

# Forests and Climate Change



*The aftermath of a forest fire in Danau Sentarum National Park, West Kalimantan. (Ryan Woo)*





Tens of thousands of hectares of peatland forest have been cleared to make way for plantations in Kalimantan, Indonesia. (Leon Budi Prasetyo)

## Plenary Session at Asia-Pacific Forestry Week

Wednesday, 23rd April, 08:30 – 12:00pm

National Convention Centre, Hanoi, Vietnam (room 313)

### Introduction

**Dr Susan Braatz, FAO**

Dr Braatz commenced her introduction by stating that forests are currently high on the global agenda, as reflected in the attention given to forests at December's Bali COP13.

There were 3 key decisions that came out of Bali, that were especially relevant to forests:

1. Consideration of) Reducing Emissions from Deforestation and forest Degradation (REDD) – ie. Indicative Guidelines were provided to implement demonstration projects.
2. (Implementation of) the Bali Action Plan
3. (Launch of) The Adaptation Fund

Dr Braatz then outlined the format the plenary would follow (ie. Mitigation & Adaptation) and introduced the first session.

### Session 1: Climate Change Mitigation

**Entering Readiness Phase for Full REDD Implementation** by Dr Daniel Murdiyarso, Environmental Services Program, CIFOR (Indonesia)

Dr Murdiyarso echoed Dr Braatz's comment that forests are currently high on the global agenda, and said that had been the case (in varying degrees) since the early 90s.

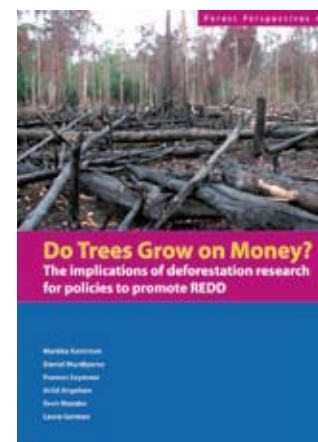
#### Setting the scene

- Some statistics were provided, around deforestation and carbon emissions, eg. 11 billion ha degraded land worldwide (at a rate of around 11 million ha per year)
- 'Avoided Deforestation' was not included in the Kyoto Protocol, largely due to question marks over methodology and fears of "leakage".
- The Stern Review (and especially the fact that land use change accounts for 20%+ of all carbon emissions) has brought it back to the table, suggesting that avoided deforestation may be the cheapest option to mitigate climate change

#### Can we afford to miss the opportunity?

Biofuel as a solution to climate change has serious question marks. For example:

1. Requires significant deforestation to plant crops, which can increase carbon emissions;
2. Can lead to food shortages, and therefore push up food prices (Dr Murdiyarso commented that he had never seen people queuing for cooking oil before!)
- There is only 2 years between Bali and Copenhagen (at which point the COP is due to make concrete decisions on REDD), and then a further 3 years before full implementation in 2012. This leaves little time to address many issues.



If Indonesia could curb peatland fires, it could potentially earn billions of dollars from REDD projects.

- Murdiyarso touched on Forest Day, which was staged during the Bali COP, and which brought together many stakeholders (around the same number as in attendance at APFW), to discuss these issues.
- In designing REDD, “priority areas should be identified within countries to focus on those about to deforest and to avoid leakage”.
- A graph was shown, which illustrated the general trend of deforestation – triggers, reinforcing loops, stabilizing loops.



Dr Nur (MOF Indonesia), Dr Kanninen and Dr. Murdiyarso (CIFOR), at the first session of Climate Change. (Photo: Yani Saloh)

#### Criteria for readiness

1. Methodological issues must be addressed (eg. monitoring and accounting).
2. Underlying causes of deforestation must be identified. This includes market failures (eg. commodity prices) and governance failures (eg. land rights issues).
3. Demonstration Activities (both national and sub-national) must be initiated. Also need to look at other Payments for Environmental Services (PES), beyond carbon.
4. Baselines (or reference levels) must be set.

#### Conclusion

- In addition to the above criteria, significant capacity building is needed at a local and regional level, and a national registry must be established that is supported by strong governance.

