Mitigation Perspective Post 2012

Challenging Approach of REDD for Smallholders of Rubber Plantation

18, August, 2011

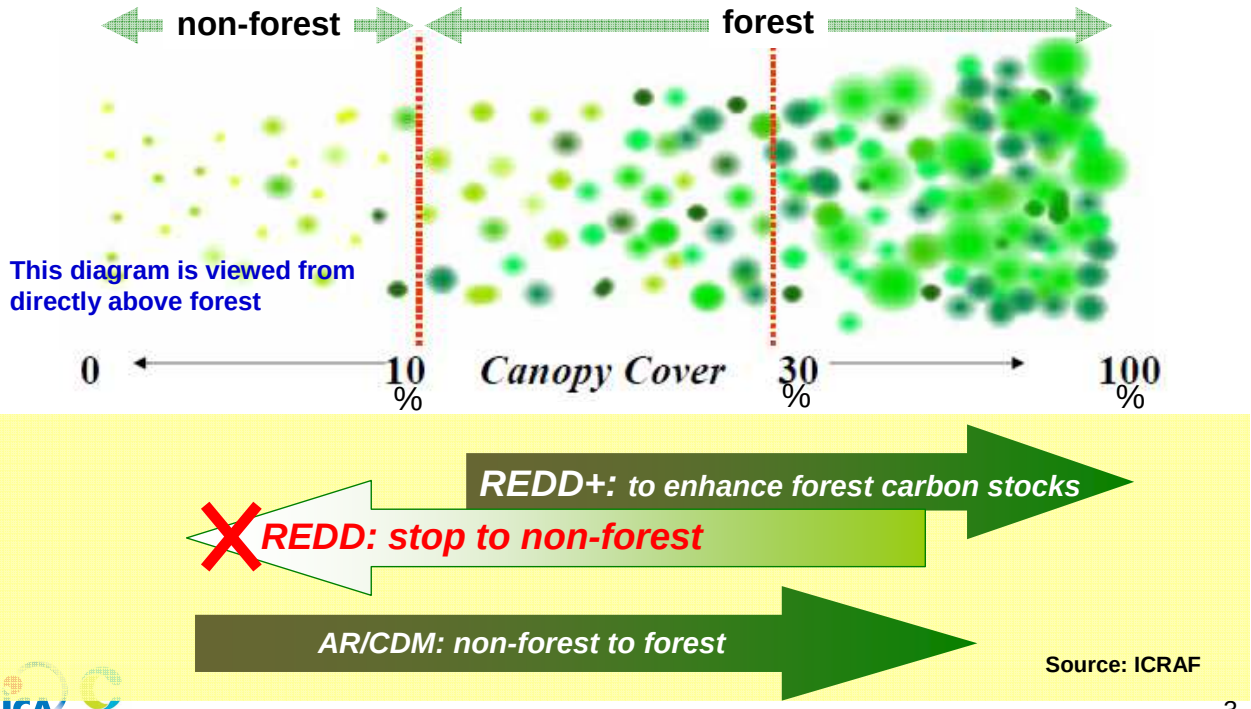
Deputy chief advisor of JICA Expert Team
Dr. Kazuhito YAMADA

Today's Agenda

1. What is REDD and REDD+?
2. Basic Concept of Challenging Approach of REDD
3. Characteristics of Natural Rubber Plantation
4. Project Design of REDD in the ASEAN Countries
5. Discussion

