IUFRO-SPDC Training Workshop: Adaptation of Forests to Climate Change: „Working Effectively at the Interface of Forest Science and Forest Policy". Umea, Sweden, 22-24 August 2008

Report

Report

on

Pre-Conference Training Workshop

Adaptation of Forests to Climate Change: "Working effectively at the Interface of Forest Science and Forest Policy"

Jointly organised by
IUFRO's Special Programme for Developing Countries (IUFRO-SPDC) and
Swedish University of Agricultural Sciences

Supported by

Swedish Ministry for Environment, USDA Forest Service, Ministry of Foreign Affairs of Finland, Asia-Pacific Network of Global Change Research (APN), Austrian Ministry of Agriculture, Forestry, Environment and Water Management.

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1. Introduction

Over the past 10 years, the issue of changes in climatic conditions around the world has become a major focus in the international debate on environment and development. All international forest-related policy processes today - in one way or another - address aspects of climate change. Because of this, the need for sound scientific information in the development of public forest policies at the local, national and international levels has grown significantly. So too has the need for such information within the private forestry sector and among non-governmental organizations, whose role in the development, sustainable management and conservation of forest resources in all regions of the world is steadily increasing in importance. Despite rapid advances in information technology that has, in theory, the potential to significantly improve the flow of research findings to policy-makers and forest managers, communication and interaction often is inadequate between the research community and the users of the information they generate.

Also, often research is planned and conducted before giving adequate thought to exactly how the results will be transformed into usable information. In order to generate value for society, research results should be used by someone – policy-makers, forestry practitioners, landowners, educators and other researchers. The science-policy interface is all about utilising scientific knowledge more effectively.

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1.1 Objectives

Enhancing the effectiveness of the science-policy interface in forestry has been the focus of IUFRO's work over the past several years. Towards this end, IUFRO-SPDC has regularly conducted training workshops on science policy interfacing in developing countries. The objective of these training workshops is:

- To provide concepts and methods to researchers on how to plan, conduct, and organise research activities so that results can more quickly and easily be transformed into usable information for problem-solving and policy-making.

Although not all research is specifically focused on policy-relevant questions, best practices in transforming research results into usable information can increase the impact of science on forest policy and improve the practice of forestry, thereby creating more value for society from forest and tree-related research. Towards this end, the training workshops specifically aim at improving the understanding of policy- and decision-making and the roles scientists can play in informing such processes.

One of the training workshops on science-policy interfacing in 2008 was organised in conjunction with the IUFRO/FAO/SLU Forest Adaptation Conference in Umea, Sweden (www.forestadaptation2008.net). This training workshop titled: Adaptation of Forests to Climate Change: "Working effectively at the Interface of Forest Science and Forest Policy" aimed at strengthening the capacity of forest scientists in developing countries in raising awareness of forest-related global change research among policy-makers and, thus, promoting the application of scientific knowledge on the adaptation of forests and forest management to climate change.

1.2 Contents and methodology

The three-day training workshop was designed to provide latest thinking on concepts and tools for the improvement of the interface of forest science and forest policy. The workshop content is built on a "best practices guide" for working effectively at the interface of forest science and forest policy. These guidelines have been developed and published by the IUFRO Task Force on Science Policy Interface (IUFRO Occasional Paper No. 17, 2005) and is available online at http://www.iufro.org/publications/series/occasional-papers/en/).

The course specifically focused on the following issues:

- Selecting research questions that are relevant to policy issues;
- Conducting research in a communicative and collaborative manner;
- Understanding, serving and engaging in policy processes;
- Creating organisational capacity and culture that enables and encourages work at the science-policy interface; and
- Demonstrating – with the help of case studies – the interaction between scientists and policy makers.

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Science-policy interactions and best practices were explained against various backgrounds and contexts. These included (a) international policy processes, (b) national forest programmes; and (c) policies and management practices at the local levels.

Resource persons from national forest research institutions and other expert organisations presented a wide spectrum of case studies from around the world that demonstrated successes and challenges of working at the science-policy interface.

Emphasis in the training workshop was placed on interactive sessions and group work so that participants could obtain significant insights in the complex nature of issues to be addressed in the science-policy interface. Towards this end, participants were asked to compile examples of research work from their own countries with linkages to policy- and decision-making, providing the basis for analysis and discussions.

The workshop programme is presented in Annex 1. All presentations given during the workshop by trainers and resource persons together with the results of group work and supporting material have been provided to the participants on a pen drive upon completion of the workshop.

