Potential Options for Economic and Financial Aspects of Forestry Sector

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Abstract

The economy of Nepal is predominantly characterized by a large rural sector where subsistence farming is main stay of household economy. There is a strong dependency on forest resources for basic need fulfillment and additional income opportunity. Forest decentralization and globalization of market economy has created tremendous opportunities for marketing of forest goods and services to local as well as international markets. Further, Nepal has comparative advantages for promoting ecotourism and exporting high value medicinal and aromatic plants through the adoption of sustainable forest management. The appropriate financial and economical policy reforms are required for capturing the opportunities. The paper reviews the contemporary economic and financial policy related to forest management and recommends potential policy options to improve SFM in Nepal.

The paper highlights the contribution of forestry sector in national economy and potential role in poverty reduction and livelihood improvement supported by the market analysis of forest based products. It discusses on the issue of promoting public-private partnership and scope for service charges. It further discusses on the prospect and potential of global market of medicinal and aromatic plants and emerging market of payment for the environmental services. The paper concludes that the economic opportunities in forestry could be achieved through strengthening forest products supply, increasing access to resource, strengthening market access and adopting local level value addition approaches.

Keywords: Nepal, Forest, Livelihoods, Economy, Sustainable Forest Management

Background

Nepal occupies 0.09 percent of earth surface but it provides home for 2.7 percent of flowering plants, 9.3 percent of birds and 4.5 percent mammals of the world's (HMG/MFSC, 2002). It is estimated that about twenty-nine percent of the total surface area is under forest cover which includes 35 different forest types (DFRS, 1999; Stainton, 1972). Compared to her small size, this country is honored for hosting a very rich floral and faunal diversity of global significance. Functional role of forests in rural villages includes producing basic household consumptive goods, factor of production, and basic life supporting services.

Out of total forest area, almost two-third forests are being managed as state managed forests and the remaining is managed by local institutions under participatory forest management regimes. Rural people believe that their right in resource is more secured if it is owned by them as a common property. Free riding is a common practice in government managed forests. There is a tremendous pressure in these forests for household consumption goods, raw material for forest based industries, cattle grazing, agriculture inputs and private incentives. Forest resource has significant contribution so

much in the rural economy, but its share in total GDP is under estimated due to exclusion of non-marketable goods and services in the current national accounting system. This has led problems in convincing decision makers to allocate adequate financial resources in forest development activities.

The economy of Nepal is predominantly characterized by a large rural sector where subsistence farming is mainstay of household economy. Therefore, there is a strong dependency of rural people on forest resources for basic need fulfillment and additional income opportunity. This sector contributes about 35 percent of the livestock nutrition (LSMP, 1993), 80 percent of cooking energy, (Ghimire, 1999), 1.36 million of full time jobs in fuel-wood and fodder collection (CBS, 1999). Positive externalities like soil and watershed conservation, bio-diversity conservation, aesthetic beauty, recreational services, Pollution control, carbon sequestration, stabilization of micro climate are major contributions of this sector.

The current forest cover in Nepal is inadequate compared to the adverse environmental conditions. The difficult topographic situation is considered as one of the challenges for development planners to choose from the available development options that maintain ecological integrity, economic feasibility, and social acceptance. The broad based economic growth through optimal use of renewable resources could be one of the potential policy options. Hydro-powers and forest resources are claimed to be the most potential sectors of national interest that contributes in poverty reduction. Economic growth and expansion in industry should go together for stable economy in the nation. However, the continuity of raw material supply may limit to industrial growth. Therefore, GoN should take policy measures to promote investment opportunities to promote forest based enterprises.

Wood industries require a very high amount of working capital; investors will not be motivated to invest in this sector unless they are assured of getting continued supply of raw materials in future. Delineation of certain forest areas as production potential zone a fo0r raw material supply could be a potential incentive for investors. However, certain forests may not be commercially viable due to socio-political reasons, economies of scale, difficult topography, poor access, and fragile ecosystem; such forests should be allocated for other management practices.

Low land forests are very much potential to produce valuable timber products. But Department of Forest (DoF) has failed to receive optimal return from these forests by implementing forest management. Consequently, both productivity and revenue collection are continuously falling. Last five years budget allocation trend reveals that GoN support in this sector is not enough. The majority of budget is spent in office management; a very small portion is spent in development activities. Due to inadequate budget support, DoF is unable to implement active forest management operations; that could have increased forest productivity in future. However, forestry sector role in poverty reduction has been widely acknowledged in state policies like Poverty Reduction Strategy, Tenth Five Years Plan and Agriculture Development Policy.