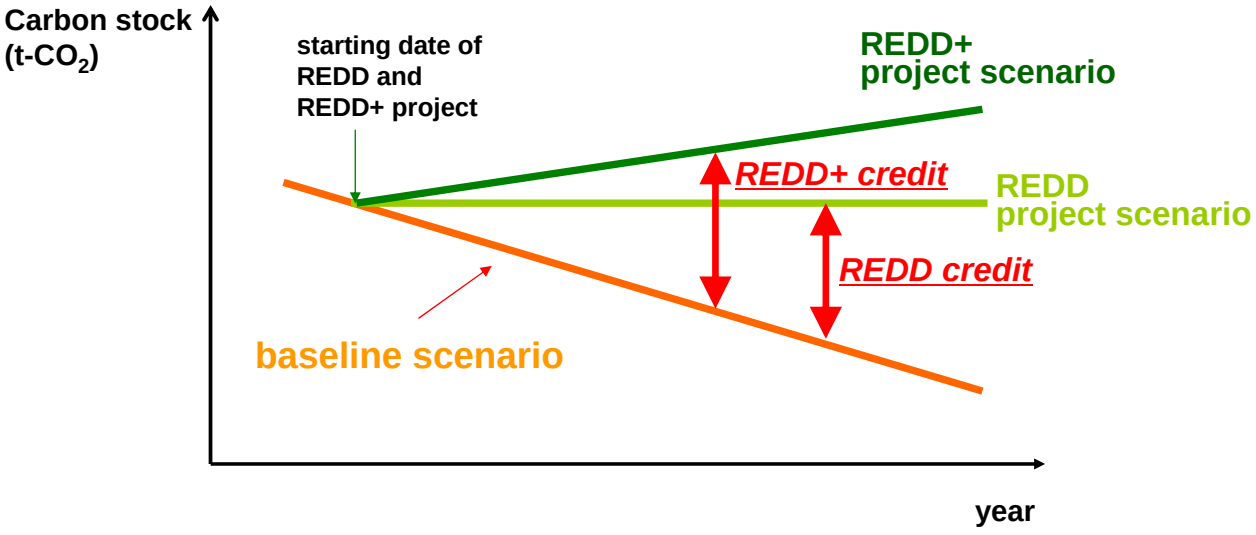
What is REDD and REDD+?

Relationship between REDD/REDD+ and A/R CDM



What is REDD and REDD+?

Baseline/Project Scenarios and Carbon Credits



What is REDD and REDD+?

Key Questions ?

- **What is the most important role of REDD/REDD+?**
  - **To stop deforestation activities, or**
  - To supply carbon credits of REDD/REDD+ to 'international carbon market'

Answer: REDD/REDD+ have to be an important GHG mitigation tools!

- **How to design the procedure/modality of REDD/REDD+ in practical way?**

What is a main cause of deforestation?

  - How to **stop deforestation activities** by causers in real forest using 'carbon credit'?
    - What kind of mechanisms do we need?
    - How to **involve stakeholders** related to deforestation activities in REDD+ in developing countries?
    - How to **develop capacities of these stakeholders** in order to implement REDD+ projects properly?

Who are main stakeholders?

Basic Concept of Challenging Approach of REDD

Main causes of deforestation:

If the main cause of deforestation is the expansion of cash crop area by farmers who want to increase their income, is it possible to reduce deforestation by increasing productivity of cash crops per unit area for farmers?

proximate causes	underlying causes
1. agricultural expansion Shifting cultivation, Permanent cultivation, Cattle ranching, Colonization	**1. demographic factors** Population increase, Migration, etc.
2. wood extraction Commercial wood extraction, Fuelwood extraction, Polewood extraction, Charcoal production	**2. economic factors** Commercialization, Market growth, etc.
3. infrastructure extension Transport infrastructure, Market infrastructure, Public services, Settlement expansion, Private enterprise infrastructure	**3. technological factors** Agricultural, Forestry
	4. policy and institutional factors Public policy, Land tenure, Corruption, etc.
	5. cultural factors Public attitudes, values, beliefs, Individual and household behavior, etc.

Source: Helmut J. Geist & Eric F. Lambin, 2001

Basic Concept of Challenging Approach of REDD

Hypotheses:

- Market share of plantation crop "**A**" is dominated by "**smallholders**".
- However, **productivity** (kg/ha/year) of "**A**" by **smallholders** is lower than that of **large-scale farm** because of limited technology and financial resource.
- Demand of "**A**" **can not be substituted** by other crops/man-made substances.
- Demand of "**A**" has increased until now. And it is anticipated that **future demand** of "**A**" **increases** substantially.
- In proportion to increase the demand of "**A**", the smallholders try to **expand harvesting area** of "**A**".
- This expansion of harvesting area of "**A**" **leads deforestation**.

