

## ADDRESSING FOREST DEGRADATION: ROLE OF ECOSYSTEM SERVICES

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### ABSTRACT

Forest ecosystem services are the consumptive benefits from forests like timber, non-timber forest products, genetic resources and fresh water along with non-consumptive benefits such as ecotourism. They also include functional benefits like carbon sequestration and storage, hydrological services, watershed protection, biological control and pollination. Despite high importance attached to forest ecosystems for providing goods and services, the communities and private individuals often lack incentives to protect and conserve forests resulting in their degradation. Ironically, India's forests also face a similar situation wherein despite gradually increasing forest and tree cover, the quality of forests is not of the desired level as evident from poor natural regeneration, unregulated grazing, and high incidences of fire, illicit felling, girdling and lopping. Recognition to the forest ecosystem services and their mainstreaming in policy and action for incentivizing the providers of these services, viz., communities, individuals and departments is seen world over as a solution to tackle the problem of forest degradation. The paper taking clues from other countries articulate the need for a policy in line of 'Beneficiary Pays' principle wherein the providers of forest ecosystem services are duly rewarded so as to ensure that forests are not only saved from further degradation but also improved and conserved for posterity.

**Keywords:** Forest ecosystem services, Forest degradation, Beneficiary pays principle, Payