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Climate Change, Forestry and Carbon Financing in Nepal: Editorial Introduction

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Forests contain 60% of the total carbon reserves in the world's terrestrial ecosystems. Every year, deforestation of about the size of Nepal takes place globally, making up to 20% of the total greenhouse gas emissions. In view of these facts, there is now a growing realization that curbing deforestation is a highly cost-effective way of climate change mitigation. Recognizing this, the United Nations Framework Convention on Climate Change (UNFCCC), at its 13th meeting of the Conference of the Parties (CoP) in 2007 in Bali recognized an agenda of Reducing Emissions from Deforestation and Degradation (REDD) in developing countries as a potential instrument for new climate regime. The commonly agreed REDD principle entails the idea that industrialized countries pay developing countries to reduce deforestation and forest degradation. However, how exactly this could take place is yet to be clear. Even through the recently completed CoP 14 in Poznan and subsequent meetings, a methodology for REDD is still being debated. As the 15th CoP in Copenhagen in December 2009 is expected to reach an agreement for post-Kyoto period, which begins in 2012, REDD and related forest carbon financing methodologies are under intense discussions and analysis. Whatever form the new REDD regime may take, it is clear that the philosophy of carbon emissions trading has been well accepted globally, creating a potential of carbon financing opportunities to those who reduce deforestation and protect forests.

Amidst these international REDD debates, the Government of Nepal (GoN) has been quick to respond to unfolding opportunities. The GoN has already initiated REDD preparatory activities through the World Bank's Forest Carbon Partnership Facility (FCPF) support, and in collaboration with other national and international agencies. Currently, GoN is in the process of preparing a plan that outlines strategies and actions to be taken if Nepal wishes to be ready for any REDD or associated carbon trade regime that may come into effect in 2012. Over the past two years, GoN, especially the Ministry of Forest and Soil Conservation (MFSC) is heavily engaged in facilitating and participating in REDD-related interactions within Nepal and internationally. Yet, there is still a significant degree of confusion and uncertainty about whether, how and to what extent Nepal can benefit through REDD. In this context, this special Issue of the *Journal of Forest and Livelihood* (JFL) has been devoted to take stock of the knowledge of climate change, forestry and livelihoods, focusing on the potential of REDD financing to community forestry groups in Nepal.

This special Issue brings together diverse angles of analysis on the potential and challenges, including possible strategies that Nepal should take to benefit from REDD. The papers together analyse the conditions that constrain or facilitate the process of forest carbon financing and explore strategies and challenges for rewarding local communities that have reversed the past trends of deforestation and forest degradation under the nation-wide programme of community forestry. In particular, this Issue has generated new insights into how and to what extent climate change is affecting forest and livelihoods in Nepal, and whether, how and to what extent Nepal's community forestry can benefit from the emerging REDD mechanisms. Some of the authors, especially Dhakal, are even sceptical of REDD as an opportunity for a country like Nepal, where livelihood roles of forest are more important than carbon benefits. While most authors focus on REDD as an instrument of mitigation and potential source of income to local communities, some of the articles also explore the risks of climate change and identify strategies for enhancing the adaptive capacity of community forestry groups to cope with risks and vulnerabilities induced by climate change. The articles together establish that climate change for a developing country like Nepal is a significant challenge, and if appropriately addressed, also has the potential to provide financial incentives to people who have been conserving forests.

More specifically, the articles in this volume address at least five key issues which are of wide relevance to the contemporary debate on climate change, forestry and local livelihoods in Nepal. These include the evidence of climate change and impact on forestry and livelihoods, the idea of REDD and its relevance to Nepal's community forestry, possible REDD strategies, resource status and need for adaptation measures.

EVIDENCE OF CLIMATE CHANGE IN NEPAL

First, authors provide evidence of the impact of climate change in Nepal and provide an indication of how severe it will be in the future. This question is addressed by Chaudhary and Aryal in great detail. They compile some interesting evidence of climate change impact from Nepal and outside and draw inference from three key aspects of socio-ecological systems: ecological factors, ecosystems processes and functions, and human well-being. They provide compelling evidence of ecosystems

being altered (such as species range shift, and changes in penology and breeding behaviour of plants) and changes in human well-being (such as increase in disease risk, water shortages, drought, lake-outburst, and declined agricultural yield and food insecurity). Similarly, based on the study of a small watershed in the central part of Nepal and by analysing data from 1978 to 2006, Lamichhane and Awasthi claim that climate change is really creating local-level impact such as changing rainfall patterns and steady rise in temperature. Gurung and Bhandari supplement climate change evidence from newly collected data from western Nepal, where they document local communities' perceptions of, and responses to climate change. They find out that the impact of climate change at local level is already being felt and that there is a need for adaptive strategies. Similarly, Chapagain and Subedi report that local people do perceive that climate risks are increasing. They have compiled several specific case studies in which local people report various aspects of climate change and its impact on their everyday life.

