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## Exploring Economic and Market Dimensions of Forestry Sector in Nepal

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**Abstract:** Public policies have been relatively favourable towards forest-based enterprises since the year 2000, but problems persist in implementation. Nepal's accession to the World Trade Organization (WTO) has by and large had positive effects on the country's forest marketing. However, earlier studies, including on the demand and supply situation done in the last countrywide assessment, indicate that the timber-based option is not feasible under the existing passive mode of forest operations that are mainly focused on patrolling of forest and extraction of dead, dying and diseased trees from forests. A positive scenario under intensive management which can improve the situation has been shown. An analysis of existing knowledge shows that enabling policies, intensive forest management, tenure security, forest certification and reward mechanism for environmental services are the crucial factors for harnessing the economic and marketing opportunities for forest products and services.

*Key words:* forest marketing, forest-based enterprises, certification, environmental services.

### INTRODUCTION

The economic and marketing opportunities for forest products and services have been crucial in enhancing the forestry sector's contribution to the national economy and poverty reduction. In Nepal, empirical evidences show that deforestation and forest degradation occur in forests under government control, except in Protected Areas (PAs), while forest products are underutilized in community-managed forests (Chakraborty 2001, Chand and Ghimire 2007, Grosen 2000, Hill 1999, Khanal 2001). The environmental services provided by the forest ecosystem are unpaid or free-ridden, barring a preliminary initiation at Kulekhani watershed where the hydropower project contributes to the conservation measures of the watershed through the District Development Committee (DDC) (Huang and Upadhyaya 2007). Similarly, there are unharnessed opportunities and options for expanding the market base for forest products and services in the country. The assessment of the existing and potential options of forest-based economy matters under different marketing scenarios. This paper reviews some of the earlier studies, including relevant information on various aspects of economics and marketing of forest products and services in Nepal. While so doing, several issues and challenges being faced by forest-

based marketing vis-à-vis their opportunities are analysed. The scale or volume of major forest products, including Non-Timber Forest Products (NTFPs), in terms of their monetary value and current transactions and potential to be marketed in the future are also important facets considered in this paper.

There are some arguments that commercialization of forest products is possible only when surplus is available beyond the internal consumption for basic needs. However, the term 'basic needs' is not only highly contentious but very hard to be specifically explored (Grosen 2000). Moreover, insights into micro economics allow researchers to consider every transaction of buying and selling for marketing purposes. The economic or marketing concern in this paper implies the higher or optimum production of forest products and services through better forest management and enterprise development on one hand and equitable distribution of benefits and costs on the other. Both sustainable production and equitable utilization of forest products and services directly depend on various property rights and resource contexts such as tenure security, productivity, enabling policies, institutions and access to market.

Economics and marketing of forest products and services are highly contested topics to

be precisely defined. Duerr (1993) includes social science in forestry, consumer behaviour, production, manufacturing, marketing and social institutions in association with forest products as the principal aspects of forest economics. As per his definition, marketing is one of the components of forest economics rather than a separate discipline. Relevant to his time, Duerr does not include environmental services within the forest economics or marketing boundaries, which are now considered as an integral part of forest economics. In this paper, the economic aspect of forest products and services includes the magnitude and trend of demand (consumers' behaviour), stock (production potential) and flows (actual supplies) of forest products and services. Because we are more interested in the marketing dimension, institutions (policies, taxes and enterprises), consumption and surplus, export potential and payment for environmental services are specifically taken into account.

**STOCK AND DEMAND - SUPPLY SCENARIOS**

Although no countrywide inventory of forests has been undertaken in Nepal for more than two decades, anecdotal estimates indicate that the net stock of forests in terms of both cover and quality has declined over time. Conversion of forestland to non-forestland refers to deforestation (loss in cover), whereas increase in shrub lands in place of forests can be defined as forest degradation (loss in quality), which lowers the production capacity (CDM-EB 2007, FAO 2000). Table 1 shows a gradual decrease in forest area and increase in shrub lands, resulting in net

deforestation and forest degradation in the country from 1978 to 2005.

Forestry is a long-term business given the rotation age of trees. The decrease in cover and quality of forests does not necessarily explain the decrease in overall volume of economic and marketing transaction of the forestry sector in the short run due to the increased supplies of products from felled trees. Nonetheless, it definitely indicates the threat to long-term progressive or sustained supplies of forest products and services. Therefore, deforestation and forest degradation have always had negative impact on the economic value and marketing of forest products and services in the long run.

