

BIODIVERSITY IN COMMUNITY FORESTRY – PERCEPTIONS AND ATTITUDES IN NEPAL

Uma Acharya, R. John Petheram and Rowan Reid

ABSTRACT

International and national development programs in Nepal place high priority on the management of forests for biodiversity. Further, communities are expected to embrace and cooperate in this endeavour for biodiversity conservation. Yet very little research has been done to understand community viewpoints on biodiversity conservation, or even to ascertain people's understanding of the concept of biodiversity. In this paper we explore perceptions and concepts related to biodiversity and its conservation held by people involved in community forestry in Nepal. Our data came from in-depth individual interviews and focus group discussions carried out in two contrasting geographical districts.

The results show that the term biodiversity, brought from the western world, is new and confusing to most forest people, who interpret jaiwik bibidhata in a variety of ways. People's perceptions of biodiversity vary widely and a considerable gap exists between policy-makers and forest users in understanding and interpretation of the Nepalese term for biodiversity and its related concepts. While there are several related concepts in Nepalese language and rural culture, these are inconsistent among users and therefore of uncertain relevance. These findings have important implications in the design and implementation of development programs and in formulation of forest policy in Nepal.

INTRODUCTION

The forest provides 81% of total fuel and more than 50% of fodder for livestock in Nepal. But the country lost 14% of forest between 1978 and 1988. Forest now covers 29% of Nepal's total area, 8% less than in 1988 (Poudel, 2003). Community forestry has been adopted as a main approach to manage the vast national forest resource (Shrestha 1996; Shrestha 2000). There are 12,700 community forestry user groups, which include 1.4 million households (40% of rural Nepali households) and a total of seven million people (Poudel, 2003). The community forestry (CF) program is more prominent in the Mid-hills of Nepal, and there are only 301 users groups in the Tarai (lowland plains below 600 meters in altitude). The process of hand-over of forest to communities in the Tarai has been slow compared to that in the hills, because the Tarai forests are rich in high value timbers, and government has been reluctant to hand over these resources.

The forest is the main source of biodiversity in Nepal, and provides habitat for thousands of indigenous and rare species that are not well conserved. Since Nepal signed the Earth Summit 'Convention on Biological Diversity' (CBD) in 1992, government and non-governmental organisations in Nepal have formally initiated several programs in the area of biodiversity conservation.

Government and development agency policy documents highlight participation of people as one of the prerequisites for biodiversity conservation, but low levels of awareness and passive participation of people are often mentioned as major threats to achieving this aim (HMG/MoFSC, 2002). Consideration as to why people are not participating actively in conserving forest biodiversity has been little explored.

DEFINITIONS

Biodiversity has been defined in many ways. For example Wilcox (cited in Wake, 1989) sees biodiversity as a science that deals with the variety of life and living organisms. The Convention on Biological Diversity (Secretariat of the Convention on Biological Diversity 2002) defines biodiversity as the variability among living organisms from all sources, including diversity within species, between species, and of ecosystems (Rio de Janeiro, 1992, Article 2).

Planners and policy makers and other stakeholders involved in the forestry sector each tend to have their own definitions and interpretations of biodiversity, which might differ among agencies, and also from the interpretations of the forest users. It would appear to be very important to conduct research to help clarify community perceptions of these terms and concepts, so that agencies and professionals associated with this field clearly understand the community viewpoints.

Patel (1999) states that knowledge of societal views is important to enable government policy to be better tailored to accommodate the needs of communities, and so that programs can be developed that are in tune with the peoples' needs rather than those of outside agencies. As poor and disadvantaged people often suffer most from impractical policies and improper implementation of development programs and projects, research will be needed for the formulation of equitable policies that cater for the special needs of such people.

The overall aim of this study is to document the perceptions and understandings of biodiversity conservation held by people involved in community forestry in Nepal. The more specific objectives are to: understand the views of members of Community Forest Users Groups (CFUGs) on biodiversity and related concepts, and explore the main socio-economic factors affecting people's perceptions of biodiversity conservation.

METHOD

The study on which this paper is based was conducted in Kavrepalanchowk (Kavre) and Chitawan districts of Nepal. Kavre is 1400-1600 meters above sea level and 50% of the district is covered by forest, of which 25% has been handed over to community forest. Kavre was the first district where community forestry was implemented. Chitawan is a Tarai district located to the west of Kathmandu at an altitude of about 200 meters above sea level. Most of the forest is government-owned and few areas of forest have been handed over to communities for management. The study took place in four CFUGs in the Mid Hills district and in four in the Tarai district. Most of the CFUGs selected for the study were handed over to users between 7-11 years ago.

In: Baumgartner, David M.; ed. Proceedings of Human Dimensions of Family, Farm, and Community Forestry International Symposium, March 29 – April 1, 2004. Washington State University, Pullman, WA, USA. Washington State University Extension MISC0526. ISBN Number 0-9721994-5-4

Criteria such as accessibility, security, cooperation from authorities, availability of well matured CFUG (community managed for a minimum of 3-4 years) were used to select the study districts.

A qualitative approach was used to study the perceptions and views of FUG members about biodiversity. Qualitative researchers try to make sense of the meanings that people bring to words or events, rather than imposing preconceived ideas that researchers may already have. Patel (1999) states that qualitative methods are useful for understanding the attitudes and views of people and their perceptions and values towards the environment. A combination of tools from social sciences and participatory rural appraisal were used - particularly focus group discussions and individual interviews. In focus group discussions, 6-12 people were brought together in an environment that encouraged open expression of opinion on particular issues. Eight focus groups, four in each of Kavre and Chitawan, were organised.

Focus groups in both the districts comprised members from the Executive Committee of the selected CFUGs. The in-depth individual interviews were carried out to further explore the views and opinion arising from the focus groups. A total of 35 users were interviewed individually. The participants represented general users and EC members (both male and female) from different caste groups. In focus groups and individual interviews, indirect questions about community forest and its composition were asked initially, and the topic of biodiversity was introduced gradually.

Grounded theory was used to guide analysis of data. This approach is based on the systematic generation of theory from data (Glaser, 1978). The data collected (i.e. words) were transcribed (from audio-recorded tapes) into typed Nepali script, and later coded manually in English, i.e. emerging themes related to biodiversity and conservation were identified and documented within the page margins.

CFUGS MEMBERS

CFUGs are the community forest groups that traditionally used a particular patch of forest. Membership of CFUGs is on a household basis, i.e. all household heads are members. Each CFUG has a specified number of users who are dependent on that forest. Membership includes all households in the village but is not confined to the geographical boundaries of the village. People from all caste groups and genders are treated equally. Community forests are handed over to CFUGs after completion of certain procedures between the district forest office and the community. The CFUGs are run by an executive body decided at elections held every 3-4 years. The process is guided by legislation and a forest work plan is prepared, jointly with government staff.

RESULTS – SOME MAIN THEMES ON BIODIVERSITY

The results of research are presented here under some main themes that emerged from the interview data. The perceptions and views expressed by the users in relation to biodiversity were often inconsistent — as this was a new term to most of them. Most respondents expressed their views on biodiversity in relation to forest vegetation and tree species, although some included animals and other inhabitants in the concept that they revealed.

PERCEPTIONS OF USERS ABOUT BIODIVERSITY

Literally translated, the term jaiwik bibidhata means biological/life related (jaiwik) and different (bibidhata), but these two words are not normally used together in Nepali language. So, it is not surprising that many different interpretations are given to biodiversity by forest users.

Uncertainty about the meaning of 'biodiversity'

Even after the concept of biodiversity was introduced indirectly and carefully to interview respondents, it became apparent that the term jaiwik bibidhata meant different things to different people. Some could not give opinions on the term that were meaningful in relation to the commonly held sense of biodiversity, internationally. Many users had never heard of the term jaiwik bibidhata. In general, respondents did not feel confident in talking about biodiversity. However, there were certain common themes in the data, that are useful in understanding local interpretation, and these are outlined under subheadings below.

