Forest-related discussions at COP13, COP/MOP3

Satoshi Akahori
Forestry Agency, Japan
March, 2008
satoshi_akahori@nm.maff.go.jp

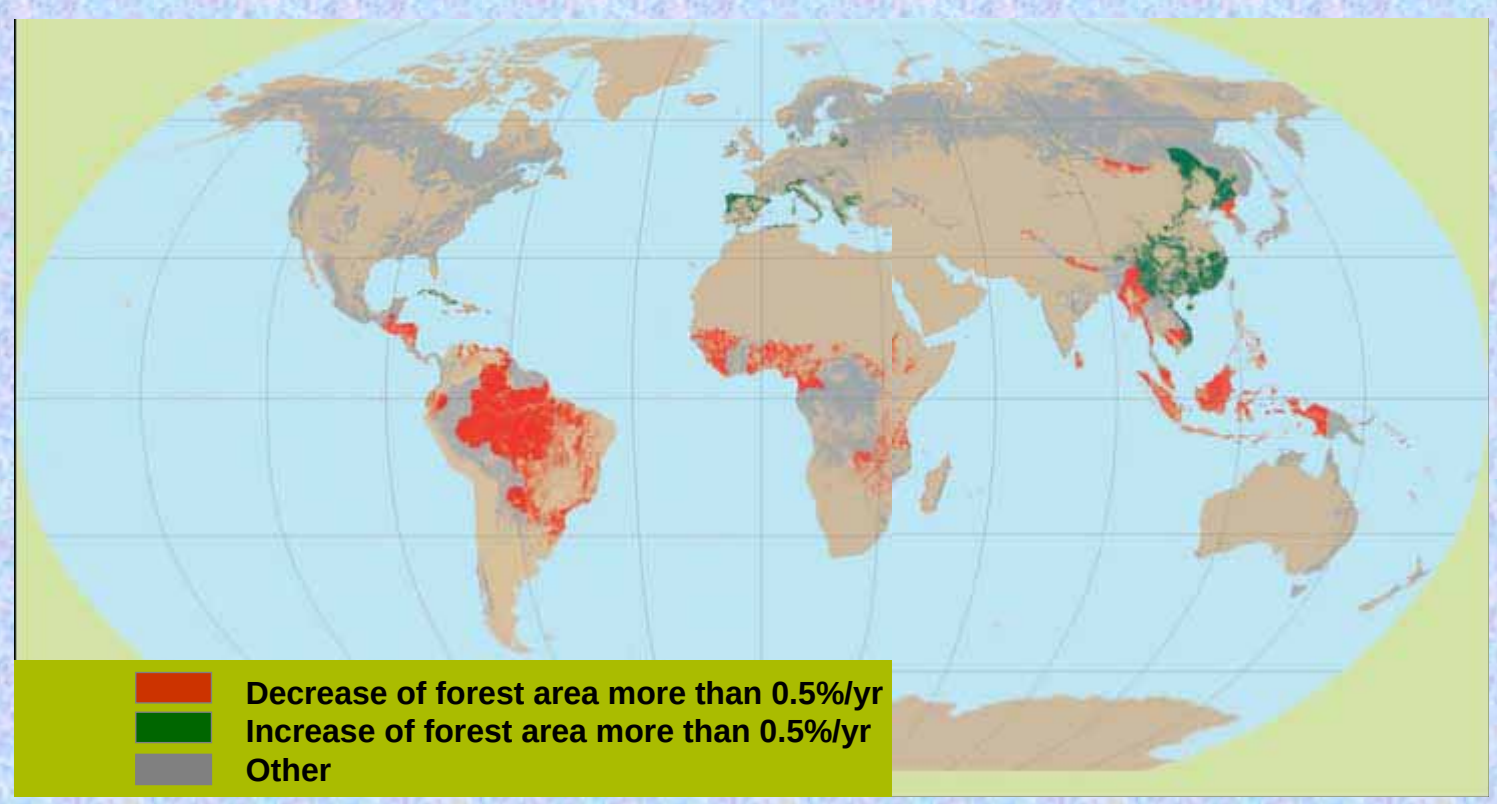
1. Reducing Emissions from Deforestation in Developing Countries (REDD)

2. Change to the limit of Small-Scale Afforestation / Reforestation CDM

1. Reducing Emissions from Deforestation in Developing Countries (REDD)

Deforestation in the World

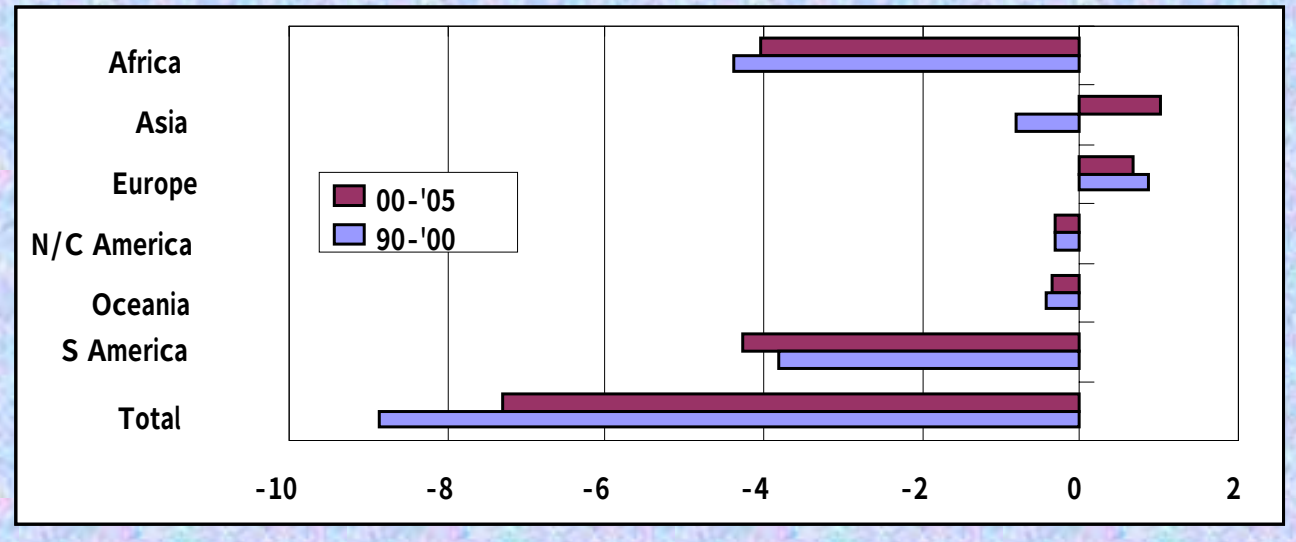
- World's forest is decreasing 7.3million ha/yr
  (ave.2000-2005、offset by the increase)
- Deforestation is occurring mainly in tropical forest in developing countries.