The growing stock in the high mountains is maximum, but these forests are still inaccessible from management and harvesting perspectives due to rugged terrain and lack of efficient transportation facilities. The next potential region for the maximum availability of timber resource is the Terai. One of the major reasons for the condensed growing stock in the Terai is the species composition, which includes some tree species such as, *Sal (Shorea robusta)*, *Asna (Terminalia tomentosa)*, *Sisso (Dalbergia sissoo)* and *Simal (Bombax ceiba)*. As the Terai forests are accessible for transport, it is easy for harvesting and extraction, both legal and illegal. As a result, the forests there are under immense pressure.

Timber (sawlogs) and fuel-wood constitute the main forest products for in-country consumption. NTFPs, basically products with medicinal and aromatic value, have been used both within the country and for export.

**Table 1: Forest Cover Status in Nepal, 1978-2005**

Cover type	Unit	Year				
		1978	1986	1994	2000	2005
Forest	Area ('000 ha)	5616.8	5504	4268	3900	3636
	Percentage	38	37.4	29	26.5	24.7
Shrub	Area ('000 ha)	689.9	706	1560	1753	1897
	Percentage	4.7	4.8	10.6	11.9	12.9
Total	Area ('000 ha)	6306.7	6210	5828	5653	5533
	Percentage	42.70	42.20	39.60	38.4	37.6

Source: FAO 2006

## KEY ASPECTS OF MODULATING FOREST MARKETING

A number of features play substantial roles in changing the economic and marketing scenarios of forest products and services. The key factors affecting the marketing of forest products and services such as policies, access to domestic and international market, production capabilities, sustainability of supplies and payment for environmental services are important to consider while promoting market and enterprise-based forest management and governance. These factors are briefly discussed below.

### Policy Dynamics

Forest policies in Nepal have shifted over time from being conservation-oriented to market-oriented through various dilemmas, including conversion of forestland to agricultural land for higher benefits. The modern Participatory Forestry Approach, which was initiated in the mid-'70s, has not been backed by homogeneous policy dynamics. From market and economic perspectives, at least three different phases of policies have evolved in the country. The first phase begins in 1988 with the promulgation of two significant sets of policy documents, viz. Master Plan for Forestry Sector (MPFS) 1988 and National Conservation Strategy (NCS) 1988. The MPFS tries to integrate various forestry sub-sectors, coupled with direct correlation of forestry input to food production. Despite separate primary programmes for wood-based industries and the development of NTFPs, including medicinal and aromatic plants, the Plan emerged basically as a response to meeting basic needs for forest products. The NCS paved the way for meeting people's basic needs from the 'prudent use' of forest ecosystem. The first phase with the 'basic needs' approach lasted until the mid-90s. During this phase no effective implementation of policies occurred due to the civil unrest for multi-party democracy.

The second phase starts during 1993-95 with the promulgation of the Forest Act 1993, Nepal Environmental Policy and Action Plan (NEPAP) 1993, Forest Regulations 1995 and Agriculture Perspective Plan (APP) 1995. These instruments have created some space for

private sector involvement in forestry for production and marketing of forest products, while at the same time continuing to emphasize handing over of community forests for either basic needs or for undefined 'collective welfare' of the community. NEPAP directs the Ministry of Forests and Soil Conservation (MoFSC) to immediately develop an appropriate system of incentives and regulations to encourage greater private sector involvement in managing national forests. It also recommends reviewing open-ended subsidies provided for the purchase of wood by the District Forest Products Supply Board, which prevents proper valuation of forests and undermines private sector involvement. The APP proposes management of national forests, basically in the Terai, private forests and leasehold forests for commercial use. All these documents again assumed Community Forestry (CF) as a subsistence or non-market practice, and the private sector as the only vital commercial actor. As a result, the major portion of government resource in the forestry sector was spent on expanding the CF in the hills for subsistence forest utilization, while no significant effort was placed on bringing the forest resources into market avenues.

The third policy effort comes after the year 2000, which is also marked with the promulgation of the Revised Forestry Sector Policy (RFSP) 2000. Although the RFSP has been criticized from various quarters, especially on the stakeholder participation ground during its formulation (Ojha *et al.* 2007), it has for the first time recognized the need for forest management beyond basic needs. It highlights socio-economic growth as one of the four guiding principles of forestry sector development. The MPFS considers the ecosystem and genetic resources only to be 'conserved', while the RFSP admits both the 'conservation' and 'sustainable use' of these resources. The RFSP also recognizes the need for joint venture with the private sector to implement commercial forestry operations in productive Terai forests. Along with the recognition of sustainable forest management, livelihood improvement and good forest governance as the major categories of second generation issues of CF by the Forestry Sector Coordination Committee in 2001 (Kanel 2004), it emphasizes management of CF

beyond the basic needs. These issues also embrace enterprise development and marketing of forest products in the CF for better livelihood of the poor. The Joint Technical Review Committee (JTRC) in 2000 also recommended commercialization of surplus forest products from community forests (Grosen 2000). Herbs and NTFP Development Policy 2004 realizes both in-country marketing and export of herbs and NTFPs in a significant way that Nepal be recognized as a huge store of NTFPs in the global arena by 2020 (GoN 2004). Analysing the three phases, the policies have been more favourable for market approach since the beginning of the new millennium, yet barriers at implementation level need to be overcome.

The forestry sector economics and marketing need to be viewed in the context of overarching national policies in economics and marketing other than the forestry sector. The Industrial Policy 1993, which has been updated recently, guides the overall industrial sector, including forest-based industries. The policy lists the forest-based industries comprising carpentry, wooden handicrafts, products made out of bamboo, rattan and natural fibres, hand-made (Nepali) paper and its products, and *sabai* grass as traditional cottage industries under Annex 1 and are exempt from tariffs, sales taxes and income taxes. The policy classifies cultivation and processing of herbs as the industries of national priority under its Annex 3, which are exempt from income taxes for seven years from the date of their establishment. Under the classification and status division, sericulture, including silk production, cultivation and processing of herbs, agro-forestry, CF and private forestry from the forestry sector, have been included under the agriculture and forest-based industries. The policy is not particularly favourable for saw mills and *Kattha* industries, which are broadly blended with cigarette and alcoholic beverage industries and, therefore, are not entitled to government facilities, such as tax exemption.

At present, the economic policies of Nepal Government are guided by the common minimum programme of the seven-party alliance and the economic policy spelled out in the Interim Constitution 2007. There are five main economic policies stated in the

common minimum programme. It puts high emphasis on the alleviation of poverty by adopting the policy of social justice, economic growth and equitable distribution. It aims to build an egalitarian society. Public, private and cooperative sectors are considered as the vehicle for development. The programme gives high emphasis to the implementation of scientific land reform programme as a means for raising farmers' standard of living. Similarly, it gives emphasis to resolving the unemployment problem and rural development (GoN 2006).

The economic policies of the Interim Constitution 2007 are stated in the Directive Principles of the State, which are also guided by the common minimum programme of the seven-party alliance. The Three-Year Interim Plan (2007/08-2009/10) is the guidelines to prepare detail plans and programmes. Hence, the economic policies and programmes of the government are tilted towards the socialistic ideas, given the composition of the interim government and the seven-party alliance.

In the forestry sector, the Interim Plan has mandated to invest at least 35% of the total income earned by the CF in poverty reduction at Community Forest User Group (CFUG) level. Similarly, the provision of utilizing a fixed share of the revenue earned in government-managed forests for pro-poor activities is also noteworthy. The Plan targets a total of 228,000 households of the poor, *Dalit*, *Adibasi*, *Janajati* and other disadvantaged groups as the beneficiaries of income-generating activities through forest-based industries, entrepreneurship and participatory forestry, including CF (NPC 2007). The market potential of the forestry sector can only be guaranteed from community forests for four major reasons. First, CF has been a mainstream forestry programme not only in Nepal but also elsewhere in the developing world (Petheram *et al.* 2002, Gilmour *et al.* 2004). The stability in terms of production and marketing can mostly be predicted in CF, while it is very difficult in other management modes with stricter government control. Second, the private sector has been reluctant to invest in forestry, given their insignificant presence in industrial leasehold forestry despite the government's special effort with the third amendment in the Forest Regulations. Third, government-

managed forests have been retarded from production point of view due to the absence of intensive management and various bureaucratic anomalies. Fourth, market imperfections or failures worsen in government-owned forests due to subsidy systems and higher enforcement costs of property rights over resources. Income generation through NTFP cultivation, enterprise development and marketing of forest products have been considered important for effective CF management for livelihood enhancement of the forest-dependent poor (Kanel 2007).