REDD OPPORTUNITIES AND CHALLENGES

Second, several authors address crucial issues of what REDD means to Nepal, and whether and how it can benefit Nepal's community forestry groups. Some are more optimistic about REDD's potential. Pokharel and Baral, Dahal and Banskota, Karky and Banskota, and Dhital are optimistic about REDD, and yet identify a number of policy and capacity-building issues. Staddon has summarized challenges and possibilities of REDD in the context of Nepal's community forestry. Pokharel and Baral argue that REDD process needs to be 'Nepalized'. Kotru stresses that despite some genuine concerns, REDD may provide opportunities for institutionalizing good governance in the forestry sector, in addition to creating added financial benefits through carbon payments. Basnet argues that, with REDD, carbon ownership will become a contested issue in times to come. She views that benefits depend on resolving the carbon ownership, and argues that with carbon becoming a marketable product, tenure insecurity may rise. Dahal and Banskota see the REDD process as an opportunity to improve forest policies to strengthen sustainable forest management.

It is to be noted that even the authors who are optimistic about REDD and carbon financing in Nepal's forestry sector have identified a number of challenges associated with future carbon financing in Nepal: the possibility of elite capture, uncertainty of carbon markets, domination of international experts in deciding the amount and value of carbon, nationalization of carbon revenues, complex methodologies. Three most critical methodological issues related to REDD are: creating a baseline scenario for carbon monitoring in a way that satisfies both the carbon credit suppliers and buyers; ensuring the rights of local and indigenous peoples while selling secured carbon credits; and enhancing the capacity of both the government and civil society institutions to implement REDD, which requires strong technical and institutional capabilities. Overall, the conclusion which the authors share in common is that while REDD is a real opportunity, the challenge is to make it workable both for carbon credit buyers and for local communities.

Notwithstanding these optimistic analyses, REDD is not free from criticisms. Dhakal in particular takes a critical look at carbon trade and cautions against unrealistic optimism. He views that REDD is a solution to industrialized countries, and it will lock forest for local use through legally binding contracts. He claims that this is not suitable for the country like Nepal where forest is part of more critical rural livelihoods systems than carbon conservation.

POSSIBLE REDD STRATEGIES

Third, authors have also explored possible strategies that can enable communities to benefit from carbon financing. Nepal forestry stakeholders have begun to explore whether and how they can bring more money to local communities who have been protecting community forests. Staddon reviews a number of challenges at national and international level, and points to voluntary marketing as a possibility in any case. Dahal and Banskota view that Nepal's community forestry can reap benefits by participating in REDD but it requires addressing a range of issues and challenges to mitigate underlying causes of deforestation and forest degradation while offering rewards to those contributing to enhance forest cover. Karky and Banskota have offered specific ideas and options in relation to how community-based forest management can benefit from REDD. Adhikari has outlined how forest commons in general face opportunities and challenges, and what lessons Nepal can learn from broader international experiences. Adhikari advances the argument for an integrated analysis of major ecosystem services provided by forest commons in order to make sure that any inter-government negotiations on forest and climate change such as REDD would not miss the importance of either component.

RESOURCE STATUS AND MONITORING

The dimension of resource status is important. Oli and Shrestha and Dhital take a closer look at the status of forest ecosystems and assess the potential for carbon financing. They show that forests in Nepal cover nearly 40% of the total land area and significantly contribute to mitigating the adverse impact of climate change. They provide information about the total carbon stock in the

forests of Nepal, and argue for maintaining reliable forestry sector statistics, such as forest cover, growing stock, biomass and carbon in the country. Dhital explores opportunities and challenges for REDD in Nepal's community forestry. He argues that Nepal can benefit from the REDD mechanism by proactively acting to curb the rate of deforestation and forest degradation. Successful participation can bring biodiversity, ecological as well as economic benefits to the community as well as the country.

NEED FOR ADAPTATION

Some authors have presented evidence of how local communities can adapt to climate change, and how development support can help them in the process. Apart from REDD benefits, there is also a need to explore ways to adaptation. Nightingale views adaptation as a political process, involving power and knowledge. For her, micro-climatic variations are important beyond the grand models produced from the data in the north. She argues that we need to take account of how social and ecological systems co-emerge, and understand adaptation as a contested, negotiated and power-laden process. Regmi *et al*. suggest that a wide array of agro-biodiversity management strategies can potentially offer options and opportunities for farmers to cope with the adverse impact of climate change if adaptation is incorporated into development planning and action.

Overall, this special Issue of climate change and forestry provides a comprehensive review of current knowledge and an assessment of future possibilities, as well as a number of steps to be undertaken before REDD can benefit Nepal and its communities protecting forests.