# Community forestry, ecosystem services and poverty alleviation: evidence from Nepal

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**Abstract**

It is now well accepted both in theory and practice that community control over forest has the potential to improve forest condition, while also enhancing livelihood benefits to the communities. However, this lesson is primarily in the context of subsistence livelihoods, and evidence related to whether and how community management can benefit from the emerging markets for diverse forest ecosystem services is still limited. Moreover, there is also a lack of theoretical consensus on whether increased marketing of ecosystem services can contribute to poverty alleviation. These two questions are particularly intriguing, as some studies claim that the access of the poor to natural resources is more secure in the subsistence-based resource management systems than when ecosystem services are promoted in the market.

Drawing from 14 case studies of community forestry in Nepal, complemented by review of grey literatures and analysis of secondary data, this paper brings new evidence to demonstrate how communities promote a variety of innovations, marking a shift away from the narrowly focussed, subsistence oriented management to more holistic management of forest ecosystem services. We also show that community forestry groups have adopted diverse management strategies to capitalise on ecosystem services such as those related to ecotourism and watershed conservation. We also demonstrate that increasing commercialization of such services helps to generate multiple benefits to the poor within the community. These innovations are catalysed by a wide range of factors including the transfer of tenure rights and autonomous institutional spaces for collective action as guaranteed by the prevailing forest law.

We further demonstrate that, in Nepal's case, such ecosystem services innovations have remained limited to most successfully functioning cases of community forestry, and not a common phenomenon. This is because such market-oriented management of ecosystem services is still not a priority of the government forest policy, which takes highly conservative stance towards such innovations. Analysis of the national forest regime indicates that forest policy and practice still nurture a narrowly conceived notion of forests that do not accommodate the holistic notion of forest ecosystem management that is emerging in some of the most innovative cases that we selected for the study. For this reason, the local innovations run the risk of increased policy restrictions at any time, given the fluid political contexts of the country.

**Keywords**: community forestry, ecosystem services, forests management, poverty, Nepal

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## 1. Introduction

It is now well accepted both in theory and practice that community control over forest has the potential to improve forest condition, while also enhancing livelihood benefits to the communities (Ojha *et al.* 2009). However, this lesson is primarily in the context of subsistence livelihoods, and evidence related to whether and how community management can benefit from the emerging markets for diverse forest ecosystem services is still limited. Moreover, there is also a lack of theoretical consensus on whether increased marketing of ecosystem services can contribute to poverty alleviation. These two questions are particularly intriguing, as some studies claim that the access of the poor to natural resources is more secure in the subsistence-based resource management systems than when ecosystem services are promoted in the market.

Local and community based forestry in Nepal has usually adopted the ecosystem based forest management. Numerous studies have shown the rich and diverse institutions of forest management where multiple ecosystem components and services used to be recognised, maintained and utilised (Gilmour and Fisher 1991; Meschermidt 1990). However, the nationalisation of forests in 1957 dismantled many local institutions and alienated local communities from their land and resource base. The centralised and bureaucratic management of resource dominated the forest management that followed.

The introduction of community-based forestry in the 1980s brought a new era in forest governance but did not bring much shift in the notion of forestry. An analysis of the policy documents reveals that the understanding of forestry based on the narrow conceptualisation of forest as the above ground biomass was continued even within community forestry. The Master Plan for the forest sector (HMG/N 1989), the Forest Act (HMG/N 1993) and Community forestry Guideline (MOFSC) all confirm this conceptualisation.

Drawing from 14 case studies of community forestry in Nepal, complemented by review of grey literature and analysis of secondary data, this paper brings new evidence to demonstrate how communities promote a variety of innovations, marking a shift away from the narrowly focussed, subsistence oriented management to more holistic management of forest based ecosystem services. We also show that community forestry groups have adopted diverse management strategies to capitalise on ecosystem services such as those related to ecotourism and watershed conservation. We also demonstrate that increasing commercialisation of such services helps to generate multiple benefits to the poor within the community. These innovations are catalysed by a wide range of factors including the transfer of tenure rights and autonomous institutional spaces for collective action as guaranteed by the prevailing forest law.

