*Indian Journal of Ecology (2021) 48(1): 196-203*

**Manuscript Number: 3193**
**NAAS Rating: 4.96**

# Carbon Storage Dynamics of different Forest Types in Central, Nepal

**Pramod Ghimire**

*Faculty of Forestry, Agriculture and Forestry University, Hetauda, Nepal*
*E-mail: pghimire@afu.edu.np*

***Abstract:*** Forest ecosystems are natural carbon sink, and play vital role in sequestrating the atmospheric carbon into biomass and soil. A study was carried out to evaluate carbon storage capability of three major forest types, representing different physiographic regions in Makawanpur districts of central Nepal. The inventory for determining above and below ground forest biomass was carried out using systematic sampling. Altogether, 68 circular sample plots were laid out systematically in three different forests. Forest biomass was calculated using standard allometric models. Soil samples were taken from soil profile upto 30 cm depth at the interval of 10 cm. Total biomass carbon in hill sal forest, pine forest and *Schima-Castanopsis* forest was found 121.46 t $ha^{-1}$, 96.26 t $ha^{-1}$ and 82.91 t $ha^{-1}$, respectively. Soil organic carbon stocks in hill sal forest, pine forest and *Schima-Castanopsis* forest was found 53.90 t $ha^{-1}$, 41.30 t $ha^{-1}$ and 48.05 t $ha^{-1}$, respectively. Total carbon stocks in hill sal forest was found 1.27 times higher than pine forest and 1.34 times higher than *Schima-Castanopsis* forest. Hence, forest ecosystems can play an important role on carbon sequestration and sustainable management of such ecosystem is crucial to combat global climate change.

***Keywords:*** Biomass, Carbon, Sal forest, Pine forest, *Schima-Castanopsis* forest