Biodiversity is natural or original

Biodiversity (jaiwik bibidhata) for many users implies the 'original' shape or form of forest. 'Original' for the users meant the form it had before people disturbed it. Undisturbed and uninterrupted forest was synonymous with biodiversity for these users, as it has its original structure and composition. Dharma, a user in a Mid-hills group said, biodiversity is 'keeping forest as it was in the beginning'.

Biodiversity as variety of species, aesthetics and co-existence

Some users associated biodiversity with their desire to have a variety of plant and animal species in their community forest. These users preferred to have 'different' species among the available plants. They were not able to give specific reasons for doing this, but they felt that having different types of plants gave them satisfaction. They said that if there are different types of living organisms in the forest, the forest becomes 'beautiful'. This perception was prevalent among the users from areas of tourist attractions. However, the enthusiasm for this concept was less than for the use-benefits that offered immediate rewards for the community (i.e. utilitarian values).

Biodiversity for a few users was 'co-existence' and 'togetherness' of different living creatures. This view was linked to religious philosophy, as they said that different things in the forest and in society live together because this universe is 'a house for everyone'.

Biodiversity is 'multifaceted' use

Respondents often perceived forest biodiversity as 'forest for different uses' or 'multifaceted use'. Examples of 'different' uses were: religious purpose, drinking water source, attraction for tourists and plantation of income-generating herbal and medicinal plants.

Biodiversity and conservation

Users often associated biodiversity with conservation. They sometimes used these two terms interchangeably. The users' answers implied that conservation and biodiversity can not stand in isolation: they thought that one can talk about biodiversity only after it is conserved.

Utility-based views about biodiversity

Attitudes of users to biodiversity conservation appeared to be shaped mainly by their perception of the benefits they believe they receive from it. For instance, water supply was a crucial problem in many villages – and therefore the focus of users was always on protection or improvement of water sources. One user said 'water supply is very important for us and we are achieving improved water supply from forest management. There is a major benefit for the community from the forest, if the water sources could be increased over time'. Where improved water supply was seen to be related to increased number of species, biodiversity was seen in a positive light.

Users' attitude and biodiversity

Community forestry has given various rights and responsibilities to the users that make them feel a sense of ownership of the forest. This change in attitude that came with community forestry has contributed towards conserving forest biodiversity. People have to rely on forest for their livelihood - for example for firewood, fodder, litter, water sources and timber. This has forced users to think about forest and follow the rules and regulations of the CFUG.

Because of their sense of ownership, users do not allow outsiders to encroach into their forest. The users felt proud when they heard good words about their forest from other people and the authorities. The sense of belonging generated a feeling of responsibility, which created an environment of care and safety. This environment is very important for the well-being of forest and therefore for conservation of biodiversity.

Hand-over of management responsibility transferred the ownership and authority to manage the forest to users. This gave the users a feeling that 'this is our forest' and 'we are responsible' for its safety. Illegal encroachment and exploitation of forest has almost come to an end. The forest has become dense and the social environment is more favourable for conserving biodiversity. The users started to feel for forest and they had emotions towards it. Krishna, a user from one of the Tarai FUG said 'many of us were involved in deforestation in the past, but now we have understood and are committed to conserve it'. It follows that such an attitude contributes to biodiversity conservation.

SOCIO-ECONOMIC FACTORS AFFECTING THE PERCEPTION OF BIODIVERSITY CONSERVATION

Various socio-economic factors influenced the perception of users about biodiversity conservation and their attitude towards it.

Knowledge-base and biodiversity

As most of Nepal's forests went through massive deforestation until few years ago, many valuable species might have been lost during that period. It was observed that forest is well looked after through community management and many species are re-appearing, although some of these are harvested. However, people have lost the knowledge of some species, and few people can recognize all species. Community members had a wealth of knowledge about their preferred plants, but plants that are not used in any way were of little interest to most users. In these circumstances some users are looking for knowledge from outside on identification of the available species and their values, so that they can take care of them during the management process.

