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National forest resource assessment commences in Nepal

Forests have multiple environmental and socio-economic functions that are vital at global, national and local levels. Accurate, reliable, up-to-date and easily accessible information on the state of forest resources is crucial to support policy making and planning in forestry sector. In Nepal, the last National Forest Inventory (NFI) was carried out in the nineties. According to that inventory, forest and shrub together were found to cover 39.6% of the country's total land area. Till date, another NFI has not been carried out to update the forest resource database. Macro-level studies and visual observation have indicated that both forest coverage and condition in the hills have significantly improved due to intervention of community forestry. On the other hand, the valuable forest resources of the Terai belt of Nepal are getting degraded. The information based on the inventory of the nineties thus does not represent the present scenario. In this context, the Forest Resource Assessment in Nepal (FRA-Nepal) Project has started from January 2010 to update forest resource database.

FRA-Nepal is a forestry sector bilateral project funded by the Government of Finland for the period of five years (2010-2014) to conduct NFI in the country. The project is under the Ministry of Forests and Soil Conservation (MFSC). The Department of Forest Research and Survey (DFRS) is the implementing agency. The main objectives of the project are: (i) strengthening institutional capacity, (ii) maintaining forestry sector information system, and (iii) data sharing among forestry stakeholders. The project aims to generate national-level data regarding forest coverage (including the protected areas) and the types of forest, growing stock, wood and non-wood products, trees outside forest, and biological diversity.

New global issues such as climate change and Reducing Emissions from Deforestation and Forest Degradation in developing countries (REDD) are gaining importance in international arena, and demand updated forest

cover map and carbon sequestration-related database to reveal change in the extent of forest cover and biomass. In this regard, FRA-Nepal project will facilitate to generate such datasets at national level.

The project will first assess the data needs through wide interaction among the forestry stakeholders. Methodological framework will then be finalized for NFI. After that, national-level forest resource data will be collected by using Remote Sensing technology and ground-based sampling. Under the multi-source data collection scheme, local stakeholders will also be engaged to ensure the best use of local knowledge and to improve ownership of data for future use. Both temporary and permanent sample plots will be laid out in the field, and measured. The state-of-the-art LiDAR (Light Detection and Ranging) technology will be used as a part of NFI to acquire complete information on forests from top of the canopy to the ground. The LiDAR technology has been found to be a promising technology that can give three-dimensional information regarding forest structures. This technology will, therefore, provide complete information about forest structure that is required for biomass calculations. Besides, Very High Resolution (VHR) satellite imagery will be used to detect trees outside forest. National- and regional-level thematic maps will be produced, and the forest resource database will be updated.

The updated forest resource database and maps will be useful for strategic management planning of valuable forest resources of Nepal. DFRS and FRA-Nepal Project anticipate support from all the stakeholders in this national endeavour.