Management). The peat land has higher capacity to store carbon (*carbon stock*) than the mineral land due to its soil morphology characteristic. The carbon contents below the peat land surface may reach between 300-6.000 t C per hectare. The deeper the peat may cause the more carbon amount that can be stored. The peat land in Sumatera and Kalimantan tends to be deeper compared to the peat land in Papua (BAPPENAS, 2010).
- **REL/RL (interpretation of Dec. 4/CP 15)**

  The REL (*Reference Emission Level*) is the base to measure the emission reduction from deforestation and forest degradation within the geographical boundaries and within a certain period, and is determined based on the historical data and by taking account of the emission potential resulted from the development activities in the future.

  The RL (*Reference Level*) is the base to measure the the emission/removals resulted from the activities of conservation, preserved forest management and carbon stock increase within the geographical boundaries and in a certain period,

and determined based on the historical data and by taking account of the emission potential resulted from the development activities in the future.

- **MRV (*Measuring, Reporting and Verifying*)**

  MRV is part of the monitoring and evaluation system of the mitigation action including REDD+, which will be reported by the countries to UNFCCC. The REDD+ activities should be able to be measured, reported and verified. In other words, the data collection and report submitted to UNFCCC should follow the standard science method, which is consistent with the COP Decision.

- ***Displacement of emission*** is the displacement of emission to outside the geographical boundaries of the REDD+ activities. With the REDD+ implementation through the national approach and implementation at the sub-national level, the displacement of emission within the country territory boundaries is handled at the national level.

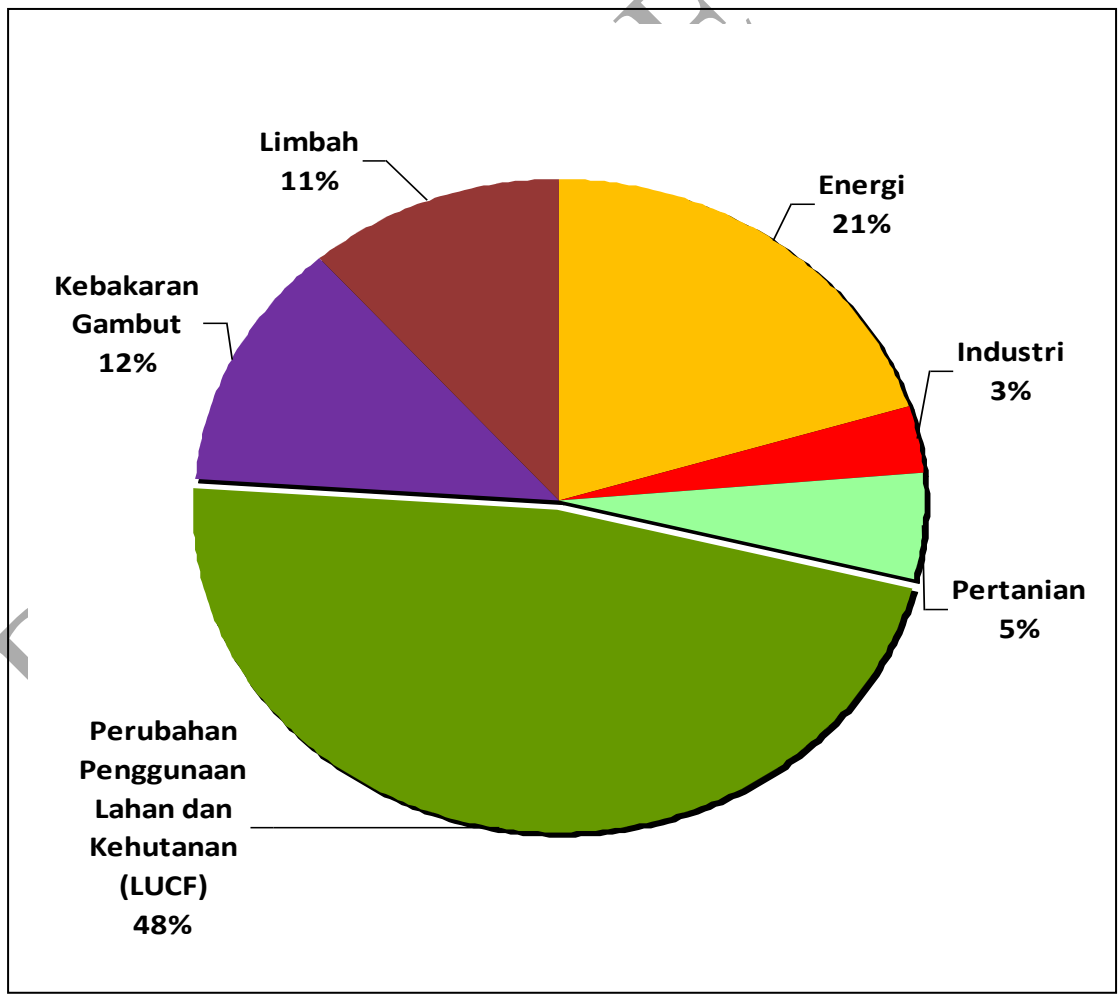
- ***Benefit sharing*** **or benefit and responsibility sharing.** The benefit distribution mechanism as well as the costs and risks in REDD+ are the components that should be prepared in the readiness phase, namely in the first component: *management of readiness.* At the international level, the direction of discussion on the payment mechanism will be based on the performance of a country, particularly in the efforts to reduce the deforestation and degradation levels and the increase of the carbon stock (carbon sink) as well as the effectiveness to achieve the co-benefit from such REDD+ program. It is also required that such mechanism integrates the principles of accountability and transparency, possesses the risk management, sufficient benefit transfer mechanism, and effective and efficient administration mechanism. The availability of such benefit distribution mechanism will a provide a competitive positive value for Indonesia to draw international funds in order to prepare the REDD+ at the national level.

CHAPTER II
CONDITION AND PROBLEM ANALYSIS

2.1. EMISION FROM THE LAND AND FOREST USAGE IN INDONESIA

2.1.1. At National Level

The forest plays an important role in the global carbon cycle and functions as an emitter and also as emission removal. National Green House Gas inventory results based on 2000 indicate that the forestry sector is the highest net emitter (Picture 1). The emission mainly comes from deforestation, forest degradation and wildfire, including moss (2nd National Communication, 2009).



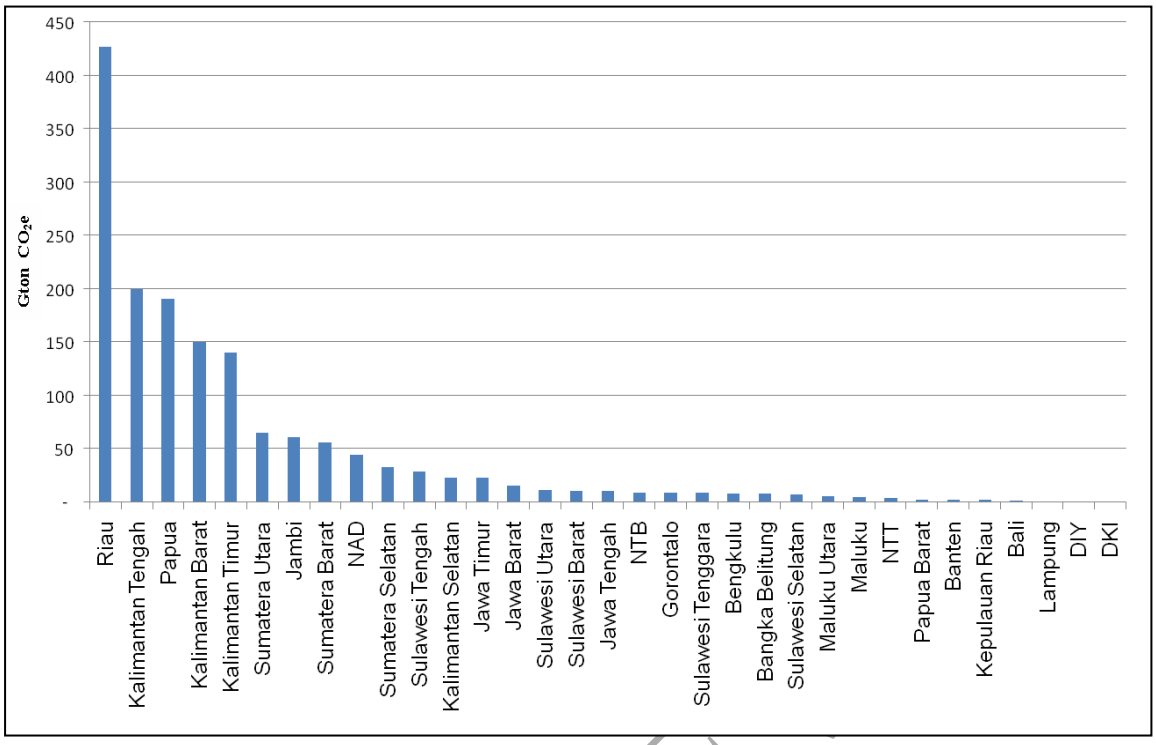
Picture 2.1 Green House Gas Emission from several sectors based on 2000.

Based on 2000, the forestry sector contributed 48% of national greenhouse gas emissions, the highest in comparison to other sectors. In order to have bigger role in lives on Earth, Indonesia has committed to decreasing the emission level by 26% by 2020 at its own expense with 41% financed by international aid. In relation to this, in order to reduce emissions as high as 26% from BAU 2020 (2,95 Gton CO_2e), the forestry sector will contribute as much as 14% whereas the remainder (12%) will be contributed by other sectors such as agriculture, communications, and energy. Thus, the reference emission levels (REL)/baseline of the forestry sector in 2020 is 1,5 Gton CO_2e. Hence, emission reduction targets for the forestry sector amount to 0,4 Gton CO_2e (26% from 1,5 Gton CO_2e). The target specified by the Government must be realized on field and can be measured, reported, made transparent and verified by independent party. The quantification of the attempt to decrease emission must be carried out by means of reducing the sources of emission in the forestry sector, which are distinguished into focus and locus of programs and activities.

2.1.2. At Sub-National Level

Out of the forestry sector's 48% of contribution towards national GHG emission, the emission at sub-national level varies from one island to the other, and also among provinces and regencies. The large amounts of this green house gas emission originate from the forestry sector and changes in land use in the 2000-2005 period reached a deforestation rate of 5,45 million ha or 1,1 million ha on average per year. Aside from deforestation, the GHG of the LUCF sector also came from the moss field fire and moss land conversion in the forest area for plantations (Picture 2). Based on the COP-15 guide, the calculation of reference emission levels for each province is determined based on historical deforestation rates of forests and moss so that an emission quote for each province and district can be achieved[3].

[3] This REL figures are temporary and used in order to facilitate the obtainment of sub-national figures that will become a national decision. These figures will continue to be improved until a valid figure is obtained in 2012.



Picture 2.2. Reference emission levels for each province based on historical data of forest and moss deforestation rates.

2.2. DEFORESTATION AND FOREST DEGRADATION CONDITIONS

The trigger of deforestation and forest degradation comes from the inside and outside of the forestry sector. From the forestry sector, the trigger of deforestation and forest degradation can be classified into 4 (four) activities: 1) Illegal logging or improper forest management, 2) Forest fire, 3) Changes in the natural forest (mineral soil and moss) for the construction of Industrial Vegetation Forest (HTI) and 4) the weak law enforcement in the forest concession management. Beyond the forestry sector, deforestation and forest degradation can be triggered by the following factors: 1) forest clearing by the people, 2) land fire (non-forest area), 3) expansion of settlement, 4) regional expansion, 5) extensification of plantation (coconut palm, rubber, cacao, coffee), 6) extensification of farm land, 7) opening of fresh water fishery in mangrove forests, 8) increase of pasture land, 9) mining and 10) development of infrastructures. On a simpler note, all facts above can be categorized as deforestation causes due to forest conversions becoming non-forest areas in either a planned or unplanned manner, and forest degradation due to logging and forest fires.

2.2.1. Deforestation and Forest Degradation

Indonesia has a land area of 187,787 million ha that is divided into forest areas as wide as 132,399 million ha (Planology Directorate General, 2008) and other areas of use (APL) are as wide as 55,388 million ha. Based on the land or forest coverage, the area covered by forest amounts to 100.740 million hectares, whereas the land area without forest coverage amounts to 87.047 million hectares. Meanwhile, forest areas that have forest coverage as wide as 92,328 million ha or 49% of the land area of Indonesia and its remainder does not have a forest coverage as wide as 40,071 million ha or 21% from the entire land area of Indonesia. Next, the forest coverage area in APL is 8,412 million ha or 4% from the land area of Indonesia and the area without forest coverage amounts to 49,976 million ha or 25% from the total land area of Indonesia (Planology Directorate General, 2010).

Table 2.2. Land Coverage Recalculation (million ha).

Land Coverage	Forest Area		Other Usage Area		Total	
	Area (ha)	%	Area (ha)	(%)	Area (ha)	%
1	2	3	4	5	6	7
Forest	92,328 (Primer= 43,801; (LOA=48,526)	49	8,412	4	100,740	54
Non-forest	40,071	21	46,976	25	87,047	46
Total	132,399	71	55,388	29	187,787	100

Source : Ministry of Forestry, 2008, processed for Citra Satelit Landsat 7 ETM+ year 2005/2006.

Based on the data obtained by the Ministry of Forestry in 2006, the changes in land coverage from forest to deforested area amount to 42.263 million hectares. A large amount of this area (36%) has turned into reed covered areas whereas 26% is agricultural land, and the rest consists of bushes, wetlands, housing, and for other uses.

The level of deforestation every year in Indonesia varies from one period to the next. During the 1990-1996, the average deforestation rate in Indonesia was 1.87 million hectares. This rate continued to increase rapidly during the period of 2000-2003 and continued to increase by 1.17 million hectares per annum during the 2003-2006 period. From the result of data history, the deforestation rate in Indonesia can be projected to 1.125 million hectares per annum. Whereas, degradation rates caused by logging activities is projected at 0,626 million ha per year (Forestry Ministry, 2010).

2.2.2. Deforestation and Degradation on Peat Moss

Moss lands play an important role in the stability of the ecosystem because of the large ability of this land in holding/storing water, high carbon deposits (C), and high moss land specific biodiversity. If the peat moss is converted, the carbon contained within will oxydize due to decomposition, resulting in a fire which emits CO2, the most important green house gas. C emissions from the moss lands are considered to be serious global issues because the amount could be two to three times more than mineral soil emissions. Moss emissions are also a local problem because they will cause the moss to thin to the point where its hydrological buffer functions disappear.

The management of peat moss in Indonesia seems very far from the principles of sustainable peat moss protection. Peat moss is not treated as a special entity which must be protected, but as a regular land which becomes a commodity to facilitate the economic activities such as plantation, vegetation forests and mines. A phenomenal example of a failure of planned peat moss land is the mega project of one million hectares of Peat Moss Management Area (PLG) in Central Kalimantan. This moss land was programmed by President Soeharto (1995) in order to be cleared for agricultural cultivation. It turned out that this land clearing has caused major environmental damage, such as fires in the PLG area and floods in surrounding residential areas among others. The Government has planned a rehabilitation and revitalization program for that area, but it has not been implemented. Other portraits from this ecosystem management are the many permissions granted on moss lands, for those with thickness less than 3m and also even more. Apart from that, not much of the moss lands are inhabited by citizens as a place of residence and used as agricultural land to make a living. The high number of population and growth rate of Indonesia (around 1.3% per annum), the decreasing amount of potential dry lands for agricultural development and out-of-control licensing along with various deviations are the cause for such problem. In provinces/districts mostly covered with moss lands such as the Riau Province, Kubu District, and Kalbar District, the exploitation of these lands have already grown into a necessity, because these lands are dominant for agricultural areas. In this condition, a sustainable peat moss management method seems to be a correct choice.

The problems which set the background for the poor management of peat moss are: 1) lack of understanding by the stakeholders (Government, people, and private sector) on the urgency of peat moss protection and the sustainable manner of managing peat moss; 2) The spread peat moss management authority and lack of distribution of authority and clear coordination network; 3) lack of inventorization of national peat moss land, which provides a complete and integrated information on the distribution, status, thickness and land condition; 4) high intentional or unintentional forest fire rate; 5) lack of provisions of law on complete peat moss management up to implementation stage, including penalty[4]; 6overlapping of policies between the Central institution and the Central and Local Governments; 7) layout and tenurial conflicts; 8) licensing over peat moss; 9) facilities/infrastructures and financing availability issue; 9) weak law enforcement.

2.2.3. Influence of Agriculture on Deforestation

The agricultural sector, particularly food crops, is significantly prone to experiencing climate change effects. However, the agricultural sector also produces GHG emission. Without Action Plan (BAU) on non-moss rice field will result in a CH4 and N2O in puddle condition (anaerobics), whereas the rice on moss land emits CH4. Since plantations on moss field only need anaerobic condition, the main GHG emission released is CO2. Green house cumulative emissions in the agricultural sector, if no effort is made to reduce emissions, is estimated at 117 million tons CO2E.

The agricultural sector also has the potentials to donate significant level of carbon emission if there are new land clearings in forested areas or moss areas at the depth of below 3 meter. Therefore, to support the fulfillment of Indonesian GHG emission decrease target by 26% or 41% in 2020, the agricultural sector must carry out several policies to decrease GHG emission. Berdasarkan data BPS (2008) total luas lahan

[4] At the moment, Indonesia already has the basic rules for moss protection, which is Presidential Regulation No. 32 Year 1990 regarding Protected Areas and Presidential Regulation No. 26 Year 2008 regarding RTRWN jo. Law No. 26 Year 2007 regarding Spatial Organization organizing moss lands with 3m density or more located in the upstream side of a river or swamp must be identified as protected areas. However, this condition was recently implemented by the agricultural sector through Permentan No. 14 Year 2009, which forbids moss land clearing for agricultural cultivation, for: (1) moss lands with a 3m density or less, (2) moss lands that are not mature (fibrist maturity level) and (3) moss lands with submerged soil layers (substratum) in the form of quartz sand and potentially sour sulfate.

Table 2.3. Estimated Needs for Main Crops in 2020.

No.	Commodity	Estimated Needs in 2020 (million ton)
1	Rice	37.021*
2	Corn	18.940**
3	Soybean	2.381**
4	Sugar	2.530

* Rice, equal to 68,8 million ton gkg. **dried seeds

pertanian adalah 69,15 juta ha. Based on BPS data (2008), the total agricultural land area is 69.15 million ha, whereas data from the Ministry of Forestry in 2008 (table 2.2) shows that the Other Usage Area (APL) including for agriculture, settlement, infrastructure, etc. as much as 55.388 million hectares.

From the data on land usage since 1986 to 2004, it seems that the rice field area has not had much development, and even decreased from 8.5 million ha in 1993 to 7.7 million ha in 2004. A rapid areal expansion occurred in the plantation sector, from 8.77 million ha in 1986 to 19.3 million ha in 2006. The expansion occured in the plantation sector from 8.77 million ha in 1986 to 19.3 million ha in 2006. The expansion occured in several exported commodities such as coconut palm, rubber, coconut, cacao, coffee and pepper. The largest development occured in the coconut palm plantations from 593,800 ha in 1986 to around 6.3 million ha in 2006. The major areal expansion has been occuring since 1996. The cacao plantation land area also developed from 95,200 ha in 1986 to 1.2 million ha in 2006. In this context, based on projections of food security until 2020, it is estimated that an additional 1, 6 million ha of farmlands and 2, 4 million ha of dry lands will be needed.

Table 2.4. The Needs to Add New Land for National Crop Sustainability up to 2020.

Type of land	Available land in 2008 (x 1000 ha)	Needs for additional land up by 2020 (x 1000 ha)
1. Rice field	6,841	1,614
2. Dry land	5,500	2,419
Total	12,341	4,033

Table 2.5. Amount of Land Area Suitable and Available for Wet Lands and Dry Lands Areal Expansion.

Island	Single-season wetlands			Single Season Dry Lands*	Annual dry lands**	Total
	Swamp	Non-Swamp	Total			
	……..…… 000 ha …….					
Sumatra	354.9	606.2	960.9	1.312.8	3.226.8	6.499.4
Java	0	14.4	14.4	40.5	159,0	213.9
Bali and NT	0	48.9	48.9	137.7	610.2	796.7
Kalimantan	730.2	665.8	1.396.0	3.639.4	7.272.0	12.307.4
Sulawesi	0	423.0	423.0	215.5	601.2	1.239.6
Maluku+	1.893.4	3.539.3	5.432.7	1.739.0	3.441.0	10.612.7

Papua						
Indonesia	2.978.4	5.297.6	8.275.8	7.083.8	15.310.1	30.669.7

Source: Agricultural Research & Development Body (2007)

Note : * Single-season dry lands are also suitable for annual crop

** Annual dry lands on dry lands and partly moss

Through proper overlaying between the land suitability map and the land usage map (NLA, 2002-2004), the unused land distribution data shows that the unused lands are overgrown with weeds and bushes, both in dry and mangrove swamps. Regardless of the ownership status, the land is assumed as a potential land available for agricultural development. The result of spatial analysis shows that around 30.67 million ha is unused land (deemed as available), which consists of 8.28 million ha of land for the expansion of single-season wetlands farm (rice fields), 7.08 million ha for single season crop dry land farm, and 15.31 million ha for the annual crop farms.

An estimated two third (20.3 million ha) of the available lands are in the forestry area (outside the wildlife reserve) which is currently overgrown by weeds and bushes. The largest lands can be found in Kalimantan, Papua and Maluku and Sumatra. The unused land in the form of 10.3 million ha found in the agricultural area (not in forest area). As such, until 2020 the needs for crop lands (1.6 million ha of wet lands and 2.4 million ha of dry lands) can still be fulfilled from the existing agricultural lands without any needs for a new forest conversion (clearing).

Table 2.6. Lands available for agriculture in agricultural and forestry areas.

No,	Islands	Cultivation Area		Total (ha)
		Agriculture	Forestry	
1,	Sumatra	2,741,632	2,757,776	5,499,408
2.	Java	129,022	84,868	213,890
3.	Bali and Nusa Tenggara	515,874	280,872	796,746
4.	Kalimantan	3,907,977	8,399,413	12,307,390
5.	Sulawesi	682,192	557,412	1,239,604
6.	Maluku+Papua	2,331,106	8,281,545	10,612,651
Indonesia		**10,307,803**	**20,361,886**	**30.669.689**

Source: BBSDLP (2008)

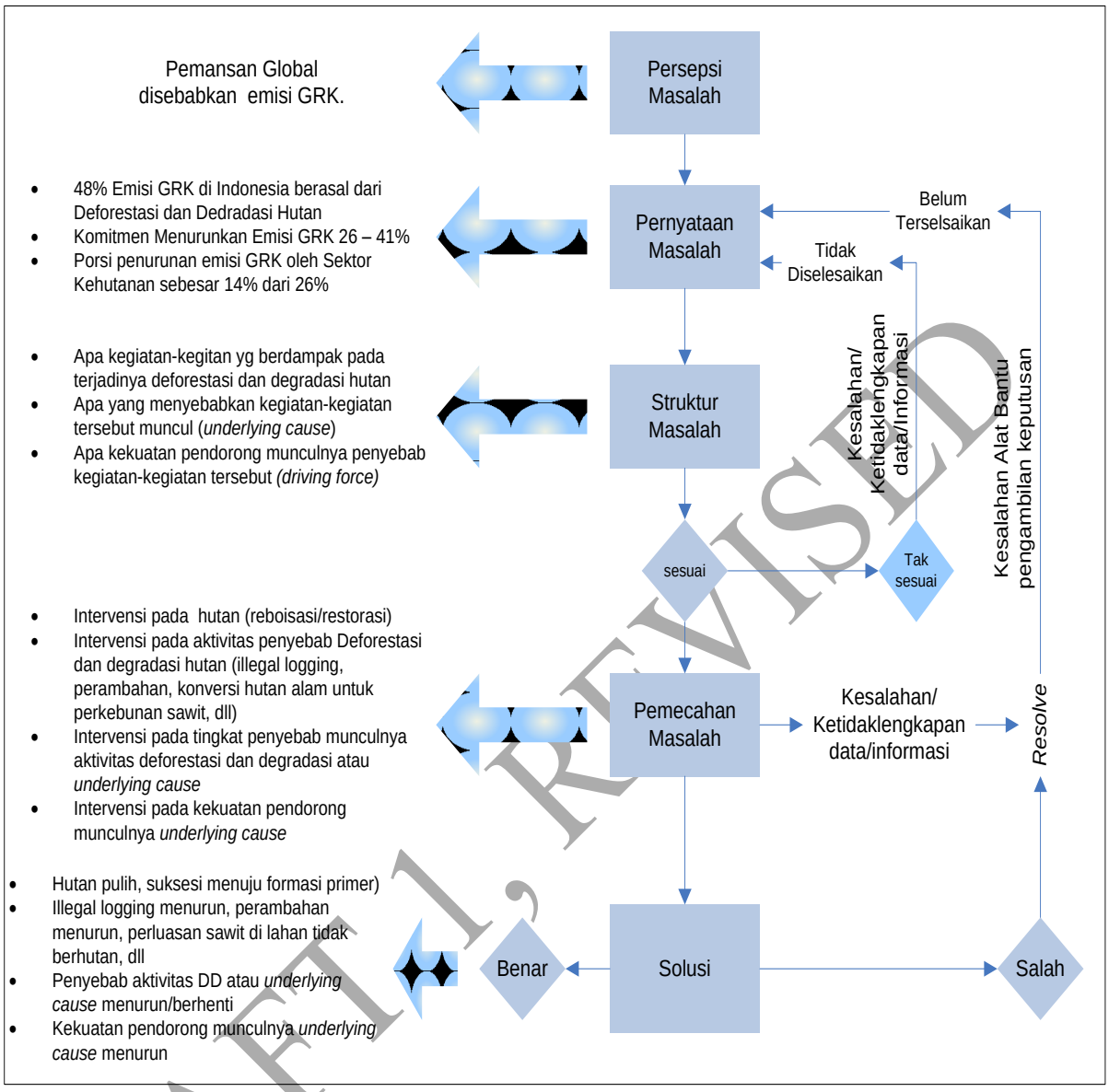
Other estimations in the agricultural sector consist of around 94.1 million ha of lands suitable for agriculture, which will not disrupt the ecological balance of the river basin, whereas lands converted to new agricultural lands amount to 63.7 million ha out of the total Indonesian territory. As such, the agricultural sector is still optimistic that it can expand the agricultural area around 30.4 million hectares with 24 million

ha in the form of fertile lands for rice fields, plantations and the development of other commodities, whereas the other 6.4 million ha are inundation rice fields, lowlands and peat moss which still require special innovation. Furthermore, to this day there is a quite large amount of abandoned farmlands, totaling 12.4 million ha.

The Forestry Ministry and Agriculture Ministry data above analyzes the availability of large overlapping areas. This data gap will grow wider when agricultural land expansion is projected until the year 2020. This data will become more confusing if other land use sectors such as mining and infrastructure are taken into account. Due to this matter, the integration of each sector to produce more accurate data must receive priority management in order for various land use policies to be more accurate.

2.3. FORMULATION OF DEFORESTATION AND FOREST DEGRADATION PROBLEMS

The analysis of deforestation and forest degradation in the attempts to implement this REDD+ aims to provide data, information and knowledge on phenomenas or symptoms deemed as promblems of deforestation and degradation of the forest so that alternative solutions for decision making. The execution of this process is important in order for decision makers to feel sensitive towards two main things, which are: 1) identifying the problem at hand and formulate it, and 2) Selecting the proper decision-making tool (Wallace, 1994).

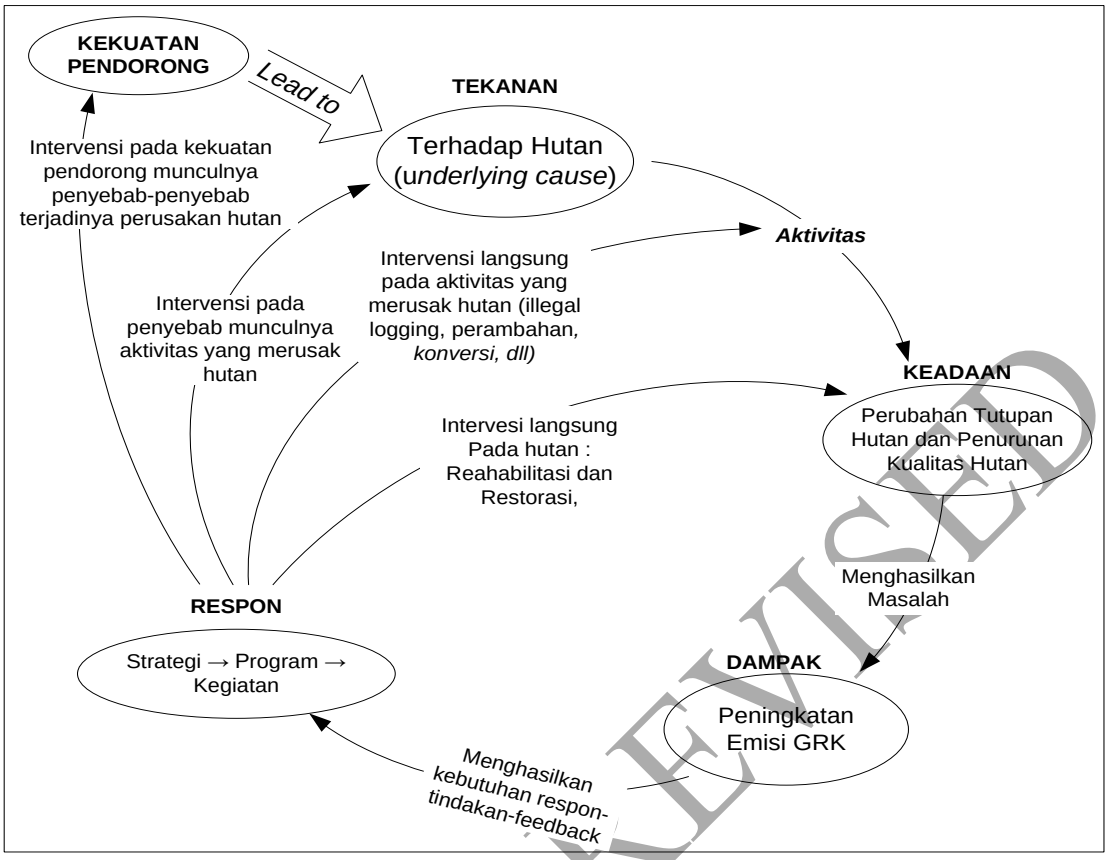


Picture 2.3. Problem Formulation Frame

In the attempts to implement this REDD+, diagnosis or formulation of problems on deforestation and forest degradation must be carried out systematically and logically. The simple formulation of deforestation and forest degradation issue in the REDD+ context is as follows:

1. Perception of problem, which refers to the forest condition and its impacts, such as forest damages which cause significant increase in GHG emission.
2. Statement of problem, which refers to the perception of problem and adopts the territorial context that Indonesia as a GHG emitter and absorber commits to decreasing the sources of emission and increases carbon absorption.