The paper is structured in six sections. The introduction section is followed by a brief overview of the emerging debate around forest and ecosystem services and associated governance issues. This section shows how a departure from the conventional notion of forest towards ecosystem services, and the implications of this shift on forest management approaches. In doing this, we identify gaps in current knowledge in relation to whether and how market oriented management of forest ecosystem services contribute to poverty alleviation. The third and fourth sections document the findings based on 14 case studies and demonstrate how

community groups across Nepal are generating diverse innovations in ecosystem management and poverty reduction. This is followed by a discussion on emerging and missing links between community forestry, ecosystem services and poverty outcomes. This section assesses the prospects of community forests (CF) in addressing poverty through ecosystem management. Finally, the paper concludes by highlighting the fact that if appropriate policy systems exists, market oriented use of ecosystem services by local communities have a potential to enhance both poverty reduction and forest conservation goals, albeit to a certain extent. We also reinforce the need to have clear and secure tenure transfer and persistent support to local forestry groups as the preferred ways to nurture and expand innovations in addressing poverty through forestry.

## 2. Emerging debate on ecosystem services and community management

Historically, the notion of 'forest' (in the form of 'foresta') was developed in Western Europe representing a special category of land that was largely managed for power, pleasure and rentals by the kings and novelties, often excluding the common people (Fay and Michon 2005). This notion of forest had little to do with nature or ecology and was used mainly to represent the symbolic and social relations of power specifically, the privilege of some and exclusion of others (Harrison 1992). The conceptualization of this narrow sense of forests and putting the large landscapes into legal category of forest suits the dominant political and economic interests of the state and ruling elite. Forest as a legal category then helped states to shape particular social relation to natural resources and people dependent on it. The legal conception of the forest, instituted as a particular domain that valued tree, above ground vegetation and biomass became an ideology that could neither respect the ecosystem integrity nor the socio-economic and cultural values of any society (Michon *et al.* 2007). The dominant definition of forest often considers agriculture and its associated activities and actors such as peasants and local communities as enemy (Westoby 1979). Consequently, forestry regulatory frameworks often imply high levels of state intervention usually to protect public environmental interests.

Enhancing public environmental interests is often translated to 'sustainability of forests' through forest policies and practice. However, the forest sustainability agenda is narrowly conceived as related to maintaining the forest stock, crown cover, biomass or biodiversity in widest sense. Forest authorities in tropical developing countries are generally less concerned with the wider economic and social dynamics and usually do not assume the responsibility of addressing poverty or supporting rural economies (Kennedy *et al.* 2001). Instead, forests and people (and their economic activities) are usually kept apart. Consequently, current management based on this narrow notion of sustainability of forests continues to result in conflicts where forestry activities are socially unacceptable, economically inefficient or environmentally unnecessary.

The concept of sustainability must expand from an ecosystem focus to incorporate local economic and socio-cultural systems (Bebbington 1997). Sustainability cannot be gained merely from managing forest ecosystem, rather we can ensure sustainability through supporting productive and viable local economy, maintaining ecological functions, and nurturing a democratic and fair society (CEQ 1993; Gunderson *et al.* 1995). Such a wider notion of sustainability is reflected in the mission statement of many national forest authorities, particularly in the industrialised countries. For example, the United States Forest Service mission states, 'help states and communities to wisely use the forests to promote rural

economic development and a quality rural environment' (USDA-FS 1994: 8.). Unfortunately, these wider economic and social interests are not yet reflected in the forest management policies and practices in Nepal.

Michon and colleagues (2007) through their long term research with farmers in Asia and Africa documented historically and geographically diverse 'domestic forestry' practices. Within this diversity, they however, noted some generic observations where forest and agriculture are closely integrated within the practice of land management and there is no conceptual or practical separation of production. They also noted that the diverse innovations in forest management are the result of thousands of communities operating outside the centralised forest agencies. The range of ecosystem services they conserve, manage and mobilise are closely linked with the diversity of these small forests and livelihood patterns of local inhabitants.

