

Wrap-up of the workshop

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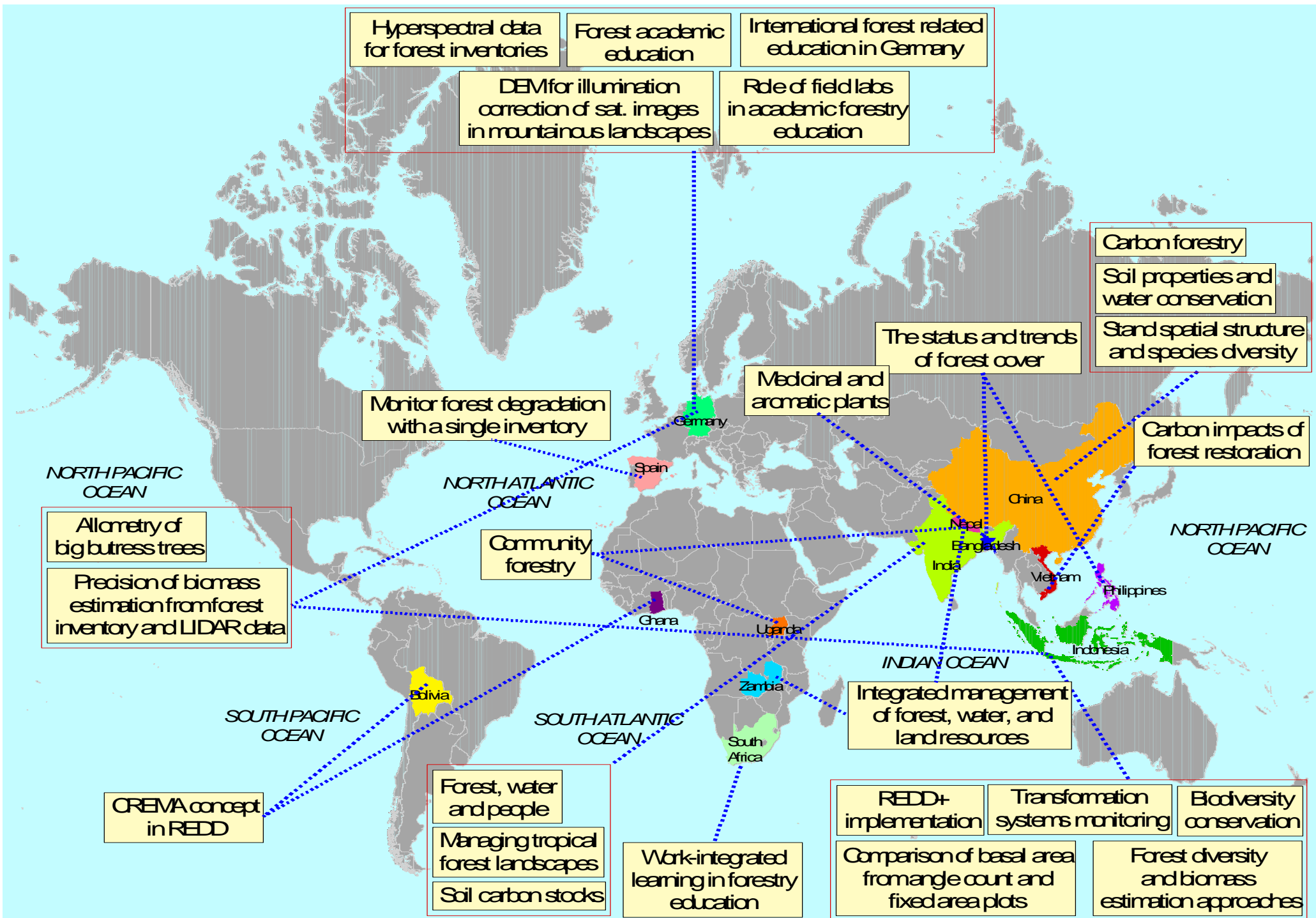
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Overview

- *Summary - but there are certainly some missing parts and somehow subjective interpretations*
- Forestry in Indonesia
- Remarks to individual topics
- More general considerations
- Education
- Looking ahead
- Concluding remarks

Countries of participants

- 45 people from 14 countries:
 - Bolivia
 - Bangladesh, China, India, Indonesia, Nepal, Philippines, Vietnam
 - Ghana, South Africa, Uganda, Zambia,
 - Germany, Spain
- 33 presentations



Hyperspectral data for forest inventories

Forest academic education

International forest related education in Germany

DEM for illumination correction of sat. images in mountainous landscapes

Role of field labs in academic forestry education

Carbon forestry
Soil properties and water conservation
Stand spatial structure and species diversity

The status and trends of forest cover

Medicinal and aromatic plants

Monitor forest degradation with a single inventory

Carbon impacts of forest restoration

NORTH PACIFIC OCEAN

NORTH ATLANTIC OCEAN

NORTH PACIFIC OCEAN

Allometry of big buttress trees
Precision of biomass estimation from forest inventory and LIDAR data