3. Structure of problem, which refers to the statement of problem that the attempts to decrease the sources of emission focus on the decreasing level of deforestation and land degradation. Deforestation problem categories must be made in this stage:
    a. The existing situation or phenomena reflects the direct cause of deforestation and forest degradation, which can be explained further as follows:
        - Deforestation occurs through planned and unplanned conversion (expansion of plantation, mining, clearing, etc.), and
        - Forest degradation due to illegal logging and forest fire.
    b. Meanwhile, the underlying causes of phenomena which cause deforestation and forest degradation above are as follows:
        - Weak layout,
        - Ineffective management unit,
        - Weak governance,
        - Weak legal basis and law enforcement, and
        - Unclear Tenurial.
    c. The driving force is the macro conditions which drive direct activities on deforestation and forest degradation. The category includes:
        - The lack of compliance with the principles of sustainable development among the decision makers;
        - High demand of supply which must be supported by forestry resources such as Wood and coconut palm fruit at global and national level exceeding the existing production output preservation forest management;
        - Economic growth target;
4. Weak leadership. Problem-solving, which refers to the structure of problem. The locus of each problem category must be identified and a suitable intervention aiding tool must be identified. The DPSIR framework (driving force-pressure-state-impact-response), as stated in Picture 5 helps in seeing the directions of necessary intervention.



Picture 2.4. DPSIR Framework
(*driving force – pressure – state – impact - respon*)

This framework provides directions for strategy, that the strategy is integrated, comprehensive and able to facilitate all needs for actions or intervention at all levels in a compiled problem structure. If not, the strategy is deemed to have not been integrated or comprehensive. This framework also points towards the need for intervention on locus issues so that instrument selection can be relevantly determined.

2.4. THE CAUSE OF DEFORESTATION AND FOREST DEGRADATION

2.4.1. Planning for Weak Layouts

The Layout Plan is compiled as a guide to the provincial and regency government for the execution of long-term development as well as an interest facility for stakeholders of various levels, starting from the central government, provincial government, regency, private sector and the public and aims to optimize the available space by

maintaining the balance between the purpose of increasing regional growth rate, the needs for development and the environmental supporting capability (Siagian dan Komarudin, 2009).

However, in its practices, there are several issues which caused the RTRW Instrument to not be able to facilitate various needs of sustainable development. In several regions, the RTRW document even becomes a document which causes deforestation through planned conversion. These issues are caused by various things, including the following things:

2.4.1.1. Disintegrated Sectoral Development Planning

Sectoral development planning which is not yet capable of being a document which independently integrates various sectoral interests. At the moment, each institution generally makes their own annual plans by allocating land resources separately. The same goes to economic and infrastructure development planning, which lacks integration so as to enable overlapping in the allocation of space and deforestation of good-conditioned forested areas.

2.4.1.2. Weak Availability and Information and Data Access

The availability and access to biophysics spatial information and data, as well as limited accurate and valid socioeconomic data. Generally the planner does not use methodology which distributes the information to decision-makers with priority choices, including the carbon issue. An example of the consequence of such decision-making is an RTRW (regency or provincial level) which specifies the degraded forest areas as forest areas, and those with middle-good conditioned forests into the conversion plan. Forest conversion in such manner will result in a staggering amount of emission.

2.4.1.3. Participation in Weak Planning

The compilation of RTRW is a top-down process and has not completely implemented the principles of basic transparency and participation so that the people who know the real conditions on field cannot give constructive inputs to the document. The lack of participation and transparency eases the unplanned lands usage field activity in RTRW, such as land clearing by the people to make plantations,

farmlands, settlements, mining without license, etc. This is a general reflection of sociability of Indonesian people, who often channel their dissatisfactions in ways that harm the forest resources or the environment.

2.4.2. Tenurial

2.4.2.1. Solution to Unexplained Land Conflicts

Forest lands with its diversity of ownership rights, status and faction have become battlefields for stakeholders with various interests which are not yet finished by now. Conflicts and disagreements on who should be controlling and managing forest and State Forest Area are sources of various anxieties, which often result in vandalisms. The sources of these anxieties can be found in the interpretation of definitions and forest locations in Indonesia and its authority. Different interpretations cause basic differences on the roles of controlling the forest resources by different actors and institutions. Conflicts over the role of controlling area and natural resources caused by unclear tenurial rights must be finalized through a serious attempt in a clear action strategy.

2.4.2.2. Indigenous Communities have no Rights

Legal dualism on the acknowledgement of traditional rights in forest area and non-forest area becomes one of the tenurial issues. The inexistence of formal rights for traditional societies result in the inability to make a natural resource-based decision in their traditional territory weakens their potential abilities in supervising forest area. At the same time, procedures which enable them to be acknowledged as legal society seem very difficult and long. Other triggers for the increasing tenurial conflicts are the implementation of unsynchronized sectoral policies and unclear regional boundaries on field due to the prolonged forest area legalization.

2.4.2.3. Scarcity of Alternative Livelihoods and Income Sources

The existence of forests usually plays a significant role in community groups around forest areas. Many concepts explain about the community and forests, such as local knowledge systems, moral values, and indigenous communities. These concepts basically explain the attachment of communities living in and around the forest to the land and available natural resources as well as producing from these forests.

In the last two decades, when the destruction of forests was of concern by many parties, the existence of communities around the forest had not been forgotten. The relation of the community with deforestation and forest degradation often becomes the main discussion topic. This fact is raised from the reality that cultural production or the livelihood of village communities are usually based on land management and natural resource harvests that are available in their surroundings. With increasing population growth, dependency on these lands and natural resources will also increase.

The opinions towards the conditions above are also extremely diverse. There are at least two major perspectives that are the source of difference, which are the human rights perspective and natural resource conservation perspective. These two perspectives consider fundamental interests, which are supported by various arguments, values, and field situations that have become supporting facts.

In order to avoid debates regarding this matter, an assumption that can relatively be accepted must be made, which is the community living around the forest who directly use and benefit from these resources always do something that they consider to be the best choice among other choices. In general, local management practices are based on sustainability and wise principles in an ecological manner. If otherwise, perhaps the existing choices are constrained by many factors that are uncontrollable, such as the increase in necessities and decent living standards. If this poor condition choice continues without the appropriate intervention from outside, the possibility for the cutting down and logging of wood from the forest will increase. Even in abnormal socio-political conditions combined with social skill levels of the new community, they can channel protests through vandalism to the point where massive vandalism could occur at any given time.

Based on this explanation, the socio-economic issue of the community that must be solved in this REDD+ implementation is as follows:

- Limited alternative livelihood and income sources of the local community apart from those based on land management.
- Limited local community capacity in developing productive economical activities.

- Weak access to the markets lead to extremely low production rates of the community, and on the other hand, lifestyle continues to rise.
- Weakening of local community institutions and the decline in the authority of moral values.

2.4.3. Ineffective Forest Management Unit

Indonesian forest area reaches 132,399 milliona ha (Baplan 2008), and around 15% of it is conservation forest (HK), 22% of it is wildlife reserve (HL), 46% of it is production forest (HP) and 17% of it is convertible production forest (HPK). According to satellite data in 2007, the forested area amounts to 92,328 million ha and the deforested area is around 40,071 million ha. The amount of convertible forest (HPK) is around 22, 7 million ha, and only 10.7 million ha is still forested.

Forest management is carried out in almost all forest in vulnerable manner. The weakness of forest management unit occurs at all levels in the forest management system, forest management organization or among individuals who work in the forestry sector in various forest functions. Various forest management unit issues based on their levels can be explained in the following:

2.4.3.1. Weak Forest Management System

Problem in the management system level consists of regulation frame, policy, and environmental conditions which do not support and hinder the achievement of preservation management purpose. Starting from the weak data and information in compilation of plans, forest management on all forest functions become invalid and difficult to achieve sustainable state. The process of establishing forest boundaries, which will show where and how vast the forest area is, acknowledged and respected by all parties, have not been carried out. Almost all production forests and wildlife reserves outside Java do not have clear party in charge, resulting in open access and triggering planned and unplanned deforestation and forest degradation.

1. Weak Production Forest Management

   The condition of 57.7 million hectares of production forest areal continues to decrease, as can be seen in the following statement (Purnama & Daryanto, 2006):

a. Natural Forest incurred with IUPHHK for Natural Forest/HPH in relatively good condition (Category I): 28.27 million Ha.
b. Natural Forest incurred with relatively "good" condition, but is open for access and is not incurred with management rights (Category II): 12.98 million Ha.
c. Damaged forest area and open-access due to lack of management (Category III): 7.14 million Ha.
d. Damaged forest area which is already reserved for Vegetation Forest IUPHHK (Category IV): 9.31 million Ha.

In the field of forest management, in 2007 only 115 units out of 486 units of HPH recorded in 1992 (24%) survived internal and external problems.

Production Natural Forest Management is still far from the laws and principles of Sustainable Forest Management (SFM). The business players at forestry sector tends to think about the aspects of business rather than production preservation. The harvesting techniques no longer pay attention to the reduced Impact Logging/RIL. Harvesting is carried out excessively (over-cutting), and the amount of waste and degree of forest damages on Log Over Area/LOA will be very high.

2. Management of Vulnerable Wildlife Reserves and Conservation Forest

The forest protection attempt for wildlife reserve and conservation forest also has several problems. In the wildlife reserve, the authority of central and regional governments is not clear, and the forest seems to be owned by no one and is open for access by anybody. In such conditions, the opportunity of deforestation increases. In the conservation forest management, 527 units of land and sea conservation areas have been formed today, including 50 units of National Park (TN), 118 units of Natural Tourism Park (TWA), 22 units of Grand Forest Park (Tahura), 14 units of Hunting Grounds (TB), 248 units of Natural Reserve (CA) and 75 units of Wildlife Reserve (SM). Sea conservation areas include 7 units of National Park, 5 units of Natural Conservation, 2 units of Wildlife Reserve and 14 units of Natural Tourism Park. The weak management capacity becomes the main challenge of today. For example, of all the conservation area units, only 34.4% have Management Plan, mostly TN and TWA. Meanwhile, only 8.4%

conservation area units have management zonation/blocks. All 21 National Model Parks have Management Plan, but 19% among them are not yet legalized.

3. Unclear Policy, Monitoring and Evaluation as well as Reward and Punishment

   There are no effective and efficient provisions of law as a basis for solving the problem of forestry which keeps on developing from time to time. The provisions of law fulfil the needs of bureaucrats in conducting their administrative duties rather than solving the problems faced by forest managers on field. Aside from that, lack of alternative solutions on field is also a problem because most regulations contain restrictions as a form of control over the forest degradation.

   On the other side, inconsistency of policy also occurs on a regular basis. Excellent programs carried by technical officers often change, depending on the authorized officer at that moment. For example, the establishment of the National Park Model that is currently neglected and unsuccessful. In terms of production forest, the issuance of RKT license on several companies in large volumes contradict with the spirit of natural forest exploitation limitations and even set aside the information on violations committed by the license applicant. On the other side, the violations in the licensing process, which are committed by the applicant or licenser, are seldom incurred with penalties, and are being repeated over and over again.

2.4.3.2. Weak Institutionalism

The unrealized institutional performance which became the cause of weak public services related to the licensing and procurement of forestry economy, and the lack of real priorities for the reinforcement of forest management organization at field/base level. Such condition became the cause of limited information on forestry resources as a basis for compiling any plans or decision-making. Furthermore, the weak institution problem also arises from the unclear implementation of regional autonomy under Law No. 32/2004 and the derivatives in relation to the sectoral rules and the inaccuracy of the distribution of authority, which causes unclear authority in the forestry sector at tread level.

At management organization level, most of the time and energy available are spent for administrative rather than substantive problems. This is driven by the organizational

performance assessment system, measured only by the absorption of budget and report documents, but not by the effectiveness and efficiency of budget, assessment of output, result, impacts and benefits which are actually occurring on field. Result of RAPPAM study in 2005 by Directorate General of PHKA and WWF on the Technical Execution Unit (UPT) of National Park Hall shows that the effectiveness of management in every UPT is very low seen from the input, process, output and planning, which results in low management performance.

In the production natural forest management organization, the performance of entrepreneurs have not reached a satisfactory level, indicated by low ecolabel or national standard issues by the Government. There are only 6 LEI standard and 5 FSC standard management units which have received ecolabeling certificates. The graduation rate of the execution of independent obligatory assessment using Government Standard is 73 units out of 138 units of HPH.

2.4.3.3. Weak Individual Capacity

Capacity problem at individual level consists of competence (capacity, qualification and knowledge), behavior and attitude and integrity (work thics and motivation), and also strong leadership from people working in the organization as the spear-end of forest management on field. Problems at individual level under relatively normal conditions are usually caused by internal situation in the organization which does not support the development of individual capacity. There is even a condition where people in the organization tends to become pragmatic and always seek for opportunities to fulfillt heir personal interests.

2.4.4. Legal Basis and Weak Law Enforcement

2.4.4.1. Legal Basis

Law No. 41 year 1999 regarding Forestry that was created with the spirit to reform, strived to restore forestry order to a better forest management system. However, these laws still need to be strengthened, in terms of appointing central and local authorities in responsible decentralized spirits. Several phenomenon based on the need to be strengthened can be seen from the authoritative ambiguity of forest companies obtaining licenses, and overlapping forest areas with regional plans. The enactment of

Law No. 26 Year 2007 as a renewal from Law No. 24 year 1992 regarding Spatial Organization is not sufficient for solving overlapping issues and forest harvest licensing in the field.

In a direct or indirect manner, these weak forestry laws open opportunities for planned deforestation. Issues regarding these weak forestry laws can be seen in the following category:

1. Natural forest exploitation opportunities are still extremely open

   Demand towards forest timber produce is still high, and have the tendency to rise. Various downstream industries within and out of the nation are extremely dependent on wood originating from the natural forests of Indonesia as their raw material. Basically, the existence of these industries is based on timber and continuous production cycles and eco-friendly practices need to be facilitated and guaranteed by forestry laws. Because of this, limitations must be enforced firmly so that production sustainability in downstream industries is also followed by forest sustainability as raw material sources. Referring to the history of forestry production and the current conditions of Indonesia' forests, it is time to stop natural forest exploitation and at the same time, intensify park establishments in deforested areas. In this context, Forestry Laws have weaknesses because they leave enough room for the exploitation of natural forests, which are still in good condition. As an example, the HTI limit flexibility on forests that are unproductive in Law 41/1999 leads to the start of implementing regulations that are extremely different from time to time. Article 30:3 Presidential Regulation No. 34/2002 regarding Forestry Governance and Forest Management Planning, Forestry, Forest Utilization and Forest Use firmly states that plantation permits can be awarded to empty lands, reed fields or bushes in productive forests. However, this law was then significantly amended in the next law, Presidential Regulation No. 3/2008 that amended Presidential Regulation No.6/2007 regarding Forestry Governance and Forest Management Planning as well as Forest Utilization, which only stated that plantations prioritized in unproductive forest production opens possibilities for execution on other forest areas.

   Apart from natural forest exploitation opportunities to meet timber demands, this exploitation is also open to activities out of the forestry sector, such as mining and

plantation or agriculture. Law 41/1999 opened opportunities for conversions without clear and firm basic restrictions. Consequently, implementing rules from this can be interpreted as different from time to time, in a short period. As an example, Kepmenhut No. 70/Kpts-II/2001 regarding Forest Area Establishment and Status Change and Area Function was amended in order to release conserved forest areas so that the area status must be changed periodically to protected forests and production forests before being changed into APL. However so, Article 4 jo Article 29 PP No. 10/2010 on Procedures for Allocation Changes and Forest Area Function stated that Conserved Forest Areas could be changed to APL through parliament agreement. The uncertainty of limits in Law 41/1999 alone has led to dissimilar interpretations of the law in managing a forest. Hence, it has facilitated the establishment of rules based on current interests.