The relation between tenure security and forest management outcomes is well studied. A number of studies have shown that a clear, comprehensive and secure tenure often results in improved forest condition (Larson 2011; Chhatre and Agrawal 2008; Sunderline 2008). However, large body of literature demands a closer scrutiny on the relation between these two and emphasise that the transfer of tenure rights must meet certain specific conditions to generate positive conservation outcomes (Ostrom 2010; Coleman 2009; Casse and Milhoj 2011; Robinson *et al.* 2011). More grounded studies in Nepal have clearly established the positive link between secure tenure and regeneration of once denuded hill forest (Branney and Yadav 1998; Gautam *et al.* 2003; DoF 2005; Paudel *et al.* 2007;). However, the impacts of transferring tenure rights in managing ecosystem services are relatively less explored in literature.

## 3. From forests to ecosystem services: emerging innovations in Nepal's community forestry

Altogether 14 cases were selected purposively considering their innovations in ecosystem management and addressing poverty. Diversity in ecological regions, focus of particular ecosystem services and management regime were considered while selecting the cases. Cases come from the Mountains, Hills and Terai both outside and inside the protected area system have been taken into account. Most common but diverse ecosystem services were considered including timber, fodder and fuelwood, non-timber forest products (NTFPs), ecotourism, management of water bodies and wetlands, fishery, soil conservation and places of religious and aesthetic value. These cases were then coded as 1 to 14[3] and only their code numbers are used in this paper. The information was collected using content analysis of their forest management operational plans, interview with officials of the groups, review of previous studies on the groups and secondary information available from Department of Forest.

In-depth analysis of the case study of 14 community forest user groups (CFUGs) across Nepal reveals innovations in managing forest ecosystem and deriving a wide range of benefits to human wellbeing. Many of these innovations have gone beyond the conventional understanding of substance based community forestry and have shown models for ensuring sustainability in its wider sense and generating multiple benefits to human wellbeing.

[3] Kankali -1, Baghamra -2, Sundari -3, Andheri Chhahara -4, Chautari - 5, Jamunbari - 6, Jautar -7, Baisakheshowri -8, Ahaldanda -9, Pallopakha -10, Goldanda -11, Gijara -12, Kattike – 13, Tengnuwa -14.

Grass, fodder, leaf litter and fuelwood are the widely available and frequently used forest products in all the case studies. These products form essential components of Nepal's predominant agrarian economy where livestock, agriculture and forest management are intricately linked. Small farmers and peasants with small piece of land, practice subsistence farming and rely heavily on forests for grass and fodder to feed their livestock, collect leaf litter to use in their farm and collect fuelwood as the main source of energy for cooking and heating. All categories of rural people – rich and poor, all caste/ethnic groups, primarily the women collect these products. Though the availability of these products varies with the ecological zones and forest types, these are most commonly available in all forest areas and are being used by almost all members of the local forest user groups.

The CFUGs adopt modest management interventions in conserving and harvesting these products. The most common one is ban or limit grazing. This is accompanied by limiting the volume of collection and seasonal restriction, which applies to fodder but particularly to fuelwood and leaf litter. Collection of these products is allowed normally in winter season.

Timber is an important product available in all 14 cases that were studied. The quality of timber varies with the ecological zones. While in the hills, it is soft wood of diverse variety, whereas in the Terai, it is usually the strong hard wood of Sal (*Shorea robusta*) or Sissoo (*Dalbergia sisoo*), both being the choice for construction and furniture. The groups carry out thinning, pruning, singling, weeding, leaf litter collection and fire line construction as management tools for promoting timber. The timber is then either used internally by the group or sold in the market. Currently, timber is the largest source of income for groups among the cases under study. However, as there is no economic valuation of diverse NTFPs and other ecosystem services, it is hard to estimate relative significance of timber.

Diverse types of herbs, medicinal plants, fibres and other non-timber forest products are available in the forests of the cases that were studied. The availability of these products varies where some of the cases are really rich in some specific herbs or NTFPs. The variation on the altitude, climatic zone and topography has resulted in rich diversity of such products across the cases. Many groups are managing bamboo and broom grass, nursery plantation, protection, sustainable harvesting and small-scale enterprise. Since millennia, these products have been protected, managed and used by the local communities. Several herbs form the essential elements of local health care system though in some cases the groups have started to manage, harvest and sell these products commercially in the market.

