Economies of forest governance in Nepal’s community forestry: A case study

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This paper focuses on economies of governance issue which has propped up with recent Nepal Government’s decision related with community forestry. Using Pearce and Warford model (1993), the impact on appropriation of community forests have been assessed. The findings include sustainability and economic aspects of forest governance and conclude that the decision infringe forest users’ right for fixing price of forest products generated from the community forests. The paper recommends proper institutional mechanism to regulate harvesting in community forests of Nepal. An important implication of the recommendation of this paper is improved livelihoods through augmentation of human, natural and physical capital.

Keywords: Community forestry, economics, governance, forest management, Nepal.

Governance is the way by which government executes its function in a prudent and judicious manner. Earlier, there used to prevail the concept of the welfare state which means the state should provide welfare to its people through a sound management of development and public services (Acharya, 2002). However, over-extended role of the states and the incapability of the institutions to perform due to excessive indulgence in power, corruption, absence of visionary leadership and inadequate reforms in principle of rule of law were not being realised. Later in 1990’s, a concept of participative governance emerged. It envisioned the increasing role of non-government sector including civil society and reduced the government’s role to regulatory function. However, the government intervention is still essential, especially to bring under-privileged and marginalised people in the main stream development. The degree of good governance can be measured by i) distribution of power, ii) allocation of resources, and iii) mechanism of solving differences.

In forestry, good governance has become a new Moto for forest administration and management in Nepal. It is about steering the system to deliver the much expected services to its clients, the people. The issue of governance has become so much obsessive that even the plan document of the government has started to incorporate a separate policy under this theme (National Planning Commission's Eighth, Ninth and Tenth Plans).

Forest governance in Nepal

Prior to the establishment of Department of Forest in 1942 with 3 circles and 12 forest check posts, forests of Nepal were protected under the code for forestry (Ghimire, 1998).

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National code had stopped the unauthorised cutting of trees. Most of inaccessible forests in the hills were controlled through informal institutions of villagers and locally hired forest watchers. Accessible forests in the Terai, government professional, until late 1940s foreign forest experts were used to regulate forest management preparing couple of forest management plans for revenue and settlement. Despite national codes to conserve forest resources, forests were cleared for settlement, revenue and agriculture purposes. Degradation of forest were also evident because of the increased shrub-land over the past survey records, besides growing need of forest products and political turmoil. Destruction, deterioration and fragmentation of forests became a public concern with calls for government established forest organisation, introduction of forest service and preparation of working plans with the assistance of foreign experts.

There was a gradual shift in development thinking from 1950s to 1970s that coincided with the emergence of community forestry. A shift from ‘Keynesian style’ development paradigm to a more rural oriented development approach paved way for community forestry. In the early 1950’s the role of forestry was to provide raw materials to the forest industries. This approach was based on a high “structural interdependence between forestry and the industrial sector of the economy” (Westoby, 1987). In 1970s, as already mentioned, there were shifts in the developmental thinking. This shift stemmed from the philosophy that the development should be achieved “based on rural income and output”. The importance was placed on achievements of equity, emphasising the distribution aspects of underlying growth. Also, people’s participation in the development process was stressed. In an address to the 8th World Forestry Congress, Westoby even took a major departure from previous stance, acknowledging; “the dreamed snowball-effect of forest industries on rural economies has not materialised” (Westoby, 1987). Westoby later acknowledges: “In the early...... concluded that forestry is about trees. But of course, this is quite wrong. Forestry is not about trees, it is about people. And it is about trees only in so far as trees can serve the needs of people.” (Leslie, 1987)

There has been significant shift in Nepal regarding forest governance with the emergence of community forestry. Greenery with its once famous term 'Shangri-La' is replenished in the hills of Nepal. The brink and pedantic forecast regarding forest disappearance in hills of Nepal becomes a myth. Nevertheless, that created a wide interest, among the donors and multilateral agencies, to assist in community forestry programmes in Nepal. However, a promising action came from villagers themselves. They shouldered a seemingly 'Herculean task' and now, even less than two decades, there is a miracle. This miracle, so called 'community forestry', is giving a lease to rural life in Nepal (Sharma, 2010a).