Source : FRA2005 (FAO)

Deforestation by regions

Deforestation observed in Latin America (esp. Brazil), and Africa. Forest area increasing in Asian region due to China, but deforestation still continues in individual countries such as Indonesia.

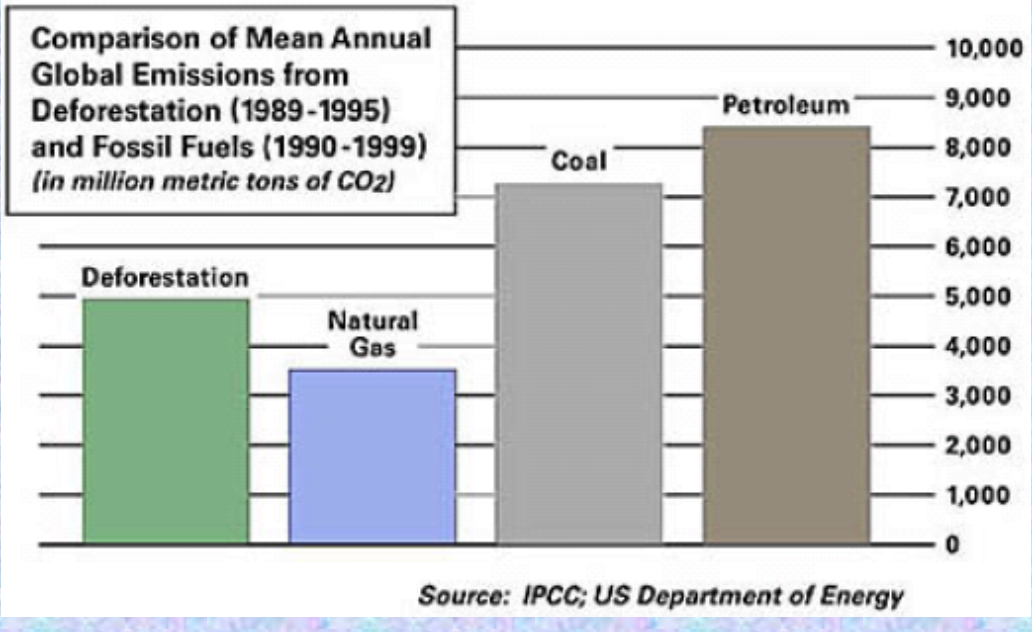


Reducing Emissions from Deforestation in Developing countries (REDD)

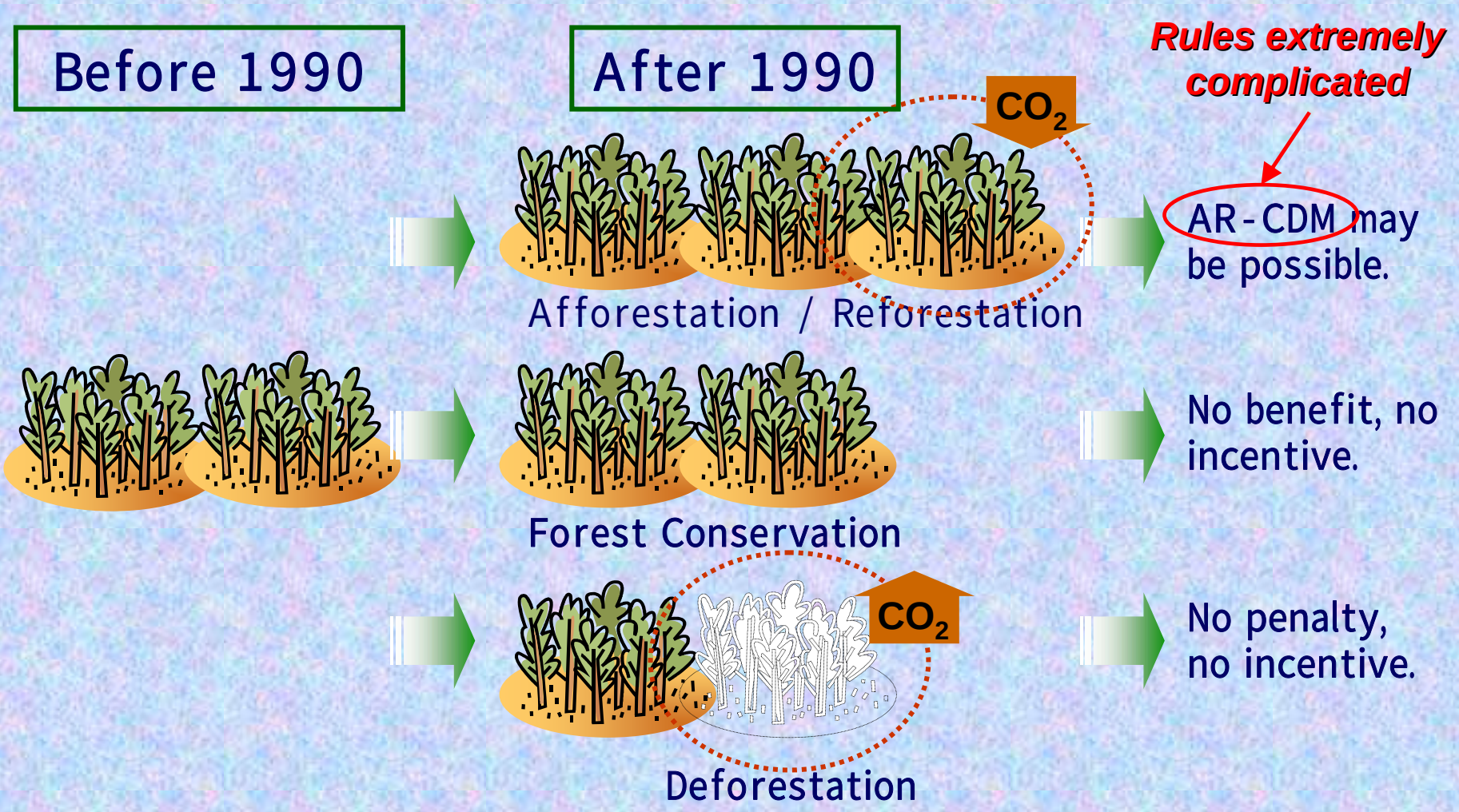
- Proposed by PNG and Costa Rica at COP11 in 2005, as a component in next the commitment period (2013 ～)
- To establish the new scheme to give positive incentives to developing countries

