

CARBON STOCK ASSESSMENT IN SWAT VALLEY USING REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEMS

Sajid Ali and Zia Ur Rehman

Department of Environmental Sciences, University of Haripur

sajedali2003@gmail.com

Abstract

Remote Sensing and GIS techniques were used as a tool to characterize the rate of change in above ground carbon stocks over a period of 19 years (1992-2011). The results show that considerable decrease in snow cover, pastures and forest cover has occurred during the study period (1992-2011). The above ground carbon stock was measured in terms of forest cover in the area. For this study, Land sat images of district Swat for two time periods of the same season (27th Sept, 1992 & 20th Oct, 2011) were acquired and classified following supervised classification method. Dense forest shows decrease from 178933.5 ha to 108054.4 ha (13.42 % decrease) which amounts to about 3730.47 ha annually over the past nineteen years. Calculations of carbon stocks were based on total forest cover data, including dense and open forest extracted from Landsat imagery. A considerable decline in carbon stocks has occurred over the period of nineteen years from 1992-2011 owing to rapid deforestation in the area.