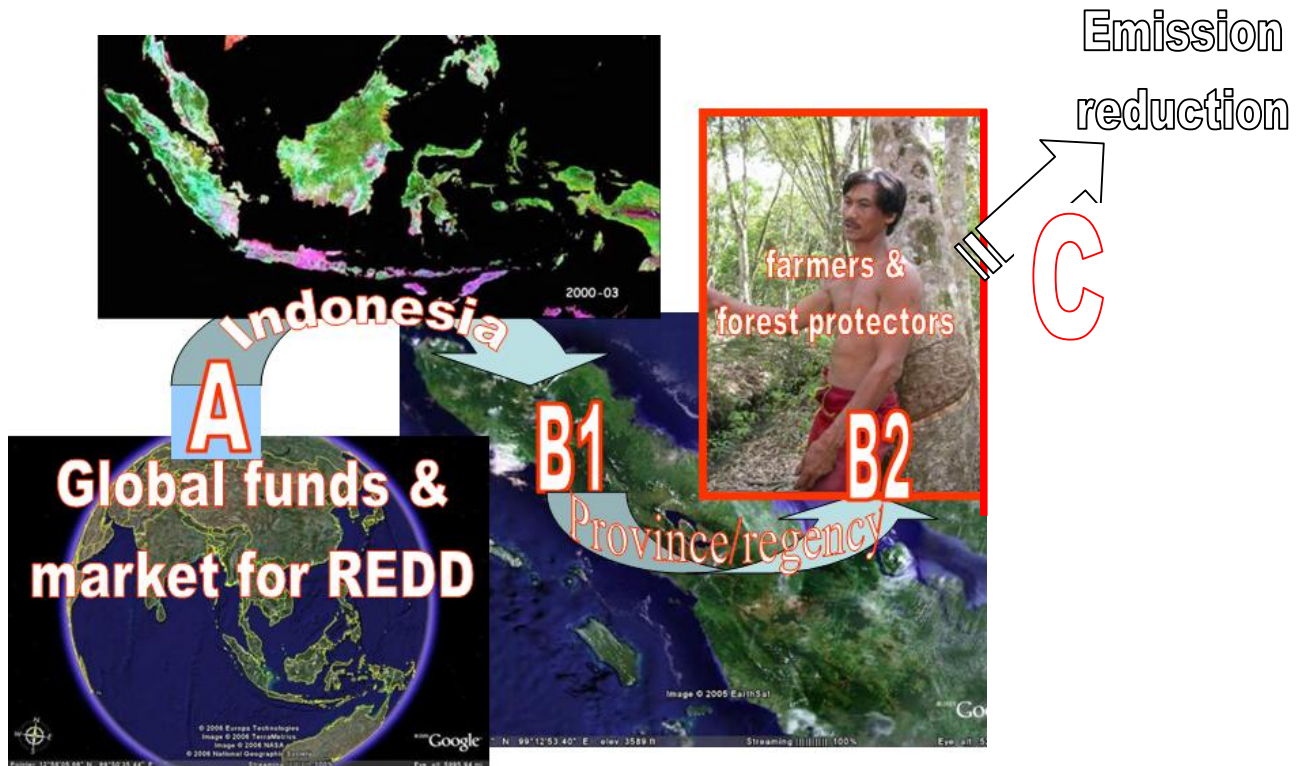


Methodology/Architecture Study 3
**PAYMENT MECHANISMS, DISTRIBUTION AND INSTITUTIONAL
ARRANGEMENT**



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SUMMARY

1. Scope of Study

How can Indonesia ensure that international payments for carbon emission reductions are equitably disbursed to reward those who have protected forests and reduced forest (and peatland?) degradation? Reducing emissions from deforestation and degradation (REDD) requires incentives to achieve demonstrable results. If money does not reach the agents who have a direct influence on forest-cover and carbon-stock change, a REDD scheme will probably not work. However there are a number of ways the Government may choose to distribute payments to achieve effective incentives and results. The national government can use international payments to fund programs that benefit the larger population, as long as it can meet internationally set targets for emission reduction. Our study is framed within the main options for REDD that are currently discussed internationally, focusing on a 'fund-based' versus 'market-based' approach at international level, with a range of options for achieving emission reduction within-country. Alternative national and sub-national payment distribution mechanisms offer a choice between a primary focus on cost efficiency in measurable emission reductions, and mechanisms that aim for fairness across all actors who protect or manage forests for the long run. The study draws 'lessons learnt' from experiences with fund, market and mixed approaches and considers the requirements for accountability, transparency, risk management, benefit transfer and administration of REDD mechanisms. Capacities needed and legal frameworks for effective institutions and functions are discussed, as is leverage for broader sector reforms as enabling condition for REDD.

2. Findings to date

Incentives to reduce emissions from forests and forest lands will potentially range from moral pressure, via regulation and positive rewards to tradable carbon credits. There is ample experience with a pure regulatory approach to policies and practices to help prevent deforestation and degradation of forests. This is the status quo. Experience with the Indonesian reforestation fund and its use for reforestation/re-greening activities (GERHAN) is mixed at best. Participation in voluntary eco-certification markets, partnership fee distribution to local communities, and debt for nature swaps are under evaluation.

At a limited scale there is experience with outcome-based approaches that link rewards for environmental services to actual performance and negotiated baselines. These experiences suggest that trust building between the various government and non-government actors is essential. The 'leakage' concerns for any REDD mechanism will be a major obstacle, unless the national boundary is used for ultimate accountability.

Full-scale attribution of emission reduction activities will not be needed if a performance baseline is negotiated at national and sub-national scales, and the mechanism for monitoring is transparent. The governments' roles as regulator, intermediary, buyer of local C credits (or other performance standards) and re-seller in the international market (or competitor for limited REDD funds) will need to be efficiently combined, but require distinct forms of accountability and transparency. Policies will need to clarify eligibility (membership) in the payment mechanism, method of payments, criteria and indicators for eligible projects/initiatives, a distribution mechanism, accountability measures, and a transparency policy. Involvement of civil society and good forest governance are required to make payment and distribution transparent and able to reduce emissions from deforestation and degradation.

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I. Urgency of REDD Incentives and Options Currently on the Negotiation Table

1.1. Architecture of REDD¹

1.1.1 Indonesia's engagement with emission reduction

Global concerns over climate change have passed the 'tipping point' and the denial response has become a rapidly declining minority voice. However, the interface of climate change and Millennium Development Goals (especially 1 and 7 on poverty reduction and sustainable development) urges attention to adaptation by the most vulnerable groups, and for making sure that mitigation measures do not, without appropriate compensation, exclude rural poor from land use options that could get them out of poverty. Innovative solutions on the interfaces of adaptation, mitigation and poverty reduction are still very much needed.

The United Nation Framework Convention Climate Change (UNFCCC) was established to avoid the negative effects of human-induced climate change on humankind and earth ecosystems. Yet the evidence that such change is already occurring and bound to increase, as compiled by the Intergovernment Panel Climate Change (IPCC) reports, makes clear that the urgency of reducing net emissions of greenhouse gasses increases rather than decreases. The fact that about 20% of global emissions, in the form of deforestation and land use change, has been left out of the global rules of the game is less and less acceptable. Efforts to deal with much smaller fractions of total net emissions, through A/R CDM (Afforestation and Reforestation as form of Clean Development Mechanism), can hardly be taken serious if these much large fluxes from deforestation and other carbon stock degradation are not brought under control.

Indonesia may well be the largest global emitter of CO₂ and other greenhouse gasses from the land use change and forestry (AFOLU or LULUCF)² sector, and third overall after China and USA if fossil fuel emissions are added. The details of the emission and ranking are contested, but the emissions are a serious concern to all and reduction is urgent in the light of the targets of the (UNFCCC). The emissions from peatlands, both the regular emissions due to drainage for agricultural use and the drainage-induced fire risks in dry years, come to more than half of Indonesia's total emissions, although peatland is a relatively small area and have relatively small economic benefits.

Why should any one receive funds or rewards for NOT damaging the global ecosystem? The answers to this question are usually a combination of:

- **“Poverty** means we have few options other than degrading the forest - we need help to develop sustainable livelihoods”,
- “We have **rights** to manage our lands the way we want; some countries that deforested in the past are now rich”
- **“Sharing responsibility**: We are committed to do our share of the global clean-up and work to protect the environment and reduce emissions, but there are real ‘opportunity costs’ that need to be compensated”

Various permutations of these answers have been provided over time, and the international community has responded with a mixture of guilt, commitment and business-sense. Investing in ‘clean development’, either under the rules of CDM or in voluntary forms, has provided

¹ This part was developed by Study 3 and 4

² LULUCF (Land Use, Land Use and Cover Change, and Forestry) is now called AFOLU (Agriculture Forestry and Land Use Change) in the IPCC reporting guidelines

ways to enhance the standing of the investor and have been more cost effective than further efforts to reduce emissions at home. The UNFCCC is an agreement between sovereign nations, and has to respect the diplomatic negotiations in which the poverty, the rights and the shared responsibility arguments are used for maximum gain. Recent positioning of the main forest countries refers to commitments and shared responsibility (Box 1) in the search for constructive solutions and international benefit transfers.

Box 1. Commitment, not beating the poverty drum

“We the Heads of State and Government and the high-level representatives of Brazil, Cameroon, Colombia, Congo, Costa Rica, Democratic Republic of Congo, Gabon, Indonesia, Malaysia, Papua New Guinea, and Peru, met in New York on 24 September 2007, resolving to enhance cooperation among countries blessed with a wealth of tropical rainforests.

While reaffirming and upholding the principle of common but differentiated responsibilities and the sovereign rights of countries over their natural resources, we recognize the *primary responsibility of industrialised nations* for the current atmospheric interference leading to global warming and its consequences, including the resulting mitigation and adaptation challenges. We note with concern the recent findings of the Intergovernmental Panel on Climate Change (IPCC) which indicate that forests may be among the main victims of climate change resulting in *dire impacts on the environment, ecosystems and the livelihoods*, particularly of those populations that depend directly on forests.

While recognizing that many developing countries can contribute to combat climate change through reducing emissions from deforestation, forest degradation and land-use change, we understand that the challenge to reduce emissions from land use change is complex and cumbersome for developing countries as for developed countries reducing emissions from industry and energy sectors. *We are committed to cooperating among our nations to slow, stop and reverse the loss of forest cover and to promote the rehabilitation of degraded forest lands, forest management and conservation.*

We call for *the fulfillment of commitments*, including those of Annex I countries under the UNFCCC, to *support our voluntary efforts* through capacity building, research and development, transfer of appropriate environmentally sound technologies. Further, we call for mobilization of new and additional financial resources sufficient to implement *non-restrictive policy approaches and positive incentives*, under the UNFCCC, and other international fora, to support our voluntary efforts in reducing greenhouse gas emissions as well as enhancing sequestration through sustainable forest management and forest conservation, and increasing carbon sinks through afforestation and reforestation, including support for early action from 2008-2012 along with expanded activities post-2012. Furthermore, we call for protected areas to be given special consideration by the international community. “

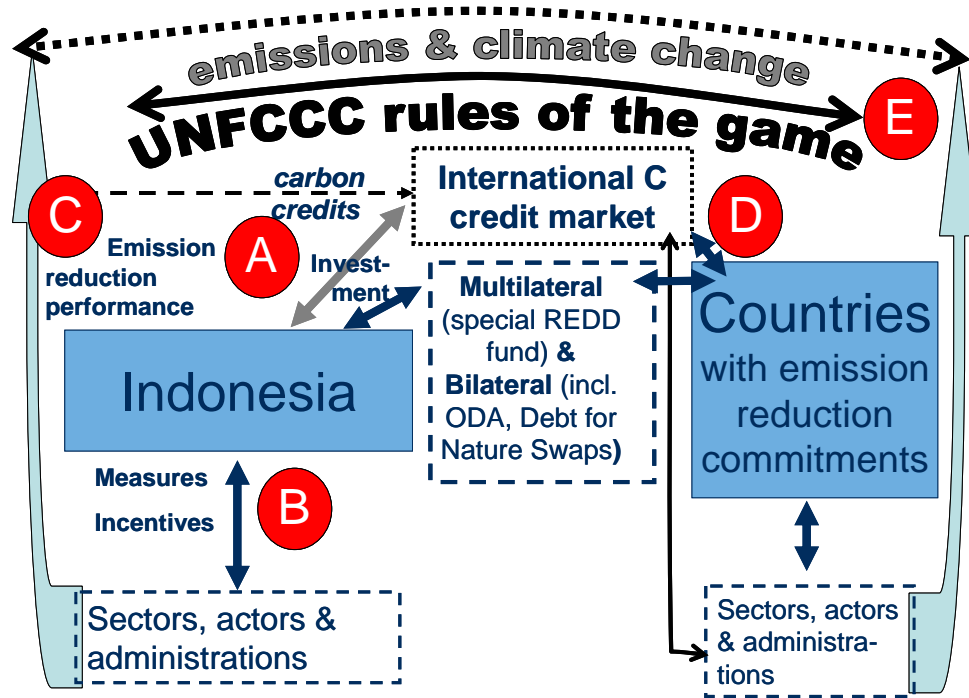


Figure 1. Basic architecture of the relations between a country such as Indonesia and countries with commitments to reduce their greenhouse gas emissions to the atmosphere; A...E refers to five questions that are part of current debate.

Two types of financial transfers have so far been proposed to provide incentives for reducing emissions from deforestation and degradation: the creation of a separate REDD fund, with a mandate to target emission reductions in forested countries, and the creation of tradable rights to emit, that could be the basis for a market in emission reduction credits. With both options on the table, the negotiation position for a country such as Indonesia is likely to depend on the answer to five questions (Figure 1):

- A. How can Indonesia access REDD funds and/or emerging international markets?
- B. What can 'payment distribution mechanism' + internal markets deliver within the country? What internal institutional arrangements are needed?
- C. How can emission reductions (compared to a reference scenario) be compared to other emissions reductions and how can it lead to 'tradable credits'?
- D. What international institutional arrangements are needed? How can returns on investment be generated for countries providing upfront investment for REDD, and hence what type of replenishment of the fund can be expected in future?
- E. Will it help to manage (reduce) climate change and reduce negative effects on Indonesia?

Different segments of society may place different weights on these questions, in line with intrinsic positions of trying to maximize short-term financial gains, long term sustainable development and concerns about environmental degradation.

An alternative way of posing these questions is in terms of:

- Slicing the cake: who will get which part? (competition and bargaining for a specified resource)
- The size of the cake: how can the total amount to be distributed be increased? (strategies for competition at higher level, influencing rules of the game)
- How palatable and attractive will the cake be? How will it taste and smell? What's the recipe? ("masih ada bau BAU (business as usual)?"", performance criteria)

- Who will pay for the cake? Will it provide a ‘free lunch’ or come with bonds and ties?

The issues about size of the cake and the rules for slicing it occur at multiple scales: between the sovereign countries that consider signing and ratifying an agreement, and between administrations, sectors and actors within each country. The ‘poverty’, ‘rights’ and ‘shared responsibility’ arguments are and will be used for maximum effect. Overemphasis on the ‘rights’ card may come across as blackmail. Overemphasis of the ‘shared responsibility’ aspect will lead to ‘lack of additionality’, while the ‘poverty’ card is more effective when expressed in terms of evolution towards equitable per capita emissions.

Should Indonesia get a large (market) share of the ‘avoided deforestation’ because it has a track record of high emissions so it can show emission reduction? Should Riau be the province where most of the funds go because it has a track record of high emissions so it can show emission reduction? Should the providers of raw material to the pulp and paper sector in Riau get most of the funds because they have a track record of high emissions and deforestation so they can show emission reduction? Or should the attention go to countries, provinces and actors that have a track record of protecting their forests and thus be trustworthy partners? At each scale that this question is asked, there is a ‘moral’ or ‘justice’ dimension to it, and a ‘pragmatic’ or ‘efficiency’ one. The challenge for the ‘distribution mechanisms’ is to strike a balance between these two dimensions.

Internationally, the recent declaration of the ‘forest eleven’ (Box 1) set a tone of ‘sharing responsibility’ and used the word ‘commitment’ in referring to the developed as well as the forest rich countries. In line with the sovereignty of nations, there will be considerable scope for countries participating in REDD to set rules for engagement within their domains, and restrict or support direct linkage between administrations, actors and sectors with international agents. However, the primary performance criteria for emission reduction will have to be measured and accounted for at national scale, and this will be influenced by both positive and negative changes in emission rates at the level of land units.

1.1.2 Scope of current REDD discussions on partial accounting of sources

The current discussions on REDD focus on a subset of the total Land Use, Land Use Change and Forestry (LULUCF) or AFOLU emissions (Figures 2, 3). It will likely focus on ‘gross deforestation’, i.e. on areas of forest that drop out of the ‘forest’ category (with a country specific definition, bounded by international rules), plus degradation within the forest domain. In terms of the scope of the current discussions it may be important to specify which parts of the LULUCF emissions will **not** be covered outside of Annex-I countries:

- emissions from lands that dropped out of the ‘forest category’ before reference year X (yet to be selected), or never qualified as forest. Quantitatively, the peatlands are the most significant contributor in this regard. The long term nature of peatland emissions, based on a few percent loss from a huge C- stock, contrasts with the rapid loss of aboveground biomass (potentially a near complete loss of a moderate C-stock), makes the choice of X important in this regard.
- sequestration by lands that re-enter the forest category, even if they have been only marginally below the forest threshold.
- C sequestration through reforestation of lands deforested after 1990, and thus not eligible for A/R CDM.

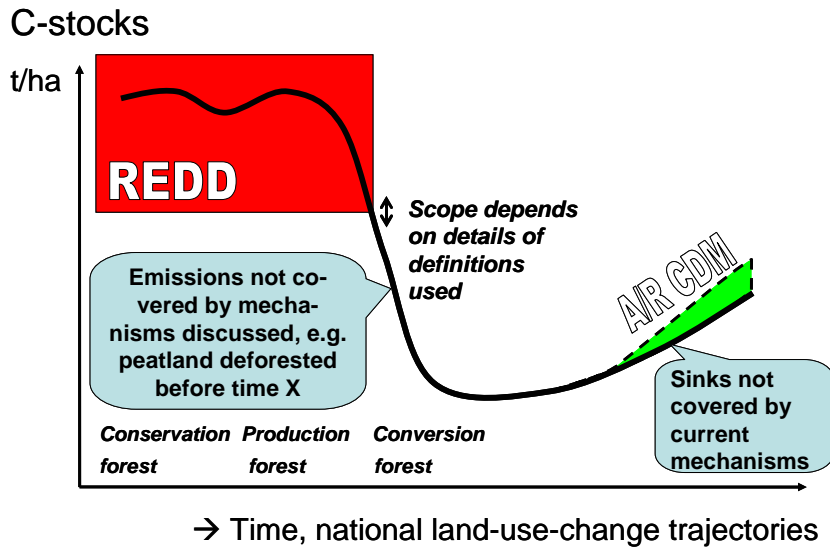


Figure 2. Schematic representation of the changes in C stock in national land use trajectories, where loss of C stocks tends to be followed by a partial return of tree cover, in a form of ‘environmental Kuznetz curve’; the potential reach of A/R CDM and REDD mechanisms is indicated, while other transitions within the LULUCF (AFOLU) domain affecting C stock are not included; the position of the labels conservation, production and conversion forest is indicative only

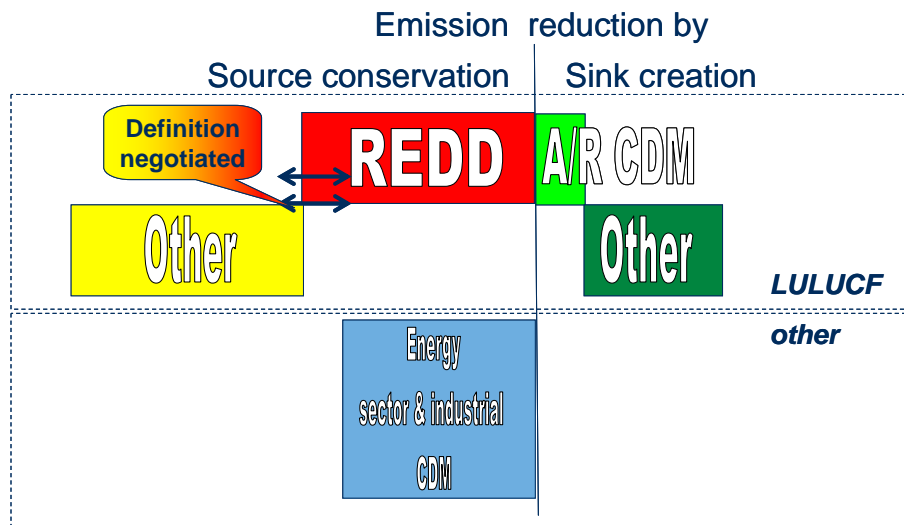


Figure 3. Schematic representation of the scope of currently discussed REDD modalities relative to other LULUCF and energy/industrial source of emissions, distinguishing source protection from sink creation; depending on the definitions to be used for REDD a substantial part of the avoidable land-based emissions, such as those from peatlands that lost their forest cover before the year X that will be chosen as reference year will be in the ‘other’ category on the source conservation side; ‘other’ sinks are those that have not been brought under the A/R CDM framework for reasons of administrative complexity and transaction costs, and/or because they do not meet one or more of the eligibility criteria

The combination of REDD + A/R-CDM will have considerably smaller scope than the accounting rules for Annex-I countries, which include all positive and negative fluxes in the AFOLU domain. The main alternative is to broaden the scope of the current REDD negotiations to include all the chapters of AFOLU accounting and converge on the accountability rules for Annex-I countries in this respect (but with a different way of deriving the baseline/targets/emission caps).