Realizing the role of medicinal plants to improve local and national economy Nepal has adopted various legal and policy instruments to develop this sub-sector. To contribute in a Poverty reduction target of Tenth Five-Year Plan, Ministry of Forests and Soil Conservation has identified thirty medicinal plant species under commercially viable category. Out of that twelve species of medicinal plants have been recommended for domestication. GoN can charge taxes and variety of other levies on forest products produced by Private Forest (PF), and both Participatory and public forests to support the nation in public expenditures. Fiscal devices could be in the form of royalties, rentals, stumpage payments, and other charges; which largely influence in choosing forest management practices and benefit distribution mechanism in the society.

Globalization of market economy has promoted tremendous opportunities for marketing of forest goods and services to local as well as international markets. Nepal has comparative advantage of promoting ecotourism and exporting high value medicinal and aromatic plants. Continuous degradation and depleting of forests is responsible for negative externalities at local, regional and global environment. It has been realized that deforestation is one of the major cause for global climate change and desertification. A suitable economic and financial instrument could be useful to internalize those externalities. Carbon sequestration trade, through Clean Development Mechanism (CDM), is one of such market based instrument that internalizes the environmental cost.

Objectives

The overall objective of this paper was to explore fiscal policy reform opportunity to promote sustainable forest management (SFM) in Nepal.

The specific objectives were:

a. To critically review contemporary economic and financial issues related to SFM in Nepal, and

b. To analyze and recommend potential policy options to improve SFM in Nepal.

Methodology

This paper is purely based on the desk review of contemporary issues in SFM in Nepal and elsewhere. The problems stated in this paper are basically picked-up from desk review, discussion with professionals, and sharing with academia of this field.

Discussion

Forest sector contribution in national Economy

The Forestry sector's contribution of to the national income has reduced from 14.6 percent in 1956-61 to 3.6 percent in 1975-80. This has further decreased to 2.8% in FY 2006/07 (CBS, 2007). There are two eminent reasons for the dwindling contribution of forestry sector in national income: growth in non-agriculture sector and inefficient forest management.

Kanel (2004) has estimated that NRs 1835 million equivalent forest products (at market price) are used within the forest user groups from CF alone. The total revenue collected by the Department of Forests in FY 2062/63 was NRs 303 million comprising of timber (81.5%), minor forest products including stone and boulders (14.6%) and value added tax on timber of community forests and private lands (3.9%).

Forests of Nepal have a lot to offer to realize Millennium Development Goals and addressing poverty in the country. The sector is directly contributing to achieve MDG goals 1,2,3,7and 8. Most of the rural people depend on medicinal plants and animals as their primary source of health care. Forests also provide substantial share of income to majority of people earning less than US$ 1 per day. Despite all alluring success in physical terms (mainly in CF, PPLHF and BZ), the equity issues remains as a major challenge. CF is increasingly being prone to inequity with rising Gini coefficient of distribution by size of the forest (Gini coefficient increased from 0.445 in 2004 to 0.458 in 2007) and it has resulted not only equity problem but also efficiency problem.

The following are the few options proposed to increase the contribution of forest sector in national economy:

1. Study the linkages of forest sector with the MDGs achievements
2. Valuation of environmental services of forest sector on national economy.
3. Study the linkages of forestry with poverty.
4. Initiate the process of calculating Gini coefficient of community forest distribution on annual and ecological basis.
5. Estimate the total revenue obtained from participatory forest management (CF/LHF/CFM/BZM etc).
6. Promote active forest management in the forest sector.
7. Increase investment in forest sector so that it contributes to a decent life and basic rule of law even in the remote areas.

Contribution of forestry sector in poverty reduction and livelihood improvement

Forestry is one of the sectors that have tremendous scope for reducing poverty due to its tangible resources like timber, fuel-wood, fodder, herbs and medicinal plants and non-timber forest products which are the sources of annual income for the state, communities, and individual. In addition, the existing policies, act and regulations are also in favor of addressing poverty issues.

Despite huge investments and efforts on different forest management practices the outcomes and output are inadequate to improve livelihood improvement of the poor people. This is mainly due to not addressing issues and needs of the poor and excluded adequately and properly. It has been experienced that the elites tend to capture decisions making power and most of the benefits generated from the forest. To contribute in the poverty reduction and livelihoods improvement of poor and excluded, strategies should primarily emphasize activities generating employment opportunities. Few major options are therefore presented below.