Background

- Emissions from deforestation accounts for 20% of total emissions.
- Cause of deforestation
  - Conversion to farmland
  - Increase of demand for fuel wood
  - Illegal logging
  - Forest fire

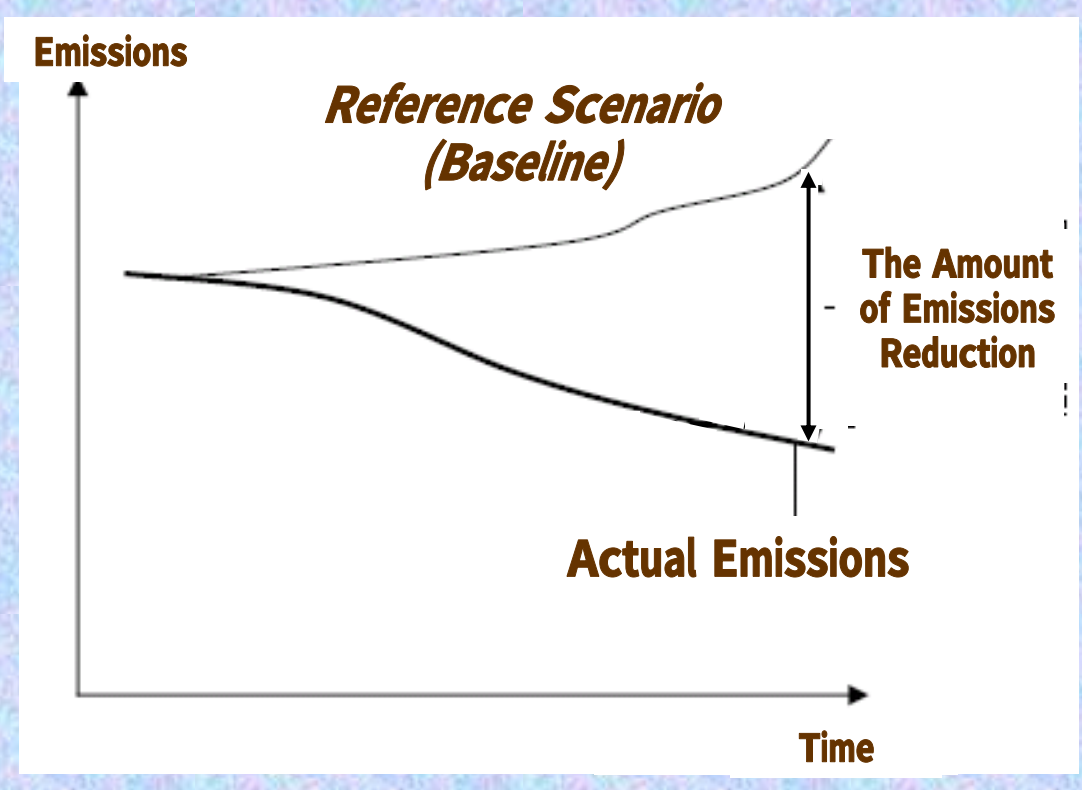


Forest Carbon Sink in developing countries during the first commitment period



Basic Idea of REDD

- Setting the Reference Scenario (Baseline) of deforestation from historical trend
- Implementation of measures to avoid deforestation
- Monitoring and accounting the amount of emission reduction
- Payment from financial mechanism according the amount of emission reduction



Proposal by PNG and Costa Rica

- **Additionality**
  - **The additionality of efforts to reduced deforestation be judged quickly and accurately by establishing national deforestation baseline rates**
- **Leakage**
  - **Leakage will be captured by addressing deforestation on the national level**
- **Monitoring**
  - **Remote-sensing technologies may be applied with accuracy and cost effectiveness**

Discussions since COP11

- Discussed on PNG-Costa Rican Proposal at COP11 (November 2005), and decided to hold a workshop before SBSTA 25 (COP12, November 2006), and come to recommendation at COP13 (December 2007)
- At SBSTA24 (May 2006) decided that topics of the workshops are *scientific and technological issues, and policy approaches and positive incentives*
- Two workshops held (#1 in Rome, August 2006, #2 in Cairns, Australia, March 2007), exchange views on scientific and technological issues, policy approaches and positive incentives

Technological / Methodological Issues

- How to set Reference Scenario (Baseline) ?
  - Inadequate Reference Scenario would produce “Hot Air”
  - Reference Scenario set only by historical trends, or future prospect also considered
- How to prevent leakage ?
  - Whether sub-national approach also allowed, and if so how to prevent leakage (increase of emissions outside the project boundary)
  - Leakage to non-participating countries if participation is voluntary
- How to secure permanence
  - Permanence issue after “payment”, risk of forest fire, natural death, human-induced logging activities
- How to monitor the deforestation accurately and cost-effectively ?
  - Accurate, fair and cost-effective monitoring, through use of satellite images ?
- How to deal with degradation of forest ?
  - Deforestation is the decrease of area, while degradation is the decrease of volume
  - How to monitor the degradation ?

Policy Issues

- **Mechanisms**
  - Market mechanisms (credit) or non-market (fund), or both
- **Timing of payment**
  - Payment before commencement of project, or after issuance of emission reduction
- **Implication to emission reduction target**
  - “Deeper cut” to emission reduction target of developed countries under the Protocol

Views of Parties

- **Annex I Parties (Developed countries)**
  - **US：Existing frameworks such as Global Environment Facility (GEF) be further utilized … present view?**
  - **EU, Norway：In favor of introducing market mechanisms in light of further contribution by developed countries, encouragement to developing countries to participate in reduction target, and promotion of carbon market**
  - **Australia：Announced $200 million global initiatives on forest and climate, proposed to establish global carbon monitoring system using satellite**

Views of Parties (cont.)