Dr Murdiyarso’s presentation was followed by a panel discussion.

#### Moderator

Dr Markku Kanninen, CIFOR’s Director for Environmental Services program.

#### Panelists

Dr Nur Masripatin, FORDA, Ministry of Forestry of Indonesia

Dr Nguyen Hoang Nghia, Forest Science Institute of Vietnam

Dr Kanninen commenced the discussion by inviting each panelist to comment briefly on Dr Murdiyarso’s presentation.

Dr Nur:

- The issues are extremely relevant to Indonesia (especially post-Bali).
- Improvement is needed for both methodological and institutional aspects.
- “REDD must be performance-based, demonstrable, transparent and verifiable.”
- It is complicated by the need for a national system, which must then be implemented at a sub-national level.
- Issues of “governance” refer not only to “government”, but also to community and business sectors.
- Determining reference levels is not only a scientific issue, but also a political one with economic implications.

Dr Nghia

- Vietnam has been identified as one the top 5 countries most vulnerable to the effects of climate change.
- We are very eager to work on potential solutions (like REDD).

Dr Kanninen then asked the audience how many participants have been involved in national level discussions about REDD? Approximately 10% raised their hands.

He made the comment that the window of opportunity to demonstrate that REDD is a viable option post-Kyoto is not big. He then invited comments and questions from the floor.

**Questions from participants:**

- Cambodia: How do we make it happen? How do we ensure that foresters are directly involved? He also made the comment that CDM was “designed to fail”.
- Malaysia: Are we willing to accept that CDM is a failure? Do we give up completely on this and move to REDD so soon?
- Yurdi Yasmî, RECOFTC: When you say “Are we ready?”, who do you mean by “we”? How do we ensure that REDD incorporates the interests of the poor?
- Vietnam: We’ve heard a lot about “deforestation”, but how will REDD address discussions about “degradation”? How does REDD include an incentive for sustainable forest management (SFM)?

**Response from panelists:**

Dr Murdiyârso

- A/R CDM which focuses on C-sequestration did not fly, in part, because it entails high transaction costs.
- REDD has a broader perspective as far as forestry is concerned, as it relates to environmental services issues like protection of biodiversity and watershed functions, but is “packaged under the banner of climate change.”
- It also has a greater scope to involve local communities.
- Reducing forest degradation is important for improving the quality of the ecosystem, as well as for retaining carbon.

Dr Nur

- There are many good policy measures that are relevant to REDD. The challenge is to integrate and to implement them.
- We definitely want to use REDD to support SFM, because as long as there is a market for illegal timber, SFM is very costly.
- I agree that we need to engage foresters. “We can have diplomats or international lawyers speaking beautiful language, but when we’re negotiating about forests, we need people who know about forests.”
- There has been a lot of negative coverage about forests in Indonesia, but there are actually some good things happening too - eg. the Forest Carbon Alliance.

**Questions from participants:**

- Indonesia: Can you explain about “leakage”, and about how the pricing system will work (for both mandatory and voluntary markets)?
- Asia-Pacific is different to the rest of the world, in that land use actually accounts for around 40% of carbon emissions. How do we design REDD so that It is anchored to existing development plans, investment plans etc?



Dr Nguyen Hoang Nghia (Forest Science Institute of Vietnam), Dr Nur (MOF Indonesia), Dr Kanninen (CIFOR), at the first session of Climate Change. (Photo: Yani Saloh)

