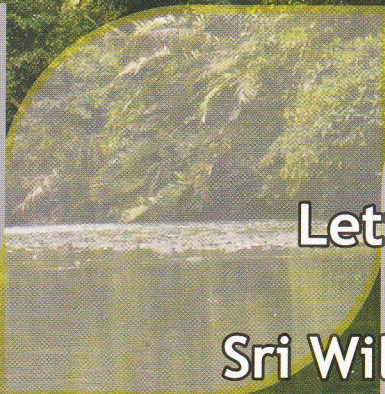
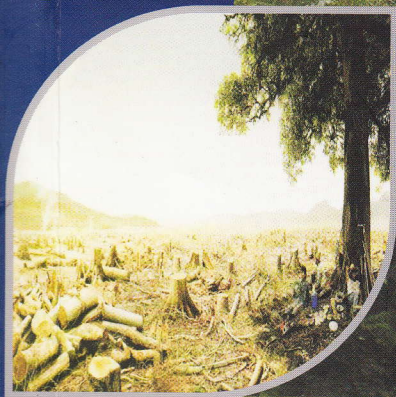


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# Proceedings of the International Workshop

## AKECOP FORUM ON REDD IN ASEAN REGION: Strengthening the Enabling Conditions for REDD Implementation in ASEAN.

Bogor, 14<sup>th</sup>-15<sup>th</sup> October 2009



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# Policy Evaluation of CDM and REDD Schemes: Economic and Social Considerations<sup>1</sup>

By:

Dudung Darusman, Dodik Ridho Nurrochmat<sup>2</sup>  
Leti Sundawati<sup>2</sup>, and Iskandar Zulkarnaen Siregar<sup>3</sup>

## THE ROLE OF SCIENTISTS IN DECISION MAKING

Scientists are seeking to play a positive role in policy and politics and contribute to the sustainability of scientific enterprise. Scientists are concerned on how best science can contribute to policy making and healthy democracy (Pielke, 2006).

The role of the scientist is not to decide between the possibilities but to determine what the possibilities are (May, 1990 in Pielke 2006). Furthermore Pielke (2006) indicate four types of scientist role:

- a. Pure Scientist, with no interest in decision making process and simply share some fundamental information.
- b. Science Arbiter, as a resource for decision making, standing ready to answer factual questions that the decision maker thinks are relevant.
- c. Issue Advocate, try to convince the decision maker to take particular decision, telling the decision maker what he or she ought to prefer.
- d. Honest Broker of Policy Alternative, provides basic information on each choices, makes an effort to expand (or at least to clarify) the scope of choices, and let the decision maker face the challenge of reducing the scope of choices based on his or her preferences and values. Honest Broker of Policy Alternative is often best achieved through a collection of experts working together with a range of views, experiences, and knowledge.

All those roles are critically important and necessary in a functioning democracy, and scientists, similar to other member of society, have to choose. Honest Broker would be a powerful role to facilitate the creation of new and innovative policy alternatives.

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<sup>1</sup> Paper presented at The Workshop on Reduced Emission from Deforestation and Degradation (REDD) IPB International Convention Center, Bogor-Indonesia, 14-15 October 2009

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		VIEW OF SCIENCE	
		Linear Model	Stakeholder Model
VIEW OF DEMOCRACY	Madison	<i>Pure Scientist</i>	<i>Issue Advocate</i>
	Schatt-schneider	<i>Science Arbiter</i>	<i>Honest Broker of Policy Alternative</i>

Figure 1: The role matrix of scientists in decision making

According to the role matrix of scientists in decision making (Figure 1), the most suited role for the scientists is to be an Honest Broker of Policy Alternative (referring stakeholder model and Schattschneider theory of democracy), which engages in decision making by clarifying and, at times, seeking to expand the scope of choice available to decision makers. Therefore, the objective of this paper is to evaluate policies on the current schemes of Clean Development Mechanism (CDM) and Reducing Emission from Deforestation and Forest Degradation (REDD).

## CARBON TRADING: IS IT WORTH TO DO OR TO WAIT ?

### a. Some Odds of the Scheme :

1. **Additionality Concept (Mukerjee, 2009).** To earn credits, a project should owe its existence to the prospective earnings from carbon credits: the emission reductions from the project should be additional to what would have happened in the absence of the CDM.
  - The Berkeley, California.-based organization International Rivers discovered that a third of the CDM's hydropower projects had been completed before they were accredited.
  - Lambert Schneider of Germany's Institute for Applied Ecology judged two fifths of the world's CDM portfolio to be of similarly questionable additionality.
  - Climatologist Michael Wara of Stanford University guesses the figure could be much higher, but, he says, "we have no way of knowing".
  - Determining which projects are "additionality" can be tricky, explain researcher Larry Lohmann of the Corner House, an environmental think tank based in Dorset, England. "There is no such thing as a single world line, a single narrative of what would have happened without the projects, it's not a solvable problem"

2. Perverse Incentive (Mukerjee, 2009). Consultant assessing a carbon-offset project often compare it with the accepted practice in the developing country where it will be located. Such an approach gives that country an incentive to take the most polluting line to maximize the credits they earn for a CDM project. Selling this artificially inflated credit could thus ultimately enable more carbon to be emitted than if the offset had not been created at all.
3. Paying the Polluters (Mukerjee, 2009). The World Bank is supposed to encourage sustainability, but much of its financing for carbon goes to polluters. For instance, the bank's private sector lending arm is financing a coal-fired power plant in Gujarat, India, that will generate 25.7 million tons of carbon dioxide per year. The bank also hopes to garner brokerage fees from the sale of offsets worth 3 million tons of carbon a year, earned by energy-efficient processes at the same plant. Janet Redman of the Institute for Policy Studies in Washington, D.C., charges that four fifths of the bank's carbon finance portfolio is invested in offsets from polluting industries such as coal, chemicals, iron and steel.
4. Artificial Market.
  - a. Selling the product of carbon sequestration service, the producer is to be controlled by the buyer without any market mechanism. It is not a real (or at least unusual) market, where the producer has to provide a certain level and quality of services continuously over a very long period. There is no market allowance or freedom (due to dynamic situations) to serve different level and quality of services, with different transaction and prices. Contrary to tourism market, for instance, the services produced may vary, with vary transaction and price accordingly.
  - b. The carbon sequestration service as a product is not measurable, and it can not be an identified or recognized object in the contract. The solution of this situation is to make the forest or "the factory/industry" as the object of transaction. It is silly, because the business idea is selling or transferring the right to use the product/services, but the reality is transferring the right to control "the factory/industry". Comparing with recreation service as a product of tourism industry the service is measurable, such as "man-day-visit", it become silly if, for instance, the buyer intend to control the management of hotel or recreational site.

**b. Some Risks to Anticipate:**

1. Contract trap. Different with other industry/factory which produces a certain or limited product, forestry as an ecosystem at the same time produces many kind of goods and services. The people have dynamically and gradually identified and utilized the products. Practically, in the scheme of CDM or REDD there is no chance to develop and to manage new product(s) outside the ones stated in the contract. Even if the new product(s) would not disturbing the purpose of the contract, it has to arrange a new legally binding contract, and the transaction costs would be expensive and unaffordable.



2. Potential abuses:

(a) the entrance and dominance of foreign power over national resources might make high rigidity, and less freedom for the nation to choose, at times, the most optimum utilization.

(b) in the case of state forests the contract might exclude, or inhibit local community's traditional access to the forests.

- Marcus Colchester of Forest People Program comments: "We see a risk that the prospect of getting a lot of money for biodiversity (similarly for carbon sequestration) could lead to indigenous people's concerns falling by the wayside." In particular, Tom B.K. Goldtooth of the Indigenous Environmental Network based in Bemidji, Minnesota stated that increasing the financial value of forests could lead to "the biggest land grab of all time", (Mukerjee, 2009).

- Mukerjee (2009) further explained that concerns of displacement are particularly acute in Indonesia, where villagers opposing logging operations and paper, pulp and palm oil plantations on their territories have experienced violent attacks. Some 20 carbon forestry projects are already in the works there, Colchester warns that the government's regulations on REDD do not adequately protect indigenous peoples. In Kampar Peninsula, for instance, a forestry company proposes to clear-cut a ring of swamp forest and plant it with acacia - so as to protect the forest in the core-area and thereby earn REDD credits. The project would limit the access of the Melayu people to their traditional fishing creeks and hunting grounds.

3. Griffiths (2007) reviewed some real and potential risks on avoided deforestation scheme relevant to human rights, social and livelihood issues, such as follow.

- a. Higher control and dominance of state and experts over forests
- b. Excessive support of government to conservation model which exclude and against local people
- c. Unfairly accused the local people as agent of deforestation
- d. Violate the traditional right of local people on land and territories
- e. Unfair contracts with local people and community
- f. Land speculation, encroachment and land conflicts
- g. Corruption of international funds among national elites

We shall understand that local/traditional people live in and surrounding a forest is part of its ecosystem, such as Dayak people in Borneos they influence the dynamic succession of the Borneos' rich natural forests. But, in Mukerjee (2009) Michael Cernea of George Washington University stated that conservationist has historically been at odds with the people who inhabit wilderness. During the last half of the 20th century, millions of indigenous people in Africa, South America, and Asia were ousted from their homeland to establish nature sanctuaries free of human, succumbed to malnutrition, disease and exploitation. Mukerjee (2009) explained that such outcomes-coupled with the realization that indigenous groups usually help to stabilize ecosystem by, for instance, keeping fire or invasive weeds at bay-have convinced major conservation groups take local human concern into account. The World Wildlife Fund (WWF) now describes indigenous people as "natural allies" and the Nature Conservancy pledges to seek their "free informed and prior" consent to projects impacting their territories.

Mukerjee (2009) in the end mentioned that it is who have intimate details of the land and the seas, accumulated over generations, who hold key insight to conservation. As Lea Scherl of James Cook University in Australia puts it: "You lose that knowledge when you take the people away".

### c. Something Suspicious:

The CDM or REDD scheme is about economic business among industrialized northern countries and less industrialized southern ones. It is very likely that the scheme is a part of their games. Therefore it is natural to raise such suspicious questions, as follows.

1. While the CDM or REDD scheme may curb global warming, may it also curb the future supply of wood and other forest products to a very prospective international markets ?
2. Since it is strongly predicted that global warming in the near future will increase the agricultural (especially grains) productivity in temperate zones, and decrease the one in tropical zones, is such unclear and unfair CDM or REDD scheme just a means of buying time ?
3. So far there is no easier means for the polluting industries to compensate and then to justify their operations. Mukerjee (2009) mentioned that doing away with the CDM and other offsets could be hard, because they are the easiest way for industrial nations to meet their emission targets.

### d. Weak Economic Attractiveness

Joining REDD scheme with the compensation rate of US \$ 6 to 12 per ton CO<sub>2</sub>-e is not so attractive yet. A research conducted by Rochmayanto (2009) analyzed conversion of peat swamp forest in Riau Province, Indonesia, and find out the minimum compensation rate of CO<sub>2</sub> sequestration to join REDD scheme or to avoid conversion to pulp plantation forest.

Table 1: Minimum compensation rate of CO<sub>2</sub> sequestration to implement forest conservation with REDD scheme\*

	CO <sub>2</sub> -e above the ground (US \$ per ton)	CO <sub>2</sub> -e above and below the ground (US \$ per ton)
Highly degraded	7.04	6.00
Medium degraded	9.50 (109.24)**	6.00
Slightly degraded	7.61 (130.64)**	6.00

\* Rochmayanto (2009), study was conducted on Peat Swamp Forest in Riau Province, Indonesia

\*\* If the value of timber harvested in land clearing is included as income.

If the calculated CO<sub>2</sub> biomass is only above the ground, the compensation rate of US \$ 6 to 12 per ton is not secure enough to avoid conversion to pulp plantation forest. But it is very secure if all CO<sub>2</sub> biomass (above and below the ground) is calculated. Actually, the value of timber harvested in land clearing to build pulp plantation forest is highly attractive as source of income. The situation pushes to increase the minimum compensation rate as high as US \$

109.24 and US \$ 130.64 per ton CO<sub>2</sub>-e for the medium degraded and slightly degraded peat swamp forest, respectively.

## **HOW THE WORSENING FOREST DEGRADATION AND DEFORESTATION HAVE BEEN HAPPENING ?**

We are fully aware and concerned that securing our world forest from degradation and deforestation (D&D) is critically important to curb global warming and climate change. For some less industrialized countries like Indonesia the multipurpose forest resource at the same time is an important asset to support their dynamic socio-economic development. They do want to have such an secure forest assets useful for both concerns. Is the problem of D&D simply lies on internal forest business? Is the CDM or REDD schemes a wise solution for both or even broader concerns? We may see wider angle of the problems.

### **A Complex Problem of Tropical Forest Deforestation & Degradation: Lesson from Indonesia.**

We may see the problem tree of tropical forest D&D, lesson from Indonesia, as shown in the following **Figure 2**.

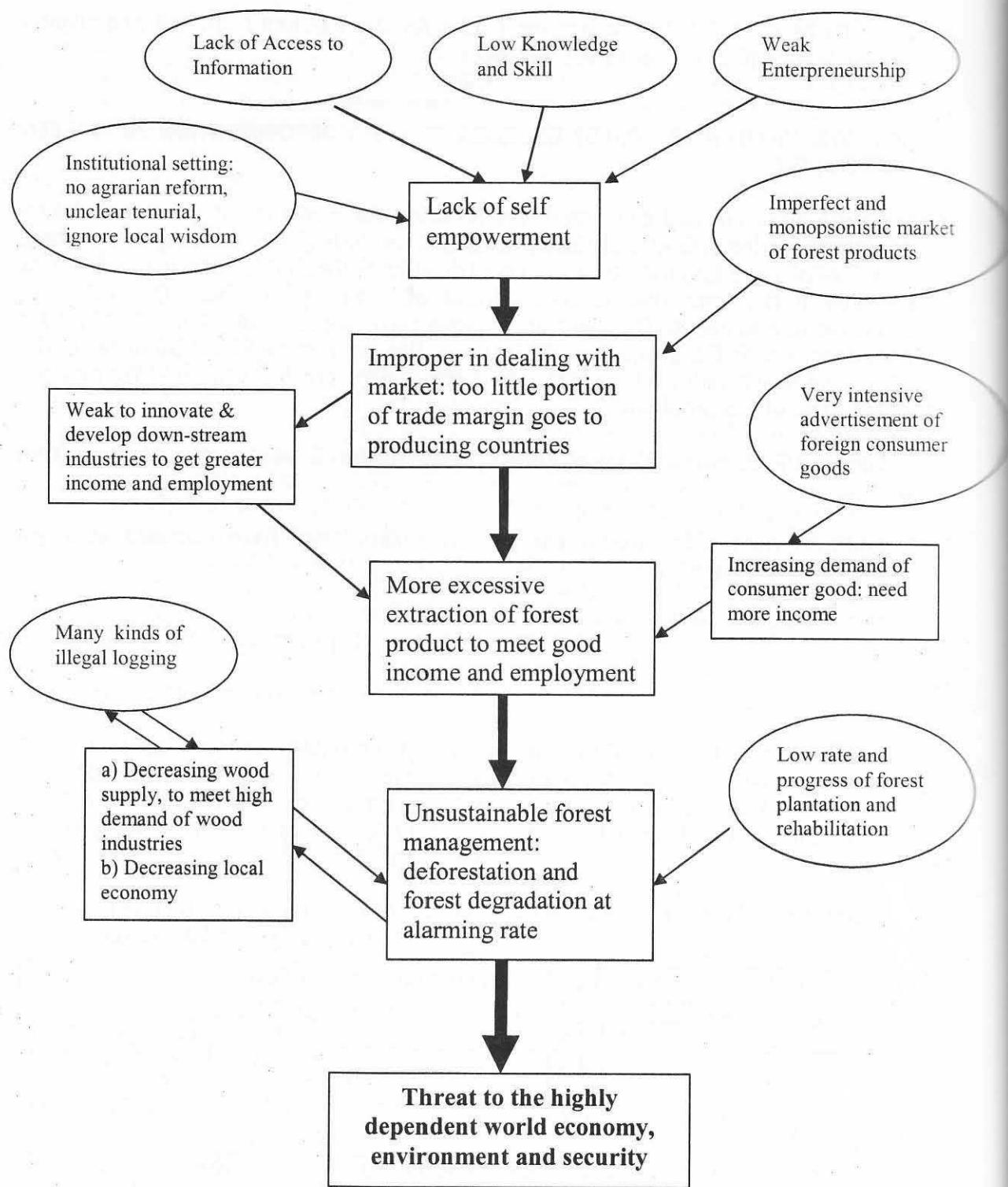


Figure 2: The problems of tropical forest degradation and deforestation.

There are at least 8 significant problems related to forest degradation and deforestation, as follow.

1. Lack of access to information quantitatively, qualitatively, as well as deliverability. Right information is material to process to get right decision.

Quantitatively means kinds and amount of information, qualitatively means reliability and validity, while deliverability means getting at right time and right place. To overcome this problem, some efforts have been effective, such as utilization of information technology(ies), mobile phone for instance, has shown good impact on access to information, not only on the market but also on the forestry technology and management.

2. Low knowledge and skill, in term of general profession as well as of specific forestry. In general, most people are lowly educated, mostly elementary school graduates. While, most of people are traditionally engaged in traditional agriculture, but not in forestry. Forest and forestry is mostly considered as wilderness, uncivilized, and inferior profession. On the other side, most of forestry companies' owner and manager were educated and experienced in retail business, which is very different with a very specific forestry business. Knowledge and skill determine the ability of the people to process information to get right decision. To overcome this problem, some informal as well as formal education and training in forestry practices and business would be very useful.
3. Weak entrepreneurship has been due to a very long history of imperialism, colonialism and feudalism. Most of people feel inferior and then feel better or safer to be labor rather than to be business actor (owner or manager). Such attitude and behavior has been very halting to becoming "the master in their own land". Further complications may create many agents of foreign powers. This situation shall be understood, but shall not be "utilized" by any foreign power. Education and training to build entrepreneurship will be very useful.
4. Less chances for the people and communities to participate in forest management and business has been due to the ideological and institutional setting, which has not recognized the role of local people and local wisdom in good forest management. The problems of land-tenure, agrarian reforms, and implementations of community based forest management, collaborative forest management have been very crucial.
5. Imperfect and monopsonistic (contrary to monopolistic) market of forest products. Those above four factors, at least, contribute to the lack of empowerment and further improperness of forestry production business in dealing with any other business parties in the markets. It has been worsening by the situation of monopsonistic market, which the end result is too little portion of business/trade margin goes to the producers.

Table 3: Cases of minor margins due to the monopsonistic structure of timber trade

Year	Cases
1976	Royalty of \$ 2 per m <sup>3</sup> to the timber producers (Government of Indonesia) imposed to natural forest timber was only one fourth of its potential economic rent
1980	Plywood export price was only one third of world plywood prices
2004	Particle board FOB price was only one fourth of its price in an European Port

Such too little portion made the producer becoming not only weak to innovate and to develop down-stream industries, to get greater income from “higher added value”, but also the worst, excessively extracting forest products in the form of raw material. At the meantime, highly intensive advertisement of foreign consumers good, which demand higher income earnings make those excessive extraction worsened. It is a need to build awareness for international/foreign parties not to get benefit from the situation, but gradually to build better and better sharing of the business/trade margin. It is also expected for developed countries to transfer and to guide the developing countries in applying higher added value and higher efficiency wood processing industries.

6. Very intensive advertisement of foreign consumer and fancy goods, which create their local demand. To meet the demand the country need more income, earned by increasing extraction and exports of raw wood material beyond the sustainability level. Forestry business, different with any other business, is constrained by a certain extraction rate to make it sustainable. Above the rate, extraction will cause detrimental effects, in the forms of deforestation and/or forest degradation.
7. Illegal logging. Such unsustainable forest management on one side have reduced wood production to meet high capacity of national and international wood processing industries. On the other side they have reduced the volume of local economy. Both impacts have stimulated many forms of illegal logging, which again (as a feed-back) have worsened the deforestation and forest degradation. The research on problems of illegal logging is so challenging, such as in the aspects of law (regulation and enforcement), economics and institutions.
8. Low rate and progress of forest plantations and rehabilitations. The low rate and progress have not been caused by lack of potential capital to invest, but the forestry business has been more interested in highly profitable natural forest extraction, legally and illegally. It must be more probable to develop plantation forest through local people participation.