The two primary ways to affect net greenhouse gas emissions are to reduce the emissions by conserving the sources, or to increase sequestration by creation of sinks. Both in terms of source conservation and sink creation the combination of REDD plus A/R CDM will provide only partial accounting. Most of the energy and industrial sector emission reduction is of the 'source conservation' type, which will potentially shift fossil fuels from current to future use. The main difference between A/R CDM and other types of emission reduction is that 'sink creation' has to be associated with responsibility for future emissions of the carbon stored temporarily (hence the 'temporary credits'), while source conservation does not (under current rules) imply responsibility for future emissions based on the source saved for now. Where 'fossil fuel conservation' is the basis for C-credits, there is no fundamental difference in the degree of permanence between forests and fossil fuel stocks conserved over a certain period of time. Quantitative estimates of the LULUCF emission reduction potential not covered by REDD + A/R-CDM are not yet available (** see section ## below?**), but will be relevant for the debate. In earlier stages of the UNFCCC implementation rules, a commitment by 50% of emission sources was taken as benchmark in the ratification of the Kyoto protocol; the absence of countries with a joint emission share of less than 20% was used as 'excuse' for non-ratification by some countries. Clearly, the credibility and effectiveness of a new global mechanism is at stake if it only covers part of the avoidable emissions.

Emission reduction in one area can increase emissions elsewhere, e.g. because market demand seeks alternative sources of supply, while local people seek alternative employment and livelihood opportunities. Such negative external effects of positive changes in limited areas and sectors, is the basis for the *leakage* concern. Leakage is a bigger concern in the AFOLU (LULUCF) domain than in the energy/industrial sectors, and hence it is a major part of the debate on how to establish credible mechanisms.

The view that the concerns over leakage can only be managed if accountability exists at national scale rather than subnational or sectoral scale, is gaining acceptance (draft resolution text for the COP13). Especially where international markets for timber or pulpwood are the drivers of forest degradation, the issue of 'international leakage' and shifts of pressures to other forested countries is a valid one. However, between-country transfers of economic activities are seen as a potentially positive element of gain in overall efficiency in other cases. The primary issue is whether or not the emissions that would increase by 'leakage' are accounted for elsewhere or not. If only a few 'tropical forest countries' would agree to reduce deforestation, the global market pressures will likely shift to the others and little global emission reduction will be achieved. The precedence in international environmental regulation is not to require full coverage, but a substantial (at least 50%) of emission opportunity. We can expect that the REDD negotiations will want to impose a benchmark for the inclusion of tropical forest countries, and the 'forest eleven' (Box 1) have clearly shared interest in the negotiations, even though they are competing for limited resources in REDD funding.

In the absence of an international agreement on REDD, a 'voluntary market' for REDD-like activities is emerging. If the international negotiations fail to reach agreement, such a voluntary market will be the 'fallback' scenario. Its size and characteristics are therefore important to assess the 'negotiation risk' at this stage. At this stage, and in the

absence of international agreement on modalities, there is a ‘voluntary market’ for REDD-like activities, out of the reach of A/R CDM. If the international negotiations would fail to lead to agreement, such a voluntary market will still be the ‘fallback’ scenario. Its size and characteristics are therefore important to assess the ‘negotiation risk’ at this stage.

The current range of options can be described as a number of dichotomies (Figure 4):

- a) Agreement, versus no agreement
- b) Protocol such as Kyoto versus Fund
- c) National versus project scale of accounting as basis for international engagement
- d) Changes in C-stock or ‘deforestation rate’ as basis for transactions
- e) Freedom to design country-specific internal systems within a bottom line of emission reduction, or specific rules for implementation.

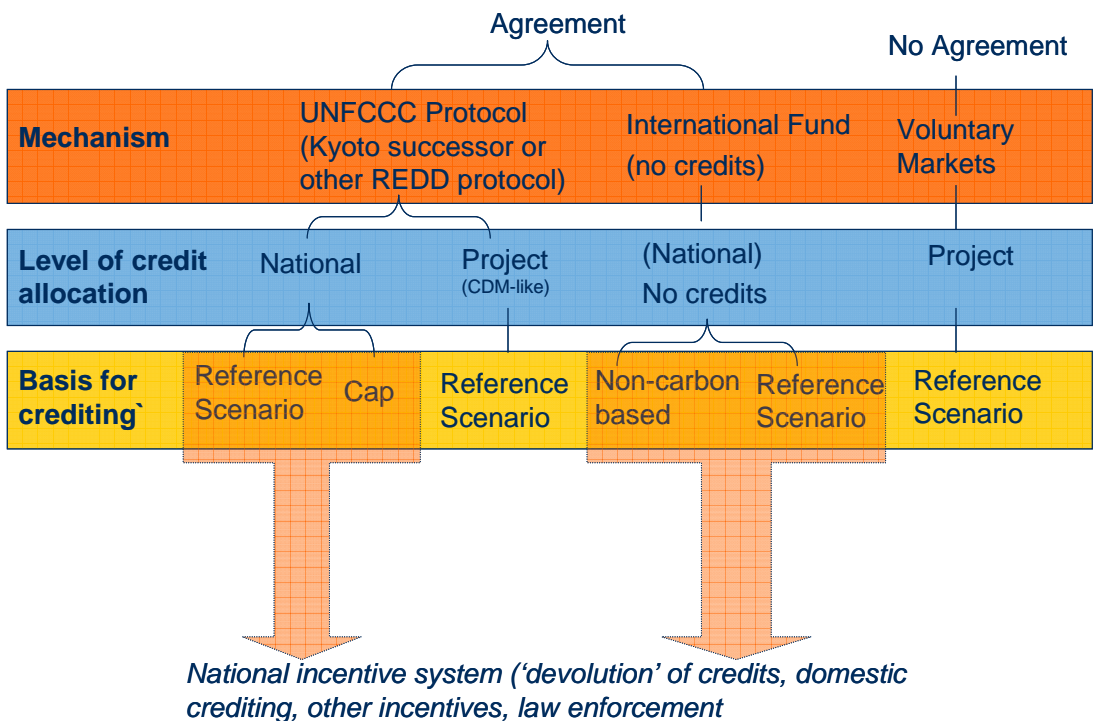


Figure 4. Decision tree of some of the main options currently on the negotiation table

In the discussions on implementation rules for CDM in the LULUCF domain following Kyoto, the issue of ‘*avoided deforestation*’ was amply discussed, but no agreement on its scope or modalities could be reached. The Marrakech accord thus only set rules for certain forms of temporary credits for afforestation/reforestation projects on lands deforested before 1990. The combination of complex rules, temporary credits and high transaction costs have meant that A/R CDM has found little application yet, while numerous energy and industrial sector CDM projects received approval and funding. A number of obstacles were identified for reducing the emissions from deforestation and land use change (Table 1). While

Table 1. Issues surrounding international incentives for forms of ‘avoided deforestation’

Issue	Why was no agreement reached 5 years ago on ‘avoided deforestation’?	Why do we think it can be resolved now in the form of REDD?
International relations		
1. Sovereignty, interference with ‘development’	Developing countries did not want to forego opportunities for economic development and many resisted foreign influence on the way they manage their lands	A substantial part of emissions is associated with activities that have negative or only small positive economic benefits (see ##); ‘bottom-line’ mechanisms will maintain national sovereignty and avoid loss of control
2. Trust	Low level of trust and social capital between the various parties at the negotiation table and associated ‘civil society’, strong signals that vested interest rather than shared responsibility for global climate dominated positions	The urgency has become more pronounced, the contribution of non-energy emission sources better articulated; inter-agent trust may well be the primary hurdle, with high expectations of financial gain a distractor
Technical aspects		
3. Quantification and monitoring	There was substantial uncertainty over the quantitative aspects of emissions, while high quality monitoring had high costs	There has been progress in remote sensing techniques, both at the high quality and the public scrutiny level, although the tradeoff between quality and costs is still an issue
4. Baselines (targets) for emission reduction	There is no ‘objective’ choice between various ways to establish reference levels of emissions as basis for ‘emission reduction’; for Annex I countries an emission cap was negotiated per country; non-Annex I countries did not want to commit to a total emission level	With a shift from ‘project’ to ‘national scale’ accounting, the reference scenario will get more the character of ‘shared responsibility’ and negotiated targets (such as committed by Annex-I countries), without use of the word cap
5. Permanence	Avoided deforestation may only shift deforestation into the future, not shift towards a low-emission future	Avoided emissions from deforestation are not essentially different from avoided emissions from fossil fuel use: neither is permanent, but they are equivalent
6. Leakage	The opportunities for shifting forest use (and associated loss of carbon stocks) to other areas, makes ‘leakage’ a serious issue at project scale	National scale accounting, based on a summation over all areas within the country, can reduce the ‘leakage’ issue to what is accepted between Annex-I countries in the Kyoto protocol
7. Additionality	In assessing the specific contributions of any activity or project, as basis for incentives or rewards, a complex network of	A commitment to ‘bottom-line’ accounting shifts the ‘additionality’ issue largely to the establishment of ‘reference scenarios’ for emissions at

	causes has to be unravelled; additionality is hard or near impossible to assess at project scale	national scale; the way such targets can be met does not require international rules
Development benefits		
8. Co-benefits	There is no shortage of other efforts to conserve forests, but a lack of effectiveness. High expectations of co-benefits complicate the additionality aspect, as a cost share among functions is expected.	With additionality out of the way, the co-benefits may be the primary incentive for decision makers to select among alternative ways of achieving a bottom line emission outcome, with financial compensation for the real opportunity costs
9. Poverty reduction	Forest-dependent people have been underrepresented in public decisions about forest futures and rules may increase poverty for these groups and reduce resource access rights	Implementation of emission reduction targets will only be feasible with cooperation and sharing of incentives; conflict as underlying cause of forest fires is now recognized as threat
Relation to long term UNFCCC objectives		
10. Transition to sustainability	With fossil fuel use seen as the ultimate cause of high emissions, transitions to sustainability will primarily depend on shifts in energy source	The 'biofuel' debate has shown that shifts to renewable fuels may lead to net increase in emissions if the links with land-based emissions (incl. REDD) is not accounted for
11. Flooding the market	Large emission reductions might be achieved at low cost, undercutting the efforts to transform industry and energy sector through CDM	Not achieving large emissions that can be achieved at low cost undermines credibility of the rest of the system; a substantive increase in total emission reduction will increase 'demand' and absorb the additional 'supply' of emission reduction credits
12. Scope	The popular association of terrestrial vegetation + soil sources and sinks with the term 'forest' lead to a need for tighter operation definitions of the term and uncertainty on inclusion/exclusion of intermediate tree density vegetation	Important and avoidable emission sources will still be excluded if current REDD proposals go forward; a broadening of the scope to other chapters in the IPCC national GHG accounting is advisable

the outcome of current negotiations is uncertain, it may help to assess the degree to which positions and opinions have shifted on some of the major concerns that prevented agreement to be reached earlier. While significant progress has been made on all the issues that were seen as stumbling blocks in the earlier discussions, a number of issues remain and will require negotiating parties to focus on the unacceptable costs of failure of current negotiations, while a stepwise approach of agreement on principles of a 'bottom line' nature to be followed by more detailed negotiation of quantitative implications is feasible.

National boundaries are the primary focus of international agreements and determine the scale at which accounting has to take place and accountability has to be achieved. In principle, countries should retain flexibility in how they implement emission reduction rules, as long as the overall effect is achieved. A number of countries, including Costa Rica and Mexico, have set up national systems to provide financial incentives for forest conservation and management. Such systems replaced earlier arrangements that were perceived as ‘forest sector subsidies’ and deemed undesirable in global trade negotiations. Although the payment systems are not directly linked to preservation of carbon stocks and have watershed protection and biodiversity conservation as more prominent objectives, they have probably also reduced carbon emissions. The discussion on the effectiveness of the systems with respect to the actual level of threat to different types of forests has not subsided, though. Public acceptability in Costa Rica of the system that favours ‘land owners’ is linked to other national policies that have a social welfare and equity focus.

Regardless of the details of implementation, accountability at national borders in systems that have to be open to public scrutiny as part of a trust building drive, will require a number of functions to be fulfilled (Figure 5)

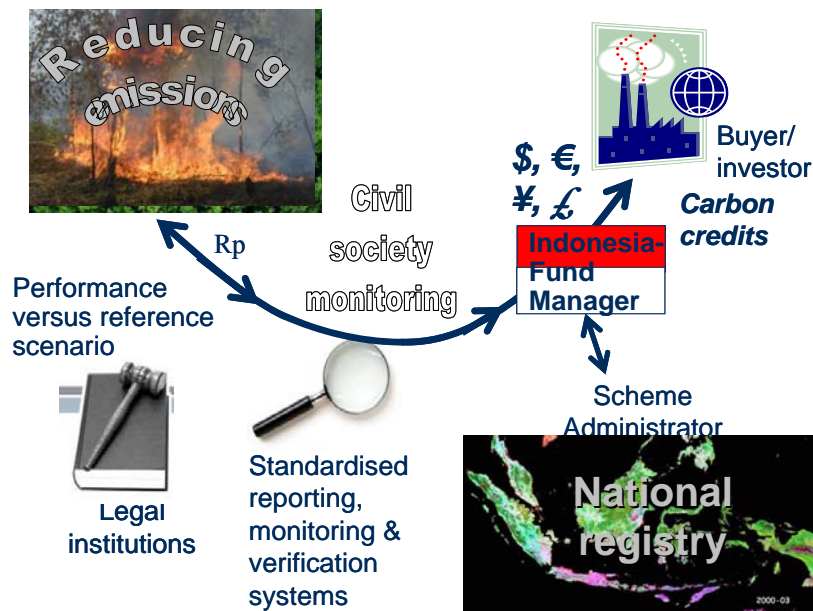


Figure 5. Functions to be fulfilled in a national translation of international agreements on emission reduction, with appropriate levels of institutional independence between regulation, implementation and audit functions

The emerging mechanisms will have to deal with two parts: *voluntary* (market-based or fund-based) options to get rewards for commitments to forego rights to emit (e.g. existing logging concessions, conversion forest use, peatland utilization), and strengthening of *governance* systems to deal with currently illegal emissions (e.g. due to logging beyond sustainable levels permitted, illegal use of deep peat soils, illegal logging, encroachment into protected areas). International agreements will be an essential step in the global chain to link current knowledge to action, but not enough by themselves. The *conditionality* (commitment as basis for international co-investment in transitions to sustainability) agreed at the national border, has to be disaggregated by smaller entities in a way that take care of ‘leakage’ and ‘additionality’ concerns.

1.1.3 Scope of current REDD discussions on forest definitions and rights

Emission reduction policies within countries that have Annex I status in the Kyoto protocol, are not specifically dependent on a definition of forest: the accountability and reporting regime cover all aboveground and belowground terrestrial carbon stocks and the changes in their status, and all activities that enhance or reduce these stocks. If not covered in one category, emissions or sequestration is covered in another one.

In non-Annex-I countries, by contrast, the term ‘forest’ and its derivatives ‘deforestation’, ‘reforestation’ and ‘afforestation’ have obtained special significance under the Kyoto protocol. In practice, however, these terms are still subject to considerable confusion because they refer in common parlance to multiple concepts:

- current vegetation with trees (with formal definition of minimum area, tree crown cover and minimum size of ‘tree’),
- cyclical processes of regeneration (with temporary absence of trees maintaining a ‘forest’ status of the land under certain conditions),
- the type of tree (with certain woody perennials such as rubber, coffee, palms, bamboo) that otherwise meet the definitions excluded,
- policy domains (*Kawasan Hutan*) that are based on former vegetation and linked with the mandate of forestry departments.

In the combination of these concepts, we have ambiguous entities such as ‘forestlands without trees’ and ‘nonforest lands with trees’.

Within the existing forest in Indonesia, we can distinguish four basic regimes that influence the legality of changes in forest condition:

1. ***kawasan hutan – protective + conservation forest***, with regulations against extraction of timber and disturbance of the vegetation and soils, but exceptions in the context of mining concessions with a strict regulation such as open-cast mine exploitation, environmental impact assessment, and reclamation.
2. ***kawasan hutan – production forest***, with logging regimes (sustainable selective logging or clear-felling and replacement by plantations) regulated by the Department of Forestry
3. ***kawasan hutan – convertible forest***, with an expressed government intent to hand over control from the forestry department to local government, often in the context of commercial plantation concessions or transmigration sites (and associated ‘land reform’)
4. ***non-kawasan hutan forest***, with commercial plantations and private/community management of natural forest, agroforest and smallholder plantations.

Across the different forest categories within the *Kawasan Hutan* there is a considerable range of policy instruments to share rights and responsibilities for forest use and maintenance between the State, private parties (‘cessionaires’) and local communities. These go by names such as *Taman Hutan Rakyat* (TaHuRa: community protection forest, a form of conservation forest), *Hutan KeMasyarakatan* (HKM, community based forest management, in production or protective forest) or *Hutan Tanaman Rakyat* (HTR, ‘peoples plantations’ on production forest).

The incentives for protection or emission of terrestrial carbon stocks differ between these categories. As in other countries, there are (and have been) ‘perverse incentives’ against tree planting on non-kawasan hutan lands, as existing tree cover (regardless of the natural, managed or planted status of the trees) has been used as basis for legal control over the trees, and even ownership of the land.

Land ownership is a key aspect of the legality of current activities that decrease terrestrial carbon stocks, with the primary legal basis established in the Constitution, the Agrarian law and the Forestry law. According to recent data from the Ministry of Forestry^{3,4}, only 10% of Indonesia has completed the legal requirements to be considered *Kawasan Hutan Negara*; 53% is *Kawasan Hutan* with a contested legal status (and incomplete legal process of ownership verification), and 37% of lands are outside of the forest domain, controlled by the state, by state-sanctioned concessionaires, local communities or private land owners. Obtaining more clarity on the issues of land ownership and community versus state control of resources has been a recognized priority for conflict resolution and development. Although the REDD issue will add further weight to this priority, operational mechanisms will have to be constructed within existing ambiguities rather than being fully reliant on one of the alternative interpretations of ‘legality’. In discussion on reducing emissions of greenhouse gasses the primary reference to deal with this confusion will have to be the emissions of gasses, directly linked to the changes in terrestrial carbon stocks in the case of CO₂, the dominant gas under consideration.

Legality of the forest use and land use change within the *Kawasan Hutan* is regulated by forestry authorities. Different levels of government play different roles. Table 2 provides a rough outline of government roles for different forest types. The central government plays a part in planning, regulating and decision making. The central government together with provincial and district governments budget activities in the various forest categories. District and lower levels of government implement policies and deal directly with people and forests. All levels of government are involved in inter-sectoral coordination.

Table 2. Government roles in different categories of forest

Govt administration	Village and Subdistrict	District	Provincial	National
Forest category				
Convertible forest	Controlling people-forest interactions	Controlling people-forest interactions; Recommending conversion	Recommending conversion	Planning, regulating, monitoring and decision making; budgeting
Conservation forest	Controlling people-forest interactions	Controlling people-forest interactions; Recommending new forest conversions; budgeting	Coordinating inter-district activities; budgeting	Planning, regulating and decision making; budgeting

³ Only 10% of the 120 million hectares classified as forest zone (*kawasan hutan*) has been demarcated through forest delineation process, leaving 108 million uncertain as to the nature of rights attached and therefore resulting forest zone legally unprotected (Contreras-Hermosilla and Fay, 2005).

⁴ An estimated 30 million to 80 million ha of land out of 120 million designated forest area has some form of community claim to land rights (Fay et al, 2000; World Bank, 2000).

Protection forest	Controlling people-forest interactions	Controlling people-forest interaction; budgeting	Coordinating Inter-district activities; budgeting	Planning, regulating and decision making; budgeting
Production forests	Securing timber productivity and community livelihoods	Securing timber productivity; recommending annual allowable cut (AAC); budgeting	Recommendation of AAC and coordinating inter-district activities; budgeting	Planning, regulating and decision making; budgeting
Trees and forests outside state forests	Endorsement	Endorsement	Endorsement	Endorsement

Specific causes of and stakeholders in deforestation and degradation in Indonesia are shown in Tables 3 and 4. Apparently all levels of government, forest and logging companies, wood based industries, local communities and other sectors contribute directly and indirectly to DD. Incentive payment distribution should consider these actors in order to reduce emissions from DD effectively.

Table 3. Causes of and stakeholders in deforestation

Cause	Location	Primary stakeholders	Secondary stakeholders
Forest conversion for agriculture and plantations: oil palm, <i>jatropha</i>	Conversion forests	Central and regional governments	Plantation companies, agricultural and economic sectors
Illegal logging	All categories of forests	<i>Cukong</i> , logging companies and local communities	Governments, pulp and paper companies, wood industries
Forest fire	All categories of forests	Companies	local communities; regional governments
Transmigration	Conversion forests	Central government	Regional governments
Mining	All categories of forests	Central and regional governments	Mining companies, banks
Private and small-scale forest conversion	Private land (outside state forests)	Forest owners	
Infrastructure development (roads)	All categories of forests	District and provincial governments	Central government (Ministry of Public Works)
Ranch development	Conversion forests	Regional governments	Ranch companies

Table 4. Causes of and stakeholders in forest degradation

Cause	Location	Primary stakeholders	Secondary stakeholders
Bad forest management	Production forests	Forest concessionaires	Central and regional governments
Illegal logging	All categories of forests	<i>Cukong</i> , logging companies and local communities	Governments, pulp and paper companies, wood industries
Conversion to fast growing forest and rubber plantations	Production forests	Central and regional governments	Tree growing companies
Forest fire	All categories of forests	Companies	Local communities; regional governments
Private and small-scale forest degradation	Private land (outside state forests)	Forest owners	

In combination of these processes, the patchwork of legal, semi-legal and illegal activities that currently drives the emissions from deforestation and forest degradation in Indonesia is complex (Table 5).

Table 5. Examples of activities that cause carbon emissions from forests and peatlands, through legal # and illegal (#) activities **INCOMPLETE**

Activities causing Carbon emissions	Order of magnitude C emissions, Mg ha ⁻¹ , from a natural forest base	Land cover type: F = forest (p = production, c = conservation+ protective, x = conversion); A = APL (e = estate, s= smallholder); U = urban						Land ownership: F = Forest Department, S = State (other), P = private/community, U = unresolved/contested				Actors and other stakeholders involved	
		F-p	F-c	F-x	A-e	A-s	U	F	S	P	U		
Forest fire followed by regrowth	-200	# & (#)	# & (#)	# & (#)	# & (#)	# & (#)							
Forest fire followed by conversion (salvage logging)	-400	#	(#)	#		#							
Conversion of forest to non-forest status	-400	(#)		#	#	#							Mining operations
Reducing forest C-stock from 'unlogged' to	150	#		#		#							

‘sustainable forest management’ level												
Past commercial logging practice	200-300	(#)	(#)	#		#						
Smallscale illegal logging	50	(#)				#						
Rotational tree crop intensification	30				#							
Reducing aboveground C stocks on non-forest lands	50				#	#	#					
Legal drainage of peatlands	1000	#			#	#						
Illegal drainage of peatlands	2000	(#)			#	#						
Fire on peatlands	500-3000	#	#	#								

Even in countries where land ownership is clear, land use planning has been in operation for a long time and economic incentives for tree-based land use are clear, the introduction of new incentives for reducing global CO₂ emissions has led to serious conflicts between the State and the private sector (Box 2). New Zealand has a strong and viable ‘farm forestry’ sector, using private lands for growing (pine) trees and sheep. The farmers/foresters and the government got locked in to a classical ‘prisoners dilemma’: if the private sector does not cooperate there will be no national emission reductions, if the state does not ratify and comply with the international agreements, there will be no market outlet for emission reductions. Analyzing the case of New Zealand, may help us understand the complexity of the issue for implementing REDD in Indonesia with efficient and equitable sharing of benefits.

Box 2. Government, carbon forestry credits and land owners in New Zealand

Shortly after ratifying the Kyoto Protocol in December 2002, the Government of New Zealand announced that it would retain ownership of any credits or debits arising from Article 3.3 of the Protocol, from plantations established after 1990 on both public and private land. Prior to this announcement, private landowners had anticipated that carbon rights would be devolved to the landowner. Anticipation of additional revenue from carbon and other market factors resulted in unprecedented rates of new plantation establishment, culminating in a record high of 98,000 hectares established in 1994 (Figure Box2-1).

The 2002 decision to nationalise ownership of forestry credits removed carbon-finance related incentives for planting new forest. This and other market factors contributed to a significant decline in the area of new plantings, down to 5,000 hectares in 2006 – the lowest rate since 1959 (NZ Ministry of Agriculture and Forestry 2007). At the same time, approximately 12,800 hectares of forest land were not replanted, resulting in a net decline in New Zealand’s production forest area - an outcome in direct conflict with the Government’s greenhouse gas reduction targets. The policy was strongly opposed by New Zealand’s forestry industry. An industry group, the ‘Kyoto Forestry

Box 1 – continued

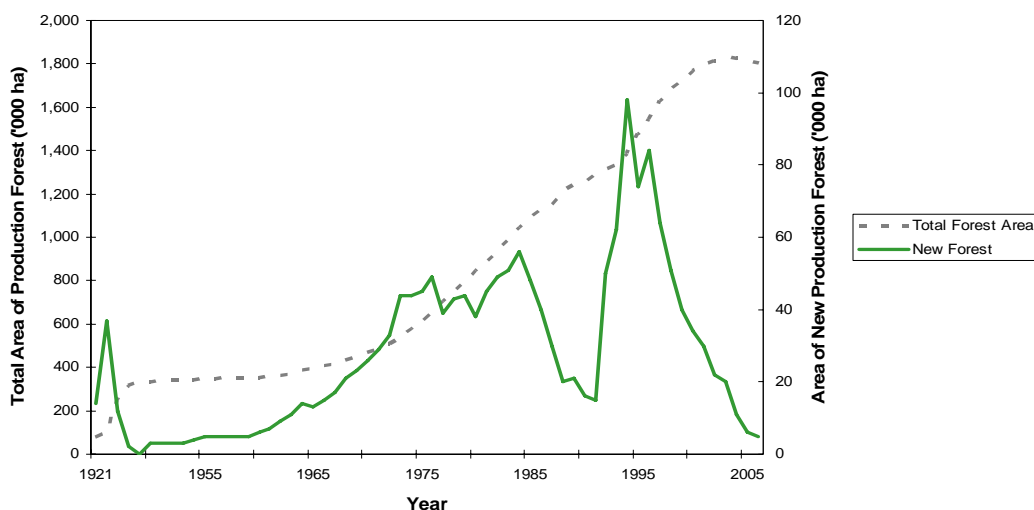


Figure Box2_1 Historical trends in production forest area and plantation establishment in New Zealand – 1920 – 2006; Source: Adapted from NZ Ministry of Agriculture and Forestry (MAF) 2007.

Association’ (KFA), was formed to lobby Government to reverse its decision not to devolve forest carbon rights to the landowner. The debate centred around the concept of forest carbon as a property right, with the KFA arguing that landowners had the right to own carbon sequestered on their own land.

In response to lobbying by the KFA, forest industry and environmental groups, the issue became heavily politicized and New Zealand’s major political parties formed alternative policy positions on forest carbon devolution mechanisms.

Following a series of consultations, the Government effectively reversed its policy in September 2007, announcing the structure of a new emissions trading scheme for New Zealand in which forest carbon credits and associated liabilities would be devolved to forest owners. Participation in the emissions trading scheme would be optional for post 1990 forest owners, and the Government would retain the credits and liabilities of post-1990 forest owners that do not participate in the scheme. In line with the rules for Kyoto, pre-1990 forests will not be eligible to earn credits, but would accrue debits if converted to non-forest. The Government plans to allocate free emissions credits to pre-1990 forest owners to cover this liability. Grants will also be offered for afforestation. The Government hopes this suite of new policies will help incentivise new plantings, and reverse New Zealand’s rate of deforestation, while contributing towards its greenhouse gas reduction target.

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Kyoto Forestry Association (KFA). 2007. Website. Available at: <http://www.kfoa.co.nz/>.

Government of New Zealand. Climate Change Solutions Website. Available at: <http://www.climatechange.govt.nz/>.

1.2. REDD Incentives

The proposed REDD initiative to be negotiated in Bali at the end of 2007 offers financial rewards for activities that can reduce carbon dioxide from clearing, converting, or degrading forests. It is a reward for not being carbon dioxide emitters. It is about rewarding policies and business practices that do not support deforestation and degradation. The REDD initiative is not about planting trees to sequester carbon such as those in A/R CDM under the Kyoto Protocol. Payment for REDD can start as soon as, there is prove that emissions reductions have occurred. It does not have to wait for forest to grow. In theory, the REDD initiative should be much simpler than the A/R CDM.

Under current negotiation, funds for rewarding CER projects/initiatives could come from three sources: UNFCCC protocol, international funds, and carbon markets. Realistically, getting REDD payment from all three options (will be difficult. Amount of payments has a very wide range and efforts to produce carbon credit from CER projects/national programs are very significant. The Indonesian government and private forestry sector will have to conduct cost benefit analysis to decide whether they will produce carbon credit from CER national programs/projects. Except for international funds, all these options are based on carbon credit transactions between suppliers and buyers of carbon credits from CER projects/initiatives. Continuing with a framework of Kyoto Protocol, developing countries will be eligible to be suppliers of carbon credits from CER projects/initiatives while developed countries can achieve their carbon emission reduction targets by buying carbon credit from CER projects/initiatives. Industries in developed countries certainly have other options to reduce their emissions including installing a new technology or support other carbon projects that offer lower costs. The different of the three options are only on the degree of certainty of REDD payments.

In the UNFCCC protocol option, REDD payments will be made based on a formal agreement between buyers and sellers (suppliers) of carbon credit from CER projects/initiatives or CER national programs. CER projects are referred to activities conducted by private companies and communities while CER national programs are referred to activities of governments at all levels. The international fund options is planned to provide REDD payment not related to carbon credit transactions but it is still based on a formal agreement between governments of developing countries and governments of developed countries. This option is aimed to support CER national programs only.⁵

The carbon market option is a voluntary market mechanism to trade carbon credits from CER projects or CER national programs. Buyers (developed countries) and suppliers (developing countries) are freely to sell or buy carbon credits from CER projects/national programs. The carbon markets, for example the Chicago Climate Exchanges (CCX), issue carbon financial instruments (CFI) to suppliers of carbon credits that are members of these carbon markets. Suppliers of carbon credits can be members of CCX that can make extra emission cuts or members that have verified offset projects including reforestation and afforestation projects. Buyers of CFI (or carbon credits) are members of CCX that are obligated by the Kyoto protocol to reduce their carbon emission to certain target levels. Therefore, CFI prices or carbon credit prices depend on quantity of carbon credits demanded as well as willingness to pay by members of CCX to meet their emission targets and quantity of carbon credit supplied as well as the cost to produce it by the suppliers that are members of CCX. This issue will be further discussed in Paper 4.

⁵ CIFOR, ICRAF, Ecoscurities, FORDA, ODI, URS, 2007, Creating Financial Incentive for REDD: Carbon Markets, International Policy, and National Implementation, National workshop on climate change and forestry in Indonesia, Jakarta, 27 – 28 August 2007

If the carbon market works efficiently, it will produce the lowest cost to reduce carbon emission from deforestation. CFI currently are traded at US\$3 to US\$ 4 per ton of CO₂ at CCX. It is unclear whether it is the lowest cost to reduce carbon emission but it is certain not the lowest cost to reduce carbon emission using forestry projects. At the moment, there is no significant carbon related forestry projects that are members of CCX.

Assuming a deforestation rate of about 2 million ha per year and an emissible carbon stock of 250 ton per ha (leading to 917 t CO₂ emission per ha), and as low a carbon price as US\$ 1/ton CO₂ (leaving space for considerable transaction costs) potentially the Indonesian forestry sector (government, companies, and communities) can receive about US\$1.8 billion annually if they can trade carbon credit from REDD projects/national programs that stop 100 percent deforestation. This assumes the quantity demanded by buyers of carbon credit also increase in proportion to the increase in the quantity supplied of carbon credit from reduced carbon emission from deforestation. If these assumptions do not hold, the potential amount to be received will reduce.

Indonesia has become one of the largest emitters of greenhouse gases (GHG) in the world due to the release of carbon dioxide from deforestation and forest degradation (DD). Table 6 provides a summary of current GHG emissions. Forestry emits 2,563 megatons of CO₂ equivalent annually, making Indonesia the third largest emitter in the world. However, if EU 25 is counted as one unit then Indonesia is the world's fourth largest emitter.

Table 6. GHG emission summary in Mt CO₂e (PEACE, 2007 from various sources)

Emission sources	United States	China	Indonesia	Brazil	Russia	India
Energy	5,752	3,720	275	303	1,527	1,051
Agriculture	442	1,171	141	598	118	442
Forestry	-403	-47	2,563	1,372	54	-40
Waste	213	174	35	43	46	124
Total	6,005	5,017	3,014	2,316	1,745	1,577

The sources of carbon stock in forestry come from forest cover, agro-forestry, plantations, fallow land, grassland, shifting cultivation areas, settlements and surrounding and mixed unproductive land. Emissions from the forestry sector occur as carbon stock is depleted and released into the atmosphere caused by changes in forest and other woody biomass stock, forest and grassland conversion, abandonment of managed land and forest fires. Forest fires contribute 57% to GHG forestry emissions (PEACE 2007). Figure 6 describes components of forestry emissions and related activities.

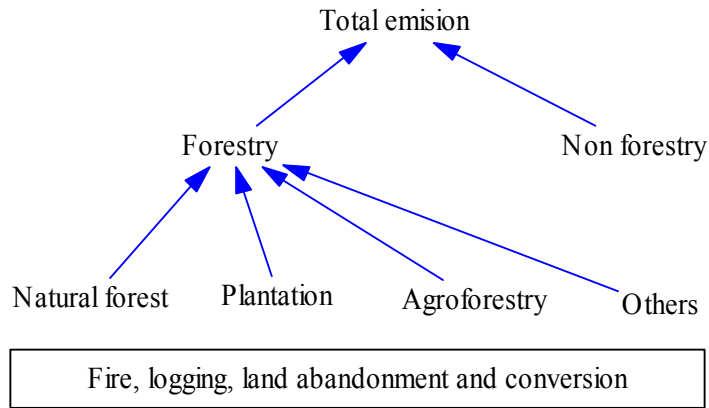


Figure 6. Components of forestry emissions

FAO (2000) classified land into three main categories based on forest cover and land use. The categories are forest, other wooded land and other land (where trees occur outside forests). There are seven forest change processes that can be categorized either as land use changes (deforestation, afforestation, and expansion of natural forest) or internal changes (reforestation, regeneration of natural forest, degradation, and improvement). Figure 7 describes these forest change processes. FAO classifies agroforestry and grazing as non-forest categories. In Indonesia there are currently many “grey zones”, given that many state forests no longer have any trees while non-forest areas do. However, clear definitions of deforestation and forest degradation are necessary to avoid confusion in REDD.

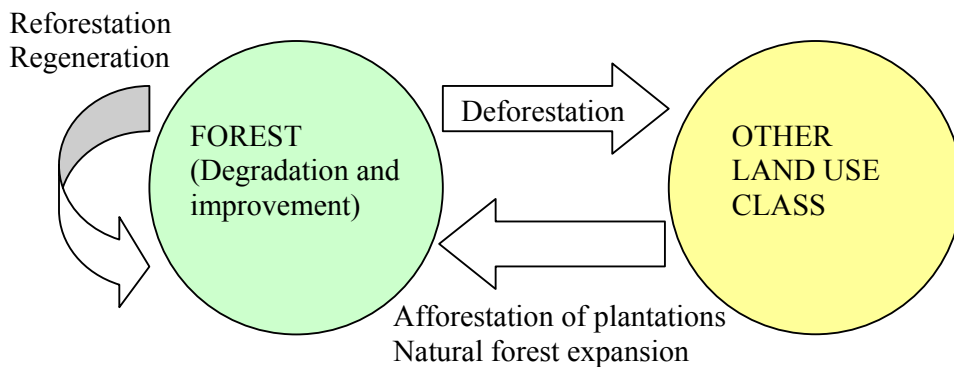


Figure 7. Forest change processes (FAO 2000)

The Government of Indonesia (GoI) has divided about 110 million hectares of state forest into five forest categories: conservation forests for nature and water conservation, protection forests, limited production forests, forests with special functions and conversion forests. The government implements different management schemes and policies for each category of forest. The extent of these different categories of state forest is shown in Table 7. In terms of forest category area there has been no major change in the last five years. In fact the statistics report an addition of one million hectares during those years.

Table 7. Forest cover by forest function⁶

Forest Functions \ Year	2000	2001	2002	2003
Conservation forests	21,824,627	21,824,627	23,214,626	23,214,628
Protection forests	29,036,994	29,036,994	29,037,397	29,037,397
Limited production forests	16,209,112	16,209,112	16,215,977	16,215,977
Production forests	27,823,177	27,823,177	27,823,177	27,823,177
Forests with special functions	7,268	7,268	0	0
Conversion forests	13,670,535	13,670,535	13,670,535	13,670,535
Total	108,571,713	108,571,713	109,961,713	109,961,714

The degradation rate has been increasing dramatically over the last twenty year, at an average of 1.8 million ha annually between 1985 and 1997, 2.6 million ha from 1998 to 2000, and 2.8 million ha after the year 2000. There is no sign that the many programs to combat illegal logging have succeeded in reducing the rate of degradation through improved forest governance or law enforcement. Indeed, the Minister of Forestry, M.S. Kaban has stated that a total of 60 millions ha has been degraded in Indonesia due to illegal logging.⁷

REDD (Reducing Emissions from Deforestation and Forest Degradation) payment is based on additionality (Figure 8), i.e. the difference between DD business as usual or reference level (RL) and DD with REDD payment. Assuming 60 million ha of Indonesian forest has been degraded then the remaining forest as the object of REDD is only about 50 million ha. If we assume the DD rate in the RL scenario to be 2.8 million ha annually and the DD scenario with REDD payment to be 1.4 million ha annually (a 50% reduction) then the additionality of reducing DD is 1.4 million per ha. The size of carbon credits varies depending on the additionality, estimates of carbon released due to DD and carbon price (Table 8). It can range from USD 1-17 billion. This figure has not included forests outside formal state forests such as private/small-scale forests.

⁶ Forestry Statistics of Indonesia 2000-2004 (MoF)

⁷ Harian Analisa, 19 January 2006

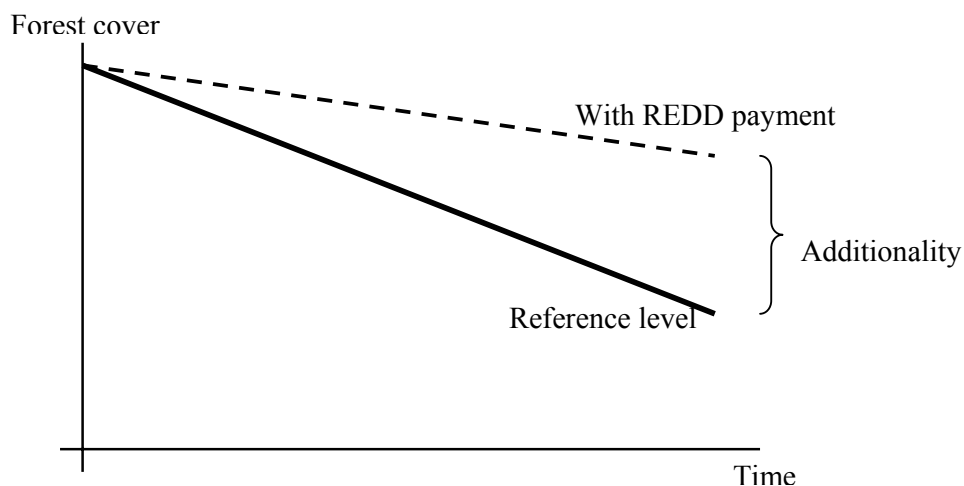


Figure 8. Emission reduction with REDD

Table 8. Orders of magnitude of potential carbon credits from REDD in Indonesia

Carbon credits size scenario	DD as baseline (million ha)	DD with REDD payment (million ha)	Additionality of REDD (million ha)	DD emissions (ton CO ₂ /ha)	Carbon emission reduction (Mt CO ₂) ¹	Carbon price (USD/t on CO ₂)	Size of carbon credits (USD million)
High carbon price	2.8	0	2.8	300	840	20	16,800
Low carbon price	2.8	1.4	1.4	300	420	3	1,260
Low additionality and carbon price	2.8	2.0	0.8	300	240	3	720

1. A wide range of values if feasible, with primary forests in the range 400-450 t C/ha, degraded forests as low as 55 t C/ha and land use types after conversion operating below 50 t C/ha (aboveground + readily emissable soil C), emission can be as high as $(450 - 50) * 44/12 = 1467$ t CO₂/ha, and as low as $(55 - 50) * 44/12 = 18$ t CO₂/ha.

Box 3. Academic Draft for Developing ES Regulation

Some laws (Undang-Undang – UU) and government regulations (Peraturan Pemerintah – PP) implicitly mention environmental services (ES) or *Jasa Lingkungan*. For example, the UU No. 5/1990 described that conservation forests provides ecosystem benefits and it provides guidance how to utilize such benefits. Nevertheless, it does not regulate clearly the zones for these purposes.

On the other hand, UU No. 41/1999 and PP No. 34/2002 also have framed environmental service issues explicitly. UU No. 41/1999 about Forestry pointed out that individual, cooperation, private and state-owned company can utilize environmental services at protection and production forests by applying ES utilization permit. PP No. 34/2002 operationally followed up this UU. This PP No. 34/2002 has some limitations such as (1) limited environmental services regulated; (2) the District governments are the only authorized body that can give permits. This might cause inflexibility of management; (3) size of forest areas and length of permits are uniform for all utilizations; (4) voluntary private schemes have not been accommodated. Furthermore, there is no regulation directing ES issues for community forests.

The paragraphs above show that there is no regulation in coordinating the environmental service issues at forest lands in Indonesia. The Ministry of Forestry has been initiating to develop an academic draft for an ES regulation. The scope of this draft includes protection, production, conservation and community forests. Three institutions noted in this draft: managing, financing and intermediary organizations. The managing organization would function to implement their action plan for all ES in their unit management, to evaluate feasibility their operation and to raise funds. The sources of funds are (1) government funding (APBN/APBD, DAK, DR, Dana GERHAN, etc.); (2) carbon trade through CDM or other carbon market mechanisms; (3) corporate social responsibility funds from companies; (4) voluntary community funds. This managing organization can be local community institution, national/provincial joint ventures, cooperation, privates, national park managers or other newly established institutions as needed. The financing organization can function as a fund and investment manager. The last one is the intermediary organization to bridge between managing organization and donors.

1.3 Conclusions of Part I

→ all co-authors please provide your views on what should go here

II. Lessons learnt from regulation, fund and market based incentives in forestry and natural resource management in Indonesia

This chapter provides lessons on how fund and market-based incentives have been created and distributed in Indonesia. These lessons can be used to develop scenarios for REDD fund payment mechanisms and market incentives to ensure efficiency and fairness, and at the same time ensure that distortions in fund and market incentives are well anticipated.

Fund incentives are not new in Indonesian forestry. Reforestation Funds (*dana reboisasi* or DR) and Debt for Nature Swap (DNS) are among the oldest incentives. The government has taken DR from forest concessionaires to ensure forests are rehabilitated, and has developed mechanisms for distributing funds to local governments, local communities and others stakeholders. Payment for environmental services (PES) and certification for forest concessionaires and small-scale/community forestry provide examples of how market-based incentives work.

2.1. Lessons from forest regulation

2.1.1. Reforestation and rehabilitation of forest and land

Forests have played a major role in Indonesia's economy and its industrial development. Under a centralized government during the New Order era, forests were used to reduce the country's dependency on foreign earnings from oil and gas. They also provided important direct revenues for the central government for financing general governmental services especially in the forestry sector and for financing reforestation and replanting of degraded forest areas. Forests were also important sources for financing improvements in the welfare of low paid military and police officers (Barr, 2004). Under the Reform era, Indonesia's already degraded natural forests continue to play an important role in financing local economic growth. In this era regional governments have more autonomy in promoting local businesses and they look at forests as resources for improving local economies and increasing their own-source revenues (PAD).

The two main sources of central government revenue from forests have been Forest Resource Rent Provision (PSDH) and Reforestation Funds (DR). Before introducing the government Non-tax State Revenue (PNBP) in 1997, the Ministry of Forestry managed all these funds and the President had discretionary power over their use, especially DR. Since the Reform era, all of these funds are paid directly to the Ministry of Finance.

Under good governmental financial management, timber revenues should be part of the annual state budget (APBN) and should be managed transparently and accountably. In the past, timber revenues, especially DR were recorded as non-budgetary funds, and their management was far from being transparent and accountable. The central government can tell the amount of its annual timber revenue receipts, but it has trouble producing information on balance of the funds, who they were paid by, or where and when they were paid. Such practices have led to corruption and misuse of funds. Instead of spending DR for reforestation, the fund has been used to finance many things over the years, including developing Indonesia's aerospace industry.

In the autonomy era, demands are increasing for transparency and accountability in the government's management of timber revenues. Under the fiscal balancing law, regional governments receive a share of the funds, which are an important source of financing for regional government expenditure. With the current government accounting system, it is

difficult to assess how appropriate the fiscal balancing and revenue sharing of these timber revenues is.

If the timber revenue system functioned as described in regulations it would be possible to estimate the size of annual timber revenues and to monitor the actual amounts received annually by the central government. It would also be easy to monitor how much each district/municipality contributes annually, and distinguish between timber revenue originating from DR and PSDH. A properly functioning timber revenue system is fundamental to the efficient and effective sharing of timber revenues with regional governments.

In reality, the timber revenue system has not functioned properly, particularly in the regional autonomy era. District/municipal heads selected by local legislative assemblies (DPRD) or directly by local communities neither report to nor are accountable to the Minister of Forestry or the Minister of Finance. There are no sanctions for not filing the monthly timber revenue payment reports obliged by the law. Consequently, heads of contributing districts/municipalities send no reports to the ministers. It is therefore extremely hard to trace exactly how much districts/municipalities contribute to government revenues from the forestry sector. This practice has significant implications on revenue sharing calculations as discussed below, and in the long-term on the quality of forest management in contributing districts/municipalities.

The central government has to share the timber revenues collected with provincial and district/municipal governments. The mechanism used to share the timber revenues is known as a balancing fund. The central government not only shares timber revenues with regional governments, but also other central government revenues such as land tax, personal tax, mining revenues, etc.

A 60% (sixty percent) share of revenue from Reforestation Funds (DR) goes to the central government and the remaining 40% (forty percent) goes to contributing districts/municipalities. Prior to 2005, DR was shared with regional governments through Special Allocation Funds (DAK) in the same ratio.

To secure its 40 percent share of DR revenue, the provincial government of the contributing districts/municipalities must submit annual forest and land rehabilitation proposals. The provincial government then coordinates forest and land rehabilitation activities in all contributing districts and municipalities in the province.

Contributing districts/municipalities must use the 40 percent share of DR revenue for forest and land rehabilitation in accordance with rehabilitation plans agreed on by the stakeholders in the district/municipality.⁸ The funds must be deposited in Forest Development accounts in the name of the district head or mayor of the municipality. They are then distributed via bank accounts in the form of loans to corporate bodies, forest farmer groups, or cooperatives. They cannot be used for rehabilitation support activities.

The Central government's 60 percent share of DR revenues should be deposited in a Forest Development account in a bank determined by the Minister of Finance. Interest on the account should be transferred to the state treasury and used for forest and land rehabilitation activities. The Minister of Forestry and the Minister of Finance then develop a five-year forest and land rehabilitation plan, which is financed by the forest development fund. The fund is also used for providing loans to corporate bodies, cooperatives, and forest farmer groups for undertaking forest and land rehabilitation. The Minister of Forestry will propose distribution of DR loans to the Minister of Finance.

Contributions from Forest Exploitation Rights (IIUPH) and Forest Resource Rent Provision (PSDH) are divided at a ratio of 20% (twenty percent) for the central government and 80% (eighty percent) for the region concerned. DBH is the 80% regional share of IIUPH

⁸ Government Regulation No.35/2002 on the Reforestation Fund

and should be divided at a ratio of 16% (sixteen percent) for the province and 64% (sixty-four percent) for the contributing district/municipality. DBH is the regional share from PSDH and should be divided 16% (sixteen percent) for the province, 32% (thirty-two percent) for the producing district/municipality, and 32% (thirty-two percent) distributed equally between other districts/municipalities within the province.

Based on a conservative calculation of timber consumed by wood industries in 2004 using the lowest rate for DR of USD 13 per m³, we would expect the central government to have collected about USD 447.52 million or IDR 4 trillion in DR revenues that year. The Ministry of Forestry only collected IDR 2.8 trillion or 70 percent of this figure. In another words, the Ministry of Forestry and Ministry of Finance failed to collect 30 percent of DR payments in 2004. Although this study was initiated with the Ministry of Finance, the ministry is unable to provide data on timber revenues.

A similar amount went uncollected in 2005; the central government should have collected USD 393.6 million or IDR 3.5 trillion from DR that year, yet only managed to collect IDR 2.5 trillion or 70 percent of potential revenue based on actual timber production.

The central government seems to have faired better at collecting PSDH. Using the lowest rate of IDR 30,000 per m³ for PSDH, the central government should have collected IDR 1.01 trillion in 2004. In fact, the Ministry of Forestry collected IDR 1.1 trillion. In 2005 however, the central government failed to collect the full amount of potential timber revenue from PSDH; it should have collected IDR 900 million but only collected IDR 653 million or 73 percent.

As suggested earlier, timber production used in this analysis is a conservative figure collected and estimated by the Ministry of Forestry, which has no access to timber produced and used by wood industries supported by local governments. Therefore, the amount of uncollected timber revenues was probably a lot higher than 30 percent.

With this poor performance collecting and sharing timber revenues, we should also expect an equally poor performance spending DR funds on rehabilitation and reforestation programs. Controlling spending is much harder that controlling timber revenues as spending for rehabilitation and reforestation programs involves millions of people. Many reports have suggested the misuse of DR funds due to corruption and inappropriate seedlings for tree planting. Late payment of rehabilitation program funds provides a key opportunity for misappropriating DR funds; government officials can say the timing of the payment was inconsistent with planting timing, and governments have to spend their budgets if they do not want to be considered incompetent.

2.1.2. Degraded Forest in Forest Concessions

The steady decline of commercially viable forest estates over the last few decades clearly shows that unsustainable forest management has been the prevalent practice in five major islands of Indonesia (Sumatra, Kalimantan, Sulawesi, Maluku and Papua). The number and area of forest concessions declined sharply from 582 concessions (*Hak Pengusahaan Hutan*, HPH) with a total area of 62 million ha in 1994, to 285 HPHs covering 27.72 million ha in 2005. Timber production also decreased sharply from 22 million m³ to 5.72 million m³ over the same period (Prasetyo *et al.*, 2007). Diminishing the number of forest concessions would lead to increasing numbers of abandoned and open access logged-over forest. Forest without clear management and ownership would potentially lead to further degradation and deforestation.

As indicated by Kartodihardjo and Priyono (2000), data from the Ministry of Forestry and Estate Crops show that as of June 1998, 69.4 million ha of forest area had been allocated to 651 HPHs. Of this total area 34 million ha (49%) were managed by 291 HPHs in their first

term of operation (first 20-years) and 35.5 million ha (51%) managed by the 359 other HPHs, whose first term concession rights had expired. In 1998, forest degradation resulting from HPH operations had reached 16.57 million ha. This area would be rehabilitated, changed to different land use categories, and reserved for other uses. More than 21 HPHs with a total area of 1.91 million ha converted into forest plantation, transmigration, and agricultural land. According to Chowdhury (2006), in Indonesia proximate causes of forest change also include smallholder agricultural expansion (World Bank, 1990; Indrabudi et al. 1998) in addition to tree crop production, oil palm estates (Dove, 1993; Osgood, 1994; Chomitz & Griffiths, 1996; Casson, 2000), timber extraction and conversion to industrial plantations (Angelsen, 1995; Fuller & Fulk, 2001; Dennis & Colfer, 2006).

Box 4. Degraded production forests as basis for conversion

In the simple scheme, production forest is not convertible for other land uses, although it can be converted to intensive tree plantations. In practice, however, part of the ex-HPH areas has been legally converted to other land uses.

*** evidence from Agung's study ***

These conversions show that a focus on 'convertible forest' as target for REDD with clear 'additionality' (because this forest was slated for conversion) can only be acceptable if 'leakage' to other forest categories is controlled.

2.1.3. Timber and Community Plantation

In the New Order era, the Indonesian government and particularly President Soeharto supported the development of industrial timber plantations hoping to become the world's largest producer of industrial timber plantations and pulp. To facilitate sources of wood for pulp companies, the government provided them with soft loans to accelerate timber plantation development. The soft loans included non-interest bearing loans and direct investments in the companies. Unfortunately, the scheme was mismanaged resulting in a number of people being prosecuted and sent to jail. The fund was used to finance development of Indonesian national airplane, non forestry projects, and unsuccessful timber plantation projects involving mark-up planting areas.

Despite its bad experience managing incentives for industrial timber plantations, the Ministry of Forestry has continued with a new program. Using an improved state financial mechanism, it established the Forest Development Payment Centre (P3H). P3H is managed using the new Public Service Agency (*Badan Layanan Umum* - BLU) state budget management mechanism. BLU are agencies at echelon II level in any government office tasked with managing budgets in a more businesslike manner. They have to produce the financial and accountability reports usually required by state-owned companies. Accordingly,

the BLU has flexibility in utilising its revenues and spending its budget wisely. The BLU system is still new and has yet to be tested in the forestry sector. The risk of repeating a past mistake appears to be looming.

The Ministry of Forestry has recently introduced the Community Plantation Forest (*Hutan Tanaman Rakyat*, HTR) program to provide local people, especially farmers with access to production forests and cheap funding. Using the BLU mechanism, the Ministry of Forestry will provide local communities with rights and funding to produce plantation forests specifically for supplying pulp industries. The same risk, even higher, applies to this program too.

Under this new policy, the government will establish 9 million hectares of new timber plantations in Sumatra and Kalimantan by 2016 (Sinar Harapan. 2006; Agro Indonesia, 2007a). Of this, approximately 5.4 million hectares will be allocated for HTR, whereas the remaining 3.6 million hectares will be developed as industrial timber plantation estates HTI (*Hutan Tanaman Industri*) (Agro Indonesia 2007f, g; Sugiharto, 2007a, b, c).

The main component of this new policy, HTR plantations, will result in the allocation of 3.7 million hectares of land in Kalimantan and 1.7 million hectares in Sumatra (Sugiharto 2007d). Over the next four years (2007-2010), the Indonesian government will distribute 1.4 million hectares of land annually to approximately 90,000 families on both islands. It is expected that once productive, these new plantations will produce enough raw material not only to close the current supply-demand gap, but also to allow for new capacity growth in the forestry sector (Kompas, 28 April 2006). Over the 10-year period (2007-2016), the HTR plantation program will cost approximately IDR 43 trillion (USD 5 billion) and is expected to generate employment for over 1.5 million people in rural areas (Agro Indonesia, 2007a; Bisnis Indonesia 2007; Sugiharto, 2007a; Sinar Harapan 2007).

The Indonesian government realizes that getting a mega plantation development program of this scale off the ground will require a major incentives package. As of July 2007, the government authorities have put together the following set of incentives in order to stimulate the development of HTR plantations:

- **Vast areas made available for plantation development.** The MoF has allocated 1.7 million hectares and 3.7 million hectares of degraded forest, defined as **Logged-over Forest** (LOF), for HTR in Sumatra and Kalimantan respectively (Akbar 2007). These LOF areas are located mainly in current or former logging concessions of the state forestry companies PT Inhutani I-V. These companies will play the leading role in the HTR program (Agro Indonesia 2007f, g, h); van Noordwijk et al. (2007), however, found that there are major inconsistencies between areas indicated for HTR and the situation on the ground. Large areas of community-managed agroforests in North Sumatra are now targeted for HTR development, although they already have a productive and profitable tree cover.
- **Streamlined project design.** The HTR program will be implemented mainly through HTR-Developer (HTR-D) schemes whereby timber plantation companies run plantation projects for the first 8 years and subsequently distribute parts of the planted areas to participating communities for a management cycle of up to 60 years (Agro Indonesia 2007c, h; APhi 2007; DJBKP 2007; Sugiharto 2007d; Widyantoro 2007).
- **Simplified license application procedures.** Verification of the degraded nature of LOF in proposed HTR project sites will be carried out by the applying concessionaries themselves (e.g. PT Inhutani I-V) (Agro Indonesia 2007b). HTR permits will be issued by district (*Kabupaten*) authorities (Agro Indonesia 2007d). Provincial institutions (governors) will be involved in cases where HTR projects cover more than one district.

- **Funding facilities.** HTR-D license holders will be able to use the available natural timber stock in project sites as collateral for commercial bank loans (Koran Tempo, 2 August 2006). They will also be able to access the government HTR fund of USD 5 billion, derived from the Reforestation Fund (DR), for the period of 2007-2016 (Sugiharto 2007a, g). HTR-D licensees will also be able to benefit from project joint-ventures involving direct foreign investment (Sugiharto 2007f).
- **Tax exemption.** HTR-D plantation ventures will be afforded an 8-year grace period on DR loans taken from the MoF (Sugiharto 2007a).
- **Simplified operational procedures.** The transport of HTR-D timber will not require SKSHH (*Surat Keterangan Sahnya Hasil Hutan*) legality certificates (Bisnis Indonesia, 11 May 2006). Instead, a company invoice (*faktur*) will be sufficient. The companies will also employ a newly approved silvicultural system called TPTII (*Tebang Pilih Tanam Intensif Indonesia*, Indonesian Selective Cutting, and Intensive Planting System) which will allow for more efficient extraction and replanting (MoF 2007b).

While it is widely accepted that timber plantations are necessary for the long-term sustainability of Indonesia's forestry sector and that timber plantations are crucial for Indonesia to benefit from carbon credits either through CDM or REDD, the plan to develop 5.4 million hectares of HTR timber plantations by 2016 is fraught with problems. Among key problems are the following:

- **Possibility of extensive deforestation.** While the officially stated objective of the HTR policy is to rehabilitate degraded forest, it is likely that in practice this will mean the replacement of the residual natural forest cover with fast-growing softwood species. Among most critical issues here is the fact that the term "degraded forest" is equated with "Logged-over Forest" (LOF, or *Hutan Bekas Tebangan*) (Akbar 2007; Sugiharto 2007d). This is very significant because an LOF is for the most part still a closed-canopy forest with substantial volumes of commercial and non-commercial timber (standing stock) (MoF 1996).

Furthermore, the simplified verification process of the forest cover in proposed HTR project sites by the concessionaries themselves increases the likelihood that the status of good quality production forest will be downgraded for HTR concessions.

Finally, the application of the TPTII silvicultural method, which is in many ways similar to an earlier system called TPTJ (*Tebang Pilih Tanam Jalur*, Selective Cutting and Row Planting) means that mechanized logging will be undertaken in strips every 15 meters, essentially removing the standing tree cover all together (MoF 1999; MoF 2007b).

- **Limited tenure incentives and uncertain economic feasibility of community timber plantations.** The MoF has heralded the 5.4 million ha HTR program as a breakthrough for rural communities in Indonesia in terms of land tenure (Djadjono 2007). The initial drafts of HTR policy envisioned both independent (family) and village (cooperatives) based timber plantations projects, where DR loans would be made available directly to the grassroots (Agro Indonesia 2007c). It was also proposed that communities would enjoy landuse rights for up to 100 years (Van Noordwijk *et al.* 2007).

In practice, however, concessionaire dominated HTR-D has become the model of choice and the community landuse rights have been trimmed to 60 years. In addition

to diminishing community tenure incentives, there are also major questions about the economic feasibility of community timber plantations – especially those growing fiber for pulp and paper mills (Sugiharto 2007i). There are indications that community timber plantations can only make a profit if the plantation softwood is used by the high-end segment of the wood-working sector (e.g. furniture), or if intercropping with other agricultural produce or hardwood timber species is undertaken (Van Noordwijk *et al.* 2007; Widyantoro 2007).

- **Lack of transparency in the application procedure.** Since verification of the degraded nature of LOF in proposed HTR project sites will be carried out by the applying concessionaries themselves (e.g. PT Inhutani I-V) (Agro Indonesia 2007b), this will essentially constitute “self-approval” and may lead to irregularities.
- **Limited capacity of local government institutions to effectively manage the HTR program.** While deconcentration of decision-making power in Indonesia’s forestry sector has been an important element of decentralization and regional autonomy in Indonesia over the last several years, it is important to draw lessons from past experiences with district/province level forest/timber utilization licenses. Between 1999 and 2003, a wide variety of such permits (e.g. IPPK, IPKTM, IPKMA) have been issued by local authorities in nearly all forested areas in Indonesia (Casson and Obidzinski 2002; Obidzinski and Barr 2003; Tokede *et al.* 2005; Barr 2006). Minimal oversight and communication breakdown between different levels of forestry administration had resulted in widespread abuse of these licenses for illegal logging and illegal timber trading, leading to their eventual cancellation.
- **Excessive subsidies and opportunities for rent seeking.** While it is widely accepted that timber plantations anywhere in the world require some sort of financial support (e.g. Bull *et al.* 2006), HTR-D plantation licensees will be able to access at least four major sources of funding before planting a single tree. First, they can use the standing stock in the residual natural forest as collateral for commercial bank loans. Second, they can harvest the remaining hardwood timber and sell it either to pulp and paper or plywood/sawn timber mills. Third, HTR-D companies will be able to access USD 5 billion in DR loans and enjoy the 8-year grace period before repayment. Fourth, they will gain major benefits from direct foreign investment. A recently announced 120,000 ha HTR-D joint venture in Central Kalimantan between PT Inhutani III and a South Korean company NCF (National Forestry Cooperative Federation) provides for South Korean investment per ha that is twice the standard plantation development input envisioned for HTR (Sugiharto 2007f).
- **Weak control of HTR operations.** The removal of the requirement of SKSHH (*Surat Keterangan Sahnya Hasil Hutan*) legality certificates for the transport of HTR timber (natural forest and planted timber) and their substitution by company invoices (*faktur*) constitutes a major weakness in the chain of custody (CoC) that will encourage irregularities.

Since late 2006, Indonesia has been in talks with EU representatives in Jakarta about the design and implementation of the Voluntary Partnership Agreement (VPA) covering the trade of timber products (LEI 2006; Sugiharto 2007h; Telapak 2007). Indonesia and Malaysia are two Southeast Asian countries currently engaged in such talks, with Indonesia seen as a frontrunner due to its, what forestry observers consider, much improved timber legality standard (TLS). The new TLS has been in preparation since 2003 and its final version was approved by the Ministry of Forestry in January 2007. It is now awaiting ratification by the government and further multi-stakeholder review before it is ready to be implemented.

There are indications, however, that the recently announced national policy to bridge the supply-demand gap in Indonesia's woodworking sector through a rapid expansion of timber plantations over the next 10 years may be on a crash course with the VPA process. It appears that the centrepiece of this timber plantation expansion policy (i.e. HTR), if implemented in its current form, may contradict the VPA framework on a number of counts and undermine the credibility of the VPA process both in the EU and in Indonesia.

- **The HTR plantation program may result in vast volumes of timber from natural forest that do not meet CoC criteria under the TLS and are therefore not fit for trade under the VPA.** The CoC criteria under Indonesia's TLS have been designed mainly to account for the movement of timber between forest management units (FMUs, logging concessions), downstream industries and consumer markets. They are ill-prepared to account for the extraction, processing and movement of timber from the conversion of LOF, particularly if only company invoices are required in the place of SKSHH legality certificates.
- This raises a very real possibility of vast amounts of **technically illegal timber entering the Indonesian and EU marketplace.**
- There are serious **shortcomings in terms of transparency and accountability both in licensing and plantation development.** The provision for third party verification is neither in place to validate the condition of LOF areas proposed for plantations nor is it envisioned for monitoring the operations on the ground.
- The spectre of the conversion of vast areas of logged-over secondary tropical forest for HTR timber plantations raises concerns over **deforestation and the unsustainable nature of plantations and the timber generated from them.**
- Limited tenure incentives, the preferred structure of HTR plantations as HTR-D, and uncertain economic benefits for local communities raise **questions about social and economic equity** envisioned under the TLS.

2.2. Lessons from 'fund' based options

2.2.1. Lesson Learned from GERHAN

GERHAN is a government programme, which aims to rehabilitate degraded forests and lands, to optimally re-function them so as to provide the local people with the resulting benefits. GERHAN was declared/introduced with a decree issued by the Coordinating Minister of People/Community Welfare, Coordinating Minister of Economy and Coordinating Minister of Politics and Security No. 09/KEP/MENKO/KESRA/ III/2003; KEP.16/M.EKON/03/2003; KEP.08/MENKO/POLKAM/III/2003 for the formation of a Coordination Team for Environmental Improvement through national Rehabilitation and Reforestation, dated 31 March 2003. GERHAN has been employed in critical watersheds, which has targeted three million hectares per year for five years. GERHAN was introduced in 2003, in 29 watersheds to rehabilitate 300,000 hectares, located in 15 provinces and 145 districts. From 2004-2007, the rehabilitation areas will amount to 500,000, 600,000, 700,000 and 900,000 hectares per year consecutively.

The budget for GERHAN was provided by the government, amounts to more than one trillion rupiahs at the beginning and continued to increase. Thirty four percent of this is for seedling procurement, 56 % for planting and land conservation building (dams, terracing etc.), and 10 % for a supporting fund. However, the government is not the only source for funding. Other funding comes from grants, debts for nature swaps, carbon trade, commercial companies, and land owners are also encouraged.

GERHAN emerged in 2003 because the government believes that catastrophes such as floods, landslides and long dry seasons are primarily caused by up river deforestation. Forest areas in the upper rivers are no longer able to function as water filtration and catchments. Rehabilitation is the only way to reduce the magnitude and frequency of these catastrophes.

The Coordinating Minister of Community Welfare decreed the governance of GERHAN through Decree No. 18/KEP/MENKO/KESRA/X/2003 for “The guidelines for executing a national movement for the rehabilitation of both forest and land” dated 3 October 2003. This decree acts as the guidelines for various stakeholder communities, private companies and the central and local governments in conducting and monitoring environmental improvement through rehabilitation and reforestation.

GERHAN is arranged into three functions (coordination/advisory, control and implementation) and at three levels (national, provincial and district). The coordination function is only at the national level, that is undertaken by the Coordination Team for Environmental Improvement through National Rehabilitation and Reforestation (Tim Koordinasi Perbaikan Lingkungan Melalui Rehabilitasi dan Reboisasi Nasional or TKPLRRN). The controlling teams are located at the national level that is they are directed by the TKPLRRN secretariat that consists of 15 people from various ministries and army.

At the provincial level the governor is responsible for controlling the implementation of GERHAN with support from the Controlling Team, at provincial level. This team comprises the provincial officials of forestry, environment, agriculture, public work, education, land use, army and police. The main duty of this team is to regulate, supervise, execute, monitor and report to the controlling team at national level.

The implementation of GERHAN located at the district level, which is called Execution team of GERHAN at district level. The district mayor directs/manages this particular . However, the District Military Commandant directs the team in the practical execution of the GERHAN programme, with the Head of the District Forestry acting as the team secretary. Perhutani and INHUTANI (state own companies) and other related governmental institutions make up the team members. The main duty of the team is to execute/implement/manage/oversee GERHAN activities in the fields.

The government reported that GERHAN had successfully planted 70.21% of the planned tree plantings, in 15 provinces, up until the end of April 2004. However, some NGOs reported that there was little to no community participation at any levels. The planning was top down. The types of trees GERHAN has been planting do not meet the aspirations of the local communities and local farmers.

The imbalance of information among stakeholders in GERHAN exists and can affect the control of money and material flows within GERHAN. In the money flow, the Forestry Unit, the Watershed Agency and companies play the most important roles in the field. The Watershed Agency buys seedlings indirectly from the companies via a tender system. The company, which wins the tender, delivers the seedlings to the Forestry Unit, under the quality assurance provided by universities. The Forestry Unit then delivers the seedlings to the farmer groups to be planted in the previously chosen fields. The question is who monitors this money and material flow and do they hold all information concerning this monitoring. This situation encourages ‘rent-seeking’ and ‘free-riding’ behavior, thus reducing the effectiveness of the program.

GERHAN is a top agenda in government programmes. However, the current institutional setting of GERHAN creates an imbalance of information among its stakeholders and actors. There is a serious imbalance of information between the Forestry Unit and the community. This situation makes transparency and social movement on forest and land rehabilitation impossible (Purnomo 2006).

2.2.2. Debt for Nature swap

Debt for Nature Swap (DNS) is a financial incentive provided by lenders (usually governments of developed countries) to borrowers (usually governments of developing countries) for reducing loan payments to lenders if borrowers are willing to invest their own local money on environmental projects including forestry projects. Developed countries have offered several forms of DNS mechanisms to the Indonesian government. However, only the DNS offer from the German government has secured its support.

The German and Indonesian governments have agreed to reschedule loan payments of EUR 91 million and EUR 106 million. The first Debt swap agreement on the first loan package (EUR 91 million) was to swap EUR 25 million of loans with the IDR equivalent of EUR 12.5 million for an education project. The debt swap process on the first loan package then continued with forestry programs in several national parks in Sumatra including one in Mount Leuser National Park. The value of loans to be swapped with forest conservation is still small; the German and Indonesian governments have only agreed to swap about EUR 12.5 million in loans for EUR 6.25 million of forest conservation programs. The second debt swap program with the German government worth EUR 106 million also includes a forestry program.

The German government DNS offer is winning the support of the Indonesian government due to its clear incentive feasibility and its simplicity. The Indonesian government should dedicate a budget only half the size of the proposed loans to be swapped for the purpose of forest conservation. There is no *additionality* in terms of funding and forest conservation activities to be eligible for this debt swap scheme.

Securing the incentive is also simple; the Ministry of Forestry only has to submit a forest conservation proposal with budget support from the Ministry of Finance to enter the DNS scheme with the German government. The Ministry of Finance will then invite the German government or its representatives to discuss the proposal. If the proposal is approved, the Ministry of Forestry should undertake the activities agreed upon in the DNS contract. Before the loan can be reduced, an independent auditor will review the Ministry of Forestry's management of the project.

Arguments suggesting the DNS schemes will have a negative affect on governments' ratings is not necessarily true, particularly if the DNS schemes are encouraged by lenders. The Indonesian government Ministry of Finance will not ask for DNS schemes in paying its financial obligations. However, if lender governments or groups of lenders are willing to apply DNS schemes to address two problems in most developing countries, i.e. large debts and environmental degradation, then a DNS scheme should not signal that a developing country has difficulty repaying its obligations. Furthermore, rating agencies consider the size of loans under DNS schemes to be immaterial.

2.3. Lessons from 'market' based options

2.3.1 Lesson Learned from Timber certification

Timber certification in Indonesia includes two main components, namely certification of sustainability of forest management and product certification (Chain of Custody-CoC), that allow you to trace the origin of wood raw material and that its status and qualifications meet sustainability standards by using third party independent auditors recognized by the Forest Stewardship council (FSC) and/or the Indonesian Ecolabelling Institute (LEI). At present there are some 1,046,000 ha of certified forests in Indonesia, of which some 147,000 have

been certified under the LEI system. More than 700.000 ha are certified using both the FSC and LEI systems (Table 3).

Table 9. Certified Natural Forest Concessions

Year	Concession Applications	Certified only by LEI (ha)	Certified by LEI and FSC (ha)	Note
1999	2			
2000	4			
2001	2		90,957 (1)	
2002	1			
2003	4			
2004				
2005			184,206	Certified by FSC in 2006
2006		147,600	267,600 195,110	
Total	15	147,600	737,873	

Source: Indonesian Ecolabelling Institute, 2007.

The potential benefits of certification can be divided into market benefits and non-market benefits. Market benefits of certification may include market share, a ‘green’ price premium and the stabilization of forest economies associated with increased security of a supply base. However, evidence for this is less than convincing. Market studies in the United Kingdom and the United States have shown a potential market share of up to 19 percent, with a price increase of up to 13 percent (WWF, 1994; Winterhalter and Cassens, 1994).

Some suppliers report price premiums ranging from 5% to 65% for certified tropical milled timber and plywood. However, the higher premiums refer to speciality retail products which represent only a small portion of the output of most mills. According to Simula *et al.* (2005), the management of a mill associated with the Indonesian concession PT Diamond Raya Timber in Riau Province, estimated that CoC (Chain of Custody) Certification led to an average 8% increase in wood product prices. This concession also granted by the Ministry of Forestry gave the company the privilege to self-approve its annual work plan and to harvest ramin (*Gonystylus bancanus*), which is listed as a protected species in Appendix 3 of CITES. Particularly significant for the company is the fact that it is not subject to reductions in annual allowable cut required by the national soft landing policy mentioned above.

2.3.2. Distortion in certification incentives

A study in East Kalimantan revealed that about 70% of timber products produced from this province are destined for Japan and China. As long as there is no tangible sign that these markets are introducing significant changes to their procurement policies in favour of verified and certified timber products, forest concessionaires and woodworking industries in East Kalimantan will probably continue to show reluctance towards certification. Moreover, legal and political instability in the province gives rise to conflicts among various levels of the government bureaucracy and results in business uncertainty. In this kind of environment, forestry companies struggle to maintain basic operations and have a difficult time planning for the long term. Forest concessionaires also point to the apparent unwillingness of international buyers to pay substantial premiums for certified timber as a factor that is hindering certification efforts in East Kalimantan. Interestingly, many concessionaires say they are not

as interested in obtaining ‘green premiums’ as they are in having the bureaucratic red tape reduced.

Indeed, the Indonesian government has put forth a number of administrative incentives to this effect. For example, companies in the process of being certified may maintain their original annual allowable cut instead of having it reduced as the government planned with its soft landing policy; they also have their annual work plans approved automatically. If maintained, such measures would indeed constitute a significant incentive in favour of certification, but government inconsistency in this and other areas is counter productive.

In general, distortion in the certification incentive can be caused by:

- Unclear market demand/signals for legal versus illegal timber products, although strong signals are now coming from buyers and some governments in Europe and North America, and are beginning in Japan. There should be developed estimates of price premiums for legal timber and certified products that would represent an incentive for producers, if the market was found to be substantial.
- Demand for sustainable forest products does not necessarily translate to a willingness to pay for the additional costs of sustainable production
- Companies in Indonesia are less likely to respond to demand from companies that they are not trading with since there are significant costs and risks related to switching markets and the benefits are not always clear.
- Environmentally sensitive companies are mainly concerned about their reputations, and need assurance that the products they purchase are approved by activist NGOs in their home markets.

The price of illegal timber is lower than legal timber, if there is limited or absent law enforcement. Buyers do not seem to tolerate a premium price of more than 5% for certified products, an insufficient margin to pay for certification costs (CCIF, 2002). Meanwhile the amount of premium price on products is defined by buyer preference. Upton and Bass (1996) cite evidence that 80 percent of consumers in U.K. and Canadian markets are willing to pay more for environmentally friendly commodities, while Stevens *et al.* (forthcoming) reports a substantially smaller share revealed by industry members in the U.S.

If demand for certified wood is small relative to overall demand, if the costs of certification are significant, and if the amount of new demand created by certification is modest, then the market is less likely to generate a price premium for the certified product, even if there are substantial numbers of consumers “willing to pay” a premium. However, to the extent that the costs of certification are small and certification with labelling creates significant new demand, the two-price alternative is increasingly likely to be generated by voluntary market activities.

Forestry companies struggle to maintain basic operations and have a difficult time planning for the long term. They need sufficient support from government to remain in the forestry business. Otherwise they will get out of the business and shift to more profitable options that potentially contribute to forest degradation or deforestation such as plantations, oil palm or biofuel.

2.3.3. Lessons learnt from Payment for Environmental Services (PES)

There is a new paradigm in environmental policy to recognize and to reward for the provision of environmental services. A popular example is the 1996 forest policy reform in Costa Rica. This policy introduced a new concept in the form of payment for environmental services, based on the principle that the providers of the environmental service will receive payment to compensate them for the benefits that accrue to the Costa Rican society (de Camino *et al.*,

2002). The intent of this policy is to increase income from forest production activities to make them competitive with alternative land uses. The National Forestry Financing Fund has been established as the main agency to administrate the fund. The major source of financing for the Fund comes from national sources (including a fuel tax) and from international agencies. This policy has been successfully implemented. The implementation of such kind of mechanisms, however, is limited in outside Latin America. Costa Rica is one of leading country, who has implemented PES, begin in 1996 with the dramatic change of forest policy reform, by recognizing the environmental services: mitigation of gas emission, protection of water resources, protection of biodiversity and scenic beauty. The government issued the forestry law no.7575. This law introduced a new concept that is a payment for environmental services, based on the principle that the provider of the services (Forest Owners) will receive payment to compensate them for the benefits provides to the Costa Rican society. Creation of the National Forestry Financing Fund (FONAFIFO).as a main agency that administrated the fund for environmental payments

Box 5

It would be good to have a box on the Costa Rican (and Mexican?) models – i.e. institutional setup, problems they've faced. As I understand them they have problems in terms of eligibility and would have problems in terms of additionality if they were focused on carbon

In Indonesia, based on the review of 84 studies that relate to the marketing of environmental services (Suyanto *et al*, 200?), reveals that the development of environmental services in Indonesia is still in its early stage. There are very few cases studies where an environmental service market has been implemented. However, there are increasingly many more initiatives, emerging projects and research related to the development of market of environmental services, which illustrates the various levels of market development for

environmental services. The review indicates that the market for landscape beauty is probably the one showing the most progress.

Although the existing environmental markets are limited in this study, it is clear that the reward is given for the efforts made to produce the environmental service function, such as stewardship, guardian and natural capital. Among the cases where there is a market mechanism it shows that stewardship is important for biodiversity conservation, carbon sequestration and watershed protection, while natural capital and guardianship is more applicable to landscape beauty. Land lease and carbon credits are used as rewards for stewardship services. In the setting where dependency of a community's livelihood on land or forest is high, using land leases (that require sustainable land management) could be effective rewards that would provide environmental services and enhance livelihoods. On the other hand, entrance fees and eco-tourism services are the rewards most often used for natural and guardian services of landscape beauty.

In the Southeast Asian region initial work on developing environmental services market has begun. One example is the work carried out by the World Agroforestry Centre (ICRAF) in building a consortium among the international and national research centres, government and non-government organizations and other interested parties to conduct action research for rewarding the upland poor in Asia for environmental services they provide (RUPES). This programme is funded by a grant from the International Fund for Agricultural Development (IFAD). The overall goal of the project is *enhanced livelihood and resource security for poor upland communities in Asia*. Improved livelihoods in this context refer to: improved food security, income and welfare of poor households and communities in upland areas; improved nutritional status; greater access to and control over the use of resources. The project objective (purpose) is *proven institutional mechanisms for recognizing and rewarding poor farmers for the environmental services they provide*. Appropriate methods for transfer payments to upland communities will be tested and monitored through action research.

2.3.4. PES Criteria and indicator: lessons from RUPES

The terminology of Payments for Environmental Services (PES) suggests that there is at least one *buyer*, at least one *seller*, and a *service* to be sold.

There is considerable variation along at least **seven** important dimensions:

- the **source** of the payment (freely usable financial capital, investment in public services, trust funds for specified activities)
- the degree to which the 'buyer' and 'seller' make the agreements **voluntarily**, within the existing framework of rules and regulations (Box 6)

Box 6. Farmer Group as smallest unit of ES providers' institution and involvement of multilayered institutions

In developing countries' and Latin American settings – specifically Costa Rican case, it is common that the smallest institution unit of ES providers is individual land owner. The purpose of this PES program is to encourage forest protection and management by paying forest owners for four environmental services provided by their forests: biodiversity, carbon, watershed management and landscape beauty. Simply no literatures mentioned involvement of local provider institution involved in the PES process.

Compared to presented RUPES cases, farmer groups are perceived as the most optimal scale where a set of working rules are established in negotiating and complying the contracts. In this case, involvement in a RES scheme is only possible when an individual is a member of a farmer group and either ES intermediaries or buyers will negotiate at this level. Compliance at group level becomes one of monitoring indicators – in this case, the concept of 'tanggung renteng' from Cidanau case is an obvious example.

Existing intersect or overlap of the interest of groups with those of the larger collective would drive the emergence of efficient institution. Focusing individuals' benefits and recognizing individuals' rights can support the establishment of efficient institution at local level, where farmer or community groups become the smallest unit of ES providers to negotiate.