1.3 Participants

In total, 22 scientists from 17 developing countries in Africa, Asia and Latin America participated in the workshop. These countries are Argentina, Bangladesh, Brazil, China, Ethiopia, Ghana, India, Indonesia, Kenya, Mongolia, Morocco, Nepal, Nigeria, Philippines, South Africa, St. Vincent and the Grenadines and Sudan. Besides participating in the three-day training workshop, these scientists also joined the Forest Adaptation Conference held in Umea to learn, disseminate information and network about latest results on globally ongoing scientific climate change research related to forests.

The workshop sessions were moderated by Michael Kleine (IUFRO-SPDC Coordinator) and Bastiaan Louman, IUFRO-SPDC Regional Coordinator for Latin America and the Caribbean Region (Tropical Agriculture Research and Higher Education Center, CATIE in Costa Rica)). A number of resource persons shared their expertise in terms of case studies and examples of good practices of science-policy interfacing. The following resource persons participated: K. Rosen and O. Rosvall, Swedish Forest Research Institute (Skogforsk), Sweden; Giashuddin Miah, Bangabandhu Sheikh Mudjibur Rahman Agriculture University, Bangladesh; T. Nakashizuka, Tohoku University, Japan; and A. Yoshimoto, Institute of Statistical Mathematics, Japan. At the end of the workshop a panel discussion was held in which the following resource persons who played a key role in organising the Forest Adaptation Conference participated: P. Mayer (IUFRO), J. Carle (FAO), B. Hanell (SLU), and Guiashuddin Miah, Bangabandhu Sheikh Mudjibur Rahman Agriculture University, Bangladesh.

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1. 4 Sponsors

The training workshop was jointly organised by IUFRO-SPDC and the Swedish University of Agricultural Sciences (Campus Umea). Generous support for bringing scientists from Africa, Asia and Latin America to Sweden was received by the following donor agencies:

- Swedish Ministry for Environment,

- USDA Forest Service,

- Ministry of Foreign Affairs of Finland,

- Asia-Pacific Network of Global Change Research (APN), and

- Austrian Ministry of Agriculture, Forestry, Environment and Water Management.

1. Day 1: International and National Forest Policy Processes

1.1 Introduction

The training workshop was opened by Professor B. Hanell, of the Department of Silviculture and Forest Ecosystems Management, Swedish Agriculture University, Umea Campus. Professor Hanell highlighted the opportunity given to the participants of intensive learning and interactions with other scientists who participate in the training workshop and the Forest Adaptation Conference.

Michael Kleine then introduced the participants to the subject of science-policy interfacing by presenting aspects of interactions between the science community and policy-makers. Important issues included (a) the difficulties in making the link between substantive knowledge and political decision-making and the barriers to science-policy interactions; (b) two ideal-type models of science-policy interaction; (c) types of knowledge use; (d) policy relevancy of research; (e) public attention cycle; (f) data versus frameworks and (g) the importance of establishing long-term processes of science-policy interactions.

Based on this first attempt to describe the issues and problems associated with science-policy interfacing, the work of IUFRO's Task Force on Science Policy Interface and IUFRO-SPDC's training initiative were explained.

1.2 International forest policy processes and agreements – challenges for science and research

As a starting point for discussions on the science-policy interface in international forest policy, Michael Kleine presented an overview on international forest-related policy proc-

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esses and agreements and the involvement of research and science. He outlined processes on sustainable development, the forest policy dialogue under the Intergovernmental Panel and Forum on Forests (IPF and IFF), and its successor, the United Nations Forum on Forests (UNFF) and highlighted the commitments and obligations that derive from the so-called international forest regime. These include the non-legally binding instrument (N-LBI) on all types of forests adopted under UNFF-7 in April 2007 and the forest-related commitments from multilateral environmental conventions such as the CBD, UNCCD and UNFCCC.

Following the presentation, a first round of discussions took place with the participants on their involvement in international forest policy processes and their contribution to these processes. Thus far most of the participants did not have the opportunity to get in contact with their country representatives in international negotiations. However, it was felt that science can make useful contributions to international policy-making and that efforts on the part of the science community need to be expanded to bring scientific knowledge and information to the policy levels.

