



Ministry of Forests and Soil Conservation
REDD-Forestry and Climate Change Cell, Nepal
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policy brief



Is demand and supply of wood a factor for redd+ project in Nepal?

The demand for forest products mainly fuel wood and timber for both subsistence and commercial use has been identified as one of the main drivers of deforestation and degradation in Nepal.

The country has been selected as a FCPF country to design a readiness plan to access external finances to reduce carbon emission and to enhance the carbon removal potentiality of the forests. A robust analysis of demand and supply of forest product over a long period of time is therefore necessary to project the forest carbon removals from or storage in the forests. A study on the demand and supply of Wood Products in Different Regions of Nepal to assess the future projection of demand and supply of wood (fuel wood and timber) in Nepal was done.

The study undertook a critical assessment of the existing and future demand of fuel wood and timber and supply potential of these products in the Terai and Mid-hills of Nepal. Its focus was on the Terai landscape from east to west (20 districts of Terai).

The information from the study informs the further advancement of the REDD readiness process, and the formulation of a broad national strategy framework by feeding the findings into establishing sub-national level forest reference emission level (FREL) and MRV² framework at the Landscape level. The information is practically useful for sustainable forest management in Nepal.

Key messages

- Sustainable management of forest in Nepal could not only increase and stabilize the supply of forest products, but it would also help in contributing the livelihood of the 17, 685 CFs and CFUG¹s and 2.18 million households involved in community forest management (DoF, 2012).
- There is a marked change in the collection and gathering activities affecting the demand and supply of forest products in Nepal. The forests of Terai are increasingly vulnerable to population growth, infrastructure development, and illegal harvesting for commerce and trade. Significant amount of timber is also transported to urban centers.
- The demand and supply of forest products depends not only on biophysical factors inherent in different ecological regions of Nepal, but also on the policy regimes perused and implemented by the Government of Nepal.

¹ Forest Carbon Partnership Facility

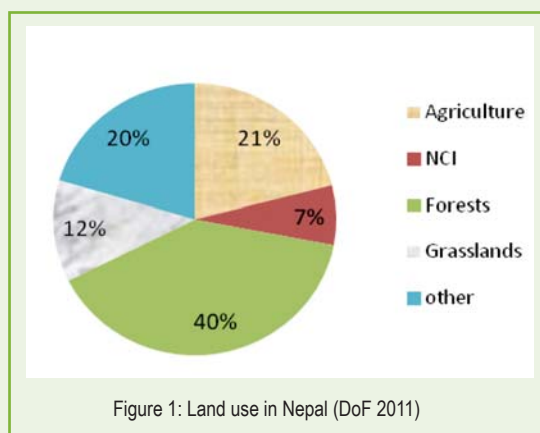
² Measurement, Reporting and Verification

Forest and land use areas of Nepal

40% of land area in Nepal is under forests and shrub land. There are three major types of forest management regimes in the Terai region of Nepal;

- Government Managed Forests
- Community Managed Forests
- Private Forests/Trees on Farm.

The total forest area is 1287³ thousand ha. in Terai while forests and shrub land in the mountains is about 396⁴ thousand ha. The Non-Cultivated Inclusions (NCI) in the mountains and area under agriculture in the mountains is reported to be 517 and 211 thousand ha respectively.



Demand and supply of wood products scenario in Nepal

The supply of fuel wood was estimated at 2.58 million tons, 5.44 million tons and 0.94 million tons for Terai, hills and mountains respectively in 2011. The supply would increase to 3.72 million tons, 6.96 million tons and 1.13 million tons in 2020 and 5.07 million tons, 9.60 million tons and 1.51 million tons in 2030 for Terai, hills and mountains respectively.

There is a marked change in the collection and gathering activities affecting the demand and supply of forest products in Nepal. The forests of Terai

$$\text{Fuel Demand} = f(\text{No. of HH, percentage using fuel wood, per capita consumption})$$

are increasingly vulnerable to population growth, infrastructure development, and illegal harvesting for commerce and trade. Significant amount of timber is also transported to urban centers of hills.

Projections of forests products demand in terai, hills and mountain areas

The government of Nepal is the predominant supplier of wood products in Nepal. In other words, it has a monopoly market mainly in the timber products.

The demand for timber and fuel wood from Terai (productive area) currently is way above the supply of the products in the 20 districts of the region.

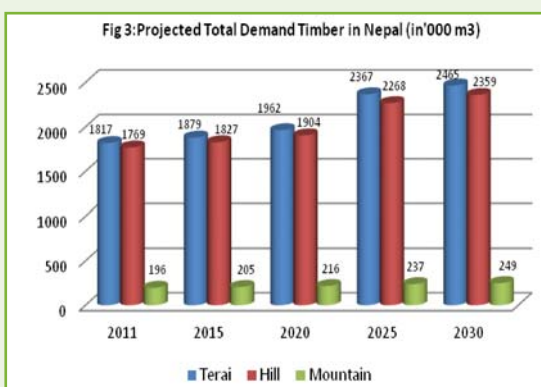
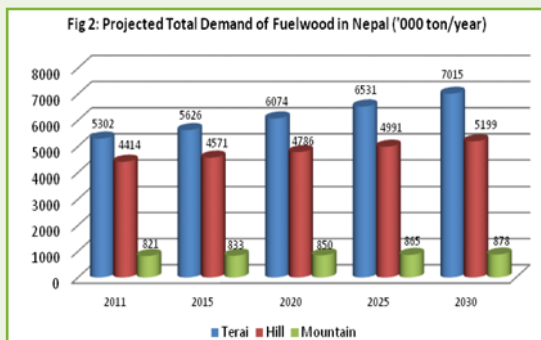
The total current fuel wood demand for Nepal is about 10.5 million tons per year. The demand would increase to 11.7 million tons in 2020, and to about 13 million tons by 2030.