### Nepal's Accession to WTO

The fifth Ministerial meeting of the World Trade Organization (WTO), held in Cancun, Mexico on September 10-14, 2003 formally approved Nepal's membership in the organization. The decision was ratified through an ordinance in 2004, making Nepal the 147<sup>th</sup> member of the WTO. Nepal's accession to the WTO has substantial impact on the economic and marketing aspects of the forestry sector in Nepal. While accepting the membership, Nepal made some commitments to be fulfilled within specified time period. In this connection, Nepal agreed to amend some existing Acts and Regulations in addition to enacting some new Acts. Out of the Legislative Plan comprising altogether 41 laws to be amended or formulated, amendment to the Environmental Protection Act 1997 and Plant Protection Act 1972, along with the formulation of the Plant Protection Act and the Act concerning Access to Genetic Resources are the major commitments that will have direct impact on the forestry sector. So far, a new Plant Protection Act 2007, replacing the Plant Protection Act 1972, has been issued and the Act concerning Access to Genetic Resources has been drafted.

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) is an important agreement of the WTO. As per Article 27(3) (b) of TRIPs, Nepal as the member of the WTO should conserve plant varieties through either patent or *sui generis* or both (Khanal *et al.* 2006). *Sui generis* is a form of intellectual property that provides the local/indigenous people with rights over the traditional knowledge and skills to conserve and use biodiversity resources. The

knowledge and skills of local people to manage Nepal's huge biodiversity resources can be registered as patent through effective legislation before piracy of their knowledge and skills takes place.

One of the important aspects of the WTO with regard to the import and export trades is the comparative advantage. Nepal has comparative advantage in exporting semi-processed NTFPs, given the relatively low cost of labour for processing in the country. Similarly, China is interested in buying *Sal* (*Shorea robusta*) and *Sissoo* (*Dalbergia sissoo*) logs for much higher prices than the government royalties. Similarly, Japan is interested in buying *Pinus roxburghii* logs (Karki pers. com. 2007). Wood is one of the items with largest proportion of cuts in import weighted tariffs as per the WTO so that the exporting countries of these products can reap higher benefits (Guru-Gharana 2001). Nepal will have comparative advantage in exporting these logs and importing furniture and non-wood construction materials from India or elsewhere<sup>1</sup>. However, a detailed study is needed on these aspects.

Nepal Government has shown its commitment through various policies to enhance the capacity of groups and individuals engaged in trade in forest products. It has promised to provide technical services, capacity building, access to small and cottage industries/business market, and support for infrastructure development. These activities are aimed to increase the resilience to confront the challenges posed by the WTO membership (Adhikari 2004). In addition, the government has promised to formulate a law related to intellectual property rights on biological endowments. However, patenting of biological endowments is possible only through minor modifications or patenting on specific properties of the biological material. For this, we need to go for geographical indications, where specific niche of specific species can be documented and to

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<sup>1</sup> This seems in contradiction with the established knowledge that exporting raw materials and importing finished products at several times higher price is not an economically rational act. However, if we get much higher price for our timber in the international market and import cheaper products from outside, then it would be a rational choice.

claim that the species belongs to Nepal. Registration of biological endowments is possible through minor modifications of policies, which will make a list of biological products found in Nepal (AEC/FNCCI 2004).

The major challenges of entering the WTO include the increase in equal competitiveness among the developing countries and cessation of quota for Nepal in the international market. We need to promote production-oriented forest management, which is a challenge in itself, without which successful competition at global level is difficult. Protection of forest-based industries in terms of government support is another challenge, as the WTO does not allow such support.

### Consumption and Surplus of Forest Products

How much forest products are produced per year against the rate of their consumption determines the marketing potential. In community forests, most of the forest products are consumed within the CFUGs at a subsidized rate or even free of cost. As a result, a hidden economy is prevalent in CF cases (Iverson *et al.* 2006, Bampton and Cammaert 2007). The surplus products are sold outside CFUGs at higher prices. Therefore, how much surplus forest products are available is an important basis for forestry sector marketing. Trade is usually recorded in three major cases: a) the products are sold by the District Forest Offices (DFOs), b) the products are sold by CFUGs and the buyers pay taxes or fees to DFOs for transport permit, and c) the products are sold by individual households

from privately-owned land and buyers pay taxes to DFOs for transport permit.