Some users were ignorant of some of the plant species present in their forest, either because they had never used these or they had poor knowledge about the benefits of those species. This lack of knowledge was admitted by people across the CFUGs and may be a significant factor in causing loss of biodiversity in some community forests. For example, users were unaware of the economic value of a herb called Dhasingare (*Gaultheria fragrantissima*) until the forest professionals and experts from outside made them aware of this plant. CFUGs expected forest officials and development workers to play a role in bringing this new knowledge on biological diversity to the users.

An indigenous caste group called Chaudhary was considered to be knowledgeable and skilful in dealing with herbs and traditional medicine in the villages in past times when modern medical facilities were not easily available. However, these

groups feared that they no longer had the traditional knowledge possessed by their ancestors about the forest. Since their business had declined, it seems that they were also losing the skills that they had inherited.

People with frequent interaction with outsiders and high level of exposure to forestry and 'biodiversity professionals' had heard of the term *jaiwik bibidhata* and were able to reflect on its meaning for them. Such members of the community were able to analyse the activities of the committee in relation to harming or improving biodiversity in their forests. One CFUG member with high exposure to forest issues said that 'biodiversity is to keep things intact and find out when that particular product is required'.

Perception by poor and disadvantaged people

A small number of respondents were from a disadvantaged socio-economic caste group. These users were little concerned about forest growth or biodiversity. This was because they did not perceive biodiversity to bring any immediate benefit to them. Most people from this category either worked as day labourers or carried on with their traditional skills, such as tailoring and blacksmithing. They expressed much less interest in understanding biodiversity or conservation than other users.

As in the case of the disadvantaged caste group, many women might have different perceptions and behaviour towards biodiversity conservation compared to more affluent people. Women spent less time than men exploring and discussing forest related issues, even though they are main users of forest, because they are so busy with their household activities and do not have as much exposure to outside views as men users. Users who perceived themselves as poor, felt it was excusable to be indifferent to biodiversity and conservation.

DISCUSSION AND CONCLUSIONS

As forest is vital to the livelihood of forest users in both the Tarai and in the Mid-hills region it is very important for policy makers and development agencies to understand the social aspects affecting environmental issues and the conservation of forest biodiversity (Baral & Subedi, 2002; Patel 1999).

The intention in this study was to explore the perceptions of forest users in two districts (and eight CFUGs) in relation to biodiversity conservation. The findings may help policy makers, development workers and forestry professionals to better understand the viewpoints of forest users, and hence to plan policies related to biodiversity that have potential for local acceptance. The qualitative, case study approach used in this research did not attempt to provide results that are applicable to all forest communities and management across Nepal - but rather to explore perceptions and concepts that could help to understand the social and cultural aspects of biodiversity in community forestry.

The most striking feature of the results of this study on biodiversity in two districts in Nepal, was the wide range of positions, opinions and perceptions expressed by villagers involved in management and use of community forest. The Nepali term for biodiversity - *jaiwik bibidhata* - was totally new and unknown to many forest users, who were therefore not in a position to offer useful opinion on its meaning. Other villagers (especially the most disadvantaged groups) may have heard of the term but were not inclined to discuss its meaning - because this seemed to have no relevance to their very utilitarian needs and views on their forest. On the other extreme, some forest users (usually those in contact with biodiversity specialists or other

outsiders) had apparently thought quite seriously about the term jaiwik bibidhata and could relate biodiversity to concepts that had meaning to them and their community forest. Some of these concepts were quite close to the common western definitions of biodiversity conservation. The range of views encountered about biodiversity amongst CFUG members across the two districts is broadly depicted in Figure 1.

It is clear from the perceptions depicted in Figure 1 that there is wide variation and serious level of confusion about biodiversity amongst people managing and using community forests in Nepal. It also seems that—while some of the concepts and meanings attached to biodiversity are likely to enhance efforts towards promoting conservation of biodiversity—other meanings may work against BD conservation. The most commonly encountered views were confusion or unfamiliarity with the term biodiversity, but ‘multi-faceted use’ was also a very common association.

