Ecological Dynamics of Fuelwood Extraction: A case study from Silpura RF, district Sheopur, Madhya Pradesh, India

Saurabh Chowdhury

Abstract

This paper focuses on the debates around the ecological impacts of fuel wood collection from a Reserve Forest (RF) and the factors that govern extraction among the local user groups. Literature indicates that fuewlood extraction by local communities disturbs the natural vegetation in forest landscapes by altering the population and community structure. This study tries to examine the same in the context of a primitive tribal community, the Sahariya Adivasi community, in a dry land ecosystem. A majority of the households in the region are poor and depend on the dry deciduous forests of the Silpura RF for livelihood. With the help of the satellite images and local key informants the RF was divided on the basis of the user's preference for fuelwood collection. Random plot based sampling was used to measure species richness, abundance and frequencies. Key informant interviews, informal group discussions and semi structured interviews were used to identify the factors that governed decisions related to fuel wood extraction among the user groups. The study found that although extraction affected the forest ecology, the level of extraction varied with user preference. Ease of access to the forest was found to determine the level of extraction in the RF. The study also found that the forest department directly affected user's choice by strictly protecting the most preferred fuel wood species, *Acacia catechu* (for its commercial significance). This indicates a more complex regime of forest access and governance than a simplistic divide between inclusion and exclusion. Due to strict restrictions on the extraction of *Acacia catechu*, other species were found to be more intensely extracted. This was confirmed by the Simpson's Evenness Index (E) which detected differences in the evenness among the different patches. Thus, Access to forest land combined with on-site governance regimes alters local ecologies. Extraction of natural resources is complex and layered and is governed by a multitude of site-specific factors, both ecological and social, and cause fine grained impacts on the ecosystem.

Keywods: fuel wood, human use, impact, dry land, Central India, Sahariya, forest dependence, governance