The demand for fuel wood will continue to increase significantly due to mainly population increase in the Terai. The demand in the Hills and Mountains will increase but at a slower rate. The share of the total population in the mountain is very small.

The projected demand for timber is significantly different in different physiographic regions of Nepal. From Figure-2, it is obvious that the projected Timber demand is highest in the Terai and lowest in the mountain.

³2011 Department of Forest Nepal reference

⁴2011 Community Forest Division report



From Figure-3, it is evident that the fuel-wood demand for Terai will rise from 5.3 million tons to 7 million tons over a period of 20 years due to high population growth.

For the hills, the total demand would rise from 4.4 to 5.2 million tons while in the mountain is estimated to increase from 0.8 to about 0.9 million tons in 2030.

In 2030 there will be a gap in timber supply for increased demand for house construction. Likewise fuel wood production in Terai region would be negative due to high demand of fuel- wood related with different socio-economic conditions. The projected demands are however counteracted by rise in price of timber and use of alternative energy sources.

Changing Nepali economy and its effect on forests of Nepal

The **economy** of Nepal is transferring from subsistence farming to cash economy. The share of non-agricultural sector in wage employment has increased from 47 to 65% and that of farm income in total household income has declined by more than 33% over the last 15 years. People engaged in overseas employment have also significantly increased over time. 23.4% of households received overseas remittance in 1995/96, 55.8% in 2010/11. The remittance per household has increased from NRs 15,160 to NRs 80,436 within the last 15 years since the transition to cash economy has led to increase per capita income of Nepali people as well (CBS, 2010). This significantly changes the growth and distribution of population, and consumption pattern of fuel wood and timber in Nepal.

Population increase and the demand of wood products from the forests

The population of Nepal was 26.6 million out of which 17 percent reside in urban areas in 2011. The population is estimated to increase to 28.2 million in 2015, to 30.2 million in 2020 and 34.5 million in 2030. Similarly, the total number of household is estimated to increase to 6.41 million in 2015, to 7.35 million in 2020 and to 9.73 million in 2030 (CBS 2011). The increase in demand for wood products is dictated by the population growth, increase in household numbers and the type of fuel and construction materials used at household level.

Impact of demand and supply of wood products on Nepal's REDD+ program

Deforestation and over-exploitation of forest resources is the most important sources of carbon emission in Nepal. The high consumption of forest product, mainly in fuel wood and timber, for subsistence and commercial purpose is one of the main drivers of deforestation and degradation in Nepal. Harvesting and removal of biomass from the forests for meeting the domestic needs of fuel wood

and timber affects the growing stock and the area of forests and hence the carbon storage in the forests.

The increased demand for timber and fuel-wood is due to increased demand in Terai. By the year 2030, there will be an excess demand of 562 and 202 thousand cubic meters timber and fuel respectively. This implies increased pressure on the forests in the area.

Policy reform actions

The Ministry of Forests and Soil Conservation itself has identified gaps in present policy implementation of community forests and has proposed amendment in the present forest act (Practical Action, 2011), which include:

- Providing joint responsibility to DFO staff and user groups in preparing, implementing, harvesting and selling of CF products.
- Optimum (viable) area per household in allocating Community Forest
- Institute and implement a service charge when timber is collected, commercially sold and distributed. This will increase investment for effective planning, management and monitoring of forests to enhance production capacity of the forests.

Sustainable management of forest could, thus, not only increase and stabilize the supply of forest products, but it would also help in contributing the livelihood of the 17, 685 CFs and CFUGs and 2.18 million households involved in community forest management (DoF, 2012).

Based on the demand and supply analysis, the following reforms in policies are necessary:

Box 1: Enabling policies in place:

- Objectives of Forest Act 1993; Stipulates Industrial, Community and Leasehold Forests,
 - Government is committed to extend forest cover in 40 percent land mass of the country;
 - Highly educated forestry professionals and improving Infrastructure/ Facilities.
 - Devolved Forest Tenure and Governance practice in place.
- The forest act of 1993 and forest regulations of 1995 Policy need to be consistent so that decisions on hand over, harvest and sales of forest products can be made based on the written and formal legal provisions.
 - The prices of timber bidding and harvest plan should also be made public and timely by the Department of Forests to enable loggers and timber traders to plan accordingly. Use of Information Communication Technology could facilitate transparency in the sale of the forest products.
 - The compensation (payment mechanism) for REDD+ should entail better management and reduced harvesting of forest products. This will certainly reduce forest product harvesting from the national forests including community forests of Nepal.

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