This paper is derived from a larger study in which the views of government, non-government and foreign development professionals were also canvassed on biodiversity. Information gathered to date suggests that forest policies of development agencies largely adopt western definitions of biodiversity, and have largely ignored the local meanings and concepts that are attached to the term by forest users. While many development agents are aware of differences between villagers’ and official interpretations of biodiversity, there is little evidence of any concerted effort to overcome the obvious blockages and constraints that these differences are causing in the promotion of biodiversity conservation. For example, biodiversity was not mentioned in any of the community forest operational management plans in the CFUGs studied.

The silvicultural activities carried out by the users are mostly based on the knowledge and skills of local people rather than scientific justifications (Ojha, 2002). It appears to be important to include biodiversity conservation and issues related to this, in the regular meeting of CFUGs so that they could be gradually integrated in forest management plans.

Misunderstanding and misinterpretation of peoples’ perception related to biodiversity can be frustrating for all stakeholders in forest management. Policy makers and development workers in the field of community forestry should understand that CFUGs can not be expected to be worried about biodiversity conservation during the first few years (6-10 years) of forest hand over, because people focus on immediate benefits from the forest and its management in the initial years. Although some executive committee members were interested in finding out more about diversity and about the unusual species and possible benefits of conserving them their forests, there was often little opportunity for them to do so.

Despite the above statements, community forestry appears to have played a very positive role in biodiversity conservation. The users tend to conserve the forest for the first few years by banning harvesting and collecting forest products, enforcing the rules and regulations and creating a social environment in the village. All these have apparently contributed to conservation of biodiversity without users being very aware or conscious that they were promoting forest biodiversity.

If the forest development professionals are to make any headway in promoting or achieving conservation and enhancement of biodiversity in Nepalese forests there seems to be an urgent need to (1) undertake research on peoples’ current views on forests and biodiversity, (2) provide awareness programs to explain the possible benefits of high biodiversity in their forests, (3) provide training in concepts of biology and ecology, especially concepts of inter-dependence of species in forest ecosystems, (4) participatory programs in which scientists and villagers can explore existing species diversity as well as the potential for other species and forms of forest that will enhance both biodiversity and community benefits in particular forests (5) include strategies for biodiversity conservation in community forest operational plans, and (6) provide training in all the above aspects for forestry professionals—especially in relation to participatory planning on biodiversity issues.

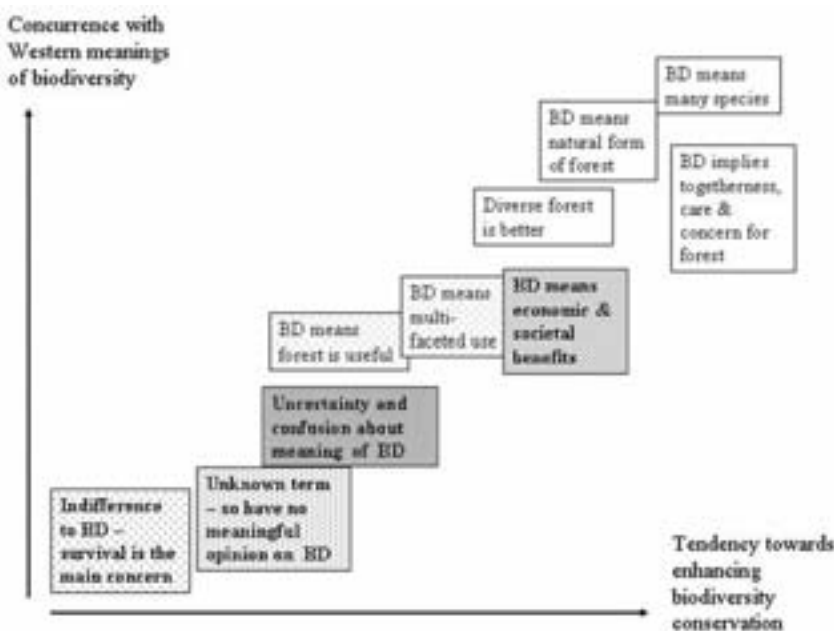


Figure 1. A range of views on biodiversity (BD) encountered amongst forest user groups in two districts in Nepal, arranged on two axes related to western views of biodiversity and its conservation. Darker shading indicates a more common view. The boxes with white background show the least common views encountered.

