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**Indigenous Communities' Knowledge of Local Ecological Services**

Sanjay Kumar

Page 2859 of 2859-2869

# Indigenous Communities' Knowledge of Local Ecological Services

*Forest planners and forest departments have long ignored local ecological services provided by forests, of which forest communities have knowledge of, and on which the economic, social and political life of the area is dependent. Joint Forest Management (JFM) is restricted to management of forests as providers of forest and non-timber forest products. This paper investigates in detail the extensive indigenous knowledge of such local ecological services among a forest community. It argues that local ecological services are the missing link in designing plans for successful decentralisation and sustainable management of forests. Enlisting such local knowledge, as is done in this paper, is the first step to incorporating it in the management of forests.*

SANJAY KUMAR

It is common knowledge that forests are intricately connected to the livelihoods of rural people: they provide timber, non-timber forest products (NTFPs), and a host of non-forestry services – climate control, water recharge, storm protection, fertility and nutrient balance, etc – that are commonly called 'ecological services'. Despite this knowledge, sustainable timber production remained central to scientific management of forests for centuries. In recent decades, as a result of the alleged virtues of 'decentralisation'<sup>1</sup> in sustainable natural resource management, and the consequent establishment of new local institution such as 'Joint Management of Government Forests' (JFM) in India and similar forms of participatory forest management elsewhere,<sup>2</sup> there is much talk about inclusion of NTFP management in the mainstream of forest development discourse (see Mitchell et al 1999, for a discussion on NTFPs of Bihar and Orissa). A discussion about ecological services,

is an attempt to broaden the list of services available at the local level, and to strengthen such views in forestry management science.

This paper is concerned with local ecological services in the eastern India plateau region, whose indigenous communities, similar to their counterparts in other parts of the world, are the bearers of extensive local-ecological knowledge that revolves around forests of the area. This knowledge could be an extremely useful tool not only in involving them in forest management and development programmes, but improving their general economic condition and ensuring the long-term sustainability of forest management in the area. It can reasonably be argued that local ecological services are the 'missing link' in designing plans for successful decentralisation and sustainable management of forests. A first step in this direction is to acknowledge that such indigenous knowledge exists and is useful, understanding it, and showing that

management of forests. The paper proceeds to suggest that (1) the field realities of natural resource management is often at odds with the popular assumption that there always exists a simple and linear correlation between indigenous communities and forest conservation; and that (2) forest management policies and practices need to be more sensitive to the changing community-nature relationship and to the internal dynamics of indigenous communities.

The paper is organised as follows. In Section I background information on the study area and the methodology of the field study is outlined. The following section summarises the main field observations and offers reasons for the unique silvico-ecological systems prevalent in the area with a view to their use in future policy-making and planning. The paper concludes with a brief note suggesting how to proceed in the direction of policy implementation in respect of local eco-

however, remains marginal to the debate. The main reason for this considered ignorance by silviculturist, forest managers, international forestry institutions<sup>3</sup> and donors<sup>4</sup> appears to be the difficulty of measuring the ecological services, both conceptually and empirically. Insofar as the concept of 'ecological service economics' in forest management decisions has gained ground, it has been as a consequence of the publication of its rough estimates for the earth-biome by Costanza, et al 1998.<sup>5</sup> Studies that describe the local ecological services provided by a forest, or which link them to the livelihoods of the village community are rare. This paper

it can be incorporated in forest management systems. This paper seeks first to enlist the types and extent of local ecological services provided by forests in the eastern India plateau region, and in doing so it fills a critical gap in the knowledge of natural resource management. It then proceeds to analyse the differences in perceptions about the local ecological services and attendant practices within communities that are dependent on forests under two contrasting land-tenure regimes, namely, community forests and state forests. Our aim is to understand the kind of institutions that can be developed and owned by local users for sustainable

logical services.

## I Background and Observations

The data for this paper come mainly from three villages, namely Katwa, Karudih and Hesadih situated in the eastern plateau region of India, a region that is home to both one of the best sal (*Shorea robusta*) forests in the world and the most populous indigenous communities of the munda and santhal tribes. The study area provides a unique opportunity to compare two different forestry institutions as it has both community-owned forests and state-owned

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2859

[Next Page](#) [Next Page](#)

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