Community forestry programme in Nepal, which involves the governance and management of forest resources by communities in collaboration with the government and other stakeholders, was specifically formulated to address local livelihoods and abate environmental degradation through sustainable forest management. The programme is now a central component of Nepal’s national sustainable development strategy that is focused on poverty alleviation through development and efficient management of natural resources (Gautam, 2009). Thus, community is geared towards sustainable management
and poverty reduction and herald people’s participation in management of forest resources in Nepal.

Community forests have been availed by the government as a local resource to the local populace and it has opened avenue for further rural development. The response at local level has been quite encouraging; particularly people at their own initiatives have launched poverty reduction activities in their local communities. Economies of the community forestry will be materialised through the governance and enabling policy environment.

**Forest resource of Nepal**

Nepal extends 800 km east to west along the southern slope of the Himalaya. The country is landlocked, and is a narrow strip of land squeezed between two Asian giants: India and China. Nepal is divided into three ecological zones: the Terai/Inner Terai (100–300 m above sea level), the Middle Hills (300–3000 m a.s.l.) and the High Mountains (above 3000 m a.s.l). The Middle Hills, or Mahabharat Lekh, represent the region where Community forestry is widespread, however, the programme extends throughout the country. Most of the country’s forest lies in the Middle Hills. The Middle Hills also have the greatest ecosystem and species diversity (Sharma, 2010c).

Nepal’s forest resource constitutes 39.6 % of the total land area. The area of the forest is about 4.3 million hectares while shrub-land measures 1.6 million hectares. Except private ones, the government owns all types of the forest. More than one-third forests are being managed by local institutions under participatory forest management regimes. The remaining area is being managed under Protected Area (PA) management system and government managed forests. The PA management system accounts approximately 15 to 17 % of total forest area. In forestry sector, power and revenue sharing mechanism exist among the stakeholders with varied forms in government owned and protected area system. Moreover, the government holds almost all legal rights in rule making, imposing and revoking participatory practices. The forests together with agriculture and fishery contribute to 32.7 % of the GDP of the Nation (Sharma, 2010b).

The forest resource continues to decline at a rate of 1.3 % annually which is even higher in the case of the Hills and the Mountain. The annual rate of deforestation in the Hills between 1978/79 and 1994 stood at 2.3 % per annum while deforestation in the Terai for the comparable period remained 1.3 % (DFRS, 1999). The Terai region of the country experienced a sharp reduction in deforestation in the late 1990s (DoF, 2005).

Different studies carried out during different periods report different statistics regarding forest and shrub-land areas. The reports published by Forest Resource Survey Office (FRSO) and Land Resource Mapping Project (LRMP), carried out before ‘80s, have reported more than 6 million hectares of total forest area. The latest available report published by National Forestry Inventory (NFI) showed substantial increase in shrub-land areas which was substantially more than reported by the Master Plan for Forest Sector (MPFS) (Fig. 1). An assessment of
the forest inventory is at the offing with Finnish government’s support and the outcome of the survey certainly will reflect the impact of community forestry in the restoration of degraded forest areas in Nepal, especially in the hilly areas of the country. Nepal is one of the top ten countries in terms of deforestation of primary forests, which lost 9.1% of its primary forests between 2000 and 2005. Deforestation rate of Nepal between 1990 and 2005 was approximately 6.4 times more than the global average.

**Fig. 1: Forest land use change trend in Nepal (from the year 1964 to 1994)**

![Forest land use change trend in Nepal](image)

**Forestry distribution and management system**

The distribution of forests in three major physiographic regions is almost equal. As indicated in Figure 2, the regional per capita forest area varies widely from High Mountain to the lowland Terai which is less than half of the national average (0.27) including PA. Population density decreases with increasing altitude.

Similarly, challenge of forest management and biodiversity conservation apparently becomes high in the Terai and Hills as compared to the High Mountain. Therefore, the topography, accessibility, types and composition of forests and the people are considered as essential components for better management of forest resources.
Fig. 2: Distribution of Population and key land based resources in different physiographic regions (Budathoki, 2011)

![Distribution of Population and key land based resources in different physiographic regions](image)

Per capita forests area including PAs in the Terai (0.10 ha) is less than half of the national per capita (0.27 ha)