- Indonesia: I work for a development company that is working on carbon sequestration projects, and we are looking for partners and incentives .
- Vietnam, Flora & Fauna Int.: How will REDD work when deals are locked into 30+ year timeframes, and yet the price/value of carbon and other relevant commodities are likely to fluctuate dramatically during this period?
- Marcus Colchester: Many forest-dwellers have no land rights. Yet, even if they do, who owns the 'carbon rights'? If you own the tree, does this mean you own the carbon? How can we ensure that payments will help, and not harm, the poor?
- Fred Stolle, WRI: Where will the money come from (given that the EU and US have stated they are against purchasing carbon from overseas forests, at least for now)? He also addressed the participants and asked how many had 'offset' their flights to Hanoi. Only 3 or 4 hands were raised!
- Nepal: Forests in our highland areas are very well maintained and regenerated due to community ownership and initiative, yet forests in our lowlands are depleting due to governments selling off the land. With a federal system of management, the net emissions of the country are not good, so where is the incentive for the community to continue their good work?
- Malaysia: Began with a Malaysian saying that translates as "beauty that deceives the eye". Stated that, as a forester, he is very sceptical of REDD because he was a delegate at COP6 and felt he had no say. "At the end of the day, decisions taken will be politically motivated". Claimed that there is a "global conspiracy".

#### Response from panelists:

Dr Murdiyarso

- As there are many stakeholders involved in forests and ecosystems, much work is needed to clarify 'carbon rights'.
- With regards to ensuring the interests of the poor are considered with REDD, this will likely mean trade-offs between equity and efficiency.

Dr Nur

- We too are eager to know where the money will come from. We are spending a lot of time and money preparing for REDD, without any guarantees of the market
- We should not be too skeptical of REDD, yet at the same time, we should not have too many expectations either
- "There are many conspiracies in the world".

## Conclusion

Dr Braatz concluded the first session by recapping on some of the key issues and opportunities discussed:

- REDD provides an opportunity to develop the capacity to monitor and assess forests, which is needed with or without implementation of REDD.
- It also provides an opportunity to bring together all of the sectors that are involved in driving deforestation, in a context that will ensure the forestry sector has the upper hand.
- Although the need to address climate change is urgent, we have to ensure that the solutions are not temporary ones. Although there is only a small window of opportunity, it is essential that we do things right, or we will lose the opportunity altogether.

## Session 2: Climate Change Adaptation

Dr Allen Solomon, National Program Leader for Global Change Research, US Forest Service, introduced the second session, by explaining that adaptation to climate change is closely linked to mitigation of climate change and, therefore, this second session would complement the first.

He then introduced the second presentation:

**Vulnerability of Forests to Climate Change: Current Research in Tropical Areas** by Dr Boone Kauffmann, Institute of Pacific Islands Forestry, US Forest Service.

Dr Kaufman commenced his presentation by pointing out that tropical forests cover only 10% of the earth's surface, yet contain around 40% of the carbon that resides in terrestrial vegetation.



Dr Rex Cruz (University of the Philippines), Dr Solomon (USDA), Dr Bruno Locatelli (CIFOR-CIRAD) and Dr Boone Kauffmann (USFS) at the second session of Climate Change. (Photo: Yani Saloh)

- They also harbor between half and two-thirds of the world's species.
- It has been demonstrated (by monitoring seasonal trends) that forests significantly affect the concentration of carbon in the atmosphere.
- "Global warming is a fact of life."
- Dr Kauffmann compared changes in temperature between 1906 and 1976 (ie. app. 0.07°C increase per decade), with changes between 1976 and 2005 (app. 0.17°C per decade).
- He pointed out that increases in temperature will decrease rates of carbon sequestration (so global warming a self-perpetuating process), which makes it hard to make long-term predictions.
- Climate Change will increase the frequency, persistence and magnitude of El Nino events.
- Likely responses of forests to climate change include collapse due to fire or drought, loss of biodiversity and dominance of invasive species.
- Mangrove forests are particularly important due to their high concentration of carbon, biodiversity and water resources. Although mangroves can adapt to major weather events, they are particularly vulnerable to land use change.
- Sea level is currently rising at around 3mm per year (twice the rate of the last century).
- At least a 1m sea level rise is expected this century, although a 3°C temperature rise would mean a sea level rise of between 3m and 6m.
- Likely impacts of sea level rise include erosion of beaches, loss of coastal ecosystems and infrastructure, coral bleaching, ocean acidification, disease and a decline of fisheries industries.
- The Pacific Islands are particularly vulnerable to sea level rise, and Dr Kauffmann provided a striking, visual representation of sea-level rise in Waikiki, Hawaii.
- He provided a number of necessary steps that must be taken if we are to adequately adapt to climate change impacts:
  - i. Enhance environmental and biological monitoring
  - ii. Improve efforts to predict impacts and to understand these impacts
  - iii. Prepare for warmer climates and, possibly, for drier climates
  - iv. Restore and maintain forests and wetlands
- "Although poverty will not be totally alleviated by forests, the loss of forests will have disastrous and unprecedented impacts on poverty."