Wetlands of diverse types including streams, lakes, swampy lands, small ponds, water springs are important forms of ecosystem services available in the studied cases. These water bodies are managed for different purposes - fishery, irrigation, drinking and swimming pool. For example, the Kankali community forest user gourp in Chitwan has constructed a fishpond and has leased it to the identified poor group of Musahar people for fishery. These are indigenous fishing community and are increasing experiencing threats to their livelihoods during decreasing availability and access to fishing. It has also constructed a swimming pool for visitors which secure a regular earning for the user group from tourism. Swampy lands provide several unique types of aquatic plants, wild vegetables, fishes and

other edible items usually collected by the indigenous people in the area.

**Table 1**: Innovations in ecosystem management in community forestry

| **Ecosystem component** | **No. of cases (out of 14)** | **Management interventions** | **Evidences** |
|---|---|---|---|
| Timber | 14 | Block based silviculture management; nursery and plantation; fire line improvement; cleaning, thinning, pruning, singling; harvesting of dead, decayed and drying tree. | Cash earning (Kankali NRs. (Nepalese Rupees) 5 million, Sundari NRs. 6 million); better off people have used best timber/furniture in their houses, timber for community buildings – school, Village Development Committee (VDC) offices. |
| Fuelwood/ fodder | 14 | Bamboo and broom grass plantation; allocation of land area for grass farming; grassland management (e.g. weeding, cleaning, and controlled fire); fire line construction | Fuelwood collection for cooking and heating; livestock feeding; construction materials, household uses, cash earning Pro-poor enterprise development (e.g. leaf plate from *Shorea robusta*); |
| Herbs/ medicine | 10 | Plantation of seedlings of medicinal plants like Asparagus, bamboo | Household use of herbal medicines, cash earning through sale. |
| Water bodies | 6 | Management of forest area for enhancing water bodies; construction of irrigation channel and tube wells; construction of water holes | Increased supply of water for irrigation and drinking; improved drinking water spots for wild animals |
| Wildlife | 3 | Habitat management; construction of water holes; wildlife risk centres and wildlife observation centres | Revenue generation through tourism (Baghmara NRs 8.78 million; Kankali NRs 1 million), employment to locals |
| Fishery | 3 | No such intervention accounted | Livelihood source for some groups like Musahars (totally depend on fishing for subsistence); source of income for the user groups; source of food |
| Soil conservation | 10 | Bamboo and grass plantation on erosion prone areas; spur of about 11,600 cubic meters constructed; ban on harvesting in erosion prone areas | Reduced erosion |
| Religious, scenic places | 3 | No such management intervention recorded | Source of income for the group (visitor fees); employment generation |

The cases also show a good presence of wildlife within the CF and are conserved and managed to attract visitors. Baghamra CF of Chitwan for instance, is an iconic case in Nepal, which has been portrayed as a model CF benefitting through ecotourism. Since the early 1990s, Baghmara CF began to manage wildlife habitat by improving grassland, controlling fire, constructing water holes, establishing wildlife rescue centre and wildlife observatory tower. The forest provides habitat to a wide range of wildlife including rhinos, tigers, deer that attract a huge number of tourists annually. It earned almost NRs nine million in the year 2011. To a lesser extent, nearby CF have also began to manage wildlife and have attracted visitors. There is a huge potential of expanding this enterprise to many of the CF along the protected area buffer zone especially in the Terai.

## 4. Diverse ways of linking ecosystem services with poverty

Analysis of the cases shows that the local forestry groups have developed diverse ways to link ecosystem management with poverty outcomes. There are surprisingly interesting innovations in translating the natural capital into physical, financial and other forms of capital assets. These innovations can be grouped into few patterns, which can help synthesise the observation and findings.

**Maximise collective income and invest in pro-poor activities:** This is the most commonly adopted strategy by the local forestry groups in addressing poverty through forest management. The local forestry groups have earned from sale of timber and other forest products, deposited the funds in their group bank accounts, developed their own annual plans and invested the funds in various pro-poor activities. These activities include: funding various pro-poor enterprises, providing educational support to children from poor families, emergency and accidental support and support during natural disasters among others. Community infrastructure is another important area where group revenue is being invested. These include construction of local road, trails, drinking water, school building, community halls and health posts. Though the government, especially the local governments are primarily responsible for these infrastructure and social services, they are usually underfunded and therefore cannot provide needed support to such project. Forest based revenue has compensated the cost in most of the areas where the forestry user groups have made good earning out of it.