- Non-Annex I Parties (developing countries)
  - PNG、Cost Rica：prefer advantage of market mechanism, but flexible to allow other approaches, gain wider support
  - Brazil：Not in favor of market mechanism, proposing of fund mechanism
  - Congo Basin countries：proposing fund-based mechanism focusing on forest area under sustainable forest management
  - China, India：in favor of including activities to conserve / stabilize present forests, Malaysia supports

Views of Japan

- Measures be effective with tangible outcomes, in line with global endeavors to sustainable forest management
- Consistency with discussions on future framework and forest carbon sink of Annex I Parties (developed countries)
- Thorough analysis on effectiveness, adaptation of technology, consistency with other existing frameworks, implication to carbon market
- Synergy with relevant international frameworks such as UNFF (UN Forum on Forest), ITTO (International Tropical Timber Organization)

Discussions in other relevant fora

- **World Economic Forum, Davos, January 2007**
  - Chancellor Merkel referred to deforestation as one of the main agenda at G8 Summit
- **G8 Heiligendamm Summit, June 2007**
  - Decided to support emission reduction from deforestation
    - Encourage World Bank Forest Carbon Partnership Facility (FCPF)
    - Support measures to combat illegal logging
    - Support sustainable forest management in developing countries
- **High level Event on Climate Change, September 2007**
  - Four main issues: Adaptation, Mitigation, Technology and Finance
  - Agreed to start negotiation on framework of next commitment period, and to reach agreement by 2009
  - Japan Initiative “Cool Earth 50”
- **APEC, Australia, September 2007**
  - Forest area in APEC countries be increased 20 mil. ha by 2020
- **East Asia Summit, Singapore, November 2007**
  - Japan announced support to forest resource management using satellite images
  - Forest area in the region be increased 15 mil. ha by 2020

Outcome of COP13

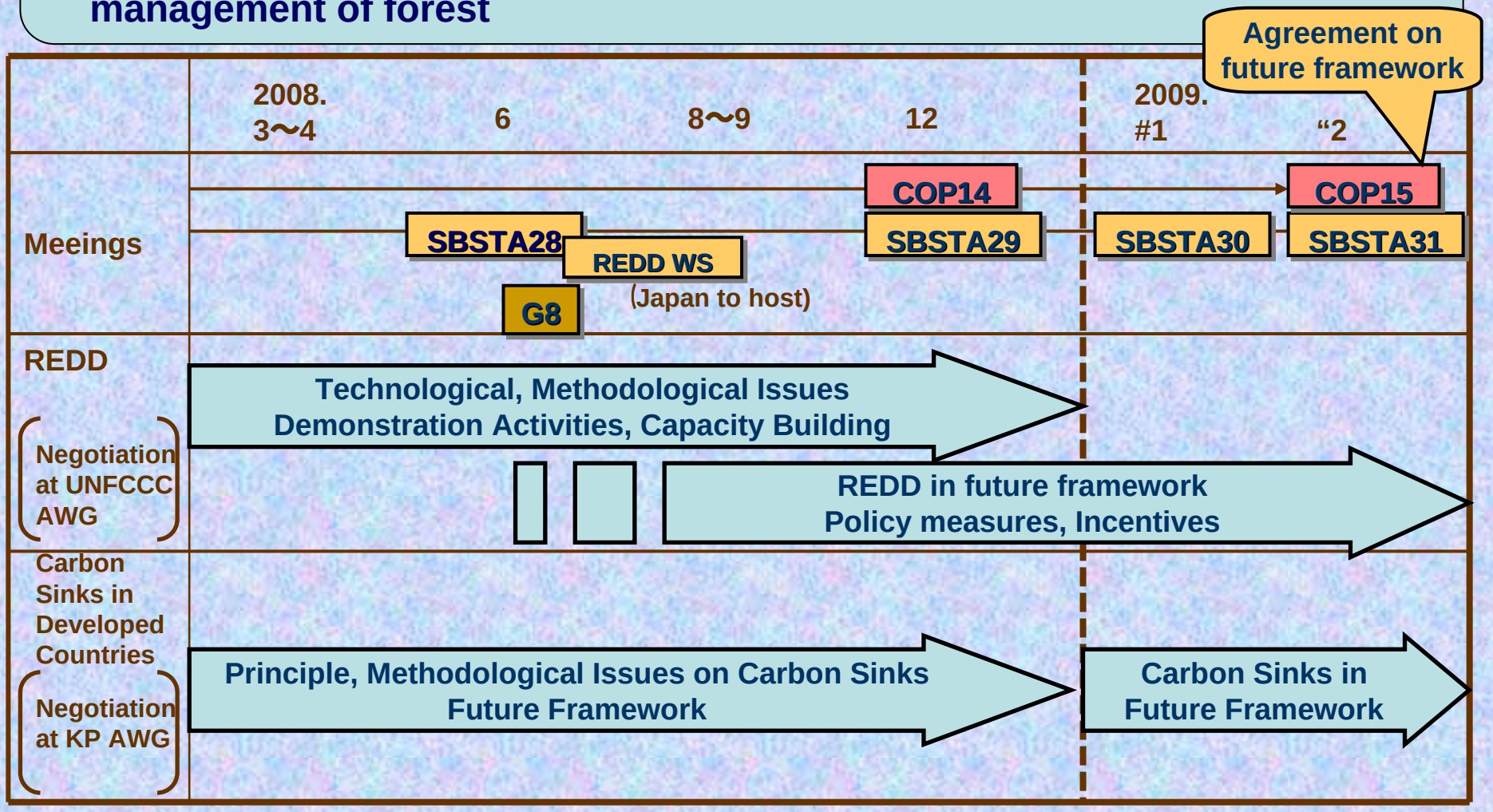
- **Regarding REDD (Reducing Emissions from Deforestation in Developing countries), decided;**
  - **capacity building, technology transfer, demonstration activities be encouraged,**
  - **to address methodological issues, invite Parties to submit their views by 21 March 2008, and hold a workshop on issues in submissions (Japan to host this workshop, tentatively in June)**

- **REDD identified as one of the Mitigation issues in “Bali Action Plan” (Framework agreed at COP13, to reach agreement on the future commitment by 2009**

- **Agreed to launch negotiation on forest carbon sink of developed countries in the future commitment period, at the Kyoto Protocol Ad Hoc Working Group (KP AWG)**

Way forward

Japan / Forestry Agency is willing to actively participate in the Climate Change negotiations for the future framework of the next commitment period (2013 -), to contribute to mitigation of CC through sustainable management of forest