Even when determining forest area functions according to valid regulations (Presidential Regulation No. 44 year 2004 on Forestry Planning and Presidential Regulation No. 68/1998 on Nature Reserves and Nature Conservation Areas), allocation and function changes should not be granted easily.

At the implementation level, allocation changes for forest areas are direct and indirect. An example of the indirect mode is the abandoning of forests where obtained concession permits can only be used to harvest timber and after that, the forest is abandoned until it is finally proposed for plantation areas or other designations with the reason that this forest is damaged, unproductive or degraded.

2. Law Conflicts or Disharmony

Conflicts or disharmony with the legislation can occur horizontally (within a sector) or vertically (between the center and region). With the publication of Law No.32 Year 2004 on Regional Autonomy, the regional authorities have played a huge role in natural resource management. In this law, it is stated that regional governance is the implementation of government affairs by the local government and parliament according to autonomy principles and duty assistance with broad principles in the system and principle of United Republic of Indonesia Year 1945. Next, it is stated that regional autonomy is the right, authority, and responsibility to organize and deal with government affairs and public interest according to the legislation. In these laws, the central and local government has their separate

authority. It was a shameful experience to give greater autonomy to the regions to issue timber utilization permits via Presidential Regulation No.6 1999 on Forest Exploitation and Forest Harvesting in Production Forests and SK Menhut No. 5 year 2000 on Licensing Criteria and Standards for the Utilization of Forest Products and Licensing of Forest Harvesting in Natural Production Forests and SK Menhut No. 310 Year 1999 on Forest Harvesting Rights to issue HPHH (Forest Harvesting Rights) as large as 100 Ha to the region has triggered deforestation rates in the 2000-2003 period.[5] With the removal of these rules through Presidential Regulation 34/2002, there has been a decrease of nearly 300% in deforestation rates.[6]

Conflicts between the central and local government usually appear invisible to the eye in territories covered by Regional Regulations. The overlapping or proposal of forest function changes for other purposes always occurs in this layout.[7] Regional regulations on layouts have strong legal basis from Law No. 26 Year 2007 regarding Territorial Layout and Law No. 32 Year 2004 regarding Regional Autonomy. The legal basis of Territorial Layouts will become stronger if combined with the interest of other sectors, where laws in these sectors could provide additional legal strength to change forest functions, such as Law No. 4 Year 2009 on coal and mineral mining. Apart from that, there are laws in the forestry sector that open great opportunities to forest function changes based on Presidential Regulation No. 10 Year 2010 or they borrow forest areas managed by Forestry Ministry Regulations.

According to the conditions in Article 1 paragraph 3 Law No. 41 Year 1999 on Forestry, it is stated that forest territories are those which are appointed and determined by the government in order to conserve their existence as permanent forests. However, up until 2004, the legal appointment on forest areas were only protected by Forest Area Land Use Agreements based on the Agriculture Minister's Decision No. 759/KPTS/UM/10/1982. With the existence of Presidential Regulation 44/2004 on Forestry Planning, TGHK must be integrated

[5] For example, the Sintang District, in the 1999-2002 period printed as many as 944 HPHH 100 permits.
[6] Khatarina, J, Murharjanti, P, Ivalerina, F, Indrarto, GB, Rahman, Y, Prana, MN, & Pulungan, I, *Indonesia Forestry Sector Profile*, Indonesian Center for Environmental Law and CIFOR (forthcoming).
[7] In the report of Team 8 formed by the 2010 Forestry Ministry, it is stated that up until 2010, there were more than 500 proposals on forest function changes from regional governments with various reasons.

accordingly to become RTRWP. Legally, RTRW is a document used to determine forest area limitations because this document should be the connection between all sectors and is based on strong studies of area functions. Unfortunately, this also opens the possibility of greater interest to participate in setting limits and land use will in fact make many changes to the proposal of non-forest areas into forest areas.6

In the case of overlapping regions that have already occurred, such as the opening of mines and plantations, it is due to the lack of coordination and the law enforcement process often faces challenges from weak aspects of stable forest areas as a result of incomplete area consolidation processes. In the conditions of Article 14 paragraph 2 Law No. 41 Year 1999 on forestry, it is stated that forest area consolidation must consider territorial layout plans through a process: 1) Designation of forest areas; 2) Forest Area Boundaries; 3) Forest Area mapping; and 4) Determining forest areas. These terms are compulsory for every activity, so in order to determine if lands are forests or not, this process must meet the requirements in Article 14 paragraph 2. If otherwise, the act of determining forest areas will be cancelled legally, and deforestation or degradation as a result of land use for other sectors can no longer be categorized as a violation.

Disharmonization does not only occur among forestry regulations, but also between forestry regulations and peat moss protection regulations. Law No. 26 year 2007 concerning Space Layout jo. Government's Regulation No. 26 year 2008 concerning RTRWN and President's Decree No. 32 year 1990 concerning Reserve Area Management stated that peat moss with thickness of 3 meters or more located upstream or in the swamp is deemed as reserve area, but this cannot be accommodated in the forestry regulations, so that the peat moss lands become production forest which can be used for economic interest.

3. Incomplete Regulations

incomplete set of rules which enable misconducts during its execution, especially in relation to the procurement of licencing for other activities in the forest area. The Agricultural Law, for example, provides the Regional Leader with the authority to issue plantation licences in their areas. Even though the Forestry Law regulated that plantations should undergo changes of purpose of forest area

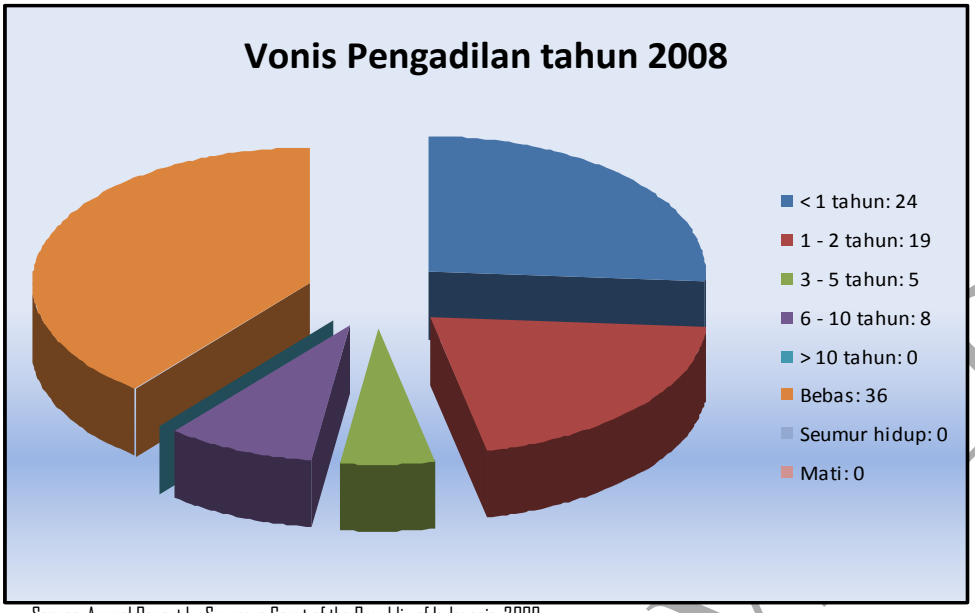
beforehand, this is apparently irrelevant on field. There are two legal issues, which are 1) Disharmony within the legislation, and 2) Incomplete regulations as a result of no existing laws on sanctions for permit issuers that make mistakes (those who are not corruptive), during the issue of permits. Unsynchronized, complicated licensing process related to various other sectors and government institutions require strong coordination between institutions. Incompleteness at this regulation level also occurs because the provisions of law do not give authority to the proper party or with proper incentives. For example, the procurement of authority to the Governor to conduct forest area boundary governance through Government's Regulation No. 38/2007 in relation to the decentralization caused problems at implementation level because the resources are scattered among the Central and Regional Governments. On the other hand, the Central Government does not provide the Governor with the necessary supporting resources to implement such policy.

In relation to incomplete regulation, The Forestry Law has not been able to give adequate penalty for the main actor of illegal logging, but is only limited to physical perpetrators. On the other side, the implementation of other Laws such as Law on Money Laundry Crime, Law on Corruption or Law on Environment which are more prepared to take a hold of the main actor of forestry crime is still very minimum.

2.4.4.2. Poor Law Enforcement

The condition of law enforcement in Indonesia is at a critical level. The public's trust towards law enforcement institutions is very low due to legal mob practices. In this case, the legal mob modus operandi in the forestry sector is allegedly carried out before and after a proceeding.

Before any proceeding, the modus includes the changes of purpose and function of forest area, licensing, and exploitation of forest resources (procurement and execution of licence). Basically, the process includes various cases where law enforcement agents are involved by protecting the perpetrators. This resulted in a high rate of illegal logging and extensive forest damages.

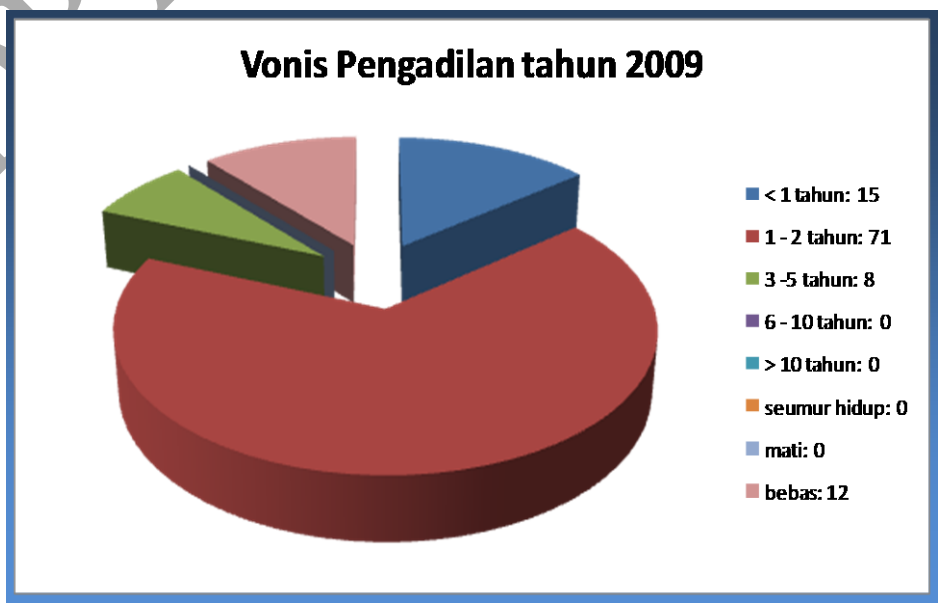


Source: Annual Report by Supreme Court of the Republic of Indonesia, 2009

Picture 2.4. . Law Enforcement in the Illegal Logging Sector in 2008.

At the time of proceeding, the law enforcement process often includes investigation, lawsuit and decision making vulnerable to legal mob practices. This caused the forestry crime rate punishment to be few in number and the majority of the actors playing on field. Pictures 2.5 and 2.6 illustrate the low punishment sentences for processed illegal loggers.

The available data has not yet been able to prove how far the allegations of the captured perpetrator being not related closely enough to the mastermind. However, based on reports to the Legal Mob Eradication Task Unit, there are strong indications that the main perpetrator of the forestry crime has not been touched by the law.



Source: Annual Report by Supreme Court of the Republic of Indonesia, 2009

Picture 2.6. Law Enforcement in the Illegal Logging Sector in 2009.

2.4.5. Governance

The analysis of problem related to forest management will be based on the combination of indicators specifically developed to assess good forest governance through The Governance of Forests Initiative/GFI Framework with indicators developed in assessing general governance called 'Partnership Governance Index'.

In assessing the forest governance, there are four important issues which must be assessed: tenurial, layout, forest management and forest revenue distribution. As is obvious in the previous discussion, in the context of Indonesia all four issues become the underlying causes of deforestation and forest degradation. In this section, the focus of problem analysis is good governance principles, which in this document will be focused on (a) coordination, (b) transparency, participation, (c) accountability, (d) effectiveness and efficiency, (e) fairness aspect, and (f) the absence of management on field.

2.4.5.1. Coordination

There are several issues in the coordination: First, the unclear authority and responsibility between the Central Government and Local Government affected by the implementation of local autonomic regime during the early stage. The case of Kampar Cape becomes an example of this condition, where the Ministry of Forestry issues RKT for Vegetation Forest (HTI) to the HTI company with ecolabeling certificate through self approval (Minister of Forestry's Regulation No. P.62/Permenhut-II/2008 articles 13), whereas at the same time the Forestry Agency has stopped issuing policies for RKT licensing in natural forests, which also have impacts on the halt of SKSHH issuance.

Gambaran dari ketidakjelasan ini juga terlihat pada tingkat sektoral. Such image unclarity is also seen at the sectoral level. Data issued by the Forestry Planology reveals that the total APL is about 55 million hectares, whereas NLA's data on the total farm area today reveals around 69 million hectares. As such, there is now around 14 million hectares of forest areas converted into farmlands unknown by the Ministry

of Forestry. We can imagine that the data and information unclarity has become the setting of almost all decision makings and the quality is certainly very low.[8]

Di kawasan hutan konservasi, menurut data Ditjen Planologi Kehutanan (2008) selama periode 8 tahun (1997–2005), terdapat pengurangan penutupan kawasan hutan menjadi non-hutan seluas 480.000 ha atau 1,7% dari total luas kawasan konservasi. Walaupun masih terdapat permasalahan sebagaimana tersebut di atas, kawasan konservasi relatif masih utuh dibanding kawasan hutan produksi dan hutan lindung karena memiliki unit manajemen yang jelas dan mandiri.

2.4.5.2. Transparency, Participation and Accountability

The absence of transparency and participation of stakeholders also result in the minimum knowledge of the society, especially those living in the forest area, to be involved in the decision making process in the licensing process and to conduct supervision for the said violation of license. This results in not only the unavailability of more reliable data during the decision making process, but also misuse of authority by the decision makers, the authorized officials, in an undetected licensing process which is not adequately supervised by the people.

The entire process eases violation in terms of licensing process and license execution.

The limited transparency and participation of the of the society are caused by at least 2 factors: unclear regulations and weakness of public capacity to participate in the decision making process.

2.4.5.3. Fairness Aspect

The injustice distribution of income from forestry sector, between the central and regional governments and the people living around the forest result in injustice between stakeholders. The injustice also affects the deforestation and forest degradation rate because they feel that they have the rights ober the forest and have not obtained any benefits from it, and therefore start taking out on their own. The condition is made worse with the absence of a strong law enforcement system, resulting in an extended deforestation and forest degradation rate.