- Policies, acts, regulations, and management regimes must be pro-poor focused and inclusive.
- Forest resources should be managed and used in such a way that biodiversity and productivity of the forest resources are maintained and peoples' requirements are met in terms of economic and social well-being without damaging the ecosystem for coming generation.
- Working modality and attitudinal behavior of all stakeholders should be directed towards appreciative.
- Forest offers various economic and employment opportunities that could be optimally used through micro and small scale enterprises.

Improving supply side of basic forest products

The demand for basic forestry products such as firewood and timber is higher than the present supply situation. The main sources of supplies are government managed forests and community forests. The possibility of large scale demand reduction of these products has a remote possibility mainly because of socio-economic conditions. Hence, there exists a gap between supply and demand situations of these products. On the other hand, available forest areas are passively managed and are under utilized compared to their potential (Growing stock 178 m^3/ha).

The latest statistics (2062/63) shows that on average, supply of timber and firewood from government managed forest is about 3 cu ft/ha/yr (2 cu ft/ha/yr of timber and 1 cu ft of firewood per ha per yr). During the past year, 1.2 million ha of community forests supplied 267,756 cu ft of timber outside the community with an average production of 2.2 cu ft/ha/yr. Both of these, estimates do not include forest products collected and consumed at household or community level from government managed forests, community forests and protected areas systems. Nevertheless, the supply fact clearly indicates that both the community and government managed forests are under utilized. The main reason is the adoption of passive forest management and country facing severe financial loss has already been explained by researchers for example Sowerine (1994), Hill, (1999), Hunt et al (2001), Khanal 2002. (Refer JTRC, 2000 for more details) It can be concluded that low productivity outcome is due to absence of sustainable forest management system in place.

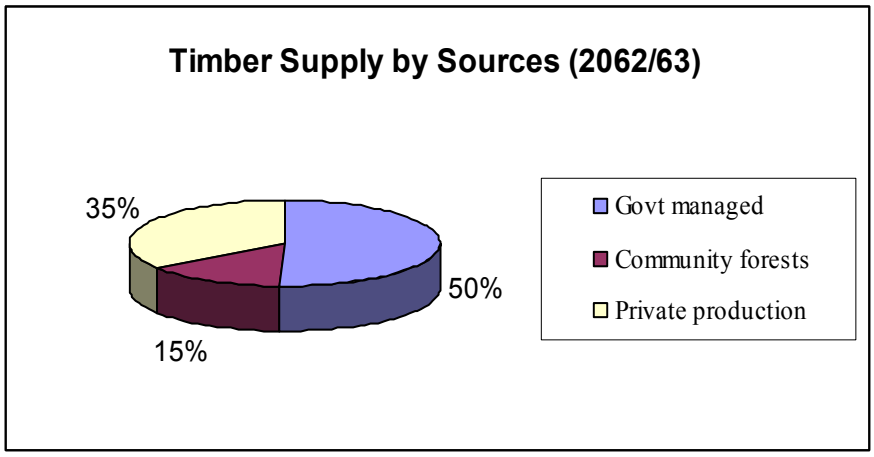
On the other hand, private small holders production during the same period is encouraging (634,324 cu ft of timber) in spite of weak institutional support mechanism. There has been a downward shift in supporting mechanism compared to Master plan proposal for private forestry development.

The information shows that supply of forest products from government managed forest and partnership managed forests is supported by the private production sources. The present context, socio-economic condition is not favorable in increasing extent of forest area coverage. The main option available is to enhance production through intensive

forest management. In addition, there is a possibility of bring public lands in forest management regime specially in the Terai to support forest products supply.

The production of forest products can be enhanced by:

1. Technological innovation and adoption- strengthening linkages between research and development, and fund investment
2. Promoting investment in forestry- creating institutional setup, soft loan, promoting private small holders, technology, promoting public land forestry
3. Favorable policy and regulatory framework- removing species ban, creating secure tenure over trees resources both to private and partnerships such as pro poor LHF,
4. Creating functional management regimes- the efficiency of state management is questionable, property rights transfer and search for appropriate partnership alternatives
5. Efficient utilization of production- efficient marketing mechanism,



Scope of Public- Private Partnership in SFM in Nepal

Empirical evidences and field study reports clearly indicate that there is irreversible forest cover depletion in low lands as well as mid hills of Nepal – both in terms of crown coverage and growing stocks. Better quality residual forests are available either in the high-altitude Mountains or low lands that are accessible to a very small population. The cost of obtaining and protecting property rights in these residual forests is so high that these residual forests will remain as unregulated commons; unless production cost is substantially decreased by infrastructure development.