COP: Conference of the Parties, SBSTA: Subsidiary Body

Contact Group Meeting on REDD, COP13, Bali

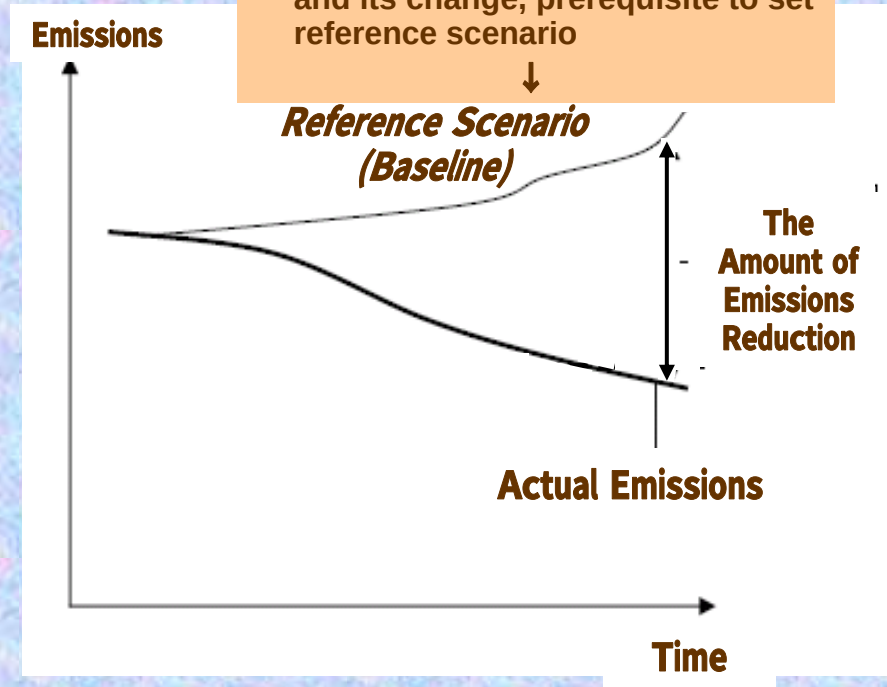
Future actions

- 2-year process to COP15, Copenhagen
  - REDD identified as one of the Mitigation issues in “Bali Action Plan”, Chancellor Merkel referred to REDD as one of the major issues at G8 Summit meeting
  - Capacity building, technology transfer, demonstration activities be encouraged
  - to address methodological issues, invite Parties to submit their views by 21 March 2008, and hold a workshop on issues in submissions (Japan to host this workshop, tentatively in June)
- Readiness process; Demonstration Activities, Capacity Building
  - Technological issues: Analytical skills on satellite images to detect forest resource and its change, data collection
  - Policy issues: Mitigation of deforestation through sustainable forest management; prevention of forest fires, pest and diseases, combating illegal logging, social forestry, etc.

Technical Transfer of Japan, examples

- **Support to forest resource management using satellite images in Indonesia**
  - JICA technical cooperation project, with participation of Forestry Agency, Forestry and Forest Products Research Institute (FFPRI), Japan
  - Using satellite images of “Daichi” (Advanced Land Observing Satellite, ALOS) of Japan Aeronautical Exploration Agency (JAXA)
  - Transfer Technology on forest resource remote sensing; a basis of REDD
  - Finalizing the project design, envisaged to commence in April - May
  - Planning a similar project in Brazil

※ Obtain data of forest resource and its change, prerequisite to set reference scenario



- **Forest Watershed project, FFPRI, Japan**
  - Workshop held in Cambodia last week, utilizing remote sensing strengthening forest resource management in the Mekong River Basin
- **Program on Tropical Forest Resource Assessment, Forestry Agency**
  - Commence in April 2008, contribution to REDD

Satellite Data Analysis - Issues

A. Seasonal change of vegetation and other land covers
Example; Green leaves in Spring, yellow / red ones in winter; seasonal changes also observed in humid tropics

B. Clouds Extensive coverage by clouds in humid tropics

C. Saturation of signals Small difference in signals from dense forest resource because of saturated signals signals; strength of reflected lights, micro waves

D. Topography Shadows created depending on direction and degree of slope, with Synthetic Aperture Radar (SAR) difficulty in analyzing steep slope

Satellite Sensors

Two broad categories of sensors for land observation;

1) Optical sensors, OPS (cameras) Three categories by resolution

A. High space resolution Resolution 10m or less, observation area narrow, exp. IKONOS, Quick Bird, PRISM with ALOS

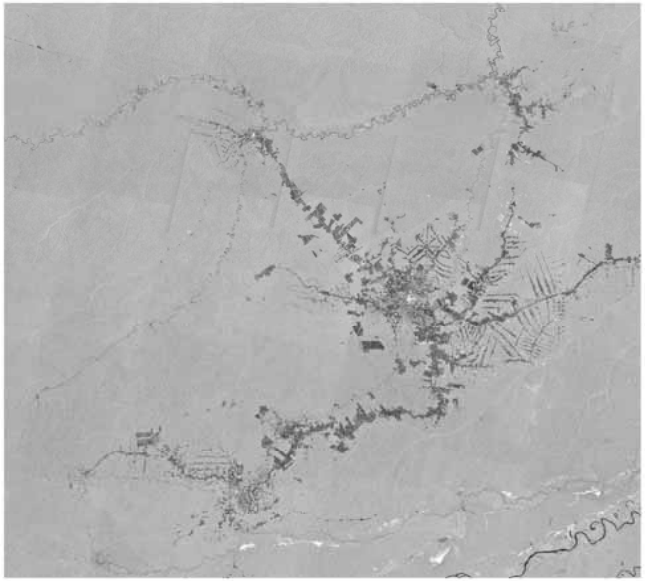
B. Medium space resolution Resolution 10 - 100m, observation area around 100km, exp. TM, ETM+, SPOT HRG, AVNIR-2 with ALOS

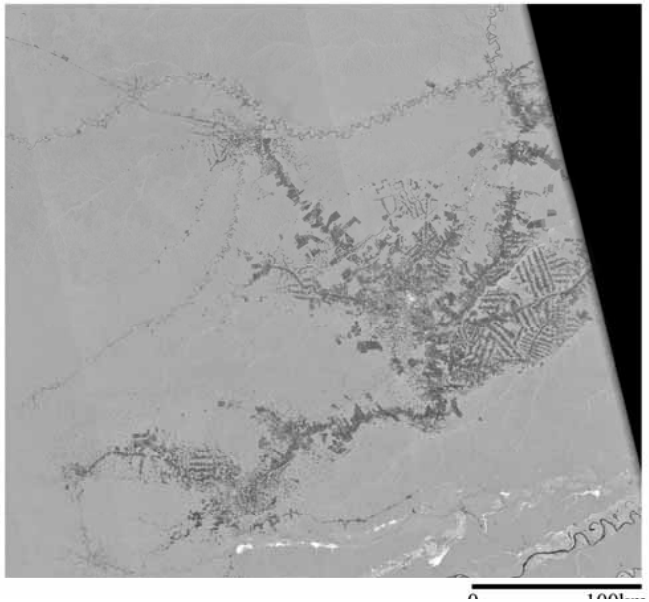
C. Low space resolution Resolution 100m or more, all the points daily observed, exp. MODIS, NOAA AVHRR