One concern brought forward by participants was the emphasis of existing science-policy processes on published scientific information. It was felt that particularly social information generated at local level may not be available in these publications, while some of the peer-reviewed articles may academically be excellent but rather distant from reality. In the discussion it was highlighted that therefore the type of information needed may depend on scale (scientifically more rigid at international level than at local level) and on who presents the information, reliable independent researchers or biased researchers of unknown capacity.

1.3 CPF Joint Initiative on Science and Technology

As an additional input to the discussion, Bastiaan Louman presented the IUFRO-led CPF Joint Initiative on Science and Technology, as an effort to provide scientifically sound information to the UNFF and other international environmental policy processes. UNFF members had chosen 'Adaptation of forests to climate change' as the priority topic to be elaborated under this initiative. The process includes the review of existing research by an Expert Panel and the elaboration of a report for policy-makers until UNFF-8 in April 2009.

The discussion during the subsequent interactive session clarified that UNFF members such as policy-makers at the international level had chosen the topic of adaptation as a vital input to forest policy discussions. Because the CPF is part of the International Arrangement on Forests (IAF) it is ensured that the results of the initiative are being picked up in the policy process under UNFF. The results of the initiative would also be useful for national, regional and local levels.

It was emphasised that the local context and knowledge should be taken into account. With regard to climate change there are many indigenous adaptive strategies which could be documented and mobilised for a learning process. The Initiative, however, has focused

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on a few typical forest biomes (boreal, temperate, sub-tropical and tropical) to present adaptation strategies in a generic way, including the impact on human well-being. The international experience has to be tailored to the local environment in order to make it applicable. The composition of the Expert Panel takes into account representation from all regions, but it is also complicated to get balanced representation.

Some of the challenges in compiling an assessment report of this nature were also discussed and include:

- Writers of different disciplines and different regions need to cooperate and agree on a common structure and thematic focus of the report;
- There are different concepts on where the scientific work begins, what literature is acceptable and how to communicate reliability and quality of scientific information;
- Different concepts exist on where the work of a scientist ends: scientific results versus recommendations for action;
- Another question is related to the integration work of different scales (global, regional, local);
- Time constraints, in particular if the work is additional to normal fulltime workload;
- Costs of coordination (meetings, time, travel); and
- Maintaining scientific rigor and at the same time attract attention of policy makers.

More information on the IUFRO-led CPF Initiative on Science and Technology can be found at: http://www.iufro.org/auth/science/science-initiative/.

1.4 National forest programmes

In his presentation on national forest programmes (nfp) Michael Kleine outlined the concept of national forest programmes as an inclusive country-specific process for forest policy formulation and implementation towards sustainable forest management, based on multi-stakeholder consultation, communication and capacity building. He highlighted the nfp principles and the approach, and emphasised that nfp processes should be embedded in sustainable development policies and address a wide range of issues at the micro- and macro-levels, taking into account cross-sectoral linkages. He further explained that nfps do not confine to central policy planning but also include sub-national and local level policy-making and implementation. Beside, nfps include also the positioning towards the international forest policy dialogue and integrate the implementation of international forest-related agreements and commitments according to country priorities and specific conditions. They can provide an effective framework for collaboration and partnership at all levels and for donor coordination. The role of different actors was explained with specific focus on the role of science and research and related challenges.

The nfp principles include the consistency with national laws and the constitution. However, this does not mean that the legal framework can not be changed if it is not conducive to transparency in the forest policy process and participation of local stakeholders in forest management. Examples were quoted from Costa Rica, where even changes in the constitution have been made to allow for the establishment of a system of payment for

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environmental services, and from Vietnam where the land law and forest law had to be changed to provide the framework for the involvement of local communities in forestry.

1.5 Policy advisory services at the national level

In this session two examples from Europe and particularly Sweden were presented showing how scientific work can help to shape forest policy.

K. Rosen from the Swedish Forest Research Institute presented ToSIA, a decision support tool for sustainability assessment of the forest-based sector. A consortium of forest research institutions in Europe have joined forces to work on EFORWOOD, a project funded by the European Commission. EFORWOOD aims at developing a general method to assess the sustainability impact of complete industrial sectors such as the forest and wood-based industry. The results provide the basis for policy decisions at the European level (European Commission, industry managers) as well as the national level (policy makers, civil servants, NGO's, researchers).