Table 2 shows the trend of major NTFP trade for three consecutive fiscal years. Four species, viz. *Thingre Salla* (*Taxus baccata*), *Rani Salla* (*Pinus roxburghii*), *Yarsagumba* (*Cordyceps sinensis*) and *Khair* (*Acacia catechu*) hold the major parts of the NTFP trade. Among these four species, resin from *Pinus roxburghii* has relatively stable trend with high volume of trade. The dramatic fall in the trade in *Taxus baccata* is not due to lower production but due to the recent government intervention in the private sector. The major buyer of *Taxus baccata* is Dabur Nepal, a joint venture of Dabur India. There was an agreement that the government would provide *Taxus baccata* leaves and twigs to the company. The company started collecting leaves and twigs and produced resin in its own processing plant in Birgunj before exporting it to India. But the government insisted that the company carry out Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) as per the Environmental Protection Regulations before undertaking any collection. In response to the government move, the company stopped collecting *Taxus baccata* leaves and took the processing plant back to India. Dabur Nepal is ready to carry out an IEE/EIA, but is asking the government if it can export leaves after grinding as the processing because it does not possess a 'resin extraction' plant at the moment. The negative response of the government has adversely affected the *Taxus baccata* trade significantly (*Taxus baccata* story based on Jha pers. com. 2007).

**Table 2: Major NTFPs Trade Recorded by the Department of Forests for Three Fiscal Years**

Species	FY 2003/04		FY 2004/05		FY 2005/06	
	Quantity (kg)	Revenue collected (NRs)	Quantity (kg)	Revenue collected (NRs)	Quantity (kg)	Revenue collected (NRs)
<i>Taxus baccata</i> leaf	78470	1923750	160197	4004935	7535	188625
<i>Pinus roxburghii</i> resin	3836183	11441523	18888134	5771123	4091747	13926472
<i>Cordiceps sinensis</i>	76.05	1372000	12.6	252060	214.6	3397000
<i>Acacia catechu</i> wood	658408	7473000	3066049	40028055	16209	2110467
Total of the four species		22210273		50056173		19622564
Total revenue from NTFPs		44,272,692		77,840,603		44,213,019

Source: DOF 2005, 2006, 2007

Reduction in *Taxus baccata* trade has substantial implications for forest marketing. Among the four major NTFPs, *Taxus baccata* is the species with ensured sustainable harvest because only leaves and small twigs are collected. Collecting leaves up to two third height of the tree for sustainable harvest has been prescribed (Parajuli pers. com. 2005), which is not a complicated task. In this case, processing of *Taxus baccata* would be a better option for export but exporting in semi-processed form also would not be a bad idea given the lack of government or private sector capacity for full processing.

The collection of *Cordiceps sinensis*, which is a fungus grown at the anterior end of a caterpillar during monsoon in the highlands, has a growing trend. The royalty rate has been significantly reduced to NRs 10,000 per kg from NRs 500 per piece (NRs 500 was set as punishment for illegal collectors). The entire fungus with the remains of caterpillar is consumed for tonic. The export market has been dominated by rosin and turpentine, the products of resin followed by *Yarsa Gumba* (Sharma 2007). However, a substantial distortion can be seen in the *Yarsa Gumba* trade. As the royalty rate is only NRs 10,000 per kg and substantially low price is paid to collectors, the product is

transacted at the rate of NRs 90,000 per kg at local market between traders (Sharma 2007). *Yarsa Gumba* is also illegally exported by evading in-country taxes and customs duties (ibid).

Table 3 shows the volume of only timber (sawlogs), but the revenue columns include the total amount from both timber and fuelwood. As fuelwood is not substantial in quantity and, in some cases, disaggregated data were not available, the quantity of fuelwood has not been mentioned in the table. Similarly, the reference sources had no record of volume or quantity harvested from CF in some cases; only revenues collected from CF are mentioned.

Although the total revenue generated from timber products is much higher than from NTFPs over the three years, their rate is in sharply decreasing trend. However, in the case of NTFPs, it would have been in increasing trend had *Taxus baccata* not been restricted. The majority of the NTFPs come from the hills or high hills and the majority of timber comes from the Terai or mid-hills. The combined production of timber and NTFPs on a large scale is possible as they do not compete, by and large, for the same patch of forests.