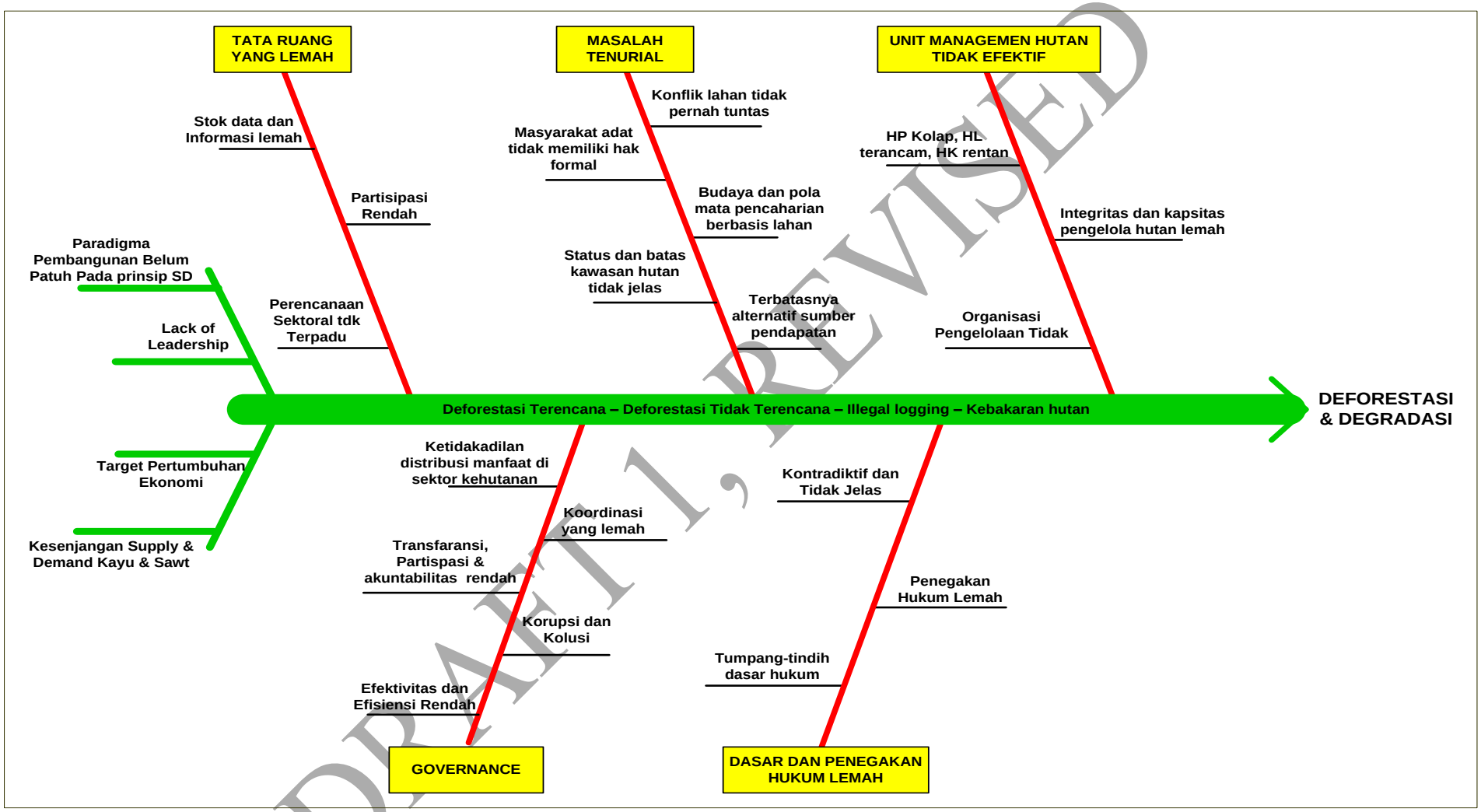
8 Dunn (1994) in the Public Policy Analysis mentions that policy are science and knowledge applicable for solving problems in a given spatial and temporal context. Meanwhile, science and knowledge are the metamorphosis of data and information.

In the beneficial distribution mechanism context (benefit sharing) on current individual carbon credit, there is no legal basis that can be followed. In general, beneficial distribution mechanism will produce at least three advantages, which are:

a. Clear delegation of responsibilities in reducing deforestation and forest degradation rates as well as carbon sink increase;
b. Create payments and other benefits which are usually higher than the economic cost because of decisions to conserve carbon stock; and
c. Emergence of other benefits (*co-benefit*) as a result of forest conservations, such as the role of the forest in maintaing DAS, and the maintenance and increase in biodiversity, etc.

2.4.5.4. Low Effectiveness and efficiency

Generally, the low effectiveness and efficiency of forest management are marked with the ineffective supervision, resulting in a major unplanned conversion of various forest areas, to which no measure is taken or of which the execution is inaccurate or ineffective, like the GERHAN program. This is due to other factors such as provisions of law which complicate the licensing process without a clear supervision process, resulting in an ineffective and high-cost bureaucracy. Other factors include improper usage of budget and human resources incapable of executing its proper duties and responsibilities in an effective manner. The latter is also related to the renumeration, recruitment, mutation and employee promotion which are not based on performance assessment.



Picture 2.7. Identification of Forest Degradation and Deforestation Causes by using Fishbone Analysis

2.5. REDD+ IMPLEMENTATIONS PREPARATION IN INDONESIA

2.5.1. Steps that have been taken

In order to know the status of REDD implementation preparation, from the methodology or institutional aspect, and to increase understanding towards deforestation and forest degradation causes, as well as to compile emission reduction, Research and Forestry Development Agencies must work together with national and international stakeholders in 2007 under Indonesia Forest Climate Alliance- IFCA (Indonesian Forest Climate Alliance /Aliansi Iklim Kehutanan Indonesia) in order to conduct a comprehensive analysis from the various aspects above. The IFCA analysis divides forest use landscape and its changes into 5 of the following categories: (1) oil palm plantations, (2) natural forest changes into forest plantations for pulp and paper/HTI, (3) natural production forest management, (4) conservation and protected forest management and (5) moss lands/forests. From the study above, occurring emissions and various strategies to reduce emissions are illustrated.

In order to support REDD implementation in Indonesia, several ideas and regulations have been released:

1. Forestry Ministry Regulation No. P. 68 year 2008 on the implementation of demonstration activities for carbon emission reduction from deforestation and forest degradation.
2. Forestry Ministry Regulation No. P. 30 year 2009 on emission reduction procedures from deforestation and forest degradation (REDD).
3. Reducing Emissions from Deforestation and Forest Degradation in Indonesia (REDDI): Readiness Strategy 2009-2012.
4. Forestry Ministry Regulation No. SK 64 year 2010 on a Working Group Establishment for the Forest and Climate Change, that is responsible in providing policy input and facilitating REDD+ implementation device setup processes.
5. Roadmap of Mainstream Climate Change Issues in National Development Planning: Forestry Sector Climate Change Management
6. National Forestry REDD+ Strategy List arranged by Forestry Research and Development Agencies that have been handed over to the National Development Planning Board.

Apart from regulations and policies mentioned above, REDD+ preparation activities have been executed at national and also sub-national level.

Table 2.7. REDD demonstration activities in Indonesia and funds that have been allocated.

No	Demonstration activity	Description
1	Collaboration project with AUSAID in Central Kalimantan and Jambi	Hasan (2010 a)
2	Collaboration project with KFW Germany in 3 districts (Kapuas Hulu, Malinau and Berau): FORKLIME	Hasan (2010 a)
3	Collaboration project with ITTO Meru Betiri East Java	Hasan (2010 a)
4	Collaboration project with TNC in the Berau District (Berau Forest Carbon Project)	Hasan (2010 a)
5	Collaboration project with KOICA in East Mataram	(Hasan (2010 b)
6	GTZ Merang South Sumatra	(Recommended by Regent Musi Banyuasin No. 522/2235/Kehut/2008 dated 21 October 2008) *)
8	UN REDD Central Sulawesi	**)

Source: *) Project Profile: REDD Merang Pilot Project, **) Indonesian Timber Market Report Vol. 15 No.15 Hal. 4.

Supporting activities besides demonstration activities that are in progress by various parties are as follows:

1. ICRAF: Credible estimates of the dynamics of carbon stocks at the national level over the past 20 years that complies with Tier 3 approach.
2. Proposed Forest Carbon Partnership Facilities (FCPF): Establishment of PSPs (permanent sample plots) represented various forests types for ground-based forest carbon monitoring- Tier 3 approaches.
3. JICA: Improvement of monitoring and assessment system through the use of satellite images and the capacity to estimate biomass and carbon.
4. UN-REDD: Review Standard & Methodology MRV.
5. GOI management teams and equipment teams and equipment to support the INCAS.
6. Models adopted collaborated and further developed by GOI to estimate emissions from land use change.

7. (Who?)Wall-to-wall land cover change analysis compilation of land use and management information existing ground based measurement.
8. (Who) Capacity development of GOI to operate an effective data management system.
9. DNPI: conduct a study of Indonesia Green House Gas Curve Costs and Low Carbon Development Strategy in three provinces, which are Jambi, Central Kalimantan and East Kalimantan.
10. Forestry Ministry WebGis is a geographical information system, forestry spatial data network launched by the Forestry Ministry on 30 July 2010. Webgis created by the Inventory and Forest Resources Monitoring Directorate, Planology Directorate General can show changes in forest coverage during every period. This institution has strived to increase quality, support trades and disseminate forestry spatial data/information presentations in the form of books, maps, and websites. Spatial data consists of measurement data, recording and imaging of a spatial element that exists below or above the earth's surface with its position pointing to the national coordinate system No 85 year 2007 regarding National Spatial Data Networks.

Meanwhile, institutions involved in REDD activities in Indonesia to this point are:

1. Research on Governance, Policy and Institutional Arrangements for REDD (ACIAR-Australian Centre for International Agriculture Research)
2. Proposed Forest Carbon Partnership Facilities (FCPF) covering :
    a. Readiness Institutional Setting & Legal Framework for REDD
    b. Monitoring Readiness Activities Including Demonstration Activities.
    c. Awareness raising, communication & outreach (incl. Policy and Scientific Dialogue)
    d. Capacity building of institutions and stakeholders.
3. UN-REDD regarding:
    a. Consensus on key issues for national REDD policy development.
    b. Dissemination of REDD lesson learned incl. Building national knowledge & learning network.
    c. Communications programme incl. National campaign, education & communication materials, training with local stakeholders as targets.

Under study in the Payment Distribution Department:

1. ICRAFT-ASB: Analyze cost of alternative land uses and benefits.
2. FORCLIME: Establishment sustainable payment mechanism.

3. Proposed FCPF :
    a. Analysis of social and environmental impact of REDD strategies
    b. Setting incentive mechanisms for REDD
4. UN-REDD :
    a. Compilation existing payment systems
    b. Analysis of benefits and constraints of existing systems
    c. Option for modification to meet the requirements of a REDD payment system.

The sincerity of Indonesia and working partners in managing REDD can be seen from the expenditure, allocated funds, and planned funds.

Table 2.8. Funds to support REDD+ activities

No	Activities	Costs
1	Indonesia Forest Carbon Alliance (IFCA) : Brief study/analysis on methodology aspects, policies and REDD preparation in Indonesia	USD 900,000
2	Demonstration Activities :	
	a. Proposed Aus AID 2nd Demonstration Activities	€1,445,255 (2008-2011) *)
	b. GTZ Merang: Measures to restore forest areas; strategies and structures for peat forest management integrated; fire management scheme	€7 M (2010-2012) *)
	c. FORCLIME : Innovative designs for REDD demonstration activities incl. establishment of FMUs	USD 3.6 M (2008-2010)
	d. TNC : Demonstration activities 'Berau Forest Carbon Program' : improved forest management, forest restoration, oil palm swap, land use planning, policies and enforcement	USD 50 M (2011-2015) **)
	e. KFCP: Reducing deforestation & forest degradation (incl. rehabilitation of peat land); monitoring & carbon accounting; payment mechanism; readiness at provincial and district level.	AUD 30 M *)
	f. ITTO: Institutional setting to prevent deforestation; technology in restoration and rehabilitation of PSF; demonstration activities with the plantation of indigenous species	USD 540 K (2010-2012) *)
	g. KOICA: Joint research and implementation of pilot project on afforestation/reforestation CDM	

	project and REDD. h. UN REDD : Capacity forspartial socio-economic planning incorporating REDD; empowered local stakeholders to benefit from REDD; Multi-stakeholder endorsed district REDD plus	USD 5 M (2009-2013) *) USD 1.5 M (2010-2011) *)
3	MRV • Capacity development of GOI to operate an effective data management system • Wall-to-wall land cover change analysis; compilation of land use and management information, existing ground based measurements • Models adopted calibrated and further, developed by GOI to estimate emissions from land use change • GOI management teams and equipment to support the INCAS a. ICRAF: Credible estimates of the dynamics of carbon stocks at the national level over the past 20 years that complies with Tier 3 approach b. Proposed FCPF: Establishment of PSPs represented various forest types for ground-based forest carbon monitoring-Tier 3 approach c. JICA: Improvement of monitoring and assessment system through the use of satellite images and the capacity to estimate biomass and carbon UNREDD: Review standard & methodology MRV.	Aus AID 2 M *) € 1,123 Million (2009-2011) *) USD 720K (2008-2011) *) USD 950K (2010-2011) *)
4	Institution: 1 **UN-REDD:** Consensus on key issues for national REDD policy development 2. **UN-REDD:** Dissemination of REDD lesson learned incl. building national knowledge & learning network. 3. **UN-REDD:** Communications Programme – incl. national campaign, education & communication materials, training with local stakeholders as targets.	USD 500 K (2010-2011) *) USD 400K (2010-2011) *) USD 700K (2010-2011) *)

5	Payment Distribution 1. FORCLIME: Establishment sustainable payment mechanism. 2. UN-REDD: **a.** Compilation existing payment systems **b.** Analysis of benefits and constraints of existing system **c.** Options for modifications to meet requirements of a REDD payment system	 € 20 Million (2010-2014) *) USD 400K (2010-2011) *)
6	Environment safeguard : UN-REDD: Toolkit for priority setting to maximize potential carbon benefits and incorporating co-benefits, at the provincial level.	 USD 375K (2010-2011) *)
7	UN REDD Central Sulawesi (plans)	USD 5.6 M ***)

Source: *) Sarsito (2010), **) Executive Summary Strategic Plan of Berau Forest Carbon (2010) and* **) Indonesia Timber Market Report Vo. 15 No.15, 1st-15th August 2010 hal.4.

2.5.2. REDD+ Readiness Condition in Indonesia

REDD+ as an international mechanism that will be applied in Indonesia requires special attention on several factors that have become requirements in order for this mechanism to operate. These requirements are based on mechanisms agreed at international level from policies, situations and internal conditions in Indonesia. For that, there are three main factors that need to be considered in thr REDD+ application in Indonesia, which are: 1) REDD+ implementation preconditions fulfillment that has been discussed in official meetings at international level, 2) Creation of enabling conditions in order to implement REDD+, and 3) the perfection of land use sector development.

2.5.2.1. REDD+ Implementation Prerequisite Fulfillment

REDD+ implementation preconditions or devices that must be prepared are:

1. Rule making relevant to REDD+ implementation
2. REDD+ methodology development, including a set Reference Emission Level/REL at national level and REL/RL at sub-national level, as well as a Measurement, Reporting and Verification system, with emission displacement management.
3. Financial institutions include mechanisms for beneficial/incentive distribution and responsibility.

REDD+ implementation device/precondition preparation basically begins with a number of preparation activities as explained in Sub-Chapter 2.5.1 and is targeted to be ready by the end of 2012.

