

Forestry Issues

Monitoring the successes and failures of community forestry in Nepal using remote sensing and GIS technologies: 1976-2000

Keshav Bhattarai

University of Central Missouri

Nepal's forest policy changed in 1978 from top-down control to bottom-up forms of governance and management. Since then, management responsibilities of local forests have been transferred to many local community user groups, which essentially assume that community forestry may be a panacea for sustainable forest management. In many developing countries, community forest management has been claimed to be the most effective and successful approach to forestry use and development. However, such blanket assumptions have been questioned as forest products became valuable commodities with various forms of development. This paper examines the forestry scenarios of Nepal from 1976 to 2000 using remote sensing and geographic information systems (GIS) technologies. It utilizes Landsat Multispectral Scanner (MSS) data of 1975-76, Thematic Mapper (TM) data of 1989-90, and Enhanced Thematic data of 1999-2000. It also uses 30 m digital elevation data from the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) sensor. All these data sources are used to examine how successful community forestry is in three ecological regions: the Terai (30 m- 999.99 m), the mid-hills (1,000-3,999.99 m), and the mountains (>4,000 m). It examines the driving forces of deforestation such as roads, urbanization and distances from roads to forests and settlements at various elevations. Separate regression models are developed for each ecological region using area deforested as a dependent variable for the transition periods 1975-1990 and 1990-2000. This study includes all the Village Development Committees of Nepal, but excludes metropolitan, municipal, and national park and wildlife reserve areas. Using statistical analyses, this research will answer whether resource degradation is more marked in community forests than in non-community forests, and if there is any effect of elevation and development infrastructure on forestry development.