The RUPES case studies indicate that operational rewards for environmental service schemes involve multi-layered institutions. At the bottom of this scheme, farmer groups or community institutions represent the ES sellers. Another layer of institutions also exists that usually mediate the transaction and regularly manage the budget. The common form of these institutions is multi-stakeholder ones, such as the watershed community forums at three sites in Indonesia or even local government institution. Some of these institutions have been formalized and others still informally operate.

- the **duration** and contractual form of the relationship. The implementation of the reward for environmental services scheme involves conservation contracts between ES providers and ES beneficiaries. ES providers agree to manage an ecosystem according to a set of agreements and receive rewards (in kind or cash) conditional on compliance with the contract [Box 7 shows the process of endorsing a conservation contract with community and its contract elements. In developing a contractual agreement, the community should become the main actors who actively give inputs to the contracts. In addition to that, similar perceptions in understanding the contract should be built between stakeholders. This can be followed up by a series of trainings to ensure sufficient capacity of farmers in accomplishing the contracts]

Box 7. Conservation contracts

RUPES team facilitated an endorsement of land and water conservation contracts among private coffee farmers in Sumberjaya watershed, Lampung. Design of contract components were based on focus group discussion with coffee farmers in the target villages, which were designed to gather information on farmer preferences for soil conservation techniques and estimates of required labor investments.

The contracts offered specified the following:

Soil conservation activities	<ul style="list-style-type: none"> ▪ Sediment pits: 300 per hectare, standard dimensions size: 100x150x40 cm evenly distributed ▪ Ridging: 50 percent of plot ▪ Vegetation strips: surrounding pits and ridging ▪ Maintaining all the land conservation structure above for a year.
Payment schedule	50 percent at inception; 50 percent at one year contingent on performance
Duration and monitoring	One year with monitoring every three months; termination if 50% contracted activities not completed by midterm monitoring date
Cancellation or non-compliance results in: <ul style="list-style-type: none"> ▪ ineligibility for second payment installation ▪ friction and conflict among community members ▪ indication of corruption 	
Force majeure provision for contract terms in the event of natural disasters	

The period of the contract is one year. The activity would be monitored and evaluated by local forestry service extension workers accompanied by ICRAF staff every 3 months. The contract would be paid in two installments: 50% after signing the contract and 50% at the end of the contract in one year as suggested by the focus group discussions. The second installment of the payment would be withheld if they farmers broke the contract and performed poorly.

In addition to that, a series of cross visits and field trainings were conducted as capacity building efforts to uniform their understanding on these techniques.

Source: Leimona et al (2007)

- the **conditionality** of payments and service delivery (with conditionality expressed at the level of the service, the condition of the land cover, the activities of the ‘seller’ and or the community-scale management of the resources)
- the degree to which the agreements refer to **specific cause-effect relationships** that relate to the *continuation* of the service(s) (avoided degradation) and/or *restoration*
- the **level of payment** in relation to the opportunity costs (options forgone) for the seller and the costs of alternative provision of the service to the buyer [Box 8 shows a reverse auction as a tool for determining level of payment and allocating contract that is sufficient for farmers in involving in a conservation program.]

Box 8. Auction as a tool for determining value and allocation of a conservation contract

The incentives provided by the ES beneficiaries must be adequate to make providers able and willing to commit to biodiversity conservation. Many cases show that this process is based on voluntary commitment or negotiation among stakeholders. This approach may be weak due to asymmetric information held by each stakeholder group. It is also possible that an imbalance of power between ES providers and beneficiaries will lead to suboptimal agreements.

Farmers will reveal their costs to participating in the conservation program while the program administrators will share their information about the significance of environmental assets that exist on farmlands. In practice, when the rewards or compensation offered to ES providers is lower than their opportunity cost or willingness to accept for participating in a conservation program, compliance with the contracts may be problematic. On the other hand, ES beneficiaries usually have a limited budget and wish maximize their environmental benefit gains. Therefore, to increase the effectiveness and sustainability of conservation contracting, a strong scientific basis is essential to designing viable contracts.

Reverse auctions to elicit landholders' willingness to accept conservation contracts have been successfully implemented in the United States, Australia and Europe, and are growing in popularity in developing countries. Lessons show that the award of contracts on the basis of competitive bidding is a method frequently used in procuring commodities for which there are no well-established markets,¹ such as in markets for environmental services. Conservation auctions are a method for allocating of conservation contract for private provision of environmental services, compensating individuals for the provision of public goods.

In addition to ensuring that conservation contracts provide adequate incentives, auctions also present the potential to maximize the cost effectiveness of conservation funding. The competitive bidding nature of the auction under a fixed budget makes it in the farmers' best interest not to overstate their true costs, which would jeopardize their probability of winning the auction.

- the degree to which underprivileged (by wealth or gender) stakeholders (among buyers and/or sellers) are affected and included (degree to which mechanism can be considered to be of 'pro-poor')

2.3.5. Reward Success Story, Government Role and Transaction Costs

RUPES success story in adapting PES to RES in 'alleviating poverty'

- a. Stop negative 'drivers' that enhance poverty and degrade environmental services ('PUPES') [enhancing supportive policy]
- b. Enhance local environmental services and resources (e.g. regular supply of clean water, access to beneficial plant and animal resources)
- c. Enhanced security of tenure, reduced fear of eviction or 'take-over' by outsiders, allowing investment in land resources; increased asset value
- d. Enhanced trust with (local) government, increased 'say' in development decisions [improving social capital, strengthening local institutions & encouraging collective actions]
- e. Increased access to public services (health, education, accessibility, security) [equity]
- f. Payment for labour invested at a rate at least equal to opportunity cost of labour

- g. Increased access to investment funds (micro credit or otherwise) for potentially profitable activities
- h. Entrepreneurship in selling 'commoditized' environmental services

Governments or the public sector can potentially play three roles in the interactions between sellers (providers) and buyers (beneficiaries) of ES. They can act as 1) buyer on behalf of 'downstream' stakeholders, 2) seller in international interactions, 3) intermediary or 4) market regulator. While different levels of the public sector or government can be involved in these different roles, a clear separation of roles is expected to be needed for transparency and for public control.

The governments' primary role as 'market regulator' needs to be reflected across a range of scales from the local community to the national scale, with international conventions as an umbrella for cross-boundary issues. Depending on the degree and success of 'decentralization', the different levels of government may either support each other in this role across scales, or, more often, contest overlapping authorities and thus substantially add to the transaction costs.

Unfortunately, much of existing regulation can be interpreted as not maximizing the overall efficiency, but at maximizing opportunities for rent seeking as intermediary (to help smooth out the pathway through a regulatory jungle). Where government entities that regulate also (intend to) operate as seller (e.g. forestry departments in applications of the 'clean development mechanism') public scrutiny of the conglomeration of roles is warranted (Figure 9. The role of the third party is important for monitoring and verify.

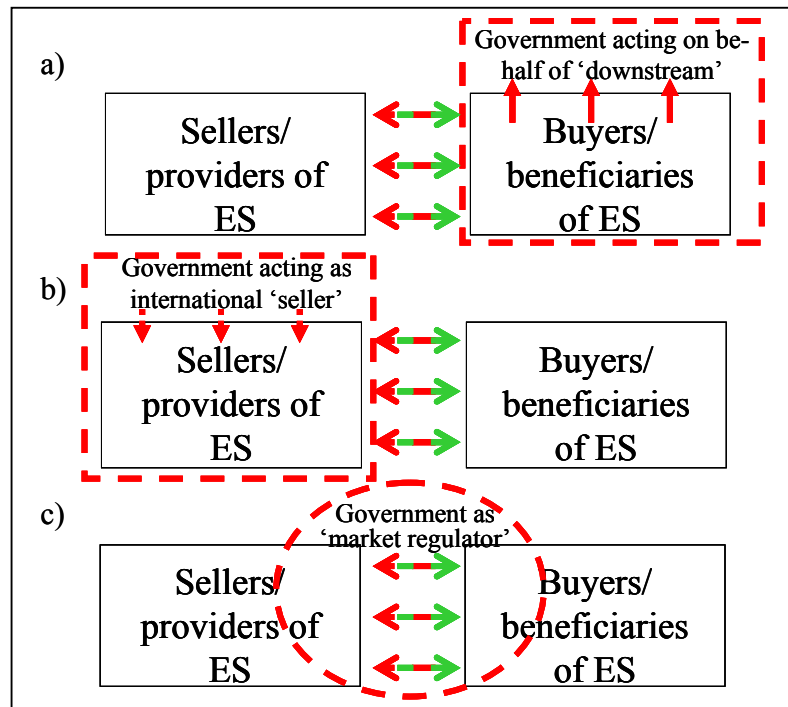


Figure 9. The government role in PES

Transaction costs can be distinguished into three categories: (1) search and information costs;(2) bargaining and decision or contracting costs, and (3) monitoring,

enforcement and compliance costs. The first two categories of costs occur before the institutional arrangements for collaborative management of natural resource are made. Therefore, the first and second categories are referred as ex-ante (investment) costs and ex-post (operational) costs for the third category.

The overall transaction cost can be broken down into two components (1) transaction cost covering interactions between buyers and intermediaries (B↔I) and (2) transaction costs covering interactions between sellers and intermediaries (S↔I). Transaction cost of B↔I will decrease as the scale of the intermediary increases. The reason is that larger scale intermediaries allow buyers to more easily deal with larger tracts of land or larger quantities of ES in single transactions. However, intermediaries will have more difficulties in dealing with larger numbers of individual farming household as ES sellers. Therefore, the I↔S transaction cost will increase.

We may expect that the total transaction costs are minimized at some scale of organization in between the two extremes. This is the ‘optimum’ scale of I from a buyer and seller perspective – it may, however, not be the optimum one from the business perspective of intermediaries or buyers who can control the process. Under certain circumstances and presumably buyer and intermediaries often have more bargaining power, a combination of two ‘brokers’, one representing buyers and one representing sellers may be more effective than a single one. When we separate the ‘negotiation’ and ‘implementation’ phases, we may expect that the I↔S transaction cost is more strongly scale dependent, and as a consequence, the optimum scale of I shifts to the left.

2.4. Lessons learnt with mixed fund and market approaches

We can take lessons from company-community (CC) plantation forest partnerships to understand the mixed approaches to fund and market-based incentives particularly in community level payment distribution mechanisms. A partnership is also recognized as an out-grower scheme. Central and local governments endorse this type of partnership to reduce land conflict and improve local community livelihoods. A partnership is categorized as a fund-based approach because the company provides a corporate social responsibility (CSR) fund to establish a partnership on concession land. In the case of a partnership on community land, both parties work based on the principle of supply and demand to maximize their profits given the opportunity cost for the community.

CC partnerships emerged from land disputes. Plantation forests in Indonesia are located on state land, some of which local communities had previously used to grow trees and crops to provide their primary source of income. Land disputes between local and customary communities and forest companies were suppressed by the military and local government during the Soeharto era (New Order regime, 1966-1998). Soeharto’s resignation in May 1998 constituted the beginning of the movement by customary communities to demand their customary rights including communal land rights.

The failure of forest owners and managers to prohibit user groups from exploitative extraction of forest resources has forced them to opt for a collaborative management approach, termed joint management (Kant and Nautiyal, 1994) or out-grower plantation forest schemes (Nawir *et al.*, 2003). Conflicts between local communities and companies broke out over: (1) land appropriation processes; (2) environmental impacts; and (3) recruitment of employees (Sakai, 2002). The main reasons for forest companies establishing company-community partnerships

are resolving conflicts and securing company plantations, while local communities expect to secure extra income, use companies' roads and utilize any unused land.

2.4.1. Fund and Market-Based Partnership Scheme

The Musi Hutan Persada (MHP) acacia plantation located in South Sumatra, in operation since 1990, developed two partnership schemes with local community members in 1998 to resolve land use issues and secure the MHP concession. The schemes were: 1) community forest management partnerships on community land outside the concession area (POC); 2) collaborative forest management partnerships within the concession area (PIC). Other plantation forests like Wira Karya Sakti (WKS) in Jambi and Finantara Intiga in West Kalimantan have developed similar and comparable CC partnerships; the former on both concession and community land, and the latter on concession land (Nawir and Santoso, 2006). POCs are basically fund-based partnerships, while PICs are market-based.

The Musi Hutan Persada POC partnership schemes shown in Table 10 are either on community land or state land claimed and controlled by community members. The company provides seeds, the costs for establishing the plantation and employment opportunities. Community members provide land and manpower, while village and subdistrict governments facilitate coordination and conflict resolution. According to contracts, the share of profits after one rotation, which is seven to eight years for acacia, would be 60% for the company and 40% for community members. Although the shares might be questionable, the scheme seems to work quite well. Many community members are interested and have submitted proposals, but less than 10% have been accommodated by the company.

Table 10. Partnership outside of concessions (POC) input and output for each stakeholder (LPF Report, 2006)

Stakeholder	Input: What they do/provide	Output: What they get
Company	<ul style="list-style-type: none"> - Seed and all costs for establishing the plantation - Transaction costs (evaluation of community proposals) 	<ul style="list-style-type: none"> - 60 % of profits after subtracting establishment and transportation costs - Security of the concession area and wood supply - Good image
Community members	<ul style="list-style-type: none"> - Land - Transaction costs (making proposals, negotiations) 	<ul style="list-style-type: none"> - 40 % of profits after subtracting establishment costs - Employment on their own land - Opportunity to sell land at a higher price
Local government	<ul style="list-style-type: none"> - Legalization of POC contracts by subdistrict head - Facilitation of conflict resolution between the company and community members. 	<ul style="list-style-type: none"> - Good image

The POC scheme has attracted rich people from nearby cities to buy land from community members, some of whom thought they got higher prices for their land. Thus, new

landlords have emerged in the area and submitted POC proposals to the company, which would invariably give them priority as they have more land and therefore lower transaction costs. Clear tenure helps the POC scheme work more effectively and peacefully, but a few rich people accumulate large areas of land.

Table 11 shows PIC scheme input and output. PICs are on concession land with no strong local community claims. The company provides roads, and plants trees, while community members use their claims as the bases for negotiations. The government legalizes contracts and facilitates negotiations and conflict resolution. The company's returns from PICs are land and plantation security, reduced conflict and a good image. Contracts entitle community members to USD 0.25 per cubic meter of wood, plantation contracts and employment opportunities. The company's payment mechanism has provided many lessons for observers. PIC was developed by local government officials, community elites, grassroots communities and the company involving high transaction costs from demonstrations, advocacy, negotiation, lobbying etc.

Table 11. Partnerships within concessions (PIC) input and output for each stakeholder (LPF Report, 2006)

Stakeholder	Input: What they do/provide	Output: What they get
Company	<ul style="list-style-type: none"> - Concession land - formally state land allocated by the government - Plant trees - Infrastructure such as roads - Transaction (negotiation) costs 	<ul style="list-style-type: none"> - Security of land and planted trees - Reduced conflicts - A good image
Community	<ul style="list-style-type: none"> - Claims based on customary rights over plantation land - Transaction (negotiation, organization) costs 	<ul style="list-style-type: none"> - Production fees of IDR 2,500 (USD 0.25) per cubic meter of wood - Management fees (1%) going to village PIC organization taken from salaries of company employees working in the concession under the PIC scheme. - Employment - Contracts - Institution of PIC
Local government	<ul style="list-style-type: none"> - Legalization of POC contracts by subdistrict head - Facilitation of conflict resolution between the company and community members. - Allocation of land to the company. 	<ul style="list-style-type: none"> - Official tax revenue - Undocumented incomes for some government officials - Some government officials (village and subdistrict heads) receive small amounts of money from production fees

2.4.2. Payment Mechanisms and Distribution

All POC schemes are legalized by village and subdistrict heads, and have two distribution mechanisms. First, in a POC between the company and a landowner (LO), then payment simply involves handing over 40% of profits to the LO after measuring and selling wood to buyers. Second, in a POC between the company and a group of landowners, payment will be made to the group head and LOs (Figure 7). Clarity over who LOs are, contract details and the head responsible for the LO group will ensure a smooth distribution mechanism.

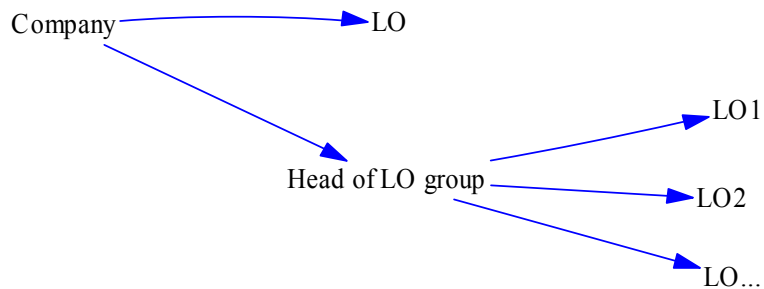


Figure 10. Flow of market-based incentives in POC scheme

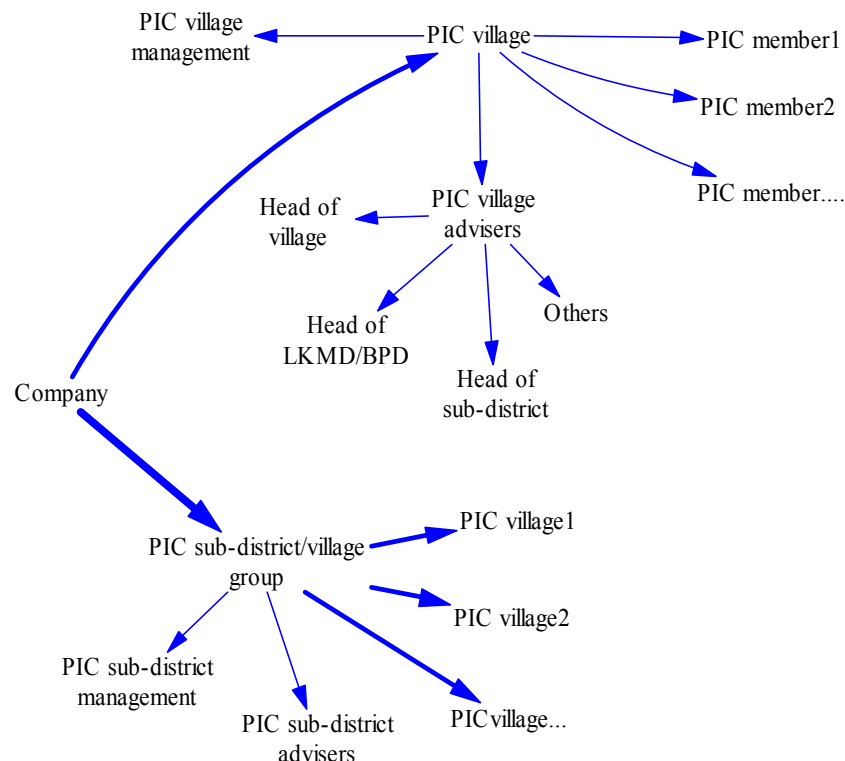


Figure 10. Flow of fund-based incentives in PIC schemes (LKMD/BPD are village assemblies)

All PIC schemes are legalized by village and subdistrict heads. Fees and plantation contracts flow from the company to community members through the PIC village or

subdistrict. Figure 8 shows the flow of partnership fees. In case of a PIC contract between the company and a village, the company pays the PIC village, which subsequently distributes it to its management, advisers and members. In the case of a contract between the company and a PIC subdistrict/village group, the company pays the fee to the PIC subdistrict, which then distributes it to its management, its advisers and its PIC villages. PIC villages then distribute fees to their members.

2.4.3. Distortion of incentive and distribution mechanism

POC (market-based) payments for individual Los are far less distorted than PIC (fund-based) payments. With a POC between the company and a group of LOs, then critical issues are: (a) transparency of LO group management; (b) location clarity and extent belonging to each LO; (c) understanding contract details; and (d) fairness of the PIC contract. If, for instance, the LO group comprises 100 smallholders, including them all in a single contract is efficient as long as the group head carries out his mandate. Although community members act as landowners, some of the land legally belongs to the state, and is inside the concession area. Clarity over actual ownership and extent of land must be ensured to avoid conflicts between community members. Some community members do not read contract in detail. As members only follow the head of the LO group, they have trouble controlling the company and the LO group head. The last issue is the fairness of the contract; the company has a better bargaining position in many ways due to its solid organization and legal understanding, community members meanwhile have neither, and are therefore vulnerable when contracts are drafted.

PIC payment is much more problematic; PIC contracts were developed to reduce conflict, so both parties were under pressure and rushed their development. The critical issues for PICs are: (a) fairness of the PIC contract (b) community land rights; (c) transparency of village PIC management; (d) weak village PIC institutions; (e) understanding contract details; (f) fee distribution among community members and leaders; (g) rent seeking within the company and the community.