Therefore, we can reduce a deforestation that would occur in the absence of productivity enhancement of a plantation crop "A".

Plantation crop "A" should be "Natural Rubber" !

Characteristics of Natural Rubber Plantation

Market share of "natural rubber" is dominated by "smallholders".

- Though rubber is grown in more than 20 countries now, **four countries** (viz., **Indonesia**, **Malaysia**, **Thailand** and **India**) who were also the pioneers in commercial rubber plantation development, continue to dominate in **area (77%)** and **production of rubber (79%)** in the world.

- Today, the smallholdings account for almost **90 %** of rubber production in **Thailand**; **89 %** in **India** and **Malaysia**; and **83 %** in **Indonesia**.

(Viswanathan, P.K., 2008)

Characteristics of Natural Rubber Plantation

Productivity (kg/ha/year) of "**natural rubber**" by **smallholders** is lower than that of **large-scale farm** because of limited technology and financial resource.

Productivity of rubber plantations by owners, 2004-09 in Indonesia (Kg/ha/year)

Years	Smallholders	Governments	Privates	Average
2004	792	1,036	1,199	839
2005	818	1,042	1,200	862
2006	892	1,299	1,541	967
2007	914	1,350	1,596	993
2008	928	1,372	1,621	1,008
2009	954	1,409	1,666	1,036

Source: http://www.thefreelibrary.com/Profile+of+rubber+plantations+in+Indonesia.-a0234569991

Characteristics of Natural Rubber Plantation

Demand of "**natural rubber**" **can not be substituted** by other crops/man-made substances.

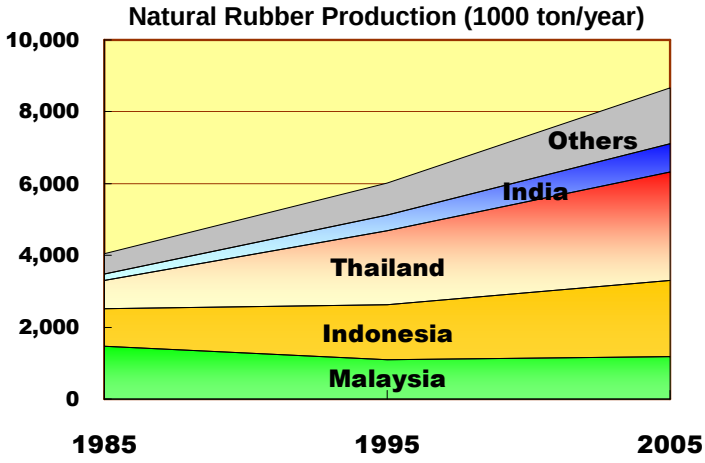
- "Rubber is a hot commodity with consumption increasing worldwide at an average rate of 5.8 percent per year since 1900. Synthetic rubber accounts for approximately 57% of the total but **natural rubber is cheaper and of superior quality for high-stress purposes**. **Jet and truck tires are almost entirely natural rubber**." (Fox, J., 2010)

- "To cite just two examples, **jet-aircraft tires and truck tires are manufactured almost entirely of natural rubber**. (Li, Z.,et. Al, 2011)

Characteristics of Natural Rubber Plantation

Demand of "**natural rubber**" has increased until now. And it is anticipated that **future demand** of "natural rubber" **increases** substantially.