The Tool for Sustainability Impact Assessment (ToSIA) is based on three pillars, namely (a) economy (e.g. added value, production costs, investment and R&D, total production); (b) society (e.g. employment, wages and salaries, safety and health, education and training); and (c) environment (e.g. greenhouse gas balance, energy generation and use, emissions to soil, water and air, recycling and recovery). The model can identify critical areas in value chains that contribute to improving sustainability, but most importantly the tool can also be developed for assessing sustainability impacts of value chains of competing materials/industrial sectors.

ToSIA is primarily designed to give answers to WHAT IF? – questions related to the impact on the forest/wood-based sector. Examples include:

- What is the impact if the EU introduces new policies on e.g. energy / transport / recycling / habitat protection?
- What happens if the use of wooden frames in house construction doubles?
- What is the impact if the global market changes?
- What is the impact of oil prices double?

Currently, the project uses ToSIA to develop future scenarios for changes in climate protection policies, environmental regulations, consumption and lifestyle, and productivity. More information on the EFORWOOD Project can be accessed at www.eforwood.com.

The second example presented by O Rosvall focussed on scientific support for strategic decisions on increased forest productivity, a long-term research undertaking at the Swedish Forest Research Institute. The work addresses the issue of increased demand for

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wood and wood products and the decreasing land area for wood production. In this context key questions are

- What is the sustainable logging level in Sweden?

- How can the amount of annual wood production be increased?

Similar to many countries in Europe also Sweden has a tradition of continuous monitoring the nation's forests through permanent inventories and accurate recording and reporting of annual harvest levels. From these figures it is obvious that current logging volumes are very close to sustainable levels, thus the entire wood increment of forests is harvested. Because it is unlikely that the forest area for timber production will increase, the expected increase in wood demand needs to be satisfied by higher productivity of existing forests.

Research has shown that increased productivity of the forests in Sweden can be achieved through fertilization of some forest areas where site conditions are suitable, establishment of Contorta Pine plantations, genetic improvement through seed orchard or vegetative propagation, and intensification of regeneration. However, a realistic estimation on possible increase in productivity ranges between 20-25% opposite an increase by more than 50% as initially expected by policy-makers.

All in all, research contributed to strategic decision-making through:

- Accurate calculations of national forest inventory data as well as the application of growth and yield modeling tools, providing realistic estimates of growth;

- Demonstrating the boreal forests are a slow-growing ecosystem that requires adaptation to higher yield levels of 40 to 50 years;

- Highlighting a number of restrictions and consequences related to the economy, land owner preferences, environmental concerns and public acceptance; and

- Identifying the need to develop tools that allow assessment of a wide range of consequences when a policy of increased productivity is being pursued.

In the discussions about policy advisory services at the national level the participants correctly noted that extensive data needed to develop such decision-support tools. These data can only be collected over long periods of time and require substantial investments in terms of personnel and financial resources. In addition, sustainability assessments and estimations of long-term growth potential are complex issues and much more difficult to address in developing countries due to insufficient and unreliable data.

In the case of the EFORWOOD Project it was interesting to note that the final research topic was decided upon negotiations with the policy makers. In addition, impact assessment of policies combines science with subjective values. The EFORWOOD Project proposes to report on size and direction of impacts, leaving the value judgements on whether these are acceptable or not, to the policy makers.

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2 Day 2: Best Practices for Improved Science-Policy Interfacing

The day started with a summary on the previous day by Michael Kleine, highlighting the key issues discussed with regard to international policy processes and policy advisory services at the national level.

2.1 Best Practices Guide on science-policy interfacing

Then Michael Kleine presented the IUFRO Guidelines for Working Effectively at the Interface of Forest Science and Forest Policy - Guidance for Scientists and Research Organizations that had been elaborated by the IUFRO Task Force on the Forest Science-Policy Interface. The publication was made available to participants as well as a summary table with the major recommendations.

Michael Kleine highlighted the key aspects of the Guidelines with regard to the involvement of scientists in policy process and how to conduct research in this regard. The interactive session triggered many remarks of participants on the relevance of research to policy, on the involvement of stakeholders at various levels, the interlinkage of scientists with policy-makers and the best way to engage in policy processes. Communication and packaging research projects and results adequately to meet the demand of policy-makers are important preconditions that science can provide targeted input into policy processes at all levels based on factual information. Policy concerns should be addressed by scientists in all research projects; they should be relevant to policy-makers and take into account their demands. Societal needs are the key starting point for research, and emerging issues should be picked up to raise awareness at policy level. Only in this way, research can attract attention of policy-makers and adequate funding. As an important output the policy implications of research results should be effectively communicated. The best practices guidelines can be downloaded from the IUFRO Website at:
http://www.iufro.org/auth/publications/series/occasional-papers/.