2) Microwave sensors

Synthetic Aperture Radar (SAR) Observations not hindered by clouds, brightness of images not matching with human eyes, exp. PALSAR with ALOS, RADARSAT

Deforestation in Amazon observed by DAICHI (ALOS), JAXA





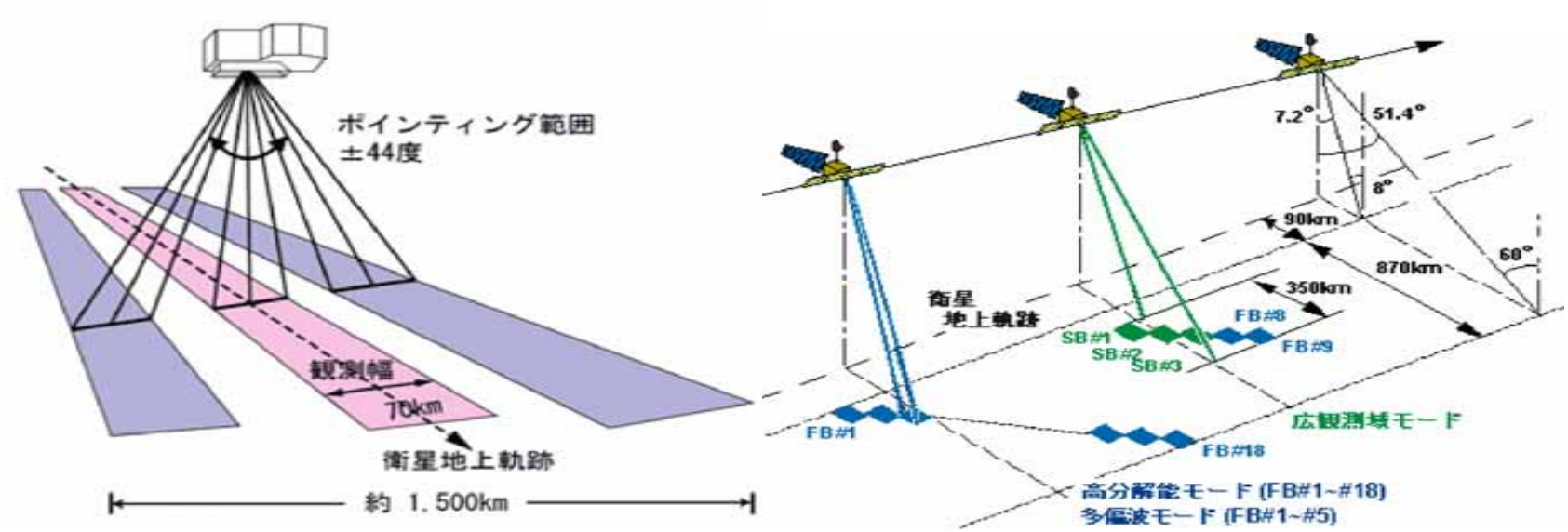
Fuyo (JERS), 1995, pixel spacing 100m

PALSAR (ALOS), 2006, pixel spacing 50m

Microwave sensor PALSAR with satellite DAICHI (ALOS)

- penetrate clouds and reach ground surface, year round observation possible even in humid tropics
- high resolution (highest 10m), precise observation possible
- expectation for advanced technology for precise observation of deforestation including detection of illegal logging sites

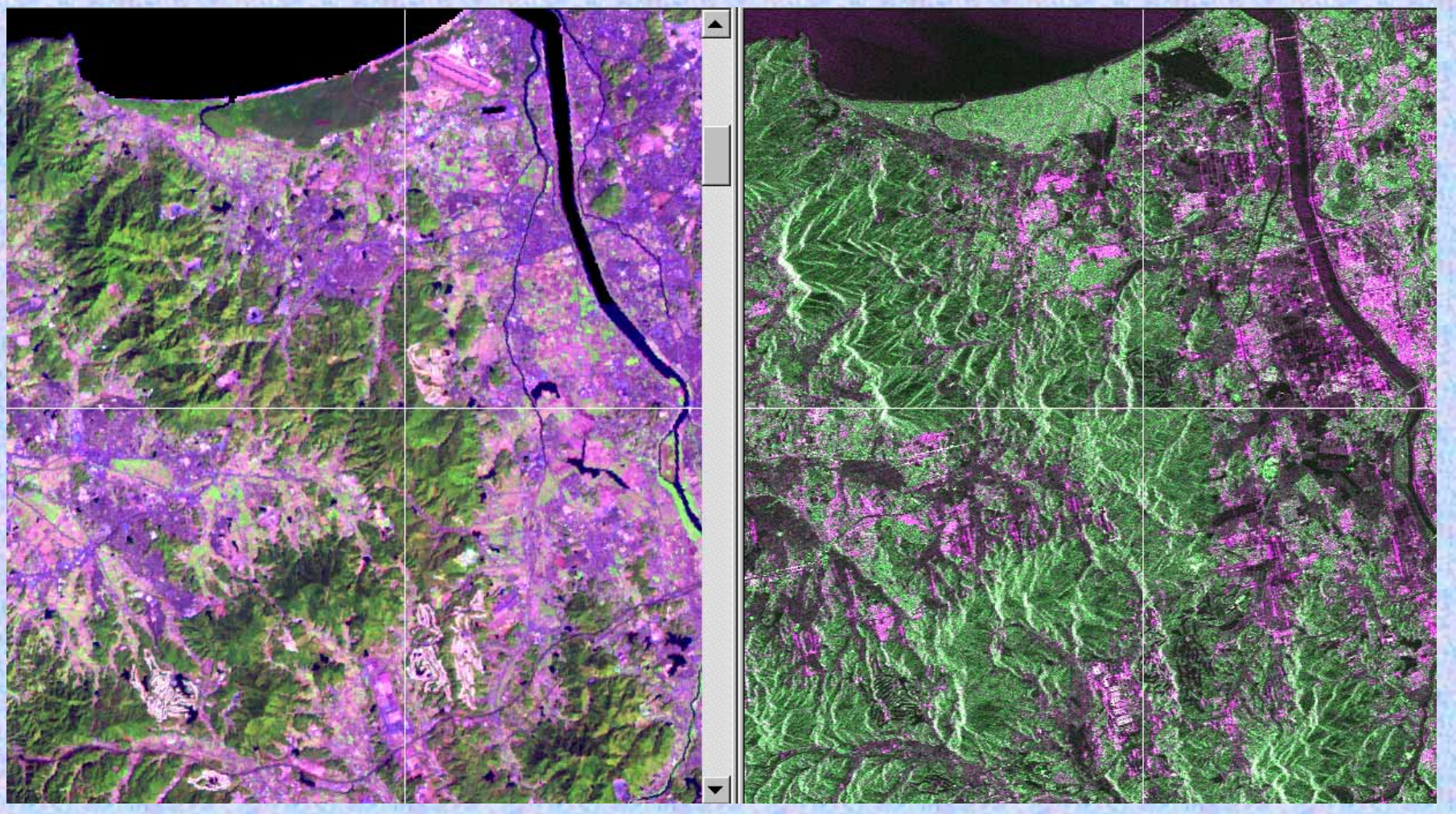
ALOS – AVNIR2 (optic) and PALSAR (radar)