GON could have best responded deforestation problems by increasing investments in a large scale plantation and forest management activities. The past tendency of diminishing budget allocation and revenue collection trends evidently demonstrates that an investment opportunity in this sector is also low. In such circumstances neither the Government nor the private sectors alone can fully address deforestation problem. Therefore, a joint production system that fills the existing gap between the demand and supply of

investment opportunities are highly desired. A good example behind this logic is successful implementation of community forest program in mid-hills; where forest management by state alone is economically non-optimal due to small fragmented resource size, high enforcement cost, and low economic rents.

The principle of sustainable forest development concludes "forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generation" (UNCTAD, 1992). Therefore, sustainable forest management practices would include efforts that increase the supply capacity of the forests through appropriate institutional arrangements; which is economically equitable, socially acceptable and environmentally feasible.

Our experiences during conflict period press us to believe in the fact that the state machineries were extremely inefficient, compared to community based institutions, to control illegal activities inside the forests due to various social, political and economic constraints. This clearly hints the comparative advantage of local-level forest management regime over centrally managed forest regime, particularly in countries like Nepal where political unrest, policy inconsistency, and corruption are widespread.

Public - private partnership in forestry is a kind of joint production system where institutional arrangements exist in sharing management roles, responsibilities, authorities, costs, risks, and benefits among the acting partners – state and local communities, state and forest users, state and corporate bodies and state and individual households. Based on the scale of production, extent of non-attenuated property rights, level of participation, resource size, management authority, benefit and cost sharing mechanisms, and management jurisdiction, following partnership modalities are potential for sustainable forest management in Nepal.

Autonomous partnership: Private Forest (PF), Community Forest (CF), Pro- poor focused leasehold forest (PPLF), Collaborative Forest management (CFM),

Nested partnership: Pro-poor activities in side CF and CFM; CF management practices within the CFM.

Regulated partnership: Industrial leasehold Forest (ILF), Religious Forest (RF), Buffer zone management (BZM), Conservation area management (CAM)

Restricted partnership: Residual Forest Management (RFM), National parks and Reserves.

Scope and option for Taxation in Forestry Products

Pearse (1990) suggests that three qualities of taxation are desirable: neutrality, equity, and simplicity. Taxation in the forestry sector is claimed to be inconsistent, because it may promote market distortion, inequality, and individualization of the products.

In Nepal, revenue from the sale of forest products is termed separately as royalties and not as tax. District Forest Offices (DFO) collect royalties on forest products while taxes are collected by the Tax offices and local governments. The Tax offices collect Value

Added Tax (VAT) from the sale of forest products of government managed and private managed forests. So far, the CF and LF are not fully covered under taxation. Those CF who sell timber products to outsiders are only liable to pay VAT for selected species only. Therefore, GoN is collecting nominal amount of revenue form these forests. However, taxation in these forests is also desired to promote equitable distribution of benefits in the society.

One of the arguments in favor of taxation is that it reduces inter-forest user group inequality and promotes equitable distribution in general. Whereas it may be argued that CFs and PPLFs are producing positive externalities to the society therefore they should be exempted of tax. This may force local people to adopt malpractice of dividing the commercial surplus product among them that will finally go to the market through individual households (Grosen, 2001). This will be counter productive to CF contribution in community development opportunity.

The pertaining question is - if tax is to be paid by CF and PPLF, how it should be paid and how tax should be charged? Should it be on Yield or property value or land size in flat rate? If GoN decides to collect tax from these forests at least following concerns needs to be addressed:
- The tax should contribute to GoN's objectives of poverty reduction and improved equity.
- The tax should motivate to good environmental management or at least be environmentally neutral.
- The tax should be designed so that market distortions and unfair competition is avoided.
- The tax should be easy to collect and the possibility of tax evasion should be limited.

As Pearse (1990) claim, property tax in timber should not be adopted in favor of yield tax on timber harvested, or a land tax based on the productive capacity of the land regardless of the timber on it. It has been realized elsewhere that such charges may create a strong incentive to “high- grade” forest stands and consequently may put a heavy burden on regulating harvesting and utilization activities in the forests. Therefore, GON should prefer to practice lump sum charges for community forestry products and differential royalty rates for sate managed forest products.