2.2 Examples of best practices for work at the science policy interface

In the following session resource persons from Japan and Bangladesh presented examples of best practices for work at the science-policy interface.

T. Nakashizuka of Tohoku University, Japan expanded on biodiversity assessments for regional forest planning. Towards this end, different assessment strategies have been developed and are currently being used to analyse the impact of human activities on the environment. The principal structure of such an assessment was presented for a case on "Wise Adaptation to Climate Change in Japan" comprising chapters on technology perspectives (e.g. range of adaptation options, monitoring technology, capacity building), policy perspectives (e.g. cooperation and alliance with relevant organizations, mainstreaming adaptation) and socio-economic perspectives (e.g. voluntary initiatives, regional vulner-

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ability assessments and economic systems such as compensation for damage caused by climate change).

The presentation further discussed various drivers of forest change, their impact on biodiversity and the consequences for ecosystem services that are important for human well-being. Assessment frameworks of biodiversity and ecosystem services attempt to answer the following three main questions:

- How has the use of forest been changed over time?

- In which way has the change in forest-use affected biodiversity?

- How has the change in biodiversity affected the ecosystem services?

With the help of two examples of biodiversity assessments in Japan and Sarawak/Malaysia the various aspects used in these assessments were explained. The assessments addressed overall land-use changes at the macro-level but also dealt with detailed analysis of data on birds and insects collected at the species level. In addition, pollination types and seed dispersal mechanisms in various forest formations were investigated to evaluate ecosystem functioning and integrity. The results obtained in these assessments were then used to demonstrate the application of quantitative evaluation on forest change to policy. Linking biodiversity science and policy is an important step towards improving the basis for land-use and natural resources management policies.

A.Yoshimoto from the Institute of Statistical Mathematics, Japan presented an economic analysis of forest utilization for carbon mitigation through forest stand optimization. He started his talk with stating that frequently policy-makers pose quantitative questions such as "what would happen if…" or "how much would it cost if …" or " what would be the best decision among certain candidate options?"

In order for forest scientists to provide adequate information to satisfy these questions substantial quantitative research is needed. Decision-making models are commonly developed and applied in the search for an "optimal" solution with respect to the type of management to be employed to achieve a desired outcome. In these models, objectives are formulated reflecting social preferences or private monetary benefits. In addition, constraints are also introduced in order to satisfy specific requirements related to biodiversity conservation, provision of other ecosystem services or carbon markets. Besides these model parameters, scientific models attempt to build tools for efficient search for optimal solutions.

Towards this end, the presentation described forest stand management regimes in Japan that were analysed to provide optimal benefits for both timber production and carbon storage. Various quantitative tree and stand parameters and calculi were used to build a forest growth simulator as basis for estimations on future stand conditions and carbon storage capacities. These were combined with various market prices and levels of subsidies for forest management, in order to come up with scenarios for stand management interventions (e.g. thinning) and economic calculations of net present value for the stand and carbon pricing. This allows prediction of the flow of environmental and economic values (here: stand optimization and carbon mitigation), thus providing the basis for strategic decisions in policy and management.

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Giashuddin Miah from the Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh deliberated on a wide range of science-policy interactions particularly on the coastal mangrove zone of Bangladesh. Following an introduction into the climate and natural resources of Bangladesh, the history of catastrophic events such as storms and floods and disaster management were explained. Virtually all coastal areas and large sections of Bangladesh's inland are regularly affected by flooding with disastrous impacts for human lives and properties.

Natural causes of these disasters include cyclones and tidal surges, flood and water logging, soil erosion, and salinity intrusion. These natural impacts are compounded by man-made causes through shrimps and salt productions, various forms of pollution such as arsenic contamination as well as general resource degradation. Regional changes in temperature, rainfall pattern, and sea level also contribute to aggravating the situation.

As a consequence, significant decrease in agricultural land, wide-spread scarcity of drinking water, lack of animal fodder and scarcity of biomass fuel can be observed in many parts of the country. This demonstrates the importance of adequate management of tree and forest resources. One of the examples is the largest coastal mangrove forest area in the world – the Sunderbarns. These forests, although under multiple threat provide vital coastal protection and an indispensable foundation for human livelihood.