AVNIRs
Observation of 44 degree angle possible

PALSAR
Right; widest possible observation (870 km)
Middle; medium observation mode (350 km)
Left: High resolution mode (70 km)

LANDSAT ETM and ALOS PALSAR



ETM+ 2002/03/13

PALSAR 2006/05/16

PALSAR – Advantage and Disadvantage

Advantage

- **Penetrate clouds, reach ground surface**
- **Data interval at the same geographical point: once every 46 days with high resolution mode, once every 4 days with medium mode**

Disadvantage

- **Difficult in analyzing conditions of ground surface, not using optical light but radar**
- **Distortion associated with data because of altitude and slopes, correction needed**

Utilization: Change in forest cover (logging, etc.)

Policy measures

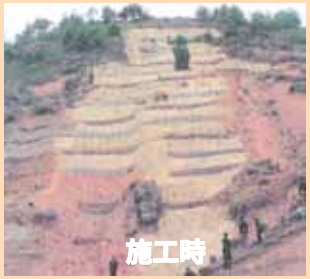
- **Promotion of sustainable forest management; indispensable to mitigation of deforestation / forest degradation → emission reduction**
  - **Forest fires**
  - **Pests and diseases**
  - **Illegal loggings]**
  - **Rehabilitation of forests**
  - **Social forestry, Agroforestry**
  - **Legal framework and its application**
  - **Land ownership, usufruct**
  - **Reform of wood industries, efficient utilization of forest resources**
  - **others**

Technological contributions of Japan

Avoiding Disasters, Damages

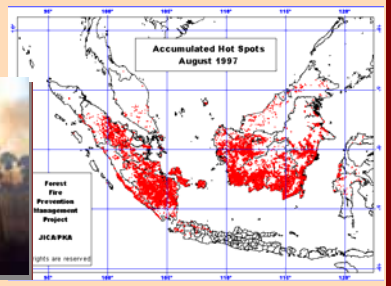
Forest land management Technologies

- Rehabilitation of degraded forest land utilizing local material (China)



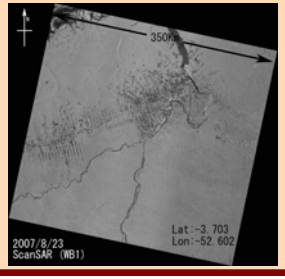
Prevention, early detection of fires

- Mitigation of cross-boundary smoke incidents by early warning system with satellites (Indonesia)



Monitoring with satellite images

- Transfer of analytical skills using satellite images, its application to measure to combat deforestation, illegal logging (Indonesia, Brazil)



Improvement of human life

Social forestry (people's participation)

- Management skills of fruit / medicinal species, achieving both income generation of farmers and environmental conservation (Kenya)

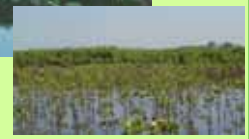
Shifting cultivation

- Prevent further expansion of shifting cultivation by supporting alternative means such as hog raising (Laos)

Rehabilitation of ecosystem

Conservation, rehabilitation of mangrove

- Management skills of mangrove to rehabilitate and conserve precious ecosystem (Indonesia)



Mangrove plantations

Research on Rainforest Ecosystem

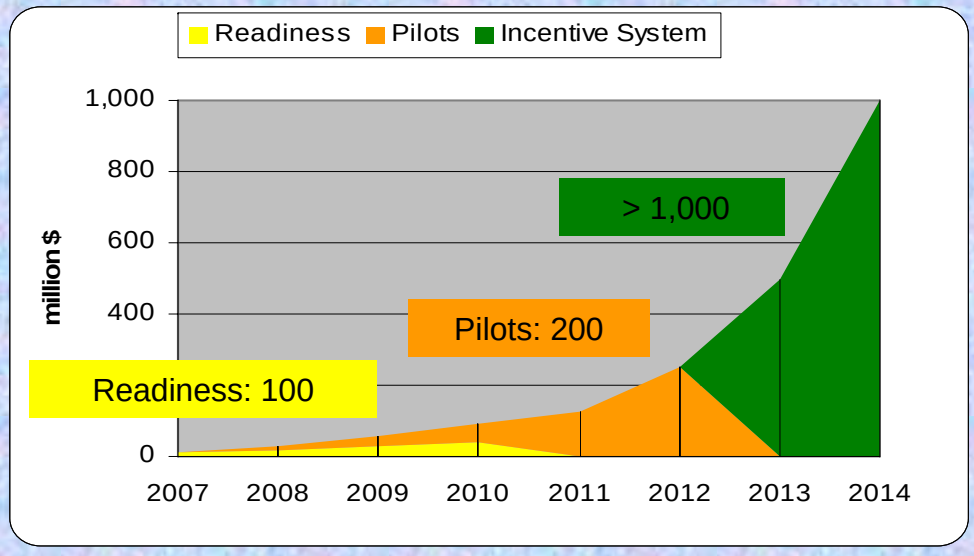
Observation tower (Malaysia)

Greening of deserts

- Application of skills to establish sand prevention forest, to avoid desertification (China)

Forest Carbon Partnership Facility, (FCPF) , World Bank

- Demonstration of emission reduction (performance) - based payment
- Two main components; capacity building and pilot activities