**Table 3: Timber and Fuelwood Trade Recorded by the Department of Forests for Three Fiscal Years**

Institutions	FY 2003/04		FY 2004/05		FY 2005/06	
	Quantity (CFT)	Revenue collected (NRs)	Quantity (CFT)	Revenue collected (NRs)	Quantity (CFT)	Revenue collected (NRs)
DFO	1,981,503	488,213,617	1,227,739	314,119,778	924,843	247,072,160
Community Forests		77909234		40,274,330		8,306,309
Total		566,122,851		354,394,108		255,378,469

Source: DOF, 2005; 2006; 2007

### Income from Protected Areas and Buffer Zone

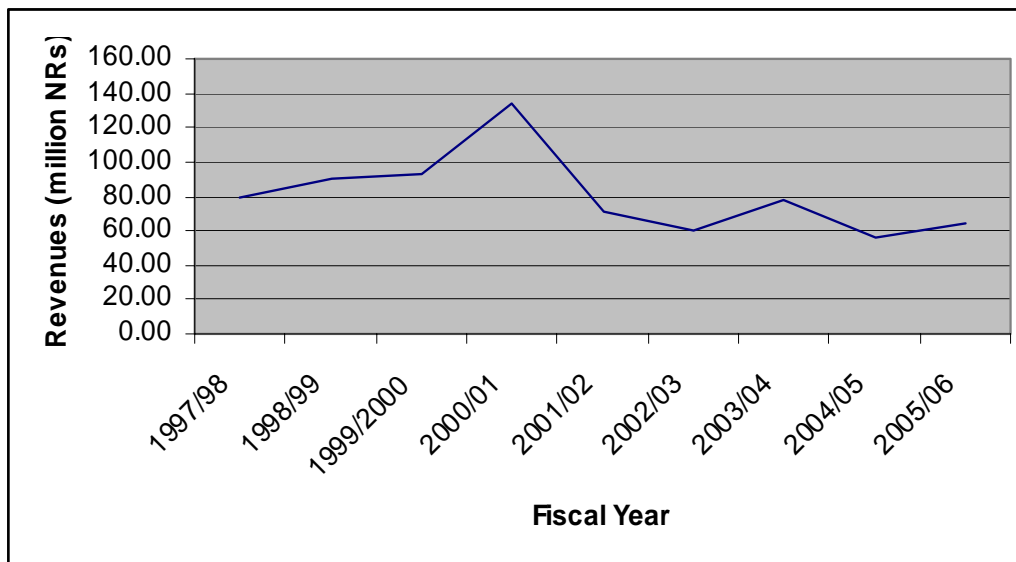
The revenue generation from 14 Protected Areas (PAs) and the Department of National Parks and Wildlife Conservation over the last nine years are given in Figure 1. The records do not include the revenue from Annapurna Conservation Area, which is managed by the National Trust for Nature Conservation. The

trend of revenue generation has been very erratic. The highest income was observed in fiscal year 2000/01, which is almost double the average annual income during the rest of the years over the decade.

The income has been significantly low from the fiscal year 2002/03, particularly during the time when government was under active monarchy.



Figure 1: Revenue Generation from 14 PAs over the Last Nine Years



Source: DNPWC 2006

Figure 1 also shows the trend of revenue generation of the PAs over the nine years. Wherever the buffer zone lies in and around a PA, 30 to 50% of the revenue of the PA goes to the fund of the buffer zone community. Besides the income from the PA revenue, the buffer zone user groups have other income sources, such as eco-tourism activities in the buffer zone areas and sale of forest products harvested from the buffer zone. Although the share of the communities from the income of PAs need not be disaggregated for economic analysis, the incomes the buffer zone communities generated from other sources need to be counted for the assessment of overall contribution of the forestry sector to the economy. Nonetheless, the incomes of the buffer zone communities from other sources is yet to be assessed as no relevant data were available during this study.

### Enterprise Development

Forest-based enterprise development is essential to earn income from forest resources through value addition, which basically is going beyond the notion of subsistence forestry and to enhance forest-based marketing. Government parastatals, community-based and private sector enterprises are found in the forestry sector of Nepal. Out of three forestry parastatals,

the Timber Corporation of Nepal (TCN) and the Forest Product Development Board (FPDB) supply timber and fuelwood, Herbs Production and Processing Company Limited (HPPCL) works on medicinal and aromatic plants to produce and sell *Ayurvedic* medicines and essential oils. However, like any other public enterprises, these parastatals are facing threats and inefficiency. Recently, the government liquidated Nepal Rosin and Turpentine Company, the only resin-based parastatal, despite an immense trade and profits the private sector is earning from resin.