Table 1: Forest and shrub-land under different institutional regimes

<table>
<thead>
<tr>
<th>Forests category</th>
<th>Area (ha)</th>
<th>% coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Forests</td>
<td>19,56,000</td>
<td>23</td>
</tr>
<tr>
<td>Leasehold Forests(^1)</td>
<td>53,572</td>
<td>0.92</td>
</tr>
<tr>
<td>Government Managed Forest</td>
<td>28,17,843</td>
<td>58</td>
</tr>
<tr>
<td>Collaborative Forests</td>
<td>44,134</td>
<td>0.76</td>
</tr>
<tr>
<td>Protected Forests(^2)</td>
<td>71,129</td>
<td>1.22</td>
</tr>
<tr>
<td>National Parks and Protected Area</td>
<td>9,90,760(^3)</td>
<td>17</td>
</tr>
<tr>
<td>Religious Forests</td>
<td>575</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58,28,000</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Notes:

1. Leasehold forest also includes commercial forests besides land provided to the people below the line of poverty.
2. Areas of scientific and biodiversity importance and are gazetted by the government.
3. Estimated forest area under PA system (adopted from Kanel et al., 2009).

Master Plan for Forestry Sector (1988) together with revised Forestry Sector Policy and Forest Act 1993 classified government forest into seven main management categories as indicated in Table 1. The main basis for classification is to encourage local forest users including informal or formal institutions involved in forest resource conservation and private sector for curbing deforestation rate and degradation of forest resources, besides fulfilling people's forest product needs and international commitment on biodiversity...
conservation. Among these categories, community forestry is a successful and accepted modality to manage common forest resources, especially in Mountain and Hills of Nepal. Nepal has achieved exemplary success in participatory management of natural resource in the world. Management of nearly 1.956 million hectares of forests by 16,283 local forest user groups has helped recover the denuded Hills and ease supply of basic commodities required on daily basis1. Nearly 29.8 % of households in the Mountains, 34.9 % in Hills and 26 % in the Terai collect fuelwood from the community managed forest.

Collaborative forest management has recently been piloted in eight Terai districts to enhance participation of distant forest users and local government bodies which are still a contentious issue of community forest and collaborative mode of the management. Leasehold forestry is promoted by the Forest Act 1993 to improve livelihoods of poor people through management of degraded forest-lands and private sector involvement in forest development. The coverage of leasehold forestry is small (0.7% of the total forest area) and there is scant information available showing its effects on recovering forest condition. Expansion and promotion of private forestry (especially in the Terai) was a major component of the Master Plan 1988, but due to poor planning and implementation and an unfavourable investment climate and market, this has not been successful. Nepal government has recently promoted protected forests to conserve ecologically critical and significant biological corridors and connectivity with biodiversity hot-spots.

**Forests and economy**

The Forestry sector’s contribution to the national income has been in the declining trend reducing from 14.6 % in 1956–61 to 3.6 % in 1975–80. It has further decreased to 2.8 % in FY 2006/07 (CBS 2007 cited by Dangi et al, 2008). This is due to swelling off-farm economy and shrinking area of forests under government management as a result of expansion of participatory forest management.

Forestry sector contributes about 35 % of livestock nutrition, while nearly 80 % of residential energy is generated from wood, primarily coming from the forests (Ghimire, 1999). Besides providing basic forestry needs, the forest sector also provides 1.36 million full time jobs in fuelwood and fodder collection (CBS, 1999 cited by Budathoki, 2011). Well maintained forests are necessary for biodiversity conservation, fresh water and tourism, and hydro power development. An analysis of tourist visits in the protected areas shows that 94 % of trekkers go to three mountain PAs in Nepal. While more than 50 % tourists visit those areas. The watershed areas of all prominent rivers of Nepal are managed as protected areas. Forests also regulate fresh water supply in middle mountain areas2. The forests lying adjacent to the southern plain areas (Terai) are called Churia

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1 Which has benefited almost 1.515 million households comprising 42 % of the total households of the country.

2 Nearly 40 % of the water supply to Kathmandu comes from Shivapuri National Park lying adjacent to the valley.
forests which are absolutely vital for the survival of Terai economy and livelihood of people.

There is growing realisation at various levels of governance that protecting forests is the most cost effective approach to reduce the effect of climate change while if properly accounted forestry can contribute between 9.45% (goods only) and 27.55% (goods and services) of total GDP of Nepal (Budathoki, 2011).