**Land allocation to poor**: Collective action in common poor resources alone cannot explicitly support the poor. In many cases the benefit sharing is based on equality – that all the members invest in forest management equally and also receive equal benefits from it. However, this practice does not consider the historical differential interactions with nature, differential dependency on the forests and also unequal capacity to realise the benefit from forestry. With this realisation, many groups have introduced a land allocation to identified poor members of the group (2, 4, 7). These groups allocate certain forestlands to identified poor members and support them for productive land use within the regulatory framework. These people have cultivated bamboo, broom grass, fodder trees, or even high value cash crops. Similarly, in two cases (1, 2), the fish ponds are given to traditional fishermen who enjoy the benefit from fishery. The government has also experimented this idea through leasehold forestry (LHF) in which small patches of forest is leased to identified poor (usually 7-11) for a period of 40 years. The group can then grow fodder trees, broom grass, bamboo or other plants and benefit from that.

**Job creation through tourism and other forest-based enterprise:** In almost every case, we observed initiatives in generating income and employment for the poor through tourism and other forest based enterprise. The case of Baghmara (1) is the best case scenario in Nepal since 1996. A plethora of studies has highlighted this case. Increasingly there are more cases that demonstrate employment opportunities through tourism(1, 2, 6). Community based tourism is different from ordinary one, in that large chunk of benefit is retained in the community. The poor people are employed as guide, elephant *Mahutes* (one who controls and takes care of the elephants), tourism operation and development of related infrastructure.

Creation of jobs within forest-based enterprise is more common in local forest management. Jobs are created in regular forest management, thinning, pruning, fire line construction, timber harvesting, processing and transportation to depot. This

is equally common in other enterprises; Triphala making (3), Sal plate making (3, 6), broom grass cultivation (4, 6), planting medicinal plants (10 cases). Employing poor people in such CFUG managed collective enterprise is largely an accepted norm in local forestry groups. These are encouraged by the policy (eg. CF Guideline 2009) and are generally supported by the government, the Federation of Community Forest User Group Nepal (FECOFUN) and development agencies.

Table 2 Innovations in linking ecosystem services to poverty alleviation through community forestry

| Ways of linking ES to poverty | Number of cases | Evidences |
|---|---|---|
| Generating CFUG revenue and funding to pro-poor activities | All | • Interest free/low interest loan to poor households (HHs)(10 cases)<br>• Scholarship/school support to kids of the poor HH (9 cases)<br>• Construction of houses to the poor (2 cases)<br>• Employing poor in timber/NTFPs enterprises (1 case)<br>• Supporting the poor on health service (2 cases)<br>• Purchasing enterprise share for the poor HHs (1 case) |
| Land/resource allocation to poor | 5 cases | • Part of the community forest land allocated to the identified poor HHs (3 cases)<br>• Allocation of fish pond to indigenous fishermen (2 cases) |
| Income and job creation through tourism | 5 cases | • Income picnic spots/swimming pools, zoo (5 cases)<br>• Income from visitors (3 cases)<br>• Income from wildlife observation e.g., from view tower, elephant riding, jungle safari (3 cases ) |
| Income and job creation through forest based enterprise | All | • Timber extraction (all)<br>• NTFPs collection/processing/sale (6 cases)<br>• Trifala production /sale (1 case)<br>• Leaf plate production (1 case)<br>• Fishery (1 case); Rubber collection/processing (1 case)<br>• Shareholding in forest based enterprises (2 cases)<br>• Lapsi (Choerospondias axillaris) collection/processing (11 cases)<br>• Handmade paper (13 cases); Broom grass (1 case) |
| Increase access to resources of the poor by providing membership in free of cost | 6 cases | • Free/reduced membership fee for poor HHs (6 cases)<br>• Relief to wildlife victims (1 case)<br>• Distribute forest product free of cost to disaster victims (2 cases) |
| Differential pricing system of forest products favouring the poor | 9 cases | • Indigenous communities have fishing rights (1 case)<br>• Reduced price of forest products for the poor (7 cases)<br>• Support to disable members (1 case)<br>• Free timber/other forest products for certain number of poor HHs each year (3 cases) |
| Creating rules for easing access to basic forest products – grass, fodder, fuelwood | All | • Free of cost collection of grass/fodder/leaf litter/dried branches throughout the year (all)<br>• NTFPs collection permitted (6 case) |
| Conserve ES that maintains and enhances productivity of land | 6 cases | • Management of stream for fishery (1 case)<br>• Bamboo/broom grass plantation (1 case)<br>• NTFPs research plots (3 cases)<br>• Nursery establishment and plantation of timber/non-timber forest species (6 cases)<br>• Construction of spurs (3 cases) |