Community forestry

INDIAN OCEAN
Integrated management of forest, water, and land resources

SOUTH PACIFIC OCEAN

SOUTH ATLANTIC OCEAN

CREMA concept in REDD

Forest, water and people
Managing tropical forest landscapes
Soil carbon stocks

Work-integrated learning in forestry education

REDD+ implementation
Transformation systems monitoring
Biodiversity conservation
Comparison of basal area from angle count and fixed area plots
Forest diversity and biomass estimation approaches

Highlights/problems of forestry in Indonesia

- Outstanding situation of the country in terms of biodiversity
- Problems: degradation and deforestation (mainly because of agriculture and mining), forest fires
- Effects of climate change (→ coral reefs, orang utans, mangrove forests)
- Solutions: REDD+, certification, marketing of „verified“ timber, ecosystem services, **SFM and community forestry**

Some remarks to individual topics

- *Ecosystem services in general*
- *„Carbon“*
- *Diversity*
- *Water*

Ecosystem services

- Broad range of „products“
- Some old (soil protection, water ...)
- Some „new“ (carbon sequestration)
- Relevant/necessary/important for the economy
- (No) Payment for them?
- Power and image of forestry is low
- Necessary to improve the image of forestry through better public relations (*Forest Information Centre at IPB!*)

Carbon 1

- Situation of forestry and climate change policy in China
- Impacts of forest restoration on carbon pools – first results of a project in Vietnam
- Studies into the soil carbon stock in four land-use types in India (forestry > agroforestry > agriculture > barren land): → Afforest barren land
- Effect of land use change (primary forest – secondary forest – palm oil plantation) of tropical peat forests on carbon storage (Indonesia)

Carbon 2

- Estimation of AGB in the context of quantifying degradation through one inventory (Indonesia)
- Precision of biomass estimation („classic“ inventory vs. „LIDAR“; TLS)
- **Studies into carbon:**
 - Complicated (see above and below ground biomass, allometric equations ...)
 - Problems of precision
 - Time consuming (running over longer periods)

Diversity

- Diversity of nature vs. diversity of use
- Problems of tiger conservation in Sumatra
- Use of medicinal and aromatic plants in Nepal
- CREMA concept in Ghana → preserve wildlife
- Potential solutions and challenges
- **Importance of traditional social structures and of indigenous knowledge**
- **Need for development and use of inventory methods (e.g. in the case of medicinal plants)**

Water

- Importance for life and economy (hydropower, agriculture, biodiversity, ecotourism ...)
- Concerns and challenges
- Forestry and other sectors (agriculture as user; industry as polluter ...) involved
- **River basin approach is suitable**
- **Integrated management required**
- **Cooperation between administrations needed**

General considerations

- *Deforestation and degradation*
- *Policy formulation*
- *Tradition and indigenous knowledge*
- *Role of communities*
- *Integrated management*
- *Methodology*
- *Research*

Deforestation and degradation

- Almost every country reported about these (more detailed examples from **Bangladesh and the Philippines**)
- Agriculture and mining as the most important driving factors
- **Monitoring deforestation and elaboration of transformation systems (Jambi Indonesia)**
- **How to measure/monitor forest degradation in one shot**
- **There exists examples that show that it is possible to reverse the declining trend (China, Pilippines, Vietnam) – we can and should learn from them!!**

Policy: from formulation to implementation

- Many examples of forest policy (Bangladesh, China, India, Indonesia, Nepal, Philippines, Uganda)
- Frequent changes of forest policy (example of India)
- Policy formulation is „simple“, how to put policy into effect is „complicated“
- Stepwise approach as in the case of REDD+ or CREMA is often necessary: sometimes the process as such is rewarding (→ SFM ...)

Tradition and indigenous knowledge

- There are traditions how to look at and use forests. They can be used (e.g. customary rights in Indonesia) and should be respected (see the negative effects of colonisation in the example of India)
- Importance of existing (traditional) social organisations (Indonesia, Ghana, Nepal ...)
- Indigenous knowledge can and should be used – and preserved

Role of communities

- Different types of communities (indigenous people vs. „other“)
- Community forestry with different history and success (see involvement of people and/or administrations, tenure, knowledge ...)
- REDD+ facilitated if community forestry (CF) works
- Many „ifs“ as precondition for success of CF
- Community forestry in Nepal and Uganda, local communities in Indonesia, CREMA in Ghana

Integrated management

- Integrated management is necessary for the use of natural resources (see conflict between mining and forestry), in particular of common resources (see „Problem of the Commons“)
- Requires cooperation between different sectors and administrations
- Is the landscape approach **the** means of integration (since other sectors are also parts of the landscape“): can it better show the importance of forestry or is there a risk of „downgrading“ and „weakening“ forestry?