Methodology

As stated earlier in the paper, this article is based on the theoretical analysis done by Pearce and Warford (1993) and attempts to generalize the framework used elsewhere in the context of community forestry governance. The whole argument is based on theoretical logic and needs to be verified with the field realities.

Discussion

According to Ostrom (1990), governance can be regarded as an overarching institutional arrangement, which regulate human behaviour, and ensure accountability and feedback. The nature of governance will influence policies, and the implementation of policies will have repercussions on operational activities. Since, policies are embedded in governance, and operational activities are embedded in the policy arenas, governance, policies and operational activities are interrelated. In a better governed forest management system, each of the levels provides feed back to one another and accountability and transparencies are ensured. This ultimately leads to better forest governance and hence healthy forest (cited by Kanel et al, 2009).

In community forestry, governance has remained as a viable public domain of democratic negotiations on forest rights and responsibilities between state, communities, non-government organizations and private sector (Pokharel and Niraula, 2004).

Forest Act 1993 and its regulation 1995 project governance as an important agenda providing policy and legal basis to devolve and share power of state with forest dependent rural communities. However the circulars issued at various levels of forest bureaucracy are often at logger head with the legal provisions, thus culminating into serious governance issues in community forestry. As such, many governance issues prop-up even in community forestry and some of them remain unaddressed.

Forest governance in community forestry of Nepal can be compared with Soccer, a popular game. In the game, the components are not only rule of game, players, umpire and field size but also the spectators. In general, governance principle refers to rule of game, participation, transparency, accountability, responsiveness, inclusion and equity, predictability, and consensus. In rule of game elements like coherent and enabling policy, legal framework and responsibility, and measures to curb abuse of power, etc. matter the

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3 Mainly agriculture and farming and Terai is regarded as the food basket of the country.
most. The major players in community forestry are FUG committee member and general members while the District Forest Officer and junior forest technicians have umpiring and lines-men role. The civil society organisations like Federation of Community Forestry Users, Nepal (FECOFUN), local Non-Governmental Organizations (NGOs), Village Development Committees (VDCs), local political bodies, and media have spectator’s role. The private sector acts as a sponsor for advertising, rewarding and stimulating the players.

As a referee, Nepal Government in April 2007 has made mandatory provisions of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) for managing and handing over community forests of size larger than 200 and 500 hectares respectively. The provision has been a contentious issue between government and FECOFUN. Sharma’s (2010c) study shows that the provision has unintended but desirable outcome in the distribution of community forests at national level. The governance fulfils the rule of games by adopting the principle of IEE, however, as players FUGs has manipulated threshold which was identified by District Forest Officer, Dang as field umpire and declined for approval.

The above example depicts two conspicuous weaknesses: i) stakeholders had not been consulted while promulgating the regulation and ii) the players (FUG) and spectators (civil society) manipulated the threshold to disobey the rule of game which has adverse effects specifically on resources and community in general. Ultimately the principle of governance has been dishonoured.

Forest governance should enable community and organisations to achieve the twined goals of sustainable management of forests, and improved livelihoods. In the following section, two aspects of community forestry governance: resource sustainability, and economics are discussed in light of recent (July 16, 2010) government decision (Box 1) which may have enduring effect in the governance system of community forestry.

**Box 1: Major decisions of Nepal Government dated July 16, 2010 related with governance issue in community forestry**

- Maximum limitation of per household forest area based on physiographic location
- Fixing of price of forest products for internal consumption on the basis of physiographic location, wealth ranking and royalty rate
- External sale of forest products through auction on the basis of existing market rate
- Deposition of 50% of royalty amount from the sale of timber in Forest Development Fund
- Involvement of District Forest Coordination Committee (DFCC) in monitoring the process (unofficial translation)
Sustainable management of community forests

A forest that is clear-felled and then used for permanent agriculture may not renew itself because of the soil erosion and nutrients depletion. Sustainable management allows forests to renew by itself and permits only the sustainable yield to be harnessed by the appropriators. If more than the sustainable yield is taken on a regular basis, the remaining forest stock has no chance to regenerate, resulting into over-use, which ultimately leads the forests to extinction.

Extinction of forests in the plain areas of Nepal was a destined possibility under prevailing circumstances, had there not been invention of community forestry in Nepal (Sharma, 2010b). However, community forestry in certain areas of Nepal are also being subjected to over-use for commercial interests, also termed as hidden economics (Iversen et al, 2006) The governance issue with community forests, then, is also the concern exhibited by Nepal Government to curb the rate at which the community forests were being used so that the forests are maintained well within the maximum sustainable yield (MSY).