**Free membership**: While the membership to any local forestry group is based on residency, and all local residents are legitimate candidate to it, there are problems in practice. In fact, one of the criticisms of community forestry is that it has not

been adequately inclusive as many households, especially the poor and marginalised sections of the group have been excluded from membership. One of the reasons for this exclusion is the high cost of membership. However, these days, due largely to the networking effect through FECOFUN and also support from development agencies, many groups have began to provide membership to poor free of cost (3, 5, 8). This has ensured their access to critical forest products to support farming, energy, construction materials and medicine.

**Differential pricing favouring the poor**: CFUGs in Nepal have an established norm of conducting a well-being ranking through which poor households are identified. The well-being ranking is then linked with CF benefit distribution schemes. One of the important aspects that many CFUGs have now introduced is the differential pricing of timber and other forest products favouring the poor through which they pay less for the same quality of timber than the standard price set by the group. For example, in Sundari CFUG, the poor get Sal timber @ NRs. 225/cft while the better off members pay NRs. 325/cft. Several groups have set such differential pricing for forest products (2, 3, 5).

Maintaining a differential price favouring the poor based on well-being ranking is one of the explicit mechanisms by which CF benefits the poor. Initially there was some resistance from within the group to introduce such rule. The argument for status quo was that the forests are collective property and if members equally invest their time, effort and sacrifice to protect it, why not to expect equal benefits out of it. However, the international and national discourses of equity forced policy documents and CF actors to respect and support equitable arrangements. The policy and programmes favoured the idea and forcefully induced such decisions by the CFUG governance system.

**Ensure access of the poor to basic forest resources:** Analysis of the cases show that most of the groups generally created rules that ease access to many basic forest resources – grass, fodder, leaf litter, wild fruit and vegetables and herbs. Fuelwood collection is generally allowed throughout the year though some restrictions are in place where its availability is scarce. Timber is highly restricted and wildlife hunting is prohibited by the law. As most of the poor rely on the marginal components of forest ecosystem, the current CFUG rules and decisions favour poor people's access to these components. Easy access to these basic forest resources can partly be attributed to locally informed decision by the CFUG. This would not be possible for government managed forests as collection of any of these items is illegal.

**Table 3:** Patterns of linking ecosystem services with poverty reduction

## 5. Enabling environment for these innovations

The emerging innovations in CF can be largely attributed to the decentralised governance system and the transfer of tenure rights to local autonomous institutions. The CFUGs and other local institutions are allowed to take forest management decisions on their own; they can set their priorities on forest management, identify the potential opportunity and respond to both internal needs and external demands. Accordingly, they have developed their long term and annual plans and identified key strategies to achieve those plans. The emerging

market for diverse forest products and ecosystem services has also induced many of such innovations. For example, the tourism market in Chitwan has induced tourism oriented management in Baghmara CF and Kankali CF. Similarly, the emerging market of herbal medicine has induced Sundari and few other CFs in investing on NTFP enterprise. Part of the innovations can be attributed to the charismatic leadership, particularly their ability to learn and adopt form their involvement in wider networking. Apart from planned exposure visits and educational tours, the networking has increased leaders' exposure to diverse local initiatives and increased their enthusiasm and confidence (see Banjade 2013 for details of forestry innovations in CF.