The community-based enterprises in the forestry sector are also emerging substantially (Pandit 2005, Subedi 2006). Pandit (2005) identifies at least seven categories of viable community-based enterprises in the forestry sector with potential to contribute to the economy and rural livelihood. These include: 1) broom and fodder grass seed-based, 2) essential oil-producing plant-based, 3) hand-made paper and fibre processing, 4) medicinal and aromatic plant-based, 5) bamboo and rattan-based, 6) *Shorea* leaf and *Terminalia* and *Emblica* fruit-based, and 7) juice, squash and jam-making. Pandit also categorizes the modalities of the enterprises as private-public partnership, cooperatives,

leasehold forestry and CF partnership. Subedi (2006) finds over 161 plant species being harvested for commercial NTFPs, in which at least 137 entrepreneurs are engaged and about 71 community-based enterprises are operating in Nepal. Subedi (2006) concludes that approximately 50% of the NTFPs are used for medicinal purposes, followed by 17% for food, 7% for essential oils, 6% for fibre and 5% for wood and craft.

### Taxation

The Fiscal Act passed every year after the annual budget speech makes new provisions or continues the existing provisions on taxes. Currently, there is a provision of 13% Value Added Tax (VAT) on timber sale for commercial trade, whereas no tax is collected when the products are sold within a CFUG. Contrary to the Forest Act 1993, several attempts to collect duties from community forests, especially in the Terai, have been observed since 2000, justifying the mechanism to generate revenues to share benefits among citizens. In 2001, the MoFSC issued a circular to the DFOs to collect 40% of the sale of forest products from community forests in the Terai when the products are sold outside the CFUGs concerned. However, the circular was nullified by a decree of the Supreme Court. Although the collection of 40% tax was made illegal by the Court on the ground of the Forest Act, following the decision, the government was successful through the Financial Act of 2004/05 to pass a provision of collecting 15% 'forest product fees' on the sale of *Sal* (*Shorea robusta*) and *Khair* (*Acacia catechu*) outside the CFUGs.

In the Fiscal Act there is also a provision of tax exemption. Annex 1 gives the list of items for tax exemption. In this list, NTFPs and their extracts are stated, implying their exemption of taxes. However, these provisions do not show the Harmonized Commodity Description and Coding System (HS) code<sup>2</sup> classification. The lack of a HS code always creates difficulty in exporting NTFPs and their extracts. The customs office requires either a clearly spelled out HS code or receipt of VAT payment. Without this documentary evidence, customs office does not grant

permission for export. Therefore, the exemption of taxes, including VAT, on NTFPs is meaningless when they are to be exported without a HS code.

There is tax exemption on income and bonus of NTFP-based cooperatives. However, the budget speech of fiscal year 2006/07 cancelled the tax exemption and the forest-related cottage and small scale industries will receive tax exemption as per the Industrial Enterprises Act. This Industrial Enterprises Act grants tax exemption to cottage industries only to remote districts for 10 years. Thus, the NTFP-based cottage industries located in the hill and Terai districts have to pay income tax. This is also a hurdle for the expansion and promotion of forest-based cottage industries in Nepal.

### Forest Certification

Forest certification is a balanced approach to certifying a forest that it is managed in a sustainable manner from social, economic and ecological perspectives. Forest certification affects forest marketing in two major ways. First, it ensures sustainable forest management to increase the supply of forest products. Second, it creates opportunities for exporting forest-based products to the international market where demands for products from certified forests are increasing, such as in Europe and North America. Nepal's trade in NTFPs, especially export, has been recorded up to US\$26.7 million per year, while wooden handicrafts worth 56.2 million rupees were exported during 2002/03 (Shrestha and Khanal 2004). The export of forest products could be seriously affected in the future, though not necessarily at present, if the buyers were conscious enough for purchasing forest products only from certified forests.