Point A in the Figure 3 depicts a situation where adequate number of shelter wood is maintained to ensure natural regeneration of the forests. In case of Sal (Shorea robusta) forests in the Terai, it is a requirement of maintaining with minimum 25 viable mother trees per hectare in the stand which may vary with the species. If that requirement is violated then we reach at point C where the only alternative of regenerating the forest is either through plantation or other artificial means of regeneration which can be not only costly option but also risk failure. If the minimum requirement, as stated, at point A is maintained and favourable condition prevails, then the forest managers, mainly the forest user groups, can move to point B, where there will be sufficient regeneration of Sal trees often with a stocking of 8000 pole sized trees per hectare. At this point, the Sal tree may not be subjected to die-back problem and can be thought of being established. However, a point beyond B exacerbates competition for sunlight, moisture and nutrients and hence
demands proper silviculture treatments. Even if such treatments are provided, there would be a point, not specified in the above diagram where the yield is a maximum and the stand should be subjected to harvesting under different management options.

In the Figure 4, a point has been shown indicating maximum timber yield which may be quite attractive for forest managers. The point is possible only when the FUGs consider the forest as their own and employ maximum protection and proper tending operations. However, with lucrative profit making the forest contractors employed by the FUG may attempt to extract maximum amount of timber with scale of economy being the driving factor. The government’s regulatory role, and to some extent FUGs’ self-monitoring mechanism exert the pressure from opposite direction.

The Figure 4 is the marginal productivity of forests which if multiplied by the price will produce marginal revenue (MR) curve. The harvesting outcome under zero harvesting fee and other variables costs including monitoring would be at zero MR at effort at open access points ($E_{OA}$); it is so because contractors will try to collect available positive rent till there it completely dissipates which is behind $E_{OA}$ point. So how long the contractors will go shall depend upon the slope of cost curve and depend on the scale of economies.

One apparently obvious management solution is to choose the Maximum Sustainable Yield (MSY) which looks attractive because one can take the MSY in each period of felling cycle, leaving forest stock to regenerate in between. Such a strategy produces the highest yield. Even though many forest managers continue to look for MSY, it may not invariably be the optimal economic strategy. The following section will describe the model developed by Pearce and Warford (1993) to explain governance issues related to over harvesting in community forests and aforesaid government’s decision.
Economies of community forestry

Figure 5 repeats the earlier diagram but changes the horizontal axis to effort. Effort is a measure of the inputs—that needs to be applied to the community forests and can be measured in terms of man-days, and prevailing wage which is quite low as the logging is still regarded as an unskilled work. The vertical axis is in terms of revenue and costs. The general intuition is that higher levels of effort (in terms of man-days and wage) correspond to lower levels of forest stock and the lower levels of effort correspond to higher levels of forest stock. Thus forest stock decreases as we move along the effort axis. The point $E_{\text{max}}$ now corresponds to maximum effort and hence tends to deplete the forest stocks ($x_0$). We attempt to convert the yield curve to a total revenue curve by assuming that each cubic meter of timber harvested commands the same price in the market because Kathmandu is the main centre of timber business. Then, harvest, $H$, times price, $P$, is total revenue. The yield curve becomes a total revenue curve, $TR = P*H$. We can also superimpose a total cost curve by assuming that each unit of effort, $E$, commands the same price, $W$. Then $W*E$ is a total cost curve. Hence, two equilibria are of interest. First, though the government is the legitimate owner of the forest, the management committee of the FUG along with the District Forest Office takes the harvesting related decisions (actually the group prepares the operational plan of the forest and the DFO approves it). As the FUG is also legally entitled to act as an individual, the group will aim to maximise profits, and this will occur at $E_{\text{PROF}}$ where the difference between $TR$ and $TC$ is at a maximum. It should be noted that $E_{\text{PROF}}$ does not correspond to the point of maximum sustainable yield because theoretically speaking, the group first attempts to fulfil their own needs then only sells the excess amount of timber in the market. It would do this only if harvesting costs tend to be quite low. $E_{\text{PROF}}$ also looks fairly safe, at least for forest stocks because the plain areas of Nepal, where we are talking about governance issue, tends to have good regeneration of *Shorea robusta*. Thus the equilibrium is a long way from $E_{\text{max}}$, which suggests that vesting usufruct rights of a community forest in a group (though entitled legally to act as an individual) may well secure the conservation of that resource (which is rather undisputable in Nepal). This conclusion will have to be modified when time is more explicitly considered, but it does
not suggest the only way of securing resource conservation because other management regimes such as leasehold forestry, collaborative forest management, buffer zone, conservation areas are also well developed in Nepal.