2.5.2.2. Enabling Conditions Fulfillment

REDD+ is basically an action and policy approach that is implemented by drivers from deforestation and forest degradation as well as activities that result in emission reduction, forest carbon stock stabilization and increase. Action and policy intervention success rates from source and sink management will reflect the creation of enabling condition levels. Action and policy intervention is required in order to create an enabling condition intended as follows:

1. Planning reformation of land use sector covers spatial planning, land use planning, forestry planning, and planning at village level.
2. Basic reformation and law enforcement.
3. Strengthening of local economic empowerment
4. Stakeholder involvement
5. Strengthening of governance or forestry sector governance

2.5.2.3. Development Reformation of the Land Use Sector

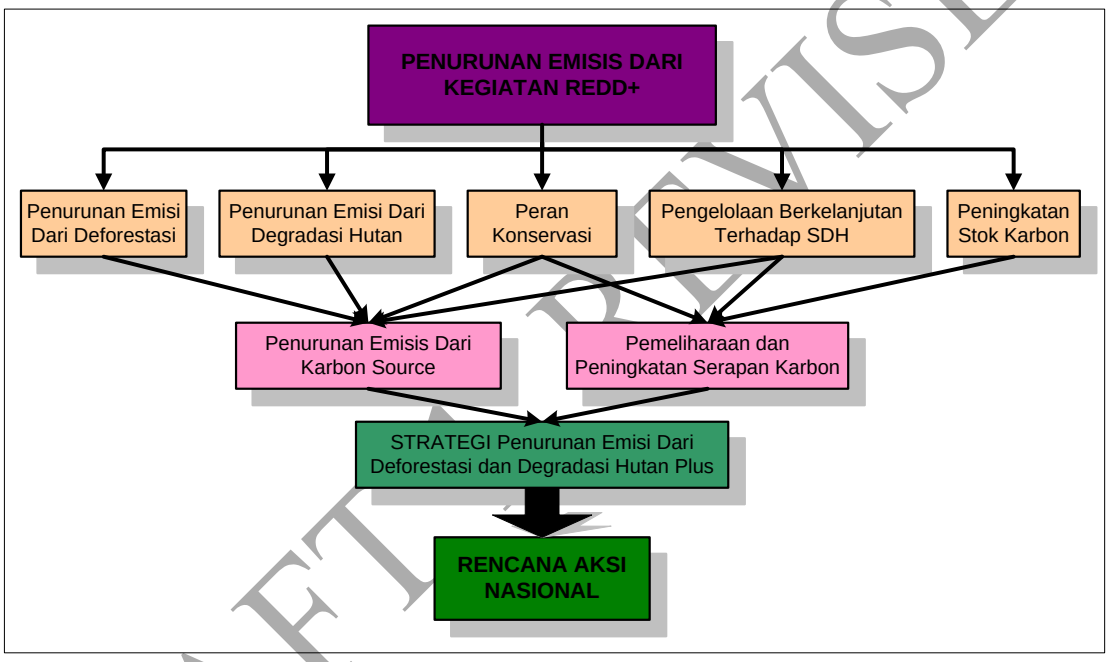
Development reformation of the land use sector is the main intention of REDD+ activities. However, this strategy will not be effective if the other two strategies have not been implemented. In general, this strategy is divided into five REDD+ activities, which are: 1) Reduction of deforestation as an emission source, 2) Forest degradation reduction as an emission source, 3) Conservation strengthening as efforts to maintain carbon stock stability, 4) Continuous management on forest resources as efforts to increase the quality of forest management practices so that on one side, it does not become an emission source and on the other hand, it is able to increase the ability of the forest or land in absorbing and storing carbon, and 5) Carbon absorption through rehabilitation and reforestation activities. These five activities are spread in several development sectors, and because of this, the third strategy will implement several main programs as follows:

1. Forestry sector development reformation

2. Agricultural sector development reformation
3. Mining sector development reformation, and
4. Development reformation of other land use sectors, such as infrastructure and other similar sectors.

CHAPTER III
REDD+ NATIONAL STRATEGY

The strategy is a comprehensive and integrated plan unit, which is designed to ensure that the basic objectives can be achieved[9]. Strategy is also a resource allocation pattern that enables the maintenance or improvement of performance. A good strategy is the strategy that can neutralize threat and simultaneously exploit the opportunity by way of utilizing power and avoiding or improving weakness[10].



Picture 3.1 Scheme of the Indonesian REDD+ Strategy

This Indonesian REDD+ National Strategy is designed as a systematic, logical objective and pragmatic direction. By referring to those principles, the reduction of emission will be implemented through the integrated (upstream to downstream) and comprehensive (multi-aspect) low carbon development strategy. The principle that is the base of this strategy formulation is the sustainable development principle, namely:

4. Economic development that supports on responsible decentralization.

9 Glueck, G.1980. The great conservation debate. *Portfolio*2(2):44–51

10 Barney, Jay B. (1997) Gaining and sustaining competitive advantage *Reading, Mass.: Addison-Wesley Pub. Co.*

5. Maintenance of balance and ecology function.
6. Inter-generation justice.

The emission reduction implementation framework through REDD+ covers: 1) Reduction of emission from deforestation, 2) Reduction of emission from forest degradation, 3) strengthening of the conservation role, 4) Sustainable management role strengthening of the forest resources, and 5) Increase of the carbon stock through restoration and rehabilitation. Those five important themes will be approached with the emission source reduction approach (*source*) and simultaneously increase of the carbon stock (*sink*), such as shown in Picture 3.1.

By referring to various existing problems, the Indonesian REDD+ national strategy is divided in three main parts, namely: compliance toward the REDD+ application requirements, improvement and strengthening of the enabling conditions, and reformation of the sector development, particularly the forestry sector (production forest, protection forest, and conservation forest) and other land use sectors (plantation and agriculture, mining and infrastructure).

3.1. STRATEGY OF COMPLYING WITH PREREQUISITE

3.1.1. REDD+ Institution Formation Program and Regulations Related to the REDD+ Implementation.

In order to support the implementation of the above main program, the following activities are needed:

1. Establishment of the REDD Institution at the national and sub-national levels with the duty scope of REL/RL. MRV, Registration and Fund management
2. Acceleration of the establishment of the legal base and strong guidelines for the implementation of REDD+ at the national and Sub-national levels.

3.1.2. Program for the Establishment / Development of the REDD+ Methodology

To support the implementation of this program, the following activities are needed:

1. Preparation of the Implementation Instructions and Technical Guidelines to determine the RL at the National and Sub-National levels.

2. Improvement of capacity in the evaluation and determination of RL, particularly at the sub-national level.
3. Development of the MRV System at the national and sub-national levels.

3.1.3. Benefit and Responsibility Allocation Development Program

In order to ensure the establishment of a fair and effective benefit distribution mechanism, this benefit distribution mechanism should be effective in regulating all actors who are responsible for the occurrence deforestation and forest degradation. In this regard, the mechanism should:

1. Create the performance based *reward* system;
2. Ensure incentive for better performance compared to without the reduction scenario (*reference scenario*);
3. Provide adequate compensation for parties that suffer losses due to the changes caused by the implementation of REDD+;
4. Not only consider the economic aspect but also the environment and social aspects, including the traditional and local community rights as well as the participation role of various parties to ensure that the reduction of deforestation and forest degradation is effective and permanent;
5. Be simple and should integrate transparency principles in order to facilitate the monitoring and minimize misuse at the implementation level.

3.2. STRATEGY FOR THE COMPLIANCE OF THE ENABLING CONDITIONS

The strategy for the compliance of the enabling condition is intended to respond to the problems that are the causes and motivation power for the activities of damaging the forest as the source of emission. Several categories that are included in this strategy are as follows:

3.2.1. Development Planning Reformation Program in the Land Use Sector

The low carbon economic development for Indonesia will need several strengthening processes, particularly related to the Spatial Plan. The Regency Level Local

Government holds an important role in integrating the village level Spatial Plan (RTRW) until the national level, and the decision making at the inter sector land use. The plan strengthening at the regency level will give a strong capital for the plan improvement at levels below, namely district, village, community levels, as well as to the levels above, namely the provincial and national levels. Based on the above mentioned matters, this plan strengthening program consists of several main activities, namely as follows:

1. The Spatial Plan Reformation covers the following activities:
    a. Perfection of the spatial data and information, particularly the biophysical and socio-economic data, with high quality and is transparent and legal, including the peat land for the spatial allocation conformity analysis materials.
    b. Integrated and multi sector perfection of the spatial data management mechanism, from the collection, processing, analysis, until the spatial decision determination at the national or regional level.
    c. Establishment of the integrated and cross sector institution for the spatial data and information management as the centre and responsible party for the collection, analysis, and preparation of the spatial planning recommendation.
    d. Postponement/moratorium of permit, including the forest area allocation and/or function change permit until the development of legal and accurate data and information concerning the forest area condition as well as other land use as the base to determine a new more precise policy.
    e. Perfection of the Spatial Plan (RTRW) in several priority provinces and regencies that have high deforestation and degradation potential.
    f. Determination of socio-cultural component that facilitates the public participation in the decision planning and making, as well as providing the opportunity to obtain the spatial space for various socio-cultural needs.
    g. Development of the stakeholders' mechanism and involvement process in the determination of spatial plan, from the village level, regency, provincial until the central level.

2. Reformation of planning at the '*land-use'* level
    a. Preparation of the spatial data and information of the land use at the landscape levels of island, province, regency and village, having high quality, transparent and legal.

b. Development and determination of the land use justification by conducting the suitability analysis of the land allocation based on the supporting capacity and accommodation capacity.
c. Planning, determination and implementation of protection toward areas with important ecological values to be stabilized as protected areas that are mutually related to the natural or semi-natural corridors.
d. Determination of the economic activity central areas and extending of investment license that obeys the conserved natural resource utilization in the framework of the low carbon economic development concept.
e. License extending mechanism development related to the integrated, simple and effective land use.
f. Input of low carbon development issues in the completion of the development plan at each level through the already existing mechanisms (*musrenbang, musrenprop, musrenkab*).
g. Determination of the top down and bottom up planning mechanisms in the development using the land resources.

3. Reformation of planning at the forest management unit level
   a. Acceleration of the forest area stabilization/affirmation through participative processes so that the forest area can be legally or actually stable and its existence is appreciated by all parties.
   b. Strengthening of the actual, legal and with high quality forest condition and potential data and information as the basis to implement the forest structuring and preparation of the forest management plan, rehabilitation of forest and reclamation as well as the forest protection and nature conservation.
   c. Acceleration of the establishment of the Forest Management Unit (KPH) institution.
   d. Planning, determination and protection of areas with high conservation values at the Production Forest Area (KPHP) either at the plant forest or natural forest.
   e. Planning, determination and protection of peat area at the forest area.
   f. Planning of the forest area allocation for the development of the plant forest is determined at the forest area that has experienced deforestation and degradation. The forest area use plan for other sectors that is proposed by the region or sector agency at the central level is considered at the forest area that is in deforestation condition.

4. The spatial and non-spatial planning reformation at the village level
    a. The participative strengthening of the spatial and non-spatial data and information at the village level as the basis of regional and national development planning.
    b. Participative strengthening of the village development plan by taking account of the balance of the growth aspect, economic development and welfare as well as the environment supporting capacity.
    c. Strengthening of the village government institution.

3.2.2. Basic Reformation and Law Enforcement Program

A strong legal base and its consistent enforcement are needed in the framework of this REDD+ implementation. In this regard, the main activities in this program include the perfection of the legal base and enforcement as follows:

1. Strong, clear, harmonious legal framework reformation related to the forest resource management and the special sector related to REDD+ through:
    a. Development of legal principles that consider and are in accordance with the principle of the *climate friendly legal framework defined* CFLF, including considering the safeguard in the REDD+ instrument to be developed;
    b. Review of all legislative regulations that are related to the forest resources based on the CFLF principles;
    c. Complete the Forestry Law, which is directed to the strengthening of conservation, protection of the production natural forest that is still in good condition, strengthening of the wood based forestry effort strengthening only through the plant forest development in the forest area affected by deforestation, limitation of conversion only at the forest area in the condition of affected by deforestation, improvement of legal sanction toward the violation of regulations, either administrative violation or forestry crime, and the development of the incentive mechanism to motivate the interest and commitment toward forest conservation by the management as well as the community.
    d. Determine the extent and location of the forest areas based on their respective functions by using a strong legal instrument in the legal hierarchy that applies as the replacement of TGHK which is only protected by the minister regulation.
    e. The completion of legislative regulations in the sector of other land use (Mining, agriculture and spatial Law) should explicitly mention to not perform activities that

cause deforestation at the forest areas that are still in good to average condition, either in the forest areas or in the other land use areas.

f. Implementation of the amendment and/or establishment of legislative regulations that are related to the peat land protection in all sectors (mining, forestry, agriculture, infrastructure and industry), among others by including peat land in the criteria of forest area determination and forest area allocation amendment, and the prohibition to clear land for mining, in order to avoid the significant Greenhouse Gas emission increase from the peat land conversion. Formulation of the sustainable peat land management method is determined in the legislative regulations that bind all sectors until the implementation level.

g. Formulation of a precise, clear and harmonious legal framework concerning the protection and management of peat land, and clear and coordinative management authority distribution, as well as its funding.

h. Completion of various technical regulations in order to minimize the legal mafia practice in the law enforcement process, among others the Civil Code (KUHP) and Code of Criminal Justice (KUHAP), Law Number 13/2006 concerning the Protection of Witness and Reporting Victim, Law Number 15/2002 concerning Money Laundering Crime, should ensure the constructive *check and balances* mechanism as well as enabling the reversal proving mechanism for corruption perpetrators as well as adequate justice collaborator protection.

2. Reformation of law enforcement related to the forest resource, through:

a. Affirmed and consistent administrative law enforcement toward violations conducted by the IUPHHK HT/HA holders who do not implement the conserved forest management activities as well as other obligations in accordance with the prevailing regulations.

b. Affirmed and consistent law enforcement toward perpetrators of forestry crime in order to create legal certainty and deterred effect.

c. Establishment of the *One Roof Enforcement System* / ORES that is selected based on the integrity and adequate knowledge concerning the sustainable development paradigm, including its application at the forestry sector with appropriate remuneration so as to be able to become the front line for the application of the relayed Law to eradicate forestry crime.

d. Establishment of special judges that will adjudicate environment cases including forestry (*Green Bench*) who are selected based on the integrity and excellent understanding on the sustainable development paradigm, including its application at the forestry sector with suitable remuneration so as to be able to provide legal justice and certainty in the sector of sustainable Natural Resources management.
e. Capacity improvement of the legal enforcement apparatuses so as to understand various regulations that can be used to eradicate forestry crime.
f. Implementation of the bureaucracy reformation at the law enforcement institutions, particularly which are related to the forestry sector.

3.2.3. Local Economy Empowerment Strengthening Program

One phenomenon of the forest deforestation is the unplanned deforestation. In addition to being caused by the weak participation, this phenomenon is also caused by the scarce income alternatives and the weak productivity as well as community access to the market. Based on those considerations, then, in the framework of this REDD+ implementation, the following main activities are needed:

1. Creation and development of productive economic activities of the communities in the surroundings of the forest based on local resources by taking account of the local natural resource sustainability principle.
2. Increase of the value added on the local community production process and result, which is beneficial as additional income for the local community.
3. Development of local technology and application of efficient absorption technology in order to improve the community production value.
4. Develop or expand the economy institutions at the local community level in order to strengthen the people's economic activities.
5. Create and accelerate a more profitable marketing process for the local community in the surroundings of the forest.
6. Providing of policy incentive to the local community groups in the buffer zone in order to pace the participation of the local community groups so as to be proactive in the forest conservation.

3.2.4. Stakeholders Involvement Program

There are at least two stakeholders group in this REDD+ implementation, which will determine the success in the field, namely as follows:

1. Stakeholders at the national level, consisting of the central government, national private sector, national universities, non-government organizations at the national level, and others.
2. Stakeholders at the sub-national level, consisting of the provincial government, regency government, forest management unit, local universities, local society organizations and others.