Prospect and Potential of Clean Development Mechanism

Under the United Nations Framework Convention on Climate Change (UNFCC), Kyoto Protocol, is an amendment to the international treaty on climate change, assigning mandatory emission limitations for the reduction of greenhouse gas (GHG) emmisions to the signatory nations. The Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol aiming to stabilize of greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interferences with the climate change. It has allowed industrialized countries with a greenhouse reduction commitment (so-called Annex 1 countries) to invest in emission reducing projects in developing countries as an alternative to what is generally considered more costly emission reductions in their own countries. CDM is the only mechanism that forges

partnership between the industrialized and developing countries in taking collective actions for mitigating for anthropogenic greenhouse gas emission (Sharma et al, 2004). As the text of the Framework Convention on climate Change was adopted at the United Nations in 1992 and opened for signature at the Earth Summit in Rio de Janerio, 169 countries have signed and 156 countries have ratified Kyoto Protocol by December 2006.

CDM has several benefits due to its innovativeness and inclusion of developing countries to collective mitigate GHG emissions such as international baseline and credit trading scheme, market based CDM which accrues economic incentives for conservation related activities in developing countries. There are major two approaches to assist forestry sector under CDM- reducing emission of energy and sequestering carbon dioxide (CO_2). Although, community forestry of Nepal has the potential for development as climate change project and can attract foreign investment under the Kyoto Protocol framework, due to stringent conditions for qualifying community forest in CDM, rehabilitated natural forests which are most common in Nepal, do not qualify or don't attract CDM funding despite it meets objective of CDM for promoting sustainable development and efficient emission reduction (Sharma et al, 2004). Moreover, reforestation activities carried out after 199, will only be qualified for this purpose.

Nepal being one of the signatory countries, major attentions for CDM could be worthwhile.

- Nepal is signatory of UNFCC. Therefore, Ministry of Forest as well as Ministry of Population and Environment should take lead role in the international forum to draw attentions about Nepal's concern.
- There are several international agencies (bilateral and multilateral) supporting to community forest of Nepal. These agencies could play important role in international policy-debate and generating ideas for including CF into CDM
- Since Nepal Biogas Company has been qualified for CDM, sharing ideas with them could be fruitful

According to changing scenario, Nepal has golden opportunities to link with CDM support project. There is about 7046 ha of plantation carried out after 2000. We have not even tried to claim money to CDM for our A/R. The opportunities of A/R project in Nepal can be presented in mainly three basic ways as per the geographical features.

To achieve these above opportunities following **actions** should be taken in near futures as soon as possible.

1) Make a temporary company group to start the project under ministry of forest and soil conservation

2) Develop the legal framework regarding A/R done after 2000 and open areas

3) Identify and prepare the database of A/R areas in Himalaya and Hills as community and leasehold forests and in Terai as private forest

4) Assess and prepare the records of open areas

5) Develop the network with other alternative energy under CDM support

Market Analysis of Forest Based Products

Marketing opportunities are emerging through out the world as trends towards economic liberalization and forest governance, which has open new markets for forestry goods and services. Forest owners have more opportunities to receive benefits from their forest resources. This has generated incentives for better management of the resources. However, there is a risk involved in the increasing demand of forest products; which will also increase their commercial value and results over-exploitation of the resource base and economic exploitation of the people who harvest the products. The result is degradation of the forest resources and continued poverty and indebtedness of the poor collectors. Therefore, it is now recognized that forest products need to be not only financially viable, but also environmentally, technically, politically and socially sustainable.

The above issues lead to the look in depth "Market Analysis and Development" process (Value Chain approach) to assist forest owners in developing forest based enterprises keeping sustainable forest management concern in mind. The strength of the Market Analysis and Development process is the systematic inclusion of social and environmental concerns, together with its consideration of the technological, commercial and financial aspects of a product. An integral part of identifying and planning potential forest based enterprises is the assessment of the sustainability of local environments.

Market Analysis of forest based products should contribute to the following options:

- Market demand trends of major forest products for at least last 5 years and its end value and uses.
- Supply situation and Sources of supply of major forest products come from Nepal
- Key Actors involved in Value Chain.
- Policy issues related to Marketing/Enterprises of forest products
- Social inclusion and Institutionalization (including financial institutions).
- Environmental and technology consideration for sustainable of forest resources.