In the final part of the presentation past and ongoing efforts on disaster prevention in Bangladesh are outlined. These include institutional arrangements for pre-warning, evacuations and relief operations, but also technical measures of disaster mitigation such as construction works, storm and flood shelters and reforestation activities. All in all, the paper could demonstrate the importance of accurate bio-physical and socio-economic data and analysis data for adequate land-management decision-making under difficult circumstances as found in Bangladesh.

2.3 Group work on science-policy interface

The participants split into four groups, each led by one of the participants selected by the group members. On the basis of concrete examples of research projects the groups were asked to

- Evaluate specific research projects against the IUFRO best practices guidelines;
- Present research projects to the group members explaining the process on how the research has been conducted;
- Discuss the project based on the following guiding questions:
    – Which of the elements in the best practices guide have been implemented?
    – Have these practices helped to make the project more useful for policy-making? If yes, how?
    – Should additional elements given in the best practices guide be included into the project? If yes, which ones?

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- Select one project and develop the research process explaining the elements of the best practices guide that you would apply to make this particular project a role model for science-policy interfacing.

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Day 3: Building Organisational Capacity for Science-Policy Interfacing, Group Presentations and Panel Discussion

Michael Kleine briefly summarised the activities and results obtained during the previous day.

3.1 Presentation of group work: model research projects and science-policy interfacing

The whole morning was then used to present and discuss the results of the group work on research projects with regard to the application of the IUFRO guidelines on science-policy interfacing.

Group 1 presented a project on Nypa-Palm in Nigeria for use as biofuels. It was emphasized that the palm is native to Indonesia and was introduced more than 100 years ago from Indonesia. It's an aggressive plant and has replaced coastal mangrove forests but local people have not learned to substitute original uses of mangroves for uses of parts of the palm. Although not planned as a policy study, it contributed to improve policies oriented at restoration of mangrove forests, providing technology (seeds for mangroves, cleaning seeds of Nypa from beaches), at the same time suggesting other options for use of Nypa palm, in particular for generating energy, showing that it can produce twice as much ethanol as sugar cane without competing with human food crops.

Group 2 analysed a project on "Biochar amendments to soil: Options for food security and climate change adaptation in Ghana". This research aims at contributing to food security through reducing land degradation and deforestation. Towards this end, the project analysed the effects of biochar on soil properties and productivity. The results revealed that biochar improves maize yield crop by 50% to 80%; it also improves soil nutrient retention, mainly exchangeable cations (potassium, magnesium, calcium etc); improves income to resource poor farmers and overall has a high potential for soil carbon sequestration.
In analysing the research focus and process the group realised that besides food security and soil fertility there are many are other problems causing deforestation such as migration, population growth, land ownership, and high demand for fuel wood. Therefore, socio-economic and cultural parameters were also taken into account during the research process. Obviously, local stakeholders and beneficiaries of this research have been consulted during the research work. Although not a policy project, the research undertaking had an impact on policy making demonstrating the usefulness of biochar, as one measure towards food security.

Group 3 evaluated a research project on "Reduced Emissions from Deforestation (REDD) and Degradation: a revenue source for natural forest management by communities in

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Vietnam". The research aimed at assessing the potential for REDD as revenue source for natural forest management in Vietnam and at identifying major constraints to participation in REDD. The project was undertaken as multi-disciplinary research with bio-physical and social sciences being part of the assessment and evaluation of REDD approaches in Vietnam.

As shown in their analysis the research work incorporated quite a number of recommendations given in the best practices guide on science-policy interfacing such as looking to the future in terms of REDD payments as an innovative way of compensating forest owners for environmental services; focusing on needs and values revealed by extensive interviews of local stakeholders; conducting interdisciplinary research as well as facilitating relations between stakeholders and policy-makers.

<u>Group 4</u> presented the analysis of a research from Ethiopia titled: "Land Use and Land Cover Perspectives in 'Langano woodland', Rift Valley of Ethiopia". The project examined the causes and effects of historical land-use changes over the last 30 years by:

- Evaluating and verifying land-use change and trends, and

- Relating the land-use changes to demographic, other socio-economic and bio-physical changes, and the perspectives of the local farmers.

The research was interdisciplinary with several specializations such as foresters, animal science, social sciences, soil and crop sciences, economists and remote sensing and GIS specialists participating. Comprehensive maps were generated to show the changes of natural resources, land-use, and degradation over time. This helped in the discussions on future trends and consequences of continued land degradation and negative effects on crop productivity, availability of fodder, declining livestock and overall food security.