By taking account of the complexity potential due to the many stakeholders that are involved in this REDD+ implementation, it is necessary to design such format of the stakeholders' involvement since the beginning. In the REDD+ implementation, the form of cooperation or partnership is directed to four partnership types, which are preceded by the preparation of the Free, Prior Informed Concern and commitment of women involvement, commencing from the planning until the monitoring and evaluation. Those activities are as follows:

1. Improvement of awareness, uniform understanding, and support of the stakeholders toward the implementation of REDD+.
2. Role improvement of the stakeholders in problem solving, including the vulnerable groups such as the tradition community, poor people and women.
3. The involvement of stakeholders in the REDD+ implementation at the site level through various forms of cooperation is as follows:
    a. *Contributory Partnership*) , namely the *support sharing* cooperation where the contributor agrees to the proposal and decides to distribute fund at the REDD+ program or project. The contributor may be the government, private sector or others.
    b. *Operational Partnership* Development, namely the *working sharing* cooperation where the parties consisting of the government, local government, private sector and the community agree to cooperate and share resources in the REDD+ activity implementation.
    c. *Consultative Partnership* Development, namely the advisory cooperation where certain parties that are considered competent provide the input of policy, strategy, design, evaluation and adjustment in order to accelerate the REDD+ implementation in Indonesia.

d. Collaborative Partnership Development, namely the cooperation in the decision making process, where the parties cooperate in the formulation of policies, planning, implementation, evaluation and adjustment of the REDD+ implementation with the authority, ownership and risks in the framework of sharing.

3.2.5. Management Strengthening Program

The management strengthening program is related to all programs and derivative activities at the enabling condition compliance strategy. Therefore, all activities in the planning reformation program of the land use sector, basic reformation and law enforcement, strengthening of the local economic empowerment at forest buffer zone, and the involvement of stakeholders, should refer to the good governance principles. The management program is particularly developed to ensure that the transparency, participation and accountability are strengthened, so as to increase the guarantee that the decision is made on base of public interest by avoiding the *conflict of interest* as well as based on legal and accurate information. In this regard, the management program will direct particularly to the:

1. Improvement of transparency, participation and accountability in (a) the legislative regulations preparation process, (b) the policy making process, and (c) the license extending process in the forestry sector. These efforts are among others implemented by explicitly regulating the legislative regulations concerning the operational participation mechanism as well as the decision making accountability obligation on the decisions that are made in the related legislative regulations.
2. Improvement of the transparency and participation space, particularly at the groups that are potential to be affected by the impacts (*potentially affected people*) with the focus on vulnerable groups such as the tradition community, poor people, women and children.
3. Improvement on the understanding of the decision makers at the national and sub-national levels concerning the important role of the stakeholders' involvement, so that the decisions are made more objective and with quality since they are based on adequate information and are minimizing the *conflict of interest* in the policy making.
4. Improvement of the public capacity, particularly the *potentially affected people,* particularly the vulnerable groups, such as the tradition community, poor people, women and children to (i)

understand the existing information and (ii) able to effectively participate in the decision making process.

5. In the context of encouraging transparency and ensuring the availability of accurate information as materials to participate, a program is needed to ensure the consistent implementation of Law 14/2008 concerning the Public Information Transparency, particularly at the government agencies in the related sectors, namely forestry, agriculture, energy, public works, and others through the capacity improvement efforts of the related public organizations in order to comply with the obligation in accordance with such Law.
6. Provide effective conflict resolution mechanism in order to organize various different views and interests in the stakeholders' involvement process.

3.3. STRATEGY OF THE SECTOR DEVELOPMENT REFORMATION

3.3.1. Forestry Sector Development Reformation Program

The Forest Management Unit (KPH) is the forest management area in accordance with its principal function and allocation, which can be efficiently and conserve managed. The Forest Management Unit is an important part of the strengthening of the forest management system of the national government, provincial government and regency/city government. The main activities in this KPH development are as follows:

1. The emission source reduction activities cover several activities, namely:
   a. Conservation strengthening in the policy formulation and forestry sector development program as follows:
      - The strengthening of the current existing conservation area management, either at the level of the management, organization as well as human resource systems in order to guarantee the non-emission of carbon from clearing and illegal logging activities in the conservation area.
      - Protection of the high conservation forest value (HCFV) at the production forest area.
      - Protection of the high conservation forest value (HCVF) at the plantation area.
      - Determining the areas that are still in good condition outside the forest area to become conservation areas by considering the *land swap* mechanism.

b. Strengthening of the sustainable management of forest resources, which cover:
   - Acceleration of the forest management implementation in the framework of the KPH implementation, which consists of the boundary structuring, forest inventory taking, division in blocks or zones, division in plots and sub-plots, and mapping.
   - Acceleration for the preparation of the long term forest management plan and short term forest management plan in each KPH.
   - Application of the *reduced impact logging* (RIL), wood legality verification system, and certification of the production forest that is managed by the license (IUPHHK) holder in order to reduce the forest degradation.
   - Protection of the forest from fire that is caused by human activities or by the nature.
   - Improvement of the workers' capacity in the forest management sector and provision of suitable *reward* as well as *punishment*
   - Development of the mechanism to provide policy incentives in the framework of improving the conserved forest management quality.

c. Improvement of the legal enforcement effectiveness in the KPH area through the improvement of the forest police capacity, forestry civil servant investigators, and improvement of cooperation with the legal enforcement apparatuses.

d. Completion of peat in the forest area through the following activities:
   - Implementation of the inventory of peat land in the forest area, forest and non-forest peat land, including the biophysical condition (including thickness), complete socio-economy that I complete, legal, transparent and accountable.
   - Application of the *best practices management* in accordance with the prevailing provisions for the extending of new license in the Limited Production Forest area, which has peat of less than 3 meters.
   - Application of the non-burning technique for the clearance of peat forests.
   - Application of good water structure management in managing the peat forest.
   - Application of the ameliorant use in the land conservation of the peat land in the forest.
   - Development of prevention and handling of peat fire.
   - Review the permit/concession legality of all activities that are implemented on the peat land and conduct the law enforcement toward illegal permits.

- Restructuring of the peat forest in the other use areas and conversion of the production forest into the protected or conservation areas.
- Restructuring of the remaining peat land that has not been extended the license or concession in order to be made as the protection forest area or conservation forest.
- Reallocation (j. *land swap*) of concession licenses in the peat forest to the mineral forest.
- Implementation of the legislative regulations amendment or preparation of new legislative regulations that accommodate the peat forest protection until the implementation phase, including the incentive/disincentive regulations. An law obedience and enforcement.

2. Activity of the carbon (sink) stock improvement and protection, covering several activities as follows:
   a. Improvement of the management quality of protection areas (conservation areas, protection forests and other protection areas which will later on be determined in the spatial layout) in the framework of carbon stock maintenance.
   b. Improvement of the reforestation in the forest deforestation areas, that is transparent, accountable and participative, particularly inside the forest area through HTR, Village Forest, Community Forest programs, and other programs.
   c. Development of incentive in order to increase the carbon stock in the degradated areas and former burned land.
   d. Implementation of the *enrichment planting* at the de-gradated areas, particularly inside the forest area.
   e. Implementation of the forest restoration at the conservation areas and at the IUPHHK-Restoration areas.
   f. Improvement of the restoration efforts of peat land affected by deforestation and degradation through the transparent, accountable and participative hydrology rehabilitation (such as canal blocking), particularly in the forest area.
   g. Improvement of the mangrove forest rehabilitation, transparently, accountable and participative, particularly inside the forest area.
   h. Implementation of the former mine land reclamation, transparently, accountable and participative, particularly inside the forest area.

3.3.2. Agriculture Sector Development Strengthening Program

The main priority of the agriculture development in facing the climate change is the adaptation action program in order to minimize the negative impacts of the climate change toward the national food endurance. In addition, the agriculture development has also the potential to provide contribution in mitigating the Green House Gas emission, either at the peat land or at the mineral land, with the condition that the Green House Gas emission mitigation is not reducing the productivity and is not harming the farmers. If the application of the emission mitigation technology causes losses, either in form of the production cost increase or reduction of the production, then the compensation fund needs to be allocated in order to cover such losses, either from domestic sources as well as fund from the carbon trade. The strengthening of the agriculture sector related to the Green House Gas mitigation consists of:

1. Perfection of the agriculture planning
    a. Planning of the agriculture and plantation, projection of its expansion and extending of license not at the forest area and other areas (other use areas), which forest cover is still in good condition (potential of carbon storage of more than 100 tons/ha.
    b. Planning, determination, and protection of areas with high conservation values at the plantation areas, particularly the oil palm plantation.
    c. Application of the postponement/moratorium of the plantation license at areas with high conservation values, such as the peat land.
    d. Development of the monitoring and evaluation system on the oil palm plantation in order to monitor the oil palm plantation spatial aspect as the basis to improve the periodical planning.
2. Application of the agriculture intensification for food plants, superior varieties, and people's plantation as well as for cattle breeding.
3. Utilization of unused land or abandoned land.
4. Application of the *land swap* policy at the APL area in the mineral land from the land with high C stock (>100 t C/ha) into the land with low C stock (<35 t C/ha).
5. Application of the intermittent irrigation system at rice fields.
6. Expansion of the agriculture land at the mineral and non-forestry land.
7. Perfection of the license extending method by considering the carbon emission.

8. Provision of incentive to the plantation concession holders who transfer from the natural forest land to the non-forest land (land swap)
9. Application of the emission mitigation activity at the cattle breeding sub-sector through the improvement of the cattle food technology as well as the utilization of cattle dung into biogas and compost.
10. Improvement of the peat land management. The quite significant emission reduction can be achieved through various programs:
    a. Obedience toward the Regulation of the Minister of Agriculture Number 14/2009 concerning the peat land use for the expansion of the oil palm plantation, where the opening of the plantation at the peat land is conducted very selective, which 70% of such land extent complies with the criteria: Peat with thickness of < 3 m, sapris or hemis maturity level, and its sub-stratum is not quartz or acid sulfate.
    b. Control of the peat burning method. The peat burning often occurs within the circles of small farmers with the objective to obtain nutrient from the peat burning ashes. If the peat has the C storage of 500 t/ha/m, the burning of 1 cm peat has the potential to cause around 5 ton C/ha emission or 18 t t CO_2-e/ha. The provision of the fertilizer subsidy to farmers at the peat land may gradually reduce the emission.
    c. The structuring of the drainage/water use. The drainage depth is strongly affecting the CO_2 emission through the peat decomposition. In this regard, the drainage depth needs to be minimized until the level that is reducing the production.
    d. Use of ameliorant. Various waste substances, such as steel crust, which contains high Fe and Si has the potential to bind (chelating) simple organic acid so that the decomposition of such organic acid is not easy. In addition to the potential of reducing emission, the use of this substance at peat land may also solve the problem of steel slag disposal, which is currently categorized as toxic and hazardous waste (B3).

3.3.3. Mining Sector Completion Program

The reduction of the carbon absorption capacity at the mining sector occurs due to the forest conversion into the mining area, which is in general directly cut down. The mining, which in general openly causes the reclamation activity is difficult to be implemented. The regulation, which declares that the mine owner has the obligation to implement the reclamation, is seldom carried out, so that there is no carbon

absorption from reclamation. The protection of peat land is not accommodated in the mining sector.

The mining perfection program consists of two activities, namely as follows:

1. Perfection of the legislative regulations in the mining sector
   a. Implementation of the amendment/establishment of new legislative regulations in the mining sector that regulates the prohibition of extending the KP license at peat land with the thickness of more than 3 meters, as well as the protection of peat land in the mining area.
   b. Perfection of correct, clear, transparent, and accountable mining reclamation regulations, among others with regard to the determination of the reclamation fund, reclamation fund management, and reclamation implementation verification system.
2. Mine planning
   a. Planning of the mining exploration and exploitation should be avoided at the forest area and other areas which still have forest cover in good condition.
   b. Planning, determination and protection of areas with high conservation values at the mining area.
   c. Development of the mining implementation monitoring system.
3. Improvement of the mine licensing and control, consisting of several activities, namely:
   a. Application of the KP license extending rationalization in the forest area through the determination of the emission threshold that is allowed at the KP licensing in order to press the emission level and simultaneously determine the requirement of the carbon stock increase at the former mining area.
   b. Obedience toward the forest area allocation plan and already specified, KP license and/or use to borrow license is not issued by amending the already existing land allocation.
   c. Law enforcement toward the KP license holder who violates the emission level threshold and the reclamation requirement.
   d. Law enforcement toward mining without license.
   e. Application of the 'open mining' minimizing.'
   f. Application of the peat land protection in the KP license.
4. Improvement of the former mining forest reclamation, consisting of several activities, namely:

a. Improvement of the forest and land reclamation efforts.
b. Development of the alternative livelihood, which is economic and with low emission for the citizens in the surroundings of the mine area.

3.3.4. Reformation Program of Other Land Use Sectors

1. The completion of the infrastructure development plan that has considered the carbon emission aspect.
2. Increase of clarity of sectors related to the long term that considers the carbon emission aspect.

CHAPTER IV

MEASURABLE, REPORTABLE AND VERIFIABLE (MRV) SYSTEM

Indonesia's participation in the REDD+ requires that Indonesia build a measurable, reportable, and verifiable system (MRV system) so that each reduction and increase in the stock of carbon in the forests can be measured accurately and thus a "reward" can be given for the performance. For this, a road map for the development of an MRV system must be drawn up according to the requirements of the Inter-governmental Panel on Climate Change (IPCC) based on the principles of efficiency, effectiveness and appropriateness. The phrase *measurable* in this sense means that the methodology used should be credible, while *reportable* means that the report must be actual and serial/periodic, whereas *verifiable* means that each report related to the reduction of emissions and or increase in the stock of carbon meets the criteria and can be verified by an independent party.

The measurable, reportable, and verifiable system constitutes an essential part in the evaluation of achievements made by the National Strategy (Nastra) for REDD+ and mechanism for international payments. Therefore, measurement must be carried out periodically to record the changes in carbon stock on a scale where the calculations of performance are to be made. The MRV itself is a part of the monitoring and evaluation system on mitigation efforts that will be registered by the countries at UNFCCC. In its implementation, MRV must observe the principles applied in the Convention for Climate Change, especially the principle of *common but differentiated responsibilities and respective capabilities* and *historical responsibilities* of GG emission of each country.

In the context of implementing Nastra REDD+, the scope of a measurable, reportable, and verifiable (MRV) system is not limited only to measuring the changes in area of forest land based on type and carbon stock in the forest, but also measuring the distribution of benefits from implementing REDD+; the contribution from implementing REDD+ on sustaining livelihoods; and eradicating poverty in communities whose livelihood depends on

the forests; achieving sustainable development and good management; and the involvement of the community members in implementing REDD+.

To build an accountable and transparent MRV system, the following pre-conditions must be fulfilled:

- Formulating national standards in line with the international protocol and *good practices* to measure changes in the carbon stock of the forests;
- Establishing an independent national institution to carry out the measuring and verification of information;
- Developing a mechanism for coordinating and harmonising the calculation of carbon and an MRV system across sectors and scales;
- Developing a non-carbon MRV system including *social and environmental safeguards*).
- Developing a coordinated and transparent system by using the available technology to manage the information and ensure that all relevant information, both spatial and non spatial is available on a regular basis and can be accessed by all the stakeholders.
- Developing a mechanism of reporting to the relevant institutions at national and international levels and providing relevant information to the actors in the carbon market.