The basis for the formulation of fee payment was unclear, and there was an imbalance when it was drafted. Production fees per cubic meter of acacia for instance varied from USD 0.25 - 1. Beside the fee, the company offered communities projects in plantation operations. However, due to collusion between the company and local elites these projects never advantaged the grassroots people. Imbalance and rent seeking both distort the payment mechanism from the company to the community.

Disputes broke out between PIC villages over the position of village boundaries, with each village tending to extend its land claim to secure bigger fees from the company. Village history, boundaries between villages and state forest (*boswesen*), and boundaries between different villages were all subjects of dispute with PIC subdistrict/village groups.

In PIC villages there were problems involving the allocation of money to members, its management and village elites. In most PICs there were no rules of play. Fees were not large enough to distribute to all members, and village elites, including informal leaders and customary leaders, claimed they deserved a larger share because PIC land belonged to their ancestors. They would sometimes disagree to all villagers becoming PIC members. PIC management and advisers tried to get some money aside from the fees, but there were no agreed mechanisms for doing so. Although the sums of money involved were small, PIC village members still wanted fees to be distributed evenly between all members. However, they rarely had any influence in PIC village decision-making processes, and village elites tended to capture most benefits from PIC schemes.

2.4.4. Payment Mechanism Efficiency and Equity

Table 12 summarizes fund and market-based partnerships. Local communities would enter into PIC rather than POC partnerships when they could not defend their land from company and government wishes to plant acacia. Those who were able to defend their property rights entered into POC partnerships. Clearly, more effort must be made to improve the efficiency and equity of fund-based mechanisms.

Table 12. Characteristics of fund and market-based incentive payments

	Fund-based	Market-based
Activity	Partnerships on concession land (PIC)	Partnerships on community land/ outside concession areas (POC)
Motivation	Reduce conflict and improve community livelihoods	Share of profits and employment
Land property rights	Unclear; local communities have no means or power to define and defend their land rights	Clear enough; local communities have means and power to defend their land rights
Power balance between company and community	Low	Medium
Source of incentives	Corporate social responsibility fund	Profit
Basis for payment	Contract; made due to land conflict, social and politics reasons	Contract; made due to economic and livelihood reasons
Payment mechanism	Company to village coordinators and elites	Company to land owners
Time lag	One rotation (7 years)	One rotation (7 years)
Transaction cost	High	Low
Local government involvement	High	Low
Problems	Unclear property rights, conflict between community members, conflict between villages and elite capture	Emergence of new landlords; rich people buy and collect land from local community members
Distribution efficiency	Inefficient; due to too many brokers	Efficient
Equity among community members	Inequitable, elites capture most of the benefits	Equitable

The LPF (Levelling the Playing Field) Project has taken two steps to resolve these problems. First, establishing a district level multistakeholder forum aimed at levelling the playing field among different stakeholders. The forum has brought local community members and the company closer together, enabling direct and transparent communication. Community members can voice their interests, while the company can communicate its security concerns over the land and plantation. This forum succeeded in facilitating a new proposal for the next rotation, fairer partnerships and reducing payment distortions.

Second, legalization of PIC village organizations; village PICs must be accompanied by statutes and bylaws (*Anggaran Dasar dan Anggaran Rumah Tangga/AD-ART*) regulating benefit sharing between PIC members, management and advisers. These should be developed in a participatory manner to accommodate the various interests of villagers. Preparing statutes and bylaws will take time, however, once finalised and under notary act, they will reduce conflicts between community members.

2.5. Other efforts

2.5.1. Biofuel Project

The International forest community for several years has focused on clearing of forests linked to illegal logging for timber and the diversion of land to oil-palm plantations. However, the other part of international community such as the international energy community supports development of biofuel project in Indonesia. By 2025, Indonesia might put 1.4 million hectares, or an area 2.5 times as big as the island of Bali, under oil-palm plantations to meet biodiesel demand.⁹

2.5.2. Debt Write-Off

When the international forest community pressure the Indonesian government to link debt write off of Indonesian forestry company debts under control of the Indonesian Bank Restructuring Agency (IBRA) with reduction in their mail capacity, other part of international community support IBRA fire sales program of forestry company debts. The International Monetary Fund (IMF) and the economic team of the World Bank did not support a call for special debt settlement for forestry companies as requested by the Indonesian Working Group on Forest Finance (IWGFF). This request is consistent with the International forest community demand for forestry reforms in Indonesia.¹⁰

2.6 Conclusions: lessons to be learnt ??

⁹ Andy Mukherjee, 2007, Alarm bells are ringing loudly about the future of our planet., Bloomberg
May 14

¹⁰ Setiono, B. 2007. Debt Settlement of Indonesian Forestry Companies: Assessing the role of financial and banking policies to support sustainable forest management, Forest and Governance brief No.11.

III. Options for Payment and distribution mechanisms

3.1 REDD Payment Mechanisms

A successful REDD initiative will depend on a payment mechanism that can make buyers and seller of carbon credits under this initiative to meet and make beneficial transactions. This payment mechanism should avoid the past mistakes made by previous international and national initiatives as described above and capture their strengths. It should provide a clear net benefit to all parties involved and accountable and transparent payment mechanism.

Regardless the current negotiation on the sources for REDD payment, the payment mechanism of REDD payments should have the following features: membership in the payment mechanism, method of payments, criteria for eligible CER projects/initiatives, a distribution mechanism, accountability measures, and a transparency policy. Both a national program initiative and a project initiative, a payment mechanism should have these features. Compare to carbon climate exchanges, this payment mechanism has a distribution mechanism component to addresses larger forestry issues such as poverty and employment.

3.1.1 Membership in financial mechanism

REDD incentive should be clear and simple to both buyers and sellers of carbon credits. To achieve this objective, the REDD PM should be a mechanism to facilitate financial transactions between supplier or sellers and buyers of carbon credits from CER projects/initiatives. Therefore, suppliers and buyers of carbon credit should be members of the REDD PM. Buyers and sellers can enter both contractual agreements and voluntary agreements and will settle their payments according to these type of agreements. Voluntary agreements are mostly to settle in the carbon climate exchanges such as the Chicago Climate Exchange.

3.1.2 Method of Payments

The REDD PM should allow different method of payments for carbon credits and non carbon credits. Buyers can settle their transactions by paying cash, debt swap, or financial assets such as carbon financial instruments. If the parties involved in transactions are governments, payments can be in the form of debt write off. Follow the German debt swap experiences in Indonesia. In addition to cash payment, buyers and sellers can also settle their transactions by providing carbon financial instruments (CFI) that can be traded in international climate exchanges.

The value of carbon credit from CER projects/initiatives will be determined in the contracts between sellers and buyers. Items include in this contract are changes in forest policies and practices to be implemented, methods for verification of baseline carbon stocks and periodical carbon stocks, price of carbon, and a method of payment.

In the case of Indonesia, if the seller is a central government, the payment will be treated as non tax government revenues (PNBP). But if the seller is a local government, the payment will be accounted as local government revenues. Under current regulations, PNBP can be shared with local governments both in provinces and districts or cities. It needs a new national regulation to request Local government revenues to be shared with sub district governments (Kelurahan or desa). This sharing of government revenues will be subject to a distribution mechanism developed in this REDD PM.

Under current negotiation, national governments of developing countries might also receive a special fund not link to carbon credit from the international forest community. This fund can only be used to promote changes in policies and practices that will reduce deforestation and degradation. The three payment methods can be used to encourage governments to implement changes in policies and practices.

3.1.3 Eligible CER projects/initiatives

REDD initiatives are about promoting forest policies and practices that can reduce deforestation and degradation. Major economic activities that currently contribute to deforestation and degradation are those that promote exports of wood-based products including pulp and paper, coal mining and industrialization of oil palm plantation. Players in these sectors of economy are key economic players in many provinces and districts as well as for the national economy in general. Changing policies and practices that related to forest land use and exploitation of natural forests will certainly have significant results to reduce deforestation and degradation. However, the costs for changing these policies and practices will be high.

Buyers and sellers will determine changes in policies and practices related to forest land use and exploitation of natural forest to be included in CER projects/initiatives. A cost-benefit analysis on policy changes should be conducted by an independent analyst to arrive at agreeable activities under the CER projects.

3.1.4 Transfer Mechanism

Governments especially the central government will be important players (sellers) in this REDD initiatives. They are very instrumental in shaping policies and practices related to economic activities that contribute to deforestation and degradation. However, local governments, companies and community are implementing these central government policies, introducing local policies and preach their practices. The REDD payments received by the central governments then should be distributed to local governments, companies, and community to encourage changes in local policies and business practices.

The Central Government of Indonesian is transferring more and more funding to local governments every year in the last five years. The Central Government has transferred about 40 percent of total government budget (APBN) or about Rp.223 trillion (US\$25 billion) to local governments in 2005. The share of local governments in APBN increased to Rp.302 trillion (43 percent of total APBN) or US\$ 33.5 billion in 2006. With direct instruction from President SBY, the Central government transferred about 47 percent of APBN to local government in 2007. The total fund transfer to local government in this year is Rp.358 trillion or US\$40 billion.¹¹

The central government transfers decentralization funds, deconcentration funds, assistance funds, and vertical funds to local governments and its vertical organization in the regions (vertical funds). Decentralization fund is the largest fund to be transferred by the Central government. The central government transferred Rp.259 trillion or US\$29 billion in decentralization fund. This fund includes balance funds (97%) and special autonomy funds (1.6%). Balance funds include general allocation fund (64%) and profit sharing of natural resource revenues (14%).

The central government transferred natural resource funds in the amount of Rp.30 trillion (US\$,3.3 billion), Rp.32 trillion (US\$3.5 billion), and Rp.35 trillion (US\$3.8 billion)

¹¹ Director General of Balance Budget, Ministry of Finance, 2007, Decentralization Fund: Allocation, Distribution, and Reporting, Magelang, August 1.

in 2006, 2005, and 2007 respectively. The amount of transfer is increasing but the accuracy is still questionable since some of natural resource funds especially reforestation funds cannot be transferred on time and in correct amount. The Central Government can only transfer in 2007 reforestation fund received in 2004.¹² The amount transferred is not known and the accuracy of amount transferred is doubtful. The Central government does not have a proper accounting system to trace the DR payments to paying company and its regional location. A complex transfer mechanism of natural resource funds also contributes to this inefficient result.

There are three methods of transfer for decentralization funds. The most direct transfer is for special autonomy funds where central government can directly calculate amount to be transferred based on laws on special autonomy for Papua and Aceh governments. The second method of transfer is based on definitive allocation where amount to be transferred is based on a definitive percentage as stipulated in laws such as general allocation fund (DAU) and special allocation fund (DAK). This transfer method is considered relative accountable. The most difficult transfer method is those use for transferring natural resource funds and tax revenues. This method is based on an estimation of revenues or known as estimation allocation method. Since the central government does not have a proper accounting system for natural resource revenues especially from forests, it is very difficult to estimate how much forest revenues should be allocated to each district and city in Indonesia.

For REDD payment, distribution mechanism should adopt definitive allocation as stipulated in a new laws regarding REDD PM. This method of transfer will be also supported with a proper accounting system to measure and account all activities under CER projects/initiatives. The value of carbon credit resulted from CER projects should also be measured and valued.

3.1.5 The fairness – efficiency tradeoff

<i>Criteria\Objective</i>	Fully market-based instruments: <i>Efficiency</i>	Government fund allocation aimed at: <i>Fairness, equity</i>	Mixed model:
<i>Realistic: measurable emission reduction, conservation of high C storage landscape elements</i>	Focus on immediate threats to maximize ‘additionality’ and quantifiable impact	Provide incentives to all stakeholders regardless of immediate threat, to express the ‘ <i>real value</i> ’ (rather than opportunity <i>cost</i>) of the ES	Rating system for landscape scale C stocks in relation to livelihoods (population.density, accessibility) + threat factors
<i>Voluntary: exceeding mandatory emission reduction on the basis of contracts and incentives</i>	Encourage ‘willingness to accept’ at low levels of payments (rewards) to maximize room to manoeuvre below the ‘willingness to pay’	Encouraging local perceptions of ES values to synergize with external rewards/ payments without fear for ‘additionality’ traps	Negotiated baselines at provincial scale (adding up to Indonesia’s baseline) as basis for reward and tax via govt funds
<i>Conditional: clarity on how</i>	Use external reference areas for	Conditionality may well be expressed at	Landscape/provincial -scale C stock evalua-

¹² Personal communication with BPK auditor

performance will be measured and rewarded, at input, system or C-flux level	dynamic baselines and performance measures, based on ‘realized threat’	‘condition of the system’ level, rather than at quantifiable ES in comparison to ‘baselines’	tion as basis for rewards relative to agreed baseline; ‘credits’ for superior performance can be traded via national broker
<i>Pro-poor: not increasing rural poverty by new restrictions on land use options</i>	Only involve those stakeholders who have rights and/or options to interfere with the ES or its conservation; only involve those with ‘ability to pay’	Use pro-poor and pro-gender rules over and above efficiency imperatives, to achieve <i>fairness</i> in allocation of benefits to all stakeholders in the landscape (regardless of e.g. land ownership); Recognize governments as custodians of the poor and as provider of relevant ES for them	Build carbon conservation policies in to general government policies aimed at clean and sustainable development support rather than as stand alone, and balance measures for overall ‘pro-poor’ effect
Main risk	<i>Perverse incentives</i> are provided towards maximizing ‘threat’ and initiating degradation as basis for rewards/ payments/ investment	<i>Lack of impact clarity</i> will prevent beneficiaries to become ‘buyers’ of ES or to replenish initial funds provided	<i>Mixing of roles</i> of government levels as regulator, buyer and seller
Compromise solutions	Strengthen local resource management/governance structures as intermediaries, guaranteeing bottom-line outcomes through mechanisms that address local perceptions of fairness; broaden the ‘efficiency’ argument to a longer term perspective where perverse incentives need to be avoided and prolonged stakeholder commitment becomes a target		

A formal representation of the efficiency-equity problem is possible on the basis of a number of assumptions about the shape of the baseline and the relative abatement costs in different phases of the landscape. Depending on the parameter values selected, an efficiency driven allocation of funds will tend to get as close to the forest margin as is financially feasible (i.e. only high abatement costs at the forest margin will drive towards allocating funds to forests with less immediate threats (Figure 11).

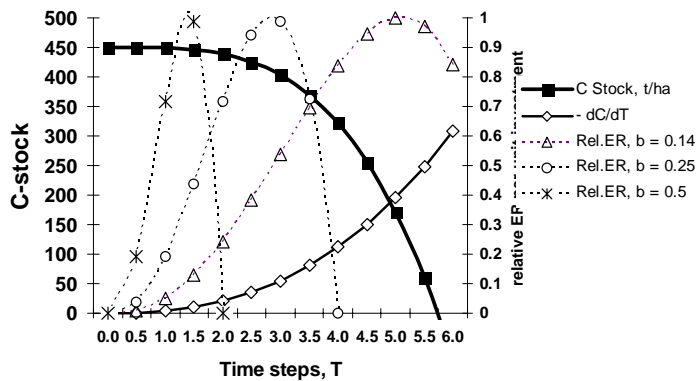


Figure 11. Relationships between Carbon stocks, emission rates and relative efficiency of investment in REDD in different phases of the non-linear baseline of forest degradation, based on the model

3.2 Distribution Mechanism

The REDD incentives may occur as fund or market incentives. The REDD fund can be structured as international or bilateral aid, technical assistance and capacity building. This fund may occur as an incentive for reducing emissions from DD and/or increasing capacities to prepare a market for REDD. Unlike GERHAN, this fund will come from the international community, and will aim to help Indonesia improve its readiness. Distribution of the fund to achieve efficiency and fairness in reducing emissions from DD is highly desirable. The fund can be realised after COP13 particularly in terms of capacity building and piloting activities.

The current government has stated clearly that its fundamental development stance is pro-growth, pro-poor and pro-employment. So, in order for the REDD fund to work in harmony with the government’s development stance, REDD fund activities should consider economic growth, poverty alleviation and employment generation.

As outlined earlier, basically there are four basic fund distribution options: First, distribution through the government administration; second, distribution through forest function and small-scale forest authorities; third, distribution through project management; and fourth, distribution from international bodies to regional governments or projects without significant national government involvement. Each mechanism has its advantages and disadvantages (Table 13). To avoid possible leakage in the regions in Indonesia, the national government should be actively involved in PDM and coordinate regional, sectoral and forestry authority commitment to reducing emissions. The first option seems the most appropriate if the different levels of government can reduce state capture and administrative corruption. It is just a matter of how good governance can take place. Civil society involvement is essential for improving governance at difference levels, and a combination with the third option would show how well REDD works at the site level.

Table 13. Fund distribution mechanisms

Option	Government administration based	Forest function based	Project based	International based
Characteristics				
Mechanism	National → Provincial → District	National → Forestry authority	National → project management	International → bodies → Regional government/project
Advantages	Controlled leakage; high	Controlled leakage;	Low state capture and	Low state capture and

	cross-sectoral coordination; systematic capacity building	low inter-sectoral coordination	administrative corruption; efficient; Low time lag	administrative corruption; efficient
Disadvantages	High state capture and administrative corruption; High time lag	High state capture and administrative corruption	Restricted capacity building; high leakage;	Restricted capacity building high leakage; High conflict risk from the national government

The next thing is REDD based carbon credits. If an agreement is reached in the UNFCCC protocol during COP13 then an agreement of REDD market will appear, otherwise a voluntarily market will emerge. Either way, determining reference levels, ensuring commitment to reduce emissions from DD and monitoring are all problems that will need to be addressed. Table 14 shows the advantages and disadvantages of market-based incentive distribution mechanisms.

Table 14. Market-based incentive distribution mechanisms

Option	Government administration based	Forest function based	Project based	International based
Characteristics				
Mechanism	National → Provincial → District	National → forestry authority	National → project management	International bodies → Local government/project
Advantages	Controlled leakage; high cross-sectoral coordination; systematic capacity building	Controlled leakage; low inter-sectoral coordination; medium readiness	Low state capture and administrative corruption; efficient; high readiness	Low state capture and administrative corruption; efficient; high readiness
Disadvantages	High state capture and administrative corruption; low readiness	High state capture and administrative corruption	High leakage	High leakage

3.3. Governance of REDD Funds

Options for the management of funds would include the integration of REDD funds into the state budget, or the management of funds being assigned to an independent body. Each has its advantages and disadvantages; if REDD funds are integrated into the state budget, they would be managed by the Ministry of Finance, and their use could be

coordinated by the Ministry of Finance, the Ministry of Forestry and other relevant agencies at the national and provincial levels. For regions, the funds could either be distributed to provincial government accounts or directly to district governments, depending on the scope of provincial and district government authority in REDD activities. For example, if REDD activities are coordinated at the provincial level, it would make more sense to distribute REDD funds through the provincial government. Similarly, if REDD activities are implemented by district governments, then distributing REDD funds directly to district governments would be more appropriate.

The transfer of REDD funds to regional governments could either follow the pattern for shared revenue distribution, or distributed on a more regular basis (e.g. monthly payments to regional governments). Important issues to consider in the distribution of funds to regions are ensuring that the leakage problem is taken into account, and making sure that funds are distributed in accordance with emission reductions in each region. Funds could be distributed through the graphic shown in Figure 12.

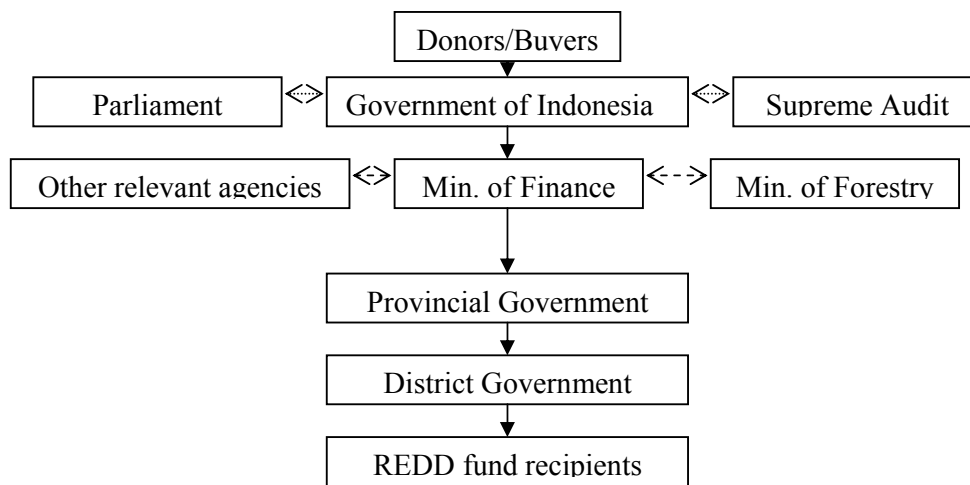


Figure 12. Integration of fund to the state budget

There are several advantages to integrating the funds into the state budget: First, control over the funds could be monitored more effectively as not only the government, but the parliament too could monitor their availability and use. Taking lessons from the reforestation fund in the 1990s into account, the fund was not integrated into the state budget, and the government would often use it for unrelated purposes. Second, integration of the fund into the state budget would make financial management more systematic at the national level and could potentially reduce the possibility of corruption. The government is currently prohibiting government agencies from creating their own accounts for so-called ‘non-budgetary funds’. Third, the government is currently applying a performance-related budgeting system, in which government agencies announce the budgets required in achieving intended outcomes. Linking REDD funds to such a mechanism would enable both the government and the parliament to set realistic targets and determine the REDD funds necessary for achieving those targets. Fourth, interest on the REDD fund would contribute to national government revenue, unless there are clauses in the agreement between the government of Indonesia and REDD donors governing interest from the REDD fund.

