Session 11. Tropical forest management and climate change adaptation

Summary report

Some recent or current changes in forests ecosystems that can be attributed to climate change identified by session participants include the following.

- In tropical ecosystems, there is an observed increase in temperatures and more extreme La Nina and El Nino effects including greater incidence and velocity of typhoons, heavy rainfalls, flooding and landslides, while on the other extreme, droughts that have reduced agricultural productivity and production, catastrophic fires and the impacts of insects and diseases that in turn have impacts on food security, poverty and livelihoods in vulnerable groups.
- Vulnerable communities that face failed agriculture and livestock caused by climate change and extreme weather events turn to forage/harvest in tropical forests as coping strategies for water, wood, fuel, non-wood forest products, food, fodder, medicines, etc., and even encroachment, that in turn causes deforestation and forest degradation.
- Due to deforestation and forest degradation in tropical rainforests, wet and dry forests, the functions and provision of goods and services are eroded. Dry forest ecosystems are identified as being the most vulnerable in some countries.
- The impacts of, and vulnerabilities of, communities to climate change and extreme weather events is diverse and depends upon the unique political, social, cultural, environmental and economic landscape that prevails in each context.
- Indigenous communities may not understand the science of impacts, but through their traditional knowledge they know how climate change impacts their lives and livelihoods and how they need to adapt. Examples: Drought = less water flow, wells dry, more time to collect water, quality of water decreases, more diseases, productivity of crops declines, crops fail, financial resources reduced, greater incidence of fire. Extreme heat = sleep outdoors, greater incidence of malaria, less capability to work, crops fail.

The participants discussed the future impacts of climate change on forests and on people and institutions and concluded the following.

- Greater encroachment, foraging and harvesting of tropical forests in illicit, informal and uncontrolled manner as people strive to cope with impacts of climate change and extreme weather events on agricultural activities and livelihoods
- Modelling of the impacts of climate change on tropical forest ecosystems is complex and in many instances there is insufficient reliable data, so future impacts on forests and forest species are difficult to predict.
- Vulnerable communities in tropical ecosystems will suffer greater through impacts on livelihoods, food security and poverty, but have the least capacity and capability to cope.
- In tropical landscapes where climate change and extreme weather events increasingly occur, vulnerable groups will increasingly encroach and overexploit forest ecosystems for wood, fuelwood, food, fodder, and medicines as coping strategies.

Potential management actions brought forth by session participants to address the impacts of climate change include: identifying vulnerable ecosystems and species; increasing protection in these areas; rehabilitating degraded forests; improving low impact harvesting systems; mainstreaming climate change in non-wood forest products and biodiversity management policies, programmes and management plans to enhance

adaptation; monitoring forest biodiversity changes; considering innovative financing mechanisms; and increasing afforestation/reforestation; and improving natural forest management.

Capacity building is needed to strengthen developing country REDD (reduce emissions from deforestation and forest degradation) readiness to establish baselines and monitor deforestation and forest degradation in tropical ecosystems through a combination of remote sensing and ground surveys to derive REDD strategies to report to the UNFCCC process.

Modellers need to engage more with other stakeholder groups in their modelling and to translate their knowledge and technology into language that is understood by key decision makers.

There is a need for new solutions to new problems. We know how to manage forests of the past, but we need to adapt forest management practices in light of climate change in each specific context, taking into account scientific, traditional and management knowledge.

In tropical countries there is a significant problem in that there is serious lack of scientific data and information on which to make climate change adaptation decisions.

Forest scientists and foresters must engage with other scientific and land-use management groups in the landscape as their communities of practice, perceptions, and adaptation solutions can be quite different.

Session participants also discussed the policy options to best support adaptation of forests and the forest sector to climate change. Generally there is a lack of climate change adaptation governance, policies and legal frameworks in tropical regions, whether for livelihoods, natural resources management, forest management or non-wood forest products management and marketing.

The policy research framework methodology is a useful national, landscape or local decision-making tool to interlink institutions and people (scientific, academic, policy-makers, managers, investors, communities and communities of practice) and identify the bridges between stakeholder groups to identify information needs, resources, roles, information sharing and networks that can stimulate participation on specific issues, such as adaptation to climate change.

Participants stressed that there is a need:

- to focus on people, poverty alleviation, food security and livelihoods issues in communities vulnerable to the impacts of climate change, to diversify their income opportunities as a coping strategy.;
- for inter-sectoral dialogue to formulate more consistent, clear and cohesive natural resources management and livelihoods policies with particular regard to water, agriculture, energy, forestry, disaster risk management sectors and climate change strategies and coping mechanisms;
- for adaptation measures within policy and planning frameworks at the local level since there is generally a lack of adaptive capacity in local communities;
- for a shift in the way that scientists interact and bridge the gap between their scientific results and the use of these by policy makers, managers, investors, communities and other stakeholder groups;
- for greater dialogue across the international, national, sub-national and local divides with regard to impacts and adaptation strategies;
- to meld both traditional knowledge on understanding the problems and the solutions in combination with science and other support systems as indigenous communities have been adapting to change, including in climate for millennia;
- for a combination of macro and micro level planning to understand the specific impacts on communities and their coping strategies particularly since each social, cultural, environmental and economic context is different.

Due to the diverse nature of impacts and vulnerabilities there is not one fix all solution, but to work with stakeholder groups in participatory approaches to explore coping strategies and more flexible, integrated policies and approaches across sectors that better connect tropical forest ecosystem goods and services to climate change.