During the discussions on the case studies, the following suggestions were brought forward regarding the science-policy interface and the best practices guidelines:

- Gender issues ought to be mentioned specifically in the guidelines
- Include suggestions on evaluations of research and policies that involve policy-makers and other stakeholders, where the results of these evaluations should be taken into consideration in designing new research projects or planning for continuation of existing ones.
- Pay more attention to research that provides information for policy research and policy formulation and implementation

3.2 Organisational capacity for science policy interface

Michael Kleine introduced the topic along Chapter IV of the IUFRO Guideline on improving the policy-science interface. He highlighted that organisational capacity includes intellectual but also non-intellectual capacities. The latter comprise resources available for research and dissemination of its results or positions, such as a communications officer in a research institution. In order to provide for these resources investment is necessary. However, as world-wide examples show, this investment pays off, since with better, tar-

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geted communication of research results policy-makers become more aware of the contribution of science and research to societal objectives.

3.3 Panel Discussion

The workshop concluded with a panel discussion involving representatives of the organising institutions, Björn Hanell (SLU), Jim Carle (FAO) and Peter Mayer (IUFRO) as well as G. Miah representing the Asia Pacific Network of Global Change Research (APN).

The panel session started with a brief summary by the participants on the main messages obtained from this workshop. These main messages include:

- Going through guidelines helps in project design and orient more towards policy impacts. Guidelines are on how to improve relevance of research.
- Internal review or peer review to improve credibility of research
- Maintain baseline information and results of monitoring of changes may allow provision information at right time
- Make sure stakeholders have realistic expectations from research
- Communication needs to be improved: how to get knowledge to the target audience. Above all when related to strategic research results.
- Many research projects may be relevant and have impact on policies but do not apply specific strategies to do so.
- Researchers should focus more on key issues and messages for the target audience.

In addition some suggestions were made for improvement of the guidelines:
- Not enough discussed how to resolve the problem, although some ideas are shown.
- Guidelines should be more explicit for specific research areas.
- Science and policy is only as far as it benefits people, but often these are not the centre of the research, should not be the domain only of social sciences and should be stressed more in guidelines. For example gender (relations between different groups of society) issue should be incorporated more in discussions and in guidelines.
- They should also address the role of science in different societies which may have different views on the world.

One member of the participants presented the final outcome of their exercises on Forest Science and Policy issues, and expressed their practical experiences gained in this workshop. He expressed the following key lessons learned and remaining challenges and opportunities:

- Workshop equipped participants with concepts and ideas that will allow them to conduct research of relevance for policy makers at different levels, having a

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clearer perception of how their research fits in the larger picture: cross-disciplinary research, looking at problem from different points of views.

- It is important to provide the right information at the right time (attention curve) to the right people.
- Helped to analyze at what level you want to influence changes (local, regional, national, international)
- Interdisciplinary research facilitates more integral analysis of the problem, design of methodology and implementation of projects

Challenges and opportunities

- Science-policy for whom? People are at the centre of our activities and there is a need to put more emphasis on the people, both in research and in the guidelines. New tools and techniques for highlighting gender issues in research and policy are needed.
- We need to address the issue of how to make sure that we have the right information at the right time?
- Budgetary and communication constraints make it difficult to perform interdisciplinary research
- Communication between researchers and policy makers needs to be two-way and needs to be improved

In addition, it was suggested to combine the workshop with a task (before or after) that involves an evaluation of research projects against the guidelines.

After that, an excellent interaction between participants and panel discussants were held. The participants expressed high satisfaction as regards the contents and methods of the training program as well as the lesson learned from the three-day exercises. Similarly, the learned panel discussants cited additional views and experiences of international organizations and universities. During this discussion session, aside from the issues of the workshop, Professor Miah (SPG member of APN) highlighted the notable contribution and on-going initiatives of APN in science and policy interface across the Asia-Pacific region as well as in Global arena. However, the discussion concluded with a note that despite significant progress made in science-policy interfacing over the past decades, much remains to be done to formulate better policy at national, regional and international levels. Finally, the participants received Participation Certificates from the IUFRO President Professor Don K. Lee. After the rounding up of the three-day hectic training workshop, all participants participated and presented voluntary papers or posters in the International Conference held in the following four days at Umea, Sweden.