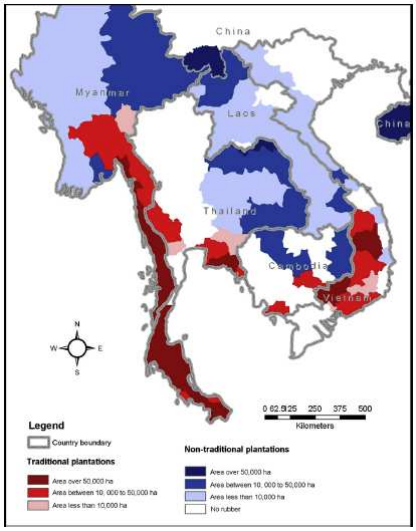
- "Consumption of natural rubber is anticipated to increase from **9.6 million tons in 2008** to **13.8 million tons by 2018** (growth of 3.7% per year) "(Fox, J, 2010)



Characteristics of Natural Rubber Plantation

In proportion to increase the demand of natural rubber, the smallholders **try to expand harvesting area** of it. This expansion of harvesting area of it leads **deforestation**.

- "By 2050, according to an estimate by Fox, Vogler, Sen, Ziegler, & Giambelluca (2009), largely by replacing lands now occupied by **evergreen broadleaf trees and swidden-related secondary vegetation**, the area of land dedicated to rubber tree growth in these nontraditional rubber tree-growing areas could quadruple. " (Li, Z., 2011)



Project Design of REDD for Smallholders of Rubber Plantation

Project title: **ASEAN-WIDE REDD (tentative)**

REDD for Smallholders of Rubber Plantation in ASEAN countries under **Bilateral Offset Credit Mechanism (BOCM)**

Project participants:

Implementing country: Thailand and Japan

Host countries: ASEAN countries

Donor country: Japan, Bridgestone, Yokohama Tire, etc.

Project description:

In order to reduce future deforestation in ASEAN region, and to promote SD of smallholders in ASEAN countries, the productivity of existing rubber plantations by smallholders in ASEAN countries is enhanced using advanced productivity-enhancement system for smallholders of rubber plantation developed by Thailand, and using financial system of BOCM by Japan.

Project Design of REDD for Smallholders of Rubber Plantation

Productivity of natural rubber in Thailand:

Thailand:	**1.875 t/ha/year**
India:	1.727 t/ha/year
Vietnam:	1.483 t/ha/year
Malaysia:	1.330 t/ha/year
Indonesia:	0.862 t/ha/year

Source: Mani S., et. Al (2011)

The productivity of natural rubber in Thailand is the NO.1 among major producing countries!

Project Design of REDD for Smallholders of Rubber Plantation

Advanced system for smallholders of rubber plantation in Thailand

- **Offices of Rubber Replanting Aid Fund (ORRAF)** (Fox, J., 2010)

ORRAF is a unique feature of the **Thai rubber growing program**. Established as an agency of the Thai government in 1960, ORRAF was initially designed to support rubber smallholders in **South Thailand** in expanding rubber production and diversifying into other crops to buffer economic risks linked to international price fluctuations.

Funded through export taxes collected from smallholder rubber producers ORRAF assists smallholders by providing free or subsidized inputs and credit.

Project Design of REDD for Smallholders of Rubber Plantation

- **Offices of Rubber Replanting Aid Fund (ORRAF)** (Fox, J., 2010) (continued)

Beginning in 1989 ORRAF provided smallholders in the **northeast**, those with less than 2.4 ha (15 rai) of land, with technical advice, free seedlings and fertilizer, low-cost credit for labor costs (including family labor), material inputs (especially herbicides), and other income generating activities.

Since 2004 ORRAF provides technical advice on cultivation and free seedlings to households with up to 1 to 1.25 ha (6-8 rai) of land.

ORRAF also supports smallholder activities such as fish ponds, livestock, crops, and handicrafts in order to aid farmers to maintain their livelihoods between the time they plant rubber and begin to tap. ORRAF assists households with extension information, provides low-cost credit, and supports community organizations and the formation of rubber cooperatives.

This kind of integrated support system for smallholders of rubber plantation will be essential to enhance the productivity!

Discussion

- How to apply the successful ORRAF system in Thailand including financial support for smallholders to in diverse ASEAN countries?
- How to integrate carbon credit effectively into the system?
- How to set baseline productivity of rubber plantation in each country?
- How to estimate avoided GHG emission reductions by the project?
- How to implement MRV of the project?