Second, suppose that there is no collective regulation and that anyone and everyone with an axe, physical strength and skill of felling trees can come and get what they want. This might be the case where both the FUG committee and District Forest Office shy respective regulatory roles. Such a community forest can also be treated as a situation close to open-access regime: with virtual absence of regulatory mechanism and no rules for using the forest. In such a case any forest contractor who realises a profit by entering in the business does so. Accordingly, wherever TR is above TC, forest contractors come to harvest the forest resource. They stop only when TC exceeds TR, as it does to the right of $E_{oa}$ in Figure 5. Accordingly, $E_{oa}$ is the situation which resembles open-access equilibrium. Notice that $E_{oa}$ does not result in the extinction of the forest resource. Nonetheless, $E_{oa}$ is quite close to $E_{max}$. Essentially, the lower the cost of harvesting, the greater the chances of extinction appear to be.

The risk of extinction associated with open-access is sometimes referred to as the tragedy of commons (Hardin, 1968). There are arguments that Hardin’s notion do not apply in case of community forestry in Nepal (Gilmour, 1990) and also because $E_{oa}$ is equilibrium at which a sustainable yield is taken unless it exceeds MSY.

**Recent policy decisions**

Analysing the harvesting in community forest, we see that the harvesting costs are quite low often tending to be negligible because of the employment of unskilled labour in the activity. Nepal Government in order to curb tendency of over-harvest (though based on MSY) decided to regularise tree cutting in community forests with measures like minimum royalty price, 50 % of the royalty amount in Forestry Development Fund (FDF) in cases of commercial sale of timber. The decision was intended to control indiscriminate felling; however it faced stiff resistance from the FECOFUN.

We can make a statement regarding recent policy decisions based on the Figure 6. The decisions further shifts the cost curve to left due to the additional restrictions like IEE/EIA, area threshold, auction regulation etc will impose additional costs to the user groups directly and indirectly to the contractors. Such a shifting due to the policy implication may result into higher cost per unit of timber extracted.

If Figure 6 is used to explain the effect of government decisions, it can be observed that the decisions of increasing stumpage price will further increase the price of timber in Kathmandu and hence will not produce any desired effect, while the effect of depositing 50 % of royalty amount in Forestry Development Fund– remains unknown. It would have been more appropriate to shift the cost curve to $TCH$ with the measures like:

1. Employment of skilled manpower in tree-cutting

2. Provision of safety gears (helmets, gloves, vests, boots), improved tools (chain-saw) and insurance premium utilising present legislation

3. Provision of IEE/EIA in hand over and management of community forests of larger size.
The above measures would have definitely move \( TC_L \) to \( TC_H \) as depicted in Figure 6. Hence, there would have been a shifting of TC curve in Figure 6 with reduced harvest that may remain well within MSY.

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TCL = W \times T_H
\]

\[
TCH = W1 \times T_H
\]

**Conclusion and Recommendations**

Based on the reasoning advanced so far, it can be believed that:

- Although intuitively attractive, MSY is unlikely to be a rational management solution for community forests.
- Community management of forest should maximise profits, which, in turn, should lead to restriction on rates of exploitation and conservation of the resource provided that the uncertainty surrounding the usufruct rights be properly addressed.
- Decision in the part of government or right-holders of the community forests, without consultation and study on the consequences, may lead to the governance issues which may overly rapid exploitation of resources.
- Government, instead of regulating price for the user group, should opt for linking product price with the market with involvement of private sector (e.g., entrepreneurship development).
- Instead of opting for the stringent measures to infringe the legal rights of FUGs in fixing price, decisions related with market domain, by assuming role of other players, it will be more appropriate for the government to regulate FUGs with the recommendations suggested above (registration of forestry workers, skilled jobs, safety nets and insurance, etc.)