Some remarks to methodology

- Impressive complexity, large amount of data and long time frame of studies that were presented
- Problems often arising in the context of larger projects – with the aim to get the needed information with the desired accuracy at acceptable costs
- Forestry projects often have to be long-term – possible nowadays under present procedures of funding??
- For wide applications, make methods as „simple“ (user friendly) as possible (problem in the context of REDD+)

Some remarks to methodology

- Methods of inventories (data, set-up, implementation, use of results ...) are still in progress
- There are isolated topics vs. cross-cutting themes of research portfolios (e.g. gender – **are there more?-carbon**)
- Evidence based forestry: really new? needed?
- *Need – and chance – to be competitive in the research community*
- *Clear set-up of studies and correct methods of data collection and digestion are mandatory*
- *Need for well structured research strategy/programme*

Research

- Studies into forest soils, water, biomass, carbon are challenging.
- Use of established (angle count method) and more recent methods (e.g. different digital elevation models, LIDAR, terrestrial laser scanner) in innovative approaches
- Need of – and chance for – basic research (hyperspectral data)
- Forestry has its own strength in research and must not „hide“

Research: the example of CIFOR

- Impact on policy as main objective
- Dealing with the „big 5“ (poverty, food security, climate change, biodiversity, green economy)
- Concentration on tropical forests
- Focus on the landscape level
- (Careful selection of) Research themes
- Use of slogans
- Example for a research strategy and a well structured research program

CIFOR's research into climate change

- Concentrating on mitigation – adaptation – synergies
- Global comparative study of REDD + (outcome so far: three publications)
- Policy network analysis
- 4 I's (institutions, interests, ideas, information)
- 3 e's (effectiveness, efficiency, equity)
- REDD = success story as an idea but challenges in implementation
- Can only lead to transformational change over a long time horizon
- Conditions for REDD success

Research results

- Should be spread better
 - How?
 - Dissemination by CIFOR as a – successful? - example
- Formulation of policy recommendations
- Contacts with politicians
- Going back to the research sites!!

Forestry education

- *Expectations*
- *History and present dynamics*
- *Goals/purpose of education and criteria for good education*
- *Some questions and ideas*
- *Further questions*

- *Start of discussions and deliberations*

Forestry education

- **Expectations** by society, education policy (e.g. Bologna Process), students, employers teachers = many actors and manifold influences
- **History**: forestry education evolved and concentrated on different issues over time
- Enormous **dynamics at present**: universities more involved in society; changing labour market; more complex forest business environment ...

Forestry education: criteria for success

- Goals/purpose of forestry education
- Indicators for reaching these goals
 - Skills needed for success in forestry (and beyond?) are developed and available.
 - There are benefits for people as result of what we are doing in forestry education.
 - The needs of enterprises (in their present complexity) are fulfilled.
 - Foresters are able to engage in research and to influence policy (dealing with politicians).
 - ...

Questions and some ideas 1

- How can forest education react/position itself?
How do we know that we are on the right way?
How to train graduates that they are able to cope with the greater complexity?
How to keep the level of quality if more students enter the university?
- Learning beyond forestry, cutting across other sectors, cooperation with other institutions
- Involvement of alumni
- Should we include more subject areas?

More ideas

- Gender issues: special course and/or everywhere? - Cutting across disciplines in general!?
- Orientation on landscapes instead only on forests (see integrated management)
- Better thinking and problem solving (EBF?)
- Better and more „soft skills“
- Better and more work integrated learning
- Intelligent use of field labs (projects, exercises, problem solving activities)

Still more questions than answers

- *Are there always more questions than answers?*
- *Are we constantly running behind or are we able to be proactive?*
- *Can there be answers in a static way?*
- *Isn't there a constant process of change?*
- *But how often and in what time frame do changes make sense?*
- *The trend of the number of students entering forestry is different between countries (reasons for that)*

Forestry in the future

- There are conflicts and forests and forestry are under pressure
- Need to stop deforestation and degradation
- Are we forgetting degraded land, secondary forests, managed forests, (semi)arid forests and plantations?
- Need to balance the supply of timber and the provision of ecosystem services under the dynamics of population growth, changing markets, greater expectations by ever more urban societies, economic viability ...
- Chance and need for new forms of management: community forestry, integrated management, cooperation with other sectors – but always pursuing SFM

Forestry in the future

- Tailoring forestry education to the needs of society in a proactive way
- Better image of forestry through better public relations
- Strengthening research and better spreading research results
- **Stressing and using the strength of forestry and forest sciences:**
 - **Concepts of sustainability and multiple use**
 - **Balancing ecology and economy**
 - **Inventories at different scales for wide ranging purposes**
 - **Management plans: integration and long time horizons**

Last but not least

- *Role, benefits and importance of networking*
- *Field excursion as a must for foresters*
- **Thanks to:**
 - **Prof. Nengah and his team**
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Thank you for your attention!

**Missing points?
Disagreement?**