**Spatially Accumulation for Soil Organic Carbon Stock in Tropical Forest Ecosystem using Geospatial Approach**

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**Abstract:** Forests present considerable resources and carbon storage put to one side of earth surface. Forest is a natal unit having a gargantuan social organization of living communities at work. These forest communities play a crucial responsibility in maintaining equilibrium of ecosystem on the earth and preserve the environment’s truthfulness as well as competence for sustainability. Soil carbon adds up to the principal terrestrial pool of carbon playing considerable function in the universal carbon cycle. Soil carbon when associated with the organic matter is called as soil organic carbon and holds a great significance in the overall strength of forest. The present study concentrates on the estimation of soil organic carbon of Ranthambhore National Park. It is primarily of edaphic climax and belongs to tropical dry deciduous forest. Forest species namely *Anogeissus pendula, Boswellia serrata, Anogeissus butea* and mixed *Acacia-zizyphus* mainly dominant in the forest cover of Ranthambhore National Park. Geospatial and various forest inventory approaches were used on IRS LISS III data acquired on September 2013, to find the precise carbon content associated with organic matter in the soil. Remote Sensing in conjunction with Geographic Information System are now providing new tools for highly developed ecosystem management facilitating the synoptic analysis of Earth system function, patterning and change at local, regional and global scales over time. Band-width of infra-red has been proved to be constructive and useful to discriminate vegetation cover with concurrence with other visible band-width range in optical imageries. Statistical correlation between estimated and predicted value gives the regression curve which helps in determination of the coefficients (r2). The result obtained for the coefficients (r2) between the predicted and estimated soil organic carbon values is found to be 0.81.

***Keywords:*** Bare soil index, NDVI, Soil organic carbon, Regression analysis