**Implications of recommended measures**

The findings of this study show the necessity to revise the present protection-oriented approach of forest management adopted by the FUGs towards a more need-based and
income-yielding forest management approach that can bring more equity. Subsistence oriented community forest policies adopted by the government has severely constrained management of community forests in absence of appropriate technology and insufficient government support mechanism (Gautam, 2009). Perhaps, due to this reason, FUGs have been blamed for hesitating towards active forest management (JTRC, 2001). Now, the alternative mechanisms of involving private sector in improving forest management is imperative to ensure sustainability and meeting the national goal of alleviating poverty from rural sector. The prescription of increasing cost of harvesting means increasing flow of money in rural economy that will eventually create employment and empower the community through enhanced skill. This may give two fold benefits to the community: enhanced skill, and equipped with safety gear that empower rural forestry labour. The skill of the forest labour and community member will be provided through different technical forest based institutes, and this mechanism needs to be regulated through licensing provision. However, this provision must not be a hurdle for entry of rural people in the forestry activities and should be a simple and single door mechanism. The transformation of good governance systems provides evidences of ecological sustainability of the resource and enhancement of the communities’ physical, social and human capital.

Strengthening human capital, linking poor households with community forest management, as recommended, will have the multiplier effects on village economy through the diversification of market opportunities (forest vocational training institutions, standard harvesting tools and techniques, forest based enterprises, especially rural based small industries). The development of small scale enterprises based on the existence of local resources, skills and markets could be a good option for poverty alleviation. It is believed that enterprise-oriented community forest management can generate positive outcomes for both conservation and local livelihood development, while small-scale wood processing enterprise development can be regarded as a high priority area for poverty alleviation (Acharya and Acharya, n.d.)

**Fig. 7: Conceptual Livelihoods Framework for Participatory Resource Management**
The frame-work indicates that the livelihoods of local people and the members of CFUG can be improved with sustainable management of community forests. The financial capital generated through diversified small forest enterprises create opportunity for employment and increased income. The increased supply of forest products with efficient harvesting minimises the loss, due to enhanced skill, improved equipments and safety gears that will ultimately avail materials to the diversified small forest enterprises. In addition, an increasing area of forests under sustainable management will ensure enduring supply of raw materials to the enterprises. As soon as managed forest area increases, vulnerability to natural disasters like forest fire, landslides, floods etc will be minimised. Even if such event accidentally happens, then the community will have enough physical capacity and financial capital to deal with such calamities. The financial capital will assist the communities to increase coping capacities at their own. This process will have horizontal effect on human and social capital. The local community and forestry workers of the community will be empowered through the accreditation of their skill by the vocational institutes and authorities which, not only gives job security but also imparts self-esteem. Such arrangements will create physical capital in the form of training institutes, employing agencies, forest harvesting company etc. Referring to the previous decisions of Nepal government, forest policies should create enabling environment through good governance. The proposed governance policy will help to empower local communities and increase their livelihoods assets.

The terms “improved livelihoods” and “poverty reduction” are both used as complementing each other in case of community forestry. In this paper, an attempt has been made to establish the relationship between increased harvesting costs and sustainability of resources, which does not simply coincide with the macro-economic theory of resource distribution. However, in case of community forestry, communities are the resource manager as well as beneficiaries of the earnings from resource operations. The increased costs of harvesting will not result into increase disparity but will definitely enhance cash transactions in rural economy. Nonetheless, government should refrain from infringing the legal rights of FUGs regarding marketing decisions. Marketing aspects of community forestry has been dealt peripherally focusing more on resource management. Perhaps, this should be the main reason of community forestry being debated particularly on resource misuse and corruption. Possibly, the provisions discussed in this paper will subside the issues with duly respecting the community rights pertaining to resource utilisation and management. The growing private sector and co-operatives should provide impetus for marketing and development of physical capitals of the FUGs in rural sector.

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4 Forest Act 1993 and Forest Regulation 1995 empower forest user groups “to develop, conserve and manage forest and sell or distribute the forest products by independently fixing the prices, as per the approved operational plan”. Forest Act 1993 Article 43.1 acknowledges the right of the forest user group as “the group can acquire, utilise, sell assets (both fixed and running capital) and manage otherwise”. It guarantees their ability to use forestry resource as mortgage to get loan from bank to carry out designated activities”. 

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