Those eight problems seem significantly contributive to the destruction and disappearance of forests, especially the tropical ones, which is believed to cause a very serious threat to the highly dependent world economy, world environment and world peace and security.

## WHAT ARE MORE SUITABLE THINGS TO DO ?

We may have another choice of national policy and politics. It may be a simple but bright policy or scenario if we can conserve natural forests and rationally develop plantation forests with our own capacity and capability. The forest resources shall be managed in sustainable way, a multi product SFM practices, to produce high value of wood and non-wood forest products. The expected value will be much higher than the value of the forest with CDM or REDD schemes. Choosing that scenario, it doesn't mean ignoring our concern on the global warming problem since large and good forest at the same time would significantly sequester carbon dioxide from the atmosphere.

At the mean time, international parties shall: (a) continue to conduct forest products trade and businesses with producing countries, either on raw or processed materials, (b) open and build fair and competitive market of forest products, and fairly distribute marketing margins (and also the added value of processing industry) among producers + traders + consumers, (c) make no tricks and no threats to the less educated, less trained and less informed parties in the producing countries. With such clean and fair trade, producing countries could get better economic gain and economic power in developing and sustaining their forest resources.

To be more specific, there are some practical efforts to be developed, such as follows.

1. Utilization of information technology(ies), especially mobile phone, has shown good impact on access to information, not only on the market but also on the technology and management.
2. Conducting some informal as well as formal education and training in forestry practices and business.
3. Conducting education and training to build entrepreneurship.
4. Implementing the most suitable arrangement of land-tenure, agrarian reforms, and implementations of community based forest management, collaborative forest management.
5. Building awareness for international or foreign parties not to get benefit from the situation of uncompetitive market, but gradually to build better and better sharing of the business or trade margin. It is also expected for developed countries to transfer and to guide the developing countries in applying higher added value and higher efficiency wood processing industries.
6. Reducing the intensity of advertisement of foreign consumer and fancy good and services
7. Doing research on problems of illegal logging is so challenging, such as in the aspects of law (regulation and enforcement), economics and institutions.
8. Implementing the most probable way to develop plantation forest through local people participation.

## CONCLUSION

It is widely accepted and is also our concern that securing our world forest from degradation and deforestation is critically important to curb global warming and climate change. However, forest degradation and deforestation in tropical-developing countries is a complex problem and therefore needs a comprehensive rather than single solution. Nowadays, carbon trading is one of the most popular

mechanisms and commonly proposed to solve the problem of deforestation and forest degradation. Despite containing some promising elements, however, carbon trading mechanism such as through Clean Development Mechanism (CDM) or Reducing Emission from Deforestation and Degradation (REDD) schemes hold also some oddness, i.e. need a complex-additional concept, creating perverse incentives for the non-polluters, paying the polluters, and operated under artificial and immeasurable market. Some risks shall be anticipated before implementing CDM and REDD schemes, among others are contract trap causing sub-optimal utilization of forests, potential abuses due to domination of foreign power over national resources, exclusion of some traditional rights, and too high domination of state control over forests. The carbon trading scheme is about economic business among industrialized northern countries and less industrialized southern ones. It is very likely that the scheme is a part of their games.

Generally, joining REDD scheme with the compensation rate is not so attractive yet. A recent study reported that if the calculated CO<sub>2</sub> biomass is only above the ground, the compensation rate of US \$ 6 to 12 per ton is not secure enough to avoid conversion to pulp plantation forest. But it is very secure if all CO<sub>2</sub> biomass (above and below the ground) is calculated. Actually, the value of timber harvested in land clearing to build pulp plantation forest is highly attractive as source of income. The situation pushes to increase the minimum compensation rate as high as US \$ 109.24 and US \$ 130.64 per ton CO<sub>2</sub>-e for the medium degraded and slightly degraded peat swamp forest, respectively. However, who will pay for those prices

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