Unfortunately, current policy, regulations and institutional framework are not very supportive to such innovations towards benefitting from ecosystem services. The analysis of the forest policy discourse and the government decisions made in the last six years (since 2006) clearly shows an exclusive focus on timber, few NTFPs or mining (Table 3). As shown Table 3, almost all policy decisions are solely focused on conservation and management of the forest biomass and there is little reference of the diverse components of forest ecosystem. The policy decisions are aimed at ensuring protection of trees, over ground vegetation and other biomass. The concerns are clearly on tree, forest products or sustainability in a narrow sense.

Table 4: Major policy decisions on community forest management in recent years

| **Dates** | **Key decisions that have direct implications to CF** |
|---|---|
| Dec 2009 | Declaration of three new protected areas through the meeting of the Council of Ministers held at Everest base camp |
| July 2010 | Implemented President Chure Conservation Programme that restricted annual tree harvesting |
| July 2010 | Forest Act (1993) amendment proposal |
| July 2010 | Ban on tree felling in two consecutive years - 2010 (to curb illegal logging) and in 2011 (International Year of the Forests). |
| June 2011 | New pricing system for timber |
| July 2011 | Declaration of half a dozen of protected forests |

Several CFUGs are protecting and managing sources of water. Many of them have sold the water and entered into some sort of understanding on water based transactions with municipalities, private firms or other entities. However, these dealing have no policy and legal foundation. The Forest Act 1973 and its subsidiary regulatory instruments do not provide any clear guideline on the ownership, transaction and benefit sharing arrangement of water sources that are within the CF boundaries. It is not that the notion of ecosystem services is completely lacking in forest policy debate. For example, the last Interim plan (2010-2013) has a strong element of ecosystem services, which reads, 'Contribute to the national economy by enhancing ecosystem services though scientific, inclusive and participatory forest management and PES'. However, the provision in the interim plan is reflected nowhere in any government policy documents and this has never been translated into any legal/regulatory instrument. Moreover, the emphasis on ecosystem services was hardly spotted and discussed in any public forums on forest policy debate.

Community Forestry Inventory Guideline 2061 gives details of forest inventory. The Guideline considers the number of seedlings and saplings per unit area of

forestland; measures the diameter and height of trees and then identifies the particular forest as: good, fair or poor (MoFSC, 2000:50). For example, a forest with numerous seedling and large amount of timber turns out to be a good forest and that with few seedlings/sapling and trees may prove fair or poor even though it might have good grass and wildlife. When we carried out inventory in one of the buffer zone CF, it turned out that the forest was qualified as poor based on the existing Guideline. The CF leaders however, disagreed with the rating. The forest has rich grasslands and therefore provides a good habitat for herbivorous animals including rhino. The leaders challenged the Guidelines as they are earning over NRs 8 million annually for last several years by sustainably managing forests. If such forests are regarded as poor, where does the Guideline guide us?

The narrow conceptualisation and sole focus on forest has been reflected in the government's institutional framework in forest sector. There are over half a dozen of ministries and departments to manage the ecosystem in any watershed/landscape, for example, the ministry of agriculture, environment, water resource, land reform, forest. Again within the Ministry of Forest and Soil Conservation, there are five departments – forest, national parks and wildlife, soil conservation and plant. The forest is divided between the jurisdiction of the two departments - Department of Forest (DOF) and Department of National Park and Wildlife Conservation. These ministries and departments have their own narrowly conceived mandates and authorities. The community forest and most of the similar CBFM modalities operate under the DOF and are facilitated, administered, monitored by the foresters. The DOF situated under this highly compartmentalised and departmentalised institutional framework is bound to conceive forests through a very narrow lens and cannot recognise and internalise the holistic nature of ecosystem.

## 6. Prospects of scaling out of ecosystem management innovations through community forestry

Analysis of cases brought three important aspects of ecosystem management. First, community forestry has generated diverse innovation in ecosystem management. This is the reflection of how local communities in and around forest land value the complex and embedded nature of forest ecosystem and how they value and manage diverse ecosystem functions and services. If we had explored the forest-people interactions at individual level, we would have observed even more diversity of management and use patterns. Those documented in these cases are only part of the diverse ecosystem services that people interact with.