In connection with verification and safeguards, it will be necessary to have an independent agency to perform an audit and give its approval on what has been achieved, then to inform this to the public as part of the process of accountability and transparency through the existing mechanism. The scope of verification includes the following:

- Implementation of MRV is not only for REDD+ activities but also for emissions from other sources and other co-benefits.
- Controlling that the MRV for carbon is carried out according to both national and international standards;
- Verification or certification on the reduction of emissions, for which a "reward" can be given, taken from the international funding;
- Supervision over the implementation of a number of social and environmental safeguards;

- Implementation and supervision on the procedure of handling complaints

MRV Institutional Framework

In implementing Nastra REDD+, the capacity of the institution performing the MRV should be strengthened to enable it to carry out the MRV activities for forest carbon efficiently and continuously. For this, the working framework of the national institution concerned must comply with the following provisions:

- In the context of coordination: to build a mechanism for intensive cooperation and coordination at the national level in relation to MRV activities for forest carbon and national policies for REDD+ and to determine the role and responsibility of the MRV institutions at national and sub-national levels, and co-benefits and other efforts in monitoring.
- In the context of measuring and monitoring: to prepare a protocol and technical units to analyse the data related to forest carbon at the national and sub-national levels. Regarding the scope of authority, the task of the MRV institution at national level is to monitor the MRV indicators nation-wide; whereas the authority of the MRV institution at sub-national level includes clarification/*ground checking* the results of measurement at national level.
- In the context of reporting: to establish a unit at the MRV institution which will be responsible for collecting relevant data to be placed in the central database, to carry out a national estimation, and international reporting according to the IPCC GPC, make an assessment of uncertainty, and improvement to the plans;
- In the context of verification: an independent institution to verify the effectiveness of implementing REDD+ in a long term at different levels and with different actors.
- Institutions that register their REDD+ activities may be considered for joining the National Commission for Mechanism of Clean Development which has been broadened to become the National Commission for Climate Change.

CHAPTER V

PHASES IN IMPLEMENTING REDD+ IN INDONESIA

Picture 5.1. Phases in Implementation of REDD+ Indonesia

The implementation of REDD+ in Indonesia can generally be divided into three main phases, namely: 1) Formulation of the National Strategy and National Action Plan for REDD+ Indonesia, 2) Preparation and initial activities, and 3) Implementation of REDD+. In general, the phases can be defined as in Picture 5.1.

a. FORMULATION OF NASTRA AND NAP REDD+ INDONESIA

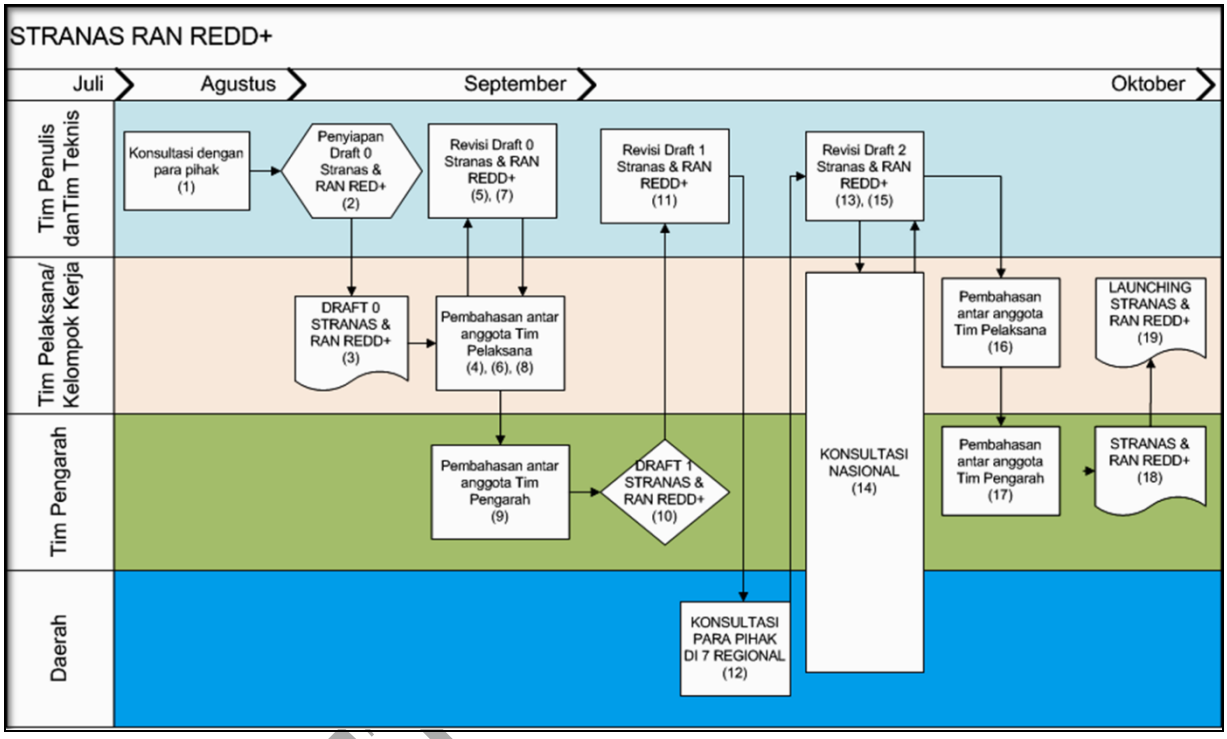
Phase One in the formulation of a National Strategy and National Action Plan for REDD+ commenced in 2010, and includes the two main activities described below :

5.1.1. Formulating the National Strategy REDD+

The National Strategy for REDD+ (NASTRA REDD+) is prepared inclusively by involving various relevant sectors and the stakeholders at national and sub-national levels. Chronologically, the formulation of NASTRA REDD+ consists of the following :

1. Forming a Steering Team, coordinated by BAPPENAS with a membership consisting of representatives from the relevant ministries/institutions.
2. Forming an Implementing Team, coordinated by BAPPENAS with a membership consisting of representatives from the relevant ministries/institutions and experts from various competent agencies.
3. Forming a Writing Team for the National Strategy REDD+ Indonesia.
4. Writing the Draft National Strategy REDD+

5. Consultation with the experts.
6. Regional consultations in 7 locations to gather the aspirations and support of the stakeholders at sub-national level.
7. Socialization at national level and launching the National Strategy Document for REDD+ Indonesia.



Picture 5.2. Scenario in formulating the National Strategy for REDD+ Indonesia

5.1.2. Formulating the National Action Plan for REDD+

The National Action Plan for REDD+ (NAP REDD+) is one of the operational documents used in implementing REDD+ which translates the NASTRA REDD+ into actions. Therefore, the NAP REDD+ contains more detailed information about the National Strategy REDD+, among others :

1. Indicative activities derived from the main activities which are described in the NASTRA REDD+.
2. Objectives and target of each activity.
3. The Person Responsible or the locus of each activity.
4. Budget plan for implementation of the activities and the funding sources.

5. Performance indicators based on the achievement of outputs, the outcome, impact and benefit of each activity.

In formulating the NAP REDD+ the team must refer to several fixed targets and the conditions of certain regions that need adjustment, namely the following :

1. The reduction of greenhouse gas emission by 26% and or 41% as targeted by the Government of Indonesia and acknowledged or registered at UNFCCC.
2. National economic growth of 7%.
3. The quota for emission used as reference at national and sub-national levels and the quota for economic growth of each region, to support a 7% economic growth at national level.
4. The different typology of each region, with the consequence that a different approach and methodology will be used in carrying out the REDD+ activities in the respective regions to achieve the target according to the REL quota that was validated and approved by the region. For this, the regions need to be strengthened through the formulation of a Regional Strategy and a Regional Action Plan for the implementation of REDD+.

The formulation of NAP REDD+ and its various planned activities is expected to be completed by the end of the year 2010. Whereas the Regional Strategy and the Regional Action Plan is expected to be completed by the end of 2011.

b. READINESS AND INITIAL ACTION

5.2.1. Creating Readiness to Implement REDD+

Readiness to implement REDD+ as contained explicitly in the Strategy consists of two important parts, namely : 1) providing the prerequisite infrastructure for REDD+, and 2) creating the enabling conditions in order to make improvements in the land use sector. These two activities are an absolute must before the REDD+ activities can be conducted in Indonesia. Thus, the main activities in creating readiness to implement REDD+ are as follows :

1. Building the infrastructure for REDD+, by forming institutions and policies for REDD+, preparing the methodology for various aspects of implementing REDD+ (REL, MRV, registration, funding) and a scheme for the division of responsibilities and transparent

benefits. Building the REDD+ infrastructure is expected to be completed by the end of the year 2011.

2. Fulfilling the enabling conditions, this is generally approached through the formulation of policies and planning in the land use sector.

Indonesia's readiness in implementing REDD+ means a readiness at both the national and sub-national levels. The efforts to create such readiness will definitely take quite a long time. Therefore the amount of time allocated for the efforts to build up readiness is 4 years, beginning at the end of 2010 up to the end of 2014.

5.2.2. Initial Action

The initial actions are directed towards the sample areas which are determined on the basis of the REL quota and potential amount of contribution to the achievement of the target to reduce emission by 26% and or 41% from BAU. Some of the initial activities that are needed according to the mandate in the Presidential Decree No 10 Year 2010 on the Task Force to Form REDD+ Institutions, are :

a. Establishing an REDD+ institution;
b. Preparing the instruments and mechanism for funding;
c. Preparing to establish an MRV (*monitorable, reportable and verifiable)* institution for REDD+ which is independent and trustworthy;

The implementation of initial action should be in line with the efforts to build up readiness to implement REDD+. Therefore these initial activities should be completed by the end of 2014 before the full implementation of REDD+ in the year 2015.

5.2.3. Implementation of REDD+

5.3.1. Mainstreaming REDD+ in Development

NASTRA and NAP REDD+ are meant to continue, consolidate and make improvements to the various efforts and policies of reducing the emission from deforestation and forest degradation so that there is a concrete impact on the prevention of global warming and the implementation of sustainable development. The said Strategy and Action Plan are formulated through the active involvement of various stakeholders, such as the civil society and actors from the business world, in addition to the active role of the government.

However, more than that, it is the inclusive involvement of stakeholders that must continue to be maintained in each phase of the development cycle.

The general principle that must be observed in mainstreaming REDD+ is :

a. The National Strategy and National Action Plan for REDD+ are part of the national planning and budgeting system and therefore should synergize with the existing planning documents.
b. The National Strategy and National Action Plan REDD+ constitute an inseparable part of the National Action Plan for Greenhouse Gases.
c. Planning with a technocratic, political, participatory, *top-down*, and *bottom-up* approach.
d. Handling problems through a holistic and systems approach.

The National Strategy and National Action Plan REDD+ are documents used as guidelines in conducting a series of strategic and integrated activities for the relevant sectors and are documents which are inseparable from the policies contained in the Medium-Term Development Plan particularly the National Medium-Term Development Plan of 2010-2014 and the Long-Term Development Plan of 2005-2025. This is intended to make sure there is an adequate supply of resources for the implementation of Nastra and NAP REDD+.

However, the process of formulating Nastra and NAP REDD+ will begin only after the National Medium-Term Development Plan of 2010-2014 has been formulated, which means there will be a gap in regulations concerning the matter of reducing the emission coming from deforestation and forest degradation during the National Medium-Term Development period of 2010-2014. Furthermore, since the planning and budgeting system is currently already applying the Medium Term Expenditure Framework (MTEF), the consequence is that the *resource envelope* as determined in the Medium-Term Development Plan Framework will be binding throughout the planning period. This will naturally affect the allocations in the Strategic Plan as well as the Work & Budget Plan of the Ministries/Institutions whose nomenclature and ceiling are based on the National Medium-Term Development Plan. As a result, it is highly probable that the substance regulated in the Nastra and NAP REDD+ will

not be accommodated in the Strategy Plan and the Work & Budget Plan of the related Ministries/Institutions.

To anticipate and overcome the above matter at the national level, it will be necessary to conduct a gap analysis on the substance contained in the Nastra and the Regional Action Plan REDD+ and the related regulatory actions in the National Medium-Term Development Plan 2010-2014. Whereas at the regional level, conditions will be better if the process of formulating the Nastra and NAP REDD+ precedes the regional five-year planning cycle which differs in each region, depending on the elections cycle to choose the regional head. Nastra and NAP RAN for REDD+ can be immediately set in the mainstream and integrated into the Regional Medium-Term Development Plan which yet to be drafted. An even more ideal situation is where the Regional Action Plan REDD+ is prepared before the Regional Medium-Term Development Plan and the Work & Budget Plan are formulated. But if they have already been formulated, a gap analysis should be conducted, which also applies to the National Medium-Term Development Plan for RPJMN 2010-2014.

The result of the gap analysis must be informed to the institutions responsible for planning and budgeting at central (national) level as well as regional level, the purpose being to head the Nastra NAP REDD+ in the same direction as the National Medium-Term Development Plan 2010-2014 and make better recommendations from the result of the gap analysis. These recommendations will in time be used as the basis for making improvement to the activities and setting more strict achievement indicators in the Work and Budget Plan of the Ministries/Institutions/Work Units of the Regional Apparatus.

This, the integration of Nastra and NAP REDD+ into the process of Planning and Budgeting should be achieved through the following main activities:

a. Conducting a *Gap Analysis* of the Action Plan for REDD+ and the National Medium-Term Development Plan.
b. Conducting a Gap Analysis on the Action Plan for REDD+ and the Medium-Term Development Plan of 31 Provinces.

c. Coordination and Alignment of the Results of the Gap Analysis with the Planning and Budgeting Institutions at Central and Regional Level.

d. Formulation of a Work Plan and Budget at the Ministries/Institutions/Work Units of the Regional Apparatus based on the Results of the Gap Analysis.

e. Integrating the Nastra and NAP REDD+ into the National Medium-Term Development Plan of 2015-2019

f. Determining the *Abatement Cost* as Material in the Allocation of Funding in the National Medium-Term Development Plan of 2015-2019

5.3.2. Full Application of REDD+

The implementation of NAP REDD+ should be accompanied by giving incentives to the provinces/districts that have committed themselves to sustainable development, specifically the reduction of emissions, in the form of providing facilities to run the programme. In addition, as the resources for applying REDD+ at both central level and regional level are quite limited, it is necessary to follow a strict priority scale, where the provision of facilities must consider which regions have the highest likelihood of succeeding. For this, the criteria of readiness must be determined and used as the basis for choosing the province/district to be facilitated. Determining the regions will take into account the feasibility study made by each of the regions.

Thus, the main activities in determining the regions where REDD+ must be applied are:

a. Determining the criteria and indicators to be used in evaluating the readiness of a region to implement REDD+.

b. Formulating a mechanism through which to facilitate the regional government in implementing REDD+ at the district levels.

CHAPTER VI
CLOSING

REDD + is one of the attempts to mitigate climate change. As a new approach related to forest management in specific and the management of sustainable natural resources in general, it requires the proper understanding and implementation. An approach which begins with a global commitment to reduce emission surely deserves special attention from Indonesia, notwithstanding the national interest and benefits. This approach must be considered as a complimentary approach to the existing approach with the principles in the attempt to perfect and improve the existing policies or strategy.

As a part of Indonesian commitment to willingly contribute to the reduction of global emission, the REDD+ national strategy is compiled with the basis of emission reduction from deforestation and forest degradation and at the same time improves the carbon sink and maintains the forest stock. The strategy is based on studies on issues and source of problem, so that it displays priority strategy and the program which must be carried out until 2020. An approach with perfection and conditioning continued with the improvement of natural resources management in its proper sector is expected to be able to provide high effectiveness.

The Implementation of National Strategy will only be effective if it enters the planning system at central and regional level. Therefore, the mainstreaming of REDD+ national strategy in the planning system is a form of certainty.