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ANNEX 1

IUFRO-SPDC Pre-Conference Training Workshop

"Adaptation of Forests to Climate Change: Working effectively at the Interface of Forest Science and Forest Policy"

Umea, Sweden, 22 to 24 August, 2008

Workshop Programme

Date	Time	Subject (Description)	Responsible
Thursday, **21st August**	**Whole day** **19:00**	Arrival of participants and registration Dinner and Icebreaker	Local Workshop Organisation
Friday **22nd August**	**09:00 – 09:15**	Welcome address and opening of the workshop	B. Hanell, SLU
	09:15 - 09:30	Introduction of participants, trainers/resource persons: experiences and expectations	M. Kleine, B. Louman Participants
	09:30 – 10:00	What is the Science-Policy Interface? • IUFRO's Task Force • IUFRO-SPDC Training	M. Kleine
	10:00 – 10:30	Objectives of the workshop • Workshop programme, daily routine	M. Kleine / B. Louman
	10:30 – 11:00	Coffee/Tea Break	
	11:00 – 11:30	International Policy Frameworks and Agreements • UNFF, UNFCCC, CBD, UNCCD	M. Kleine
	11:30 – 12:30	CPF Joint Initiative on Science and Technology • Work of the "Climate Change Adaptation Panel"	B. Louman
	12:30 – 13:30	Lunch	
	13:30 – 14:30	Interactive Session: Science contributions to international forest policy processes: challenges and opportunities	B. Louman, M. Kleine

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Date	Time	Subject (Description)	Responsible
Friday 22nd August	**14:30 – 15:30**	National forest programmes • processes, issues and challenges • science contributions	M. Kleine
	15:30 – 16:00	Coffee/Tea Break	
	16:00 – 17:30	Policy Advisory Services at the national level ToSIA - a decision support tool for sustainability impact assessment of the forest-based sector	K. Rosen, Skogforsk, Sweden
		Increased forest productivity, scientific support for strategic decisions	O. Rosvall, Skogforsk, Sweden
	19:00	Dinner	
Saturday 23rd August	**08:30 – 08:45**	Summary of results obtained on previous day	M. Kleine
	08:45 – 10:30	Best Practices Guide: Working Effectively at the Interface of Forest Science and Forest Policy • Recommended practices • Examples and case studies	M. Kleine/ B. Louman
	10:30 – 11:00	Coffee/Tea Break	
	11:00 – 12:30	Examples of best practices for work at the science-policy interface • Biodiversity assessment for regional forest planning • Economic analysis of forest utilization for carbon mitigation through forest stand optimization • Coastal vulnerabilities and management policy in Bangladesh	T. Nakashizuka, Tohoku University, Japan A.Yoshimoto, Institute of Statistical Mathematics, Japan G. Miah, BSMR Agriculture University, Bangladesh
	12:30 – 13:30	Lunch	

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Date	Time	Subject (Description)	Responsible
Saturday **23rd August**	**13:30 – 15:30**	Group Work: Evaluation of research projects based on best practices guide • Groups discuss individual case studies • Developing a role model for science-policy interfacing	Participants M. Kleine/ B. Louman
	16:00 – 17:30	Group Work continues: • Describing the role model for science-policy interfacing • Compilation of a group presentation	Participants M. Kleine/ B. Louman
	19:00	Dinner	
Sunday **24th August**	**08:30 – 08:45**	Summary of results obtained on previous day	M. Kleine
	08:45 – 10:30	Presentation of group work Discussions	Participants
	10:30 – 11:00	Coffee/Tea Break	
	11:00 – 12:30	Presentation of group work Discussions	Participants
	12:30 – 13:30	Lunch	
	13:30 – 15:00	Create organisational capacity, culture and role in improving the science-policy interface • Country experiences from Africa, Asia and Latin America Discussions	M. Kleine/ B. Louman
	15:00 – 15:30	Coffee/Tea Break	
	15:30 – 16:30	Panel Discussion: • Progress made in science-policy interfacing • Lessons learned • Identification of follow-up action	P. Mayer (IUFRO) J. Carle (FAO) B. Hanell (SLU) T. Nakashizuka (TU) Moderator: M. Kleine/B. Louman

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Date	Time	Subject (Description)	Responsible
	16:30 – 17:00	Closing of Workshop and Handing-over of Certificates	D. K. Lee (IUFRO President) M. Kleine/ B. Louman
	19:00	Dinner	

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