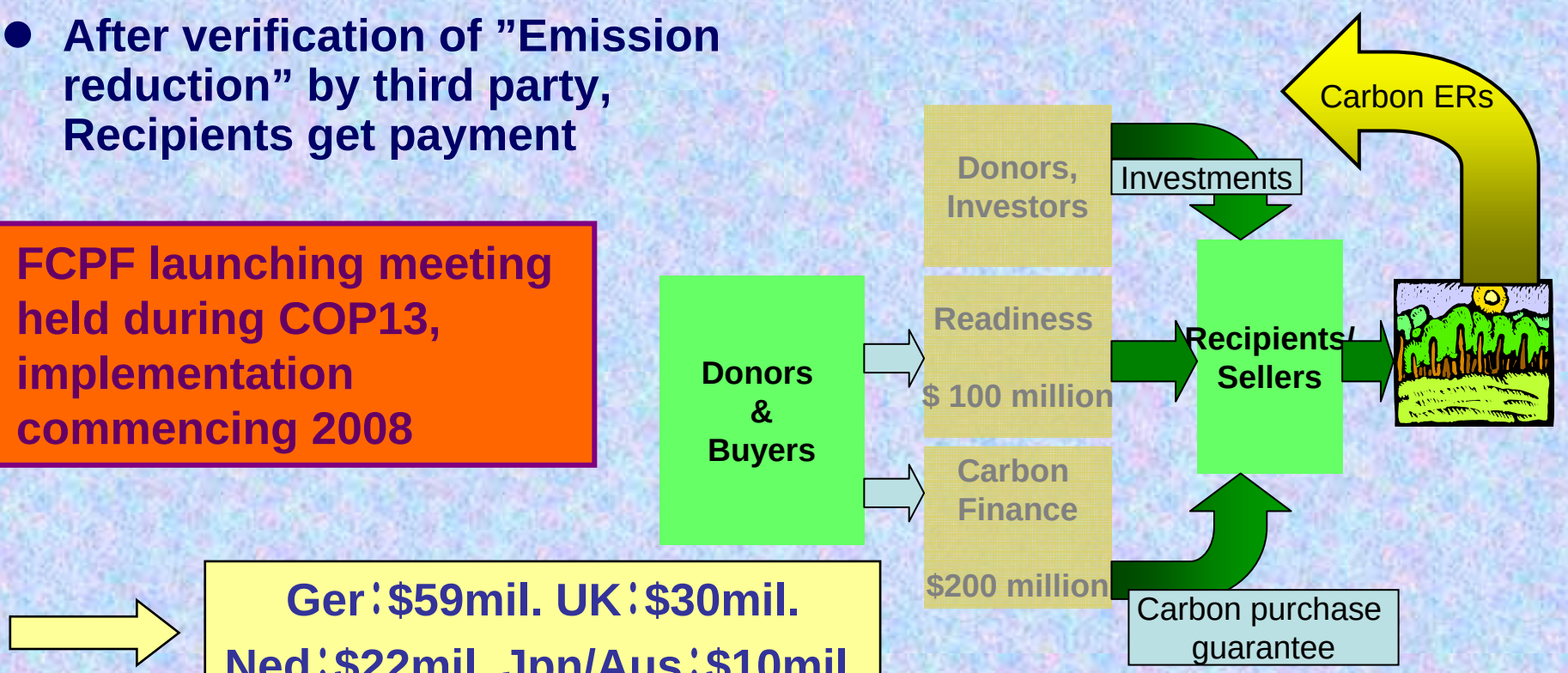


  - Readiness Fund; Capacity Building
    - ✓ Support provided to 20 – 30 countries, in estimating forest carbon stocks and formulating REDD strategies
  - Carbon Fund; Purchase of emission reductions
    - ✓ Application to around 5 countries envisaged
    - ✓ “Reference Scenario” selected in “ready” countries
    - ✓ Pilot carbon financing transactions for “ready” countries after monitoring

FCPF

- Agreement between Donors / Buyers and WB, financial contribution by Donors / Buyers
- Agreement between Recipients and WB, formulation and submission of “Readiness Plan” to be implemented after endorsed by “Participants Committee”
- After verification of ”Emission reduction” by third party, Recipients get payment

FCPF launching meeting held during COP13, implementation commencing 2008



Ger：$59mil. UK：$30mil.
Ned：$22mil. Jpn/Aus：$10mil.

2. Change to the limit of Small-Scale Afforestation / Reforestation CDM

CDM projects (as of 2 March 2008)

- Registered CDM project; 948
- Issued CERs; 126,626,880
- Afforestation / Reforestation CDM
  - approved methodologies; 10
  - registered project; 1
  - Facilitation Reforestation for Guangxi Watershed Management in Pearl River Basin, registered November 2006

Issues of Afforestation / Reforestation CDM

- Being carbon sink as well as CDM; both sink and CDM to complement domestic emission reduction by developed countries, 1% limit in utilizing AR CDM credit in emission reduction target
- Guidelines of AR CDM formulated at COP9 (2003), 2 years later than guidelines of all the other elements in Kyoto Protocol at COP7 (2001, Marrakesh Accord)
- Non-permanence of AR CDM credits; risks to be disappeared because of fires, natural death, etc.
- High technical requirements; consideration at CDM Executive Board complicated, time consuming

Simplified Monitoring Methodology for Small-scale AR CDM

- No monitoring for the baseline
- Executive Board develops simplified methodologies to estimate/measure actual net greenhouse gas removals by sinks
- Upper limit of 8 kilo (8,000) CO2 t / yr, before COP13

Small-Scale Afforestation / Reforestation CDM projects (pipeline)

- **All under validation / certification process to be registered**
  - **Small-scale Reforestation for Landscape Restoration (Tengchong, Baoshan city, Yunnan province, China)**
  - **Uganda Nile Basin Reforestation Project No.3**
  - **Laguna de Bay Community Watershed Rehabilitation Project – 1, 2, the Philippines**
  - **Nerquihue Small-Scale CD< Afforestatino Project using Mycorrhizal Inoculation in Chile**

Discussions at COP/MOP2, November 2007

- Colombia, Bolivia and other Latin American countries expressed their dissatisfaction on the progress of AR CDM, asserted that the upper limit of Small-Scale AR CDM hindering formulation of AR CDM, be revised. Brazil reluctant to the revision.
- Agreed to encourage Parties to submit their views by Feb. 2007, discuss again at SBSTA26
  - ➢EB28 took note of this COP/MOP decision

Discussions at SBSTA26、COP/MOP3 (COP13)

Bolivia, Colombia, Chile, others; upper limit too low, hindering implementation of Small-Scale CDM, the limit be raised to 4-5 times, local communities still possible to manage

Brazil, Tuvalu, others; experiences on AR CDM still lacking, no firm basis for revision of the limit too early, local communities not possible to manage if the limit increased

→ Brazil compromised at COP/MOP3, concluded the discussion by raising the limit to 16 kilo CO2 ton / yr

Contact Group Meeting, SBSTA26, May 2007

(IISD ENB)


Thank you for listening