

Tropical forest management and climate change adaptation by indigenous people

This article has been downloaded from IOPscience. Please scroll down to see the full text article.

2009 IOP Conf. Ser.: Earth Environ. Sci. 6 382028

(<http://iopscience.iop.org/1755-1315/6/38/382028>)

View [the table of contents for this issue](#), or go to the [journal homepage](#) for more

Download details:

IP Address: 38.107.179.213

The article was downloaded on 16/02/2012 at 11:06

Please note that [terms and conditions apply](#).

P38.11

Tropical forest management and climate change adaptation by indigenous people

Durgadas Mukhopadhyay

Delhi University, Economics Department, Noida, India

Forests around the world are widely expected to face significant pressure from climate change over the coming century. Although the magnitudes of the projected temperature rises and precipitation changes are still uncertain, modeling based on mean figures show that ecological, economic and social disruptions are likely. Tropical forest ecosystems around the globe, particularly the ones on which the livelihoods of people from several regions of the world depend, belong to the most vulnerable ecosystems to climate change variability and long term changes in temperature and rainfall (CIFOR, 2007). Many of these humid forest ecosystems which are occupied by indigenous peoples have seasonal climates. In many cases climate change may result in longer dry seasons. This combined with the disturbance to forest systems from industrial forestry etc will make these areas particularly prone to major forest fires. Tropical forests are the richest habitat type of the world in terms of the diversity of inhabiting peoples. Tropical forest ecosystems harbour at least 1,400 distinct indigenous and traditional peoples. Indigenous peoples of the tropical rainforest are dependent on the forest. Many of them are already today affected by the impacts of environmental and climate change and are struggling to adapt to the changes in the environment. Most of these peoples are hunters-gatherers. (e.g. the Dayak of Borneo, the Papuans of New Guinea, Amerindians in South America, Pygmies of the Congo Basin etc.) Most of these hunting and gathering communities are gradually adapting their lives to an agricultural economy and are becoming increasingly semisedentary. In many cases indigenous peoples have developed specific coping strategies to extreme variations of weather. Some examples of such adaptation strategies include:

- Crop diversification in order to minimize the risk of harvest failure (many varieties of crops with differing susceptibilities to droughts, floods, pest etc. are grown). Some of these varieties are adapted to different environment/field locations (near rivers, high on mountains, close to a primary forest etc.).
- Change of hunting and gathering periods to adapt to changing animal migration and fruiting periods.
- Change in food storage methods, such as drying or smoking foods according to climate variability and corresponding availability of food.
- Changes in food habits, for example when the crops or cultivated plants are not producing good harvests, people will revert to gathering food in the forests.
- Forests as source of famine food in case of emergency. There is an urgent need to help indigenous peoples living in tropical forests to prepare for different climate change scenarios.
- Help inform and empower indigenous peoples to address climate change issues.
- Identify indigenous forests dwelling groups who are particularly susceptible to climate change threats. Provide assistance to these groups in planning and preparing to deal with climate change related risks.
- Take measures to ensure that the interests of indigenous forest peoples are properly addressed in any negotiations on large scale carbon sequestration projects, biofuel projects or avoided deforestation projects.

There is need to consider adaptation and mitigation simultaneously, the need to mainstream forest-related challenges into development planning, and the need for innovative mechanisms for funding, including private and public partnerships. Adaptation is needed now to build resilience to multiple stresses and that it should be focused on the most vulnerable, including forest-dependent people. Indigenous knowledge is knowledge unique to a given culture or society, acquired through accumulation of years of experiences of local people passed on from generation to generation. Any adjustment (economic, ecological or social), whether passive, reactive or anticipatory, as a means to ameliorate the anticipated adverse consequences associated with climate change. Community regulations and religious decrees bans on cutting certain types of trees (e.g., acacia, fruit trees) Identification of most vulnerable regions Local knowledge on trees that resist harsh climates Knowledge on species with a limited geographic range Knowledge on species with limited seed dispersal and migration capabilities. It is necessary to document indigenous knowledge practices in a region There should be awareness and observation of a particular indigenous strategy There is need for perception of the practice as a solution to adapt to or cope with climate change There must be motivation to enhance adaptation using indigenous knowledge. Agencies should experiment with local

practice to improve climate change adaptation. There is need for validation of the role of local practice in climate change adaptation