Prospect and Potential of Global Market of NTFP/ MAP

Nearly 80 percent of the world population is dependent on indigenous medicine for primary health care. Ethnobotanical information and knowledge are believed to have contributed to the development of close to 30 percent of modern medicine. The are between 35,000 and 70,000 plant species which have been used at one time or another in one culture or another for medicinal purpose in Nepal (Edward, 1996). An international trade in medicinal and aromatic plants has grown to a multimillionaire industry, local

harvesting pattern have shifted from subsistence local collection to commercial' mining' (Bhattarai and Karki, 2004).

The global demand for medicinal plants and herbal medicine is about US $ 40-60 billion per year. In 2000-2001, more than 69 countries exported 94 475 metric tones, this valued US $ 84.2 million of only major 24 types of MAPs (Rawal, 2003). In 1997-1998, 12 countries (Hong Kong, Japan, USA, Germany, Republic Korea, France, China, Italy, Pakistan, Spain, UK, and Singapore) traded 342,550 tones which values US $1015 million. The annual global impacts of MAPs in 1990 amounted to an average of 400,000 tones, value to US $ 1.2 billion; Hong Kong is the largest market of herbal in the world, importing in excess of US $ 190 million per year.

Parajuli (1996) estimated that annual trade of NTFP/ MAP in Nepal is 20, 00 metric ton which worth US $ 18-20 million. About 90 percent MAPs are exported to Indian in raw form. In order to promote NTFP sub-sector in Nepal, Herbs and NTFP Development Policy 2004 has dreamed to make Nepal well known worldwide as treasure of Herbs and NTFPs in the global market within 2020 A.D.

NTFP sub sector development needs:

- Implement NTFP policy: for the promotion, management and commercialization NTFP/ Maps, NTFP policy 2004 should be implemented.
- Wholesale market development: NTFP marketing centers should be established linking with producers/ collectors, road head traders, retailers and processors. Appropriate marketing mechanism should be developed in all the level.
- Branding Nepal NTFP: to compete with international market, Nepal NTFP should be branded so as to establish its own identity e.g. geographical area, types of products
- Policy development: to participate pro-poor groups of community forest user groups and private farmers conducive policy should be developed for income generation, group marketing/ cooperative marketing, processing and value addition.
- Value addition and enterprise development: Value addition in the producer's level, market center, processors and national level should be developed.

Conclusion

Forest provides household consumption goods, raw materials for the forest based industries, cattle grazing, agriculture inputs and private incentives. The significant volume of non-marketable goods and services are not included in the current national accounting system which is limiting in convincing decision makers to allocate adequate financial resources in the forest development activities. The globalized market economy has offered wonderful opportunities for selling of forest goods and services to local as well as international markets. In addition, Nepal has comparative advantages of promoting ecotourism and exporting high value medicinal and aromatic plants through the adotion of sustainable forest management. The review of contemporary economic and financial policy on sustainable forest management revealed that regulatory action is weakly enforced and forest products pricing policy is inappropriate. The paper argues

that present level of harvesting is sub-optimal whereas the possibility of reduction in current consumption patterns of forest products is remote.

The paper recommends that existing problems on sustainable forest management can be addressed through the promotion of public-private partnership, strengthening forest products supply, increasing access to resource, strengthening market access, creating consultative service charges approaches. In addition, market analysis and development to assist forest owners in developing forest based enterprises could address systematic inclusion of social and environmental concerns, together with its consideration of the technological, commercial and financial aspects of a product. There are tremendous opportunities to use this sector as an effective instrument to contribute in poverty reduction in rural villages and national economic growth. Following actions will be helpful in achieving above mentioned outcomes:

1. Present level of economic benefit from the forestry sector could be increased significantly by intensive management of forest resources through public- private partnership.
2. In order to provide effective service and promote equity, there should be some service charges from all participatory forests, except pro poor leasehold forests.
3. The royalty rates of certain timber and NTFP is not practical. A periodic review of royalty rates based on the market demand trend is inevitable.
4. Action research to develop appropriate management and product harvesting techniques for commercially viable species.
5. Action research for domestication of few valuable medicinal plants in CF, LF and PF.
6. Research and development for raw material supply and value addition of high value low volume medicinal plants.
7. Strengthen access to market price, technology, financial resources and public services.
8. To capture benefits of carbon trading though CDM, a baseline information of carbon stock for different forest types is essential.

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