Conversely, integrating the REDD fund into the state budget also has its disadvantages: First, if the fund is channelled through the government system, delays in its disbursement to the districts and ultimate beneficiaries will be inevitable. Experience from the

distribution of revenue sharing funds in forestry show how allocation to regional governments can be delayed; the funds are disbursed close to the end of the fiscal year, making it hard for regional governments to plan and implement programs properly. Second, and probably more importantly, the integration of REDD funds would require changes to Indonesia's legal system, particularly in respect to central and regional government financial management, since the government requires a relevant regulatory framework on the collection and allocation of funds to the regions. Third, since there are several actors in the channels, from those in central government and regional government, some funds may be lost to so-called 'administration fees', though the amounts might not be so significant. Fourth, calculations of how much emissions should be reduced by in particular regions (province or district) and appropriate REDD funds will require time for negotiation, as numerous actors and types of forest are involved.

3.3.1. General Service Agency

Weak financial governance in managing government funds is well documented and understood by the Indonesian government. They are working hard to remedy this problem by introducing several new laws on public finance, new government accounting standards, and new state auditing procedures. One innovation by the Ministry of Finance that is worth to explore is the introduction of General Service Agency or *Badan Layanan Umum* (BLU) in managing a government fund. A government unit at echelon 2 can manage its own budget under BLU mechanism as long as it has meet criteria set up by the Minister of Finance. The government unit that earns full status of BLU can manage its own budget as if it runs like a separate independent company. They can manage their own revenues and use them directly. They can also keep the balance of the budget in its bank accounts. If it does not have a full status of BLU, it has to deposit all revenues and balance budget to state accounts directly. However, BLU is required to maintain proper accountability and transparency in management of its budget. It has to be audited by an independent auditor and its financial report can be assessed by general public.

Government revenues under REDD PM should be governed using the BLU method. The BLU method allows professionals (not bureaucrat) to manage the fund. BLU also allow professional to sit in board of directors and to serve in its audit committee.

3.3.2. Accountability Measure

To improve accountability of REDD PM, financial reports of organization responsible for managing payment of REDD initiatives should be audited by an independent auditor and or the Indonesian Supreme Auditor (BPK). The audit report should be made available for general public.

To prevent corruption and other misused of funds, independent auditors, BPK, independent reviewer, and other professionals working under a framework of this payment mechanism should be required by law as reporting parties to the Indonesian Financial Intelligent Unit (PPATK). They can also make a report to the Indonesian Anti Corruption Unit (KPK). A reporting party should submit a report to PPATK if it has identified indication of money laundering as defined by law. It is also required by law to implement the know customer principle to all its customers.

3.3.3. Transparency Policy

The office for the REDD payment should have a transparency policy. This policy should include policies on publication of financial reports, audited reports, and management reports related to all activities under this payment mechanism. General public should have easy access to these reports either through website or directly collecting the information from the REDD PM office. Management of the office for the REDD payment should also produce a guideline of ethical conducts for themselves and employee of the office.

3.3.4 Indicators of Good Governance and Climate Project

After the end of the Cold War, international investments went to developing countries. Failure of policy reform and the emergence of new institutional economics endorsed the importance of governance. Evidence demonstrated the importance of governance to a country's economic growth, human welfare and societal development (Arndt and Oman, OECD 2006). Governance is defined as formal and informal institutions (culture and unwritten values) and their interaction with the behaviour of economic and political organization. Governance in general is about exercise of authority, decision-making processes and relationships between the state and its citizens, civil society and the private sector.

Good governance pays a very large development dividend, and an improvement in governance can boost a nation's per capita income. On the other hand, income can improve governance. Governance is a key word for sustainable forest management at different levels, but how can you measure the quality of governance? CIFOR (2002) characterized governance with participation, transparency, accountability, rule of law, effectiveness, and equity in both decision-making processes and their outcomes. Although many elements of good governance are common; good governance is specific to context of value and government structure (Mayers, 2002)

Kaufmann *et al.* (2005) of the World Bank came up with Worldwide Governance Aggregate Indicators (WGI) comprising six aggregate indicators as follows:

1. Voice and accountability; measuring political, civil and human rights;
2. Political stability and absence of violence; measuring the likelihood of violent threats to, or changes in, government, including terrorism;
3. Government effectiveness; measuring the competence of the bureaucracy and the quality of public service delivery;
4. Regulatory quality; measuring the incidence of market-unfriendly policies;
5. Rule of Law; measuring the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence; and
6. Control of Corruption; measuring the exercise of public power for private gain, including both petty and grand corruption and state capture.

Kaufmann *et al.* (2005) exercised these indicators in all countries including Indonesia. These indicators are important; however they do suffer from construct validity and the assumption of independence among those indicators (Thomas, 2007). Based on the existing analysis, we may group these indicators into three categories:

1. Voice and accountability;
2. Political stability and absence of violence;
3. A cluster of the 3rd, 4th, 5th and 6th WGI indicators; these indicators are highly interdependent, so that we need only one indicator i.e. control of corruption to understand the other three indicators.

These three aggregate indicators can be used to measure the readiness of government at national, provincial and district level in piloting and implementing REDD. Instead of using aggregate indicators, CIFOR used terms of criteria as ‘*A standard that a thing is judged by*’ and principle as ‘*A fundamental truth or law as the basis of reasoning or action*’. Indicator itself means ‘*a trend or fact that indicates the state or level of something*’, which can be supported by a verifier as ‘*data that enhances the ease of assessment of an indicator*’. Altogether these form a hierarchy of PCIV (Principle, Criteria, Indicator and Verifier).

At the site level, The Climate Community & Biodiversity Alliance, which is a unique partnership among research institutions, corporations and environmental groups developed standards for the climate change project <http://www.climate-standards.org/projects/>. It provides a set of eligibility criteria and indicators for climate based projects. Although, the set does not aim to measure REDD project eligibility, we can modify it for REDD eligibility. The following are criteria for the climate change project developed by the Alliance.

1. *Net Positive Climate Impacts*. The project must generate net positive impacts on atmospheric concentrations of greenhouse gases (GHGs) within the project boundaries and over the project lifetime.
2. *Offsite Climate Impacts (“Leakage”)*. The project proponents must quantify and mitigate likely negative offsite climate impacts; namely, decreased carbon stocks or increased emissions of non-CO₂ GHGs outside the project boundary, resulting from project activities (referred to as “leakage” in climate change policy).
3. *Climate Impact Monitoring*. Before a project begins, the project proponents must have an initial monitoring plan in place to quantify and document changes in project-related carbon pools, and non-CO₂ GHG emissions if appropriate, (within and outside the project boundaries).
4. *Adapting to Climate Change and Climate Variability*. Projects designed to anticipate and adapt to probable impacts of climate change and climate variability are more likely to sustain the benefits generated by the project over the long term.
5. *Carbon Benefits Withheld from Regulatory Markets*. When some carbon benefits generated by a project are not sold to satisfy regulatory requirements, additional mitigation action will be required elsewhere to meet these requirements.

3.4. Options/Scenarios for REDD Distribution Mechanism

Fahey and Randall (1998) defined scenarios as descriptive narratives of plausible alternative projections of a specific part of the future. They are a combination of estimations as to what might happen and assumptions about what could happen, but they are not forecasts of what will happen.

Recalling some of the main options currently on the negotiation table in Chapter I, there are a number of dichotomies: (a) Agreement versus no agreement; (b) Protocols such as Kyoto versus funds; (c) National versus project-scale accounting as the basis for international engagement; and (d) Changes in C-stock or ‘deforestation rate’ as the basis for transactions. The following is a discussion on the REDD fund and market-based incentives.

3.4.1. REDD Fund and Market Based Incentives Distribution

The REDD incentives may occur as fund or market incentives. The REDD fund can be structured as international or bilateral aid, technical assistance and capacity building. This fund may occur as an incentive for reducing emissions from DD and/or increasing capacities

to prepare a market for REDD. Unlike GERHAN, this fund will come from the international community, and will aim to help Indonesia improve its readiness and will not be based on carbon credits. Distribution of the fund to achieve efficiency and fairness in reducing emissions from DD is highly desirable. The fund can be realised after COP13 particularly in terms of capacity building and piloting activities.

The current government has stated clearly that its fundamental development stance is pro-growth, pro-poor and pro-employment. So, in order for the REDD fund to work in harmony with the government's development stance, REDD fund activities should consider economic growth, poverty alleviation and employment generation.

Basically there are four basic fund distribution options: First, distribution through the government administration; second, distribution through forest function and small-scale forest authorities; third, distribution through project management; and fourth, distribution from international bodies to regional governments or projects without significant national government involvement. Each mechanism has its advantages and disadvantages (Table 15). To avoid possible leakage in the regions in Indonesia, the national government should be actively involved in PDM and coordinate regional, sectoral and forestry authority commitment to reducing emissions. The first option seems the most appropriate if the different levels of government can reduce state capture and administrative corruption. It is just a matter of how good governance can take place. Civil society involvement is essential for improving governance at difference levels, and a combination with the third option would show how well REDD works at the site level.

Table 15. Fund distribution mechanisms

Option	Government administration based	Forest function based	Project based	International based
Characteristics				
Mechanism	National → Provincial → District	National → Forestry authority	National → project management	International → bodies → Regional government/project
Advantages	Controlled leakage; high cross-sectoral coordination; systematic capacity building	Controlled leakage; low inter-sectoral coordination	Low state capture and administrative corruption; efficient; Low time lag	Low state capture and administrative corruption; efficient
Disadvantages	High state capture and administrative corruption; High time lag	High state capture and administrative corruption	Restricted capacity building; high leakage;	Restricted capacity building high leakage; High conflict risk from the national government

The next thing is REDD based carbon credits. If an agreement is reached in the UNFCCC protocol during COP13 then a regulated REDD market will appear, otherwise a

voluntarily market will emerge. Either way, determining reference levels, ensuring commitment to reduce emissions from DD and monitoring are all problems that will need to be addressed. Table 16 shows the advantages and disadvantages of market-based incentive distribution mechanisms.

Table 16. Market-based incentive distribution mechanisms

Option	Government administration based	Forest function based	Project based	International based
Characteristics				
Mechanism	National → Provincial → District	National → forestry authority	National → project management	International bodies → Local government/project
Advantages	Controlled leakage; high cross-sectoral coordination; systematic capacity building	Controlled leakage; low inter-sectoral coordination; medium readiness	Low state capture and administrative corruption; efficient; high readiness	Low state capture and administrative corruption; efficient; high readiness
Disadvantages	High state capture and administrative corruption; low readiness	High state capture and administrative corruption	High leakage	High leakage

3.4.2. Legal Framework for Distribution Mechanism

Existing legal frameworks have a potential influence on fund-based and market-based scenarios. The assumption is that money coming from carbon credits would be incorporated into the state budget; therefore the following regulations have to be taken into account.

Currently, Government Regulation No. 28/2007, and Law No. 32/2004 and 33/2004 describe decentralization of forest governance to regional governments, district governments in particular. Basically, district governments do not have sole authority over most decisions relating to production forests and protection forests, but have to consult with provincial governments for guidance and assistance. National forest decisions, including allocation for conversion, are still in the hands of the central government, which in most cases only takes a role in providing forest management criteria and indicators to ensure sustainability.

In addition, Law No. 41/1999 and the recent Government Regulation No. 6/2007 on Forest Management provide general guidance on the management of forest resources with a specific article regulating the management of environmental services. These laws, combined with Law No. 34/2000 and Government Regulation No. 65/2001 on Regional Taxation, will also have a significant impact on payment distribution.

According to Law No. 33/2004 on Fiscal Balancing between Central and Regional Governments, balancing funds consist of: (a) Revenue Sharing Funds (DBH); (b) General Allocation Funds (DAU), and (c) Special Allocation Funds (DAK):

- Deconcentration fund shall be part of the budget of the state ministries/institutions allocated based on the work program and budget of the State ministries/institutions.

- Revenue Sharing Funds sourced from natural resources from forestry come from concession rights contributions (IHPH), forest resource rent provision (PSDH) and reforestation funds
- Deconcentration fund shall be distributed through the account of the State Treasury
- The Governor shall at the start of each budget year establish Regional Government Work Program (SKPD) as executors of Deconcentration activities
- In the event of a remaining balance in the implementation of the Deconcentration budget, such balance shall be paid back into the APBN.
- In the event of cash balance in the implementation of the Deconcentration budget, such balance shall be paid into the account of the State Treasury.

3.4.3 Reducing land conflict for REDD

Legal and institutional mechanisms for land allocation and conflict resolution include: Rapid Tenure Assessment (RaTA), spatial planning processes (*Rencana Tata Ruang P/K, TGHK*), and gazzettelement processes.

RaTA (Rapid Land Tenure Assessment)

To assess the risk of conflict and take steps to manage it when any level of government implements REDD schemes, a better appraisal of the existence of multiple claims on land ownership is needed. Experience has shown that full legal clarity is not always needed to achieve workable, negotiated modalities for land use and forest protection (Kusters *et al.* 2007). The RaTA (Rapid Land Tenure Assessment) tool developed at ICRAF can play a role in clarifying the existing situation. This tool is a rapid land tenure survey followed by in-depth exploration of strongly contested claims; links to collective action and property rights. It has been used in two different sites: Mount Halimun-Salak National Park, West Java and Banten Provinces and Batang Toru Watershed, North Sumatra Province. This tool might help to prevent potential land conflicts and ensure REDD schemes do not endanger customary rights.

Box 9. The example use of RATA

In Mount Halimun-Salak National Park, the RATA tool helped conflicting stakeholders resolve their disputes. In 2003, a national park was designated covering 113,357 ha of land. Without realizing the potential of land conflict, the national park authorities try to secure the land from forest dwellers and customary people. The designation brought people's unrest because about 314 settlements have been designated as part of the national park. In 2004, RaTA has been introduced and has been used by these conflicting stakeholders to understand the nature of land tenure conflicts. Through this understanding, the stakeholders negotiate about the solution on these different claims and propose a scheme called Village with Conservation Designations. On the other hand, in 2006, the output from different negotiation between national park authorities and customary people was to prepare a district regulation for regulating joint forest management between the national park authorities and customary people inside and surrounding forests. This case study shows that the RaTA tool has helped different stakeholders to negotiate based on comparable data from the stakeholders' contested legal claims.

An example of RaTA achievements is in Batang Toru Watershed. In 2006, the provincial government in North Sumatra decided to allocate 148,570 ha of forest for orang-utan conservation as Batang Toru National Park. The park covers the three districts of North Tapanuli, Central Tapanuli and South Tapanuli. To study whether the decision would affect the customary people's rights, RaTA assessments were conducted in 2006 and 2007, showing that an area of about 32,573 ha is controlled by local people and should be classified as agroforest. Half of the area (17,931 ha) was legalized by the National Land Agency (BPN) as customary land, but the legalization process has been rejected by the forestry authorities. Current efforts to enhance orang-utan conservation in the area need to take the views of stakeholders outside the Ministry of Forestry into account, otherwise conflicts may render conservation efforts counterproductive (van Noordwijk *et al.* 2007). This case study shows that land tenure conflicts might arise if the government does not fully understand the legal status and contested claims over forest areas.

3.4.4. Managing investment risk

Payment from REDD incentives will be subject to corruption, fraud, and other irregularities common in any incentive mechanism aimed at protecting the environment. The review of current and past environmental incentives described in Chapter 2 shows that many of these incentives failed to reach their targets. To avoid misappropriation of REDD incentives the payment mechanism should be more accountable, auditable, and transparent. It should involve government auditor agencies, private accountants, the Financial Intelligence Unit, and the Anti Corruption Commission, all of which should play a part in preventing irregularities and enforcing the REDD incentive mechanism. The recipients of REDD incentives should reveal details of the bank accounts they use to deposit REDD money.

IV. Conclusions and Recommendations

In relation to sovereignty, interference with 'development' the REDD's scenario would contribute to a substantial part of emissions associated with activities that have negative or only small positive economic benefits. The current range of options can be described as a number of dichotomies: a) Agreement, versus no agreement; b) Protocol such as Kyoto versus Fund; c) National versus project scale of accounting as basis for international engagement; d) Changes in C-stock or 'deforestation rate' as basis for transactions; e) Freedom to design country-specific internal systems within a bottom line of emission reduction, or specific rules for implementation.

The REDD initiative is a new international forest policy for addressing the same old forestry problems: deforestation and degradation. The international forest community should learn from this failure and recognized their past mistakes. They should also learn from failures of many national forestry programs to stop deforestation including programs for rehabilitation and reforestation of forest and land and many programs for developing timber plantation. All these programs have spent billions of dollars of donor funds and government budgets and yet failed to reduce deforestation and degradation. The proposed REDD initiative to be negotiated in Bali at the end of 2007 offers financial rewards for activities that can reduce carbon dioxide from clearing, converting, or degrading forests. It is a reward for not being carbon dioxide emitters. It is about rewarding policies and business practices that do not support deforestation and degradation.

This paper outlines several options of REDD incentives and payment mechanisms as well their distribution to key stakeholders. REDD payment mechanism should make potential suppliers and buyers of carbon credit from REDD initiatives (not being emitters of carbon dioxide) can meet and make mutual benefit transactions. It functions like a market for carbon credits.

The proposed REDD Payment Mechanism should have the following features:

- REDD incentive should be clear and simple to both buyers and sellers of carbon credits. To achieve this objective, the REDD PM should be a mechanism to facilitate financial transactions between supplier or sellers and buyers of carbon credits from CER projects/initiatives. Therefore, suppliers and buyers of carbon credit should be members of the REDD PM.
- The REDD PM should allow different method of payments for carbon credits and non carbon credits. Buyers can settle their transactions by paying cash, debt swap, or financial assets such as carbon financial instruments. If the parties involved in transactions are governments, payments can be in the form of debt write off. Follow the German debt swap experiences in Indonesia.
- Buyers and sellers will determine changes in policies and practices related to forest land use and exploitation of natural forest to be included in CER projects/initiatives. A cost-benefit analysis on policy changes should be conducted by an independent analyst to arrive at agreeable activities under the CER projects.
- For REDD payment, distribution mechanism should adopt definitive allocation as stipulated in a new laws regarding REDD PM. This method of transfer will be also supported with a proper accounting system to measure and account all activities under CER projects/initiatives. The value of carbon credit resulted from CER projects should also be measured and valued.
- To improve accountability of REDD PM, financial reports of organization responsible for managing payment of REDD initiatives should be audited by an independent auditor and or the Indonesian Supreme Auditor (BPK). The audit report should be made available for general public.
- To prevent corruption and other misused of funds, independent auditors, BPK, independent reviewer, and other professionals working under a framework of this payment mechanism should be required by law as reporting parties to the Indonesian Financial Intelligent Unit (PPATK). They can also make a report to the Indonesian Anti Corruption Unit (KPK).
- The office for the REDD payment should have a transparency policy. An involvement of civil society is must.

Next Steps

With the above analysis and framework, the payment team should continue developing a payment distribution scheme for REDD incentives with the following qualities: providing feasible incentives to stakeholders especially the Indonesian government; a simple distribution mechanism; and proper risk management. Indonesia's experience with different kinds of incentives should be considered as the basis for developing an effective REDD incentive and payment distribution mechanism.

All members of the team should contribute to the development of a payment distribution scheme for REDD incentives. Team members should coordinate with the teams

involved in the carbon baseline study and the market study to find feasible incentives for REDD. The team should take international debates on inclusion or non-inclusion of peat forests into account. After a feasible incentive has been found, work on distributing this incentive will become much easier and clearer.

The team should learn lessons quickly from past and present incentive and payment distribution mechanisms. These lessons will form the basis for developing a risk management system for the proposed REDD incentive and payment distribution mechanism.

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