The study, as it progresses, is gathering information on socio-economic and other factors that seem to influence the understanding and associations held by people in relation to biodiversity. The main factors are the obvious ones, such as of exposure to outsiders—who impart their own definitions and perceptions of biodiversity to community members. Another influence is the level of knowledge about biological species and their uses: those who have appreciation of species names and possible uses seem to be inclined towards accepting western concepts of biodiversity and its conservation. On the other hand, those who are very disadvantaged in society and have no contact with outsiders often have the least knowledge of species (apart from those they use) and hence the least interest in biodiversity or activities that might conserve or improve it. This last group is also the one most opposed to increasing the diversity of wild animals, which might harm their meagre crops and livestock enterprises.

REFERENCES

- Acharya, K.P. (2003), Conserving Biodiversity and Improving Livelihoods: The Case of Community Forestry in Nepal, in Center for International Forestry Research, International Conference on Rural Livelihood, Forests and Biodiversity, 19-23 May, 2003. Bonn, Germany, Center for International Forestry Research.
- Baral, J.C. and Subedi, B.R. 2002, Is Community Forestry of Nepal's Tarai in Right Direction, (online), available: <http://www.nepalnet.org.np/forestry/terai.htm> (11.09.2003).
- Glaser, B.G. 1978, Theoretical Sensitivity, Sociology Press, Mill Valley, CA, USA.
- HMG/MoFSC. 2002, In Nepal Biodiversity Strategy, government strategy paper, His Majesty's Government of Nepal/Ministry of Forest and Soil Conservation, Kathmandu, pp117.
- Ojha, H.R. 2002, Silviculture in Community Forestry: Conceptual and Practical Issues Emerging from the Middle Hills of Nepal, (online), available: <http://www.nepalnet.org.np/forestry/silvicul.htm> (11.09.2003).
- Patel, A., Rapport, J. D., Vanderlinden, L. and Eyles, J. 1999, 'Forests and Societal Values: Comparing Scientific and Public Perception of Forest Health', The Environmentalist, vol 19, no. 3, pp.239-249.
- Poudel, K. 2003, 'Community Forestry-Uncertain Future' in Spotlight, vol. 23, no. 10, 29.08.2003, pp1-6.
- Secretariat of the Convention on Biological Diversity. 2002, Sustaining Life on Earth - How the Convention on Biological Diversity Promotes Nature and Human Well-Being, (online), available: <http://www.biodiv.org/doc/publications/guide.asp> (27.08.2002).
- Shrestha, K.B. 1996, Nepal Madhyasthata Samuha - Community Forestry in Nepal- an Overview of Conflicts, (online), available: <http://www.panasia.org.sg/nepalnet/ici/mod/MNR96-2.htm#country> (8.07.2002).
- Shrestha, N.K. 2000, Community Forestry in Nepal: Recent Challenges, (online), available: http://www.recoftc.org/pubs_apcf.html#13.1 (9.01.2002).
- Wake, D.B. 1989, 'Biodiversity, Book Review', Science, vol 243, no. 4890, p.553.

AUTHORS

Uma Acharya
Ph.D. Candidate
Institute of Land and Food Resources
The University of Melbourne
Parkville, Victoria 3010, Australia
Phone: +61 3 8344 8356; Fax:+61 3 8344 4665
u.acharya@pgrad.unimelb.edu.au

R. John Petheram (Dr.)
Senior Lecturer, People in Resource Management Institute of Land and Food Resources
The University of Melbourne
Creswick Victoria 3363, Australia
Phone: +61 3 5321 4150;
Fax:+61 3 5321 4194
johneth@unimelb.edu.au

Rowan Reid
Lecturer, Agro-forestry programs
Institute of Land and Food Resources
The University of Melbourne
Parkville, Victoria 3010, Australia
Phone: +61 3 8344 5011;
Fax: +61 03 9349 4172
rfr@unimelb.edu.au