Nepal's forest resources are either underutilized where management regimes have been well established, such as in community forests (Khanal 2001) or unsustainably harvested, resulting in deforestation and depletion, such as, in government-owned forests in the Terai (Hill 1999). The negative effect of deforestation or depletion of forests in overall forest marketing is well understood. The issue is interesting even when forest is underutilized. The underutilization of forests has direct negative effects not only on the

<sup>2</sup> The HS code is the same for the items of import and export in all countries. It is in terms of number. For example the HS Code for wood-related items is 44.

opportunities of economic well-being and marketing but also on climate change. Overstocked old-growth forests sequester net carbon very low or even negative, given the high rate of respiration contributing to non-reduction of Greenhouse Gases. As 20% area of the country comes under the PA system, lack of active forest management in the rest of the forests brings no overall benefits. In such circumstances, continuous harvest from sustainably managed forests is desirable from social, economic and environmental perspectives. Bringing forest areas into certification regimes would enhance sustainable forest management and export forest-based products for increasing benefits from forest marketing.

### Payment for Environmental Services

Payment for environmental services from the forestry sector is specially connected with biodiversity conservation, watershed protection, carbon sequestration (Swallow *et al.* 2005) and landscape beauty (Grieg-Gran *et al.* 2005). These environmental services from forest areas have been so far the positive externalities of forests in Nepal, i.e. people do not directly pay for these services to the managers of forests. Biodiversity conservation and watershed protection are still considered complicated for accounting the benefits for payment. However, some initiatives have been taken for preliminary mechanism for payment for environmental services. For example, Makawanpur DDC has allocated 20% of the amount it receives from Nepal Electricity Authority for the location of hydropower plants in Kulekhani of this district. Currently, the DDC receives US\$55,000 annually (Huang and Upadhyaya 2007).<sup>3</sup> The DDC has constituted Environmental Management Special Fund to deposit the 20% amount so that the fund could be utilized in the conservation and development programmes proposed by the upland communities of Kulekhani watersheds in return for their protection of the watersheds (*ibid*).

Carbon dioxide emissions from forest biomass during the period 1990-2005 were estimated to be – 26.9 metric ton per year,

<sup>3</sup> The Local Self-Governance Act 1999 requires that the central government share 12% of the revenue earned from Nepal Electricity Authority with the DDC concerned.

implying negative emission. The carbon stock in forest biomass in 2005 was found to be 485 MT (UNDP 2007). Clean Development Mechanism under the Kyoto Protocol has been arranged to trade carbon sequestration at global level. Afforestation and reforestation activities have been included under carbon trading in the first commitment period between 2008 and 2012. The inclusion of management of existing forests, which is technically termed as 'avoided deforestation' is possible beyond 2012, depending on the bargaining capacity of the developing countries. However, Nepal has not realized forestry sector carbon trading yet, despite the fact that more than 7,000 hectares of area have been afforested/reforested since 2000 (Dhungana *et al.* 2007). Taking South Asian carbon price (between US\$10 and 20 per metric ton) into account, US\$0.4 to 0.8 million could be earned solely from the plantation forests annually (*ibid*) if the total area of community forests were brought under carbon trading. Karky (2005) estimates US\$8.25 million per year, considering only US\$5 per metric ton of carbon. In the future, the market of environmental services, including carbon trading from the forestry sector, will be increasing, given the ever-increasing awareness of these services globally.

### CONCLUSION

The economic and marketing potential of forest products and services is very high in Nepal. However, a number of factors restrain the full exploitation of opportunities of marketing these products and services. The policies pertaining to the growth of market for forest products and services are newly developed, especially since 2000. Principally, they are enabling, by and large, for the production and marketing capacity of the forestry sector. Nepal's accession to the WTO has also opened avenues for the growth of forest marketing at international level with comparative advantage such as exporting timber and medicinal plants and importing readymade goods at relatively low prices, such as, light furniture. Nonetheless, anomalies exist in practice, such as, the imprecise taxation provisions for NTFP export and the rent-seeking behaviour of forest and finance bureaucracy. The sustainability of forest products and services cannot be ascertained because forest

certification is yet to be institutionalized and internalized. The payment for environmental services from forests is one of the most undermined areas of the forest economy and marketing in the country, which has caused environmental injustice to the communities directly bearing the costs of producing watershed, carbon sequestration and biodiversity services. In this connection, enabling policies, intensive forest management, tenure security, forest certification, reward mechanism for environmental services and marketing opportunities have been crucial for enhancing the economic and marketing aspects of forest products and services.

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