Dr Kauffmann's presentation was followed by a panel discussion.

## Moderator

Dr Solomon

### Panelists

Dr Bruno Locatelli, Environmental Services Program, CIFOR-CIRAD (Indonesia)

Dr Rex Cruz, College of Forestry and Natural Resources, University of the Philippines

Dr Solomon commenced the discussion by inviting each panelist to comment briefly on Dr Kauffmann's presentation.

Dr Cruz:

- Impacts of climate change will be both direct and indirect. For example, as certain areas are affected, people will move to other areas.
- We must persist with sustainable forest management (SFM).
- We must look at climate change adaptation from a holistic perspective – ie. consider the intricate connections between mountain peaks and coastal areas.
- Is climate change mitigation relevant for the poor, or merely for economic sectors?

Dr Locatelli

- Discussed the Tropical Forests and Climate Change Adaptation (TroFCCA) project.
- Even if forests are thought to be among the areas most affected by climate change, adaptation policies don't give much importance to forests. For example, for TroFCCA, the research has demonstrated that this is not necessarily the case.
- Therefore, the emphasis mustn't necessarily be on forests, but on the goods and services (eg. water resources and NTFPs) that forests provide.
- Endorsed Dr Cruz's statement that we must look at forests and climate change from a holistic perspective, specifically by:
  - i. Mainstreaming adaptation into forests
  - ii. Mainstreaming forests into adaptation

Dr Solomon

- The key to growth is soil. Climate change will mean more extreme weather events, which will displace soil.
- What can we do about this?
  - i. Increase forest diversity (which will increase resistance to disturbance and disease).
  - ii. Improve our understanding and analysis of genetics.

Dr Solomon then invited comments from the floor.

### Questions from participants:

- Indonesia: "Climate change is a global conspiracy, inspired by scientists and adopted by politicians". When it comes to forest management, foresters have always been told what to do by others, while it should be the other way around.
- Malaysia: There are so many things to do, where do we start?
- Japan: Mitigation and adaptation should be tackled holistically, but how do we coordinate things? He also mentioned that Japan will host the UNFCCC workshop on REDD soon.
- Vietnam: There has been much talk about mainstreaming adaptation into forests, but how do we mainstream forests into adaptation?

### Response from panelists:

Dr Kauffmann

- Climate change is probably the most complex problem to ever face scientists, let alone foresters.
- Where to begin? Pick the low-hanging fruit. "But, if there were easy solutions, we wouldn't be having meetings like this".

Dr Locatelli

- At a local scale, we have to start from local stakeholders' needs before studying future impacts and developing policy solutions. At a global scale, the links between adaptation and mitigation must be strengthened.

Dr Solomon

- Contrary to popular opinion, we need to start speeding up the carbon cycle – ie. get carbon into trees faster.

## Conclusion

**Dr Susan Braatz, FAO**

- There seems to be a consensus that foresters need to be more engaged in climate change strategy.
- There are clearly synergies between mitigation and adaptation, so these strategies must be tackled holistically
- Both need to be addressed within a broader policy context (ie. outside the forestry sector), as well as within the context of existing development and forestry plans.
- Establishing carbon rights and equitable distribution of rewards will be crucial if we are to alleviate poverty.
- There is already a lot of knowledge about what needs to be done, but this knowledge needs to be synthesized and implemented.



Media conference: Dr Daniel Murdiyarso (CIFOR), Dr Susan Braatz, Mr Jan Heino (FAO) and Long Tran Kim (MARD Vietnam). (Photo: Yani Saloh)



The Center for International Forestry Research (CIFOR) and the Food & Agriculture Organization of the United Nations (FAO) proudly present:

# Forests and Climate Change

at Asia Pacific Forestry Week  
National Convention Centre, Hanoi, Vietnam  
Wednesday, 23<sup>rd</sup> April, 2008; 08:30-12:00 (room 313)

Forests are high on the agenda of any future climate strategy, both as a means of sequestering carbon, and of reducing the vulnerability of forest-dependant communities.

