

PRODUCTIVITY AND CARBON SEQUESTRATION POTENTIAL OF VAN PANCHAYAT FOREST IN KUMAUN HIMALAYA

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Abstract: Present study deals with biomass and carbon sequestration potential in Letibunga van panchayat forest in Nainital district of Kumaun Himalaya. The van panchayat was dominated by banj oak (*Q. leucotrichophora*) species and associated with some other tree species. The whole van panchayat forest was divided into three sub-sites viz., hill top, hill slope and hill base site. In van panchayat, total 7, 14 and 34 species of tree, shrub and herb were reported. *Quercus leucotrichophora* was the dominant tree species in each site with maximum density. The biomass and productivity of forest was 523 t ha⁻¹ and 21 t ha⁻¹ yr⁻¹, of which tree layer accounted for 99 and 86 per cent, respectively. The carbon stock and carbon sequestration was 249 t ha⁻¹ and 10 t ha⁻¹ yr⁻¹, of this tree layer contributed 99 and 86 per cent, respectively. This study concluded that van panchayat forest having oak tree species not only provide the wood demands of the local people in the area but also play a vital role in the conservation of carbon, therefore mitigates the climate change problem and also supports the sustainability of the region. In this context, such community forests must be protected and managed in such a way so that the sustainable development could not be hampered in near future.

Key words: Van panchayat forest, Biomass, Productivity, Carbon stock, Carbon sequestration

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