Second, the CFs have numerous practices on ways to link ecosystem services with poverty reduction. These ways depend upon the type of ecosystem services, the nature of the market and existing institutions. The pros and cons of each way can be examined. However, there appear primarily two broad approaches. One is collective management and individual distribution and another is individual management within collective governance. In both cases, some sense of carefully chosen combination of collective and individual management appear to be working effectively.

Third, another important area of analysis is what drives these innovations in managing multiple ecosystem services and adopting diverse ways of addressing poverty. As argued above, a multiple factors are at work. The tenure security, autonomy in management decisions and access to full benefits appears to be

playing an important role. The support from various external agencies especially during their initial formation phase appears to have helped a lot in establishing an enterprising culture among the members of the group.

Despite inspiring innovations at the grassroots in managing ecosystem, the national forestry regime appeared to be lagging behind in facilitating and supporting such innovations. The forest policies, regulatory instruments and forestry institutions are less flexible, limiting forestlands to forest or trees and could not embrace the evolving notion of ecosystem services. The policies and institutions have promoted trees, vegetation or above ground biomass as their domain. This could be due to the old schooling, inadequate exposure to wider perception of ecological functions and complexity of ecosystem. The techno-bureaucratic set up of the forest bureaucracy promotes rigidity and could not embrace the innovations in the forestry sector (Giri and Ojha 2011).

Networking, sharing and exchange with peer groups, external actor and some initial institutional support has induced local leadership in introducing and practicing those innovative practices. Though the actual volume of the support or its continuity is less significant, what is more important is whether these groups were engaged with external actors and practices. Therefore, increased cross-group sharing and learning provides a great inspiration for local leaders experiment or adapt new practices in forestry and natural resource management.

## 7. Conclusion

In this paper we analysed information from Nepal community forestry to understand a) when and under what conditions communities can resort to market oriented use of forest ecosystem services, and b) if such shifts can contribute to poverty alleviation. We conclude that increasing market value of ecosystem services has the potential to contribute to poverty reduction if communities are granted secure tenure rights over forests and also if there is an enabling environment for networking, innovation and learning among community groups. Using limited spaces provided by the forest policy and legal framework, local communities have identified, conserved and managed diverse ecosystem services and derived multiple benefits. The paper described how ecosystem specific management interventions have been proved appropriate in sustaining nature, deriving multiple ecosystem benefits and realising poverty reduction and enhancing human wellbeing.

The evidence presented here also demonstrates that national forest policy and institutions are yet to recognize such local level changes, much less create more enabling environment that help flourish such innovations across the community based forestry in Nepal.

We have also identified some gaps between community innovations in valuing the integrity of ecological functions and managing complex ecosystems to ensure sustainability and human wellbeing in its environmental, social and economic terms. The paper demonstrated the link between transfer of tenure rights, associated external support, community networking and good array of leadership in community forestry that induced these innovations. Strong tenure rights, relative autonomy to the local groups in decision making and good combination of external support in many cases has helped experiment and institutionalise innovations in CF. The networking through FECOFUN that has created a learning

environment through frequent interactions, and interface with range of forestry stakeholders provided exposure to outside world.

This finding suggests that policy actors must revisit their conservative stance with regard to the potential of community management and marketing of ecosystem services, and must recognise and encourage the holistic management of forest ecosystem for poverty reduction and ecological integrity. Despite innovations at the grassroots level, Nepal's forest policy, regulatory framework and institutional practice have not adequately appreciated the complexity of ecosystem. Instead, forest is conceived narrowly as tree and other above ground biomass. Similarly, sustainability is conceived purely on ecological basis so that the economic and social aspects are ignored. Consequently, the forest policy decisions are focused only on maintaining forest cover irrespective of its social and economic impacts. Even in ecological sense, the issues of hydrology, watershed conservation and soil conservation are not adequately valued.

More importantly, the forest policy institutions that are developed during the 1980s and early 1990s must be transformed to embrace the evolving notion of ecosystem services. How can the holistic and complex ecosystem be understood, valued and supported not only for subsistence use but also in enterprise context is important. In order to embrace these broader notions of forests, our forestry institutions must be restructured accordingly. The new forestry institutions must facilitate a more integrated and holistic management of forest lands that can focus and manage the ecosystem for multiple ecosystem services and funds.

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