This event will provide the platform to raise key issues in relation to these two primary themes for addressing climate change - mitigation and adaptation.

A world-renowned expert will introduce each theme, and a panel discussion will further explore the issues raised.

## Forests and Climate Change Mitigation (08:30 - 10:00)

“Reduction of Emissions from Deforestation and Forest Degradation (REDD): A Readiness Index for Full Implementation”  
**Dr. Daniel Murdiyarto**, CIFOR Environmental Services Programme (Indonesia) & member of the UN Intergovernmental Panel on Climate Change (IPCC) - winner of the 2007 Nobel Peace Prize.

- According to the IPCC, land conversion and deforestation emits around 1.7 billion tonnes of carbon annually, more than 20% of all global emissions.
- Consequently, the Bali Action Plan identifies REDD as a key focus for any future climate agenda.
- However, the time is short and there are many issues around governance, indigenous land rights and methodology that will have to be addressed if such a scheme is to be fully implemented after 2012.

## Forests and Climate Change Adaptation (10:15 - 11:45)

“Vulnerability of Forests to Climate Change: Current Research in Tropical Areas”

**Dr. Boone Kauffmann**, Institute of Pacific Islands Forestry, US Forest Service.

- Tropical forest ecosystems are among the most vulnerable ecosystems to climate change variability and long term changes in temperature and rainfall.
- Consequently, climate change will seriously affect the provision of forest goods and ecosystem services, which are crucial for many economic sectors and the livelihoods of already vulnerable communities.

Please join us to learn more about the issues framing climate change, to network with a range of key stakeholders, and to play a role in developing sustainable, practical solutions for this global crisis.

Participants will include experts, enthusiasts and decision-makers from government departments, non-government organizations, research and academic institutions, community groups and the private sector.

This event has been made possible thanks to the generous support of the United States Forest Service.



**For further information:**  
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## Co hosted by:

### **CIFOR**

The Center for International Forestry Research (CIFOR) was established in 1993 in response to global concerns about the social, environmental, and economic consequences of forest loss and degradation. CIFOR is dedicated to developing policies and technologies for sustainable use and management of forests, and for enhancing the well-being of people who rely on tropical forests for their livelihoods. CIFOR is one of the 15 centres of the Consultative Group on International Agricultural Research (CGIAR). CIFOR has its headquarters in Bogor, Indonesia, and works in over 30 other countries around the world.

### **FAO**

The Food and Agriculture Organization of the United Nations leads international efforts to defeat hunger. Serving both developed and developing countries, FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. FAO is also a source of knowledge and information, helping developing countries and countries in transition to modernize and improve agriculture, forestry and fisheries practices, and ensure good nutrition for all. FAO was founded in 1945, and has focused special attention on developing rural areas, home to 70 percent of the world's poor and hungry people.

## Media Conference

Wednesday, 23<sup>rd</sup> April

**12:00–12:30pm** (immediately following plenary session)  
National Convention Centre Hanoi, Vietnam **(room 313)**

World-renowned experts available to provide a range of perspectives on the most pressing issue of our time, will include:

- **Dr. Daniel Murdiyoso**, CIFOR Environmental Services Programme (Indonesia) & member of the UN Intergovernmental Panel on Climate Change (IPCC) - winner of the 2007 Nobel Peace Prize
- **Dr. Jan Heino**, Assistant Director-General, FAO Forestry Department

Some of the questions to be addressed will include:

- What are the implications of Bali conference for the forest sector in Asia?
- What are the governance and livelihood issues related to reducing emission from deforestation and forest degradation (REDD)?
- What are the main climate-related threats to tropical forests in Asia, and their consequences for forest-dependent communities and economic sectors?
- What are the policy options for reducing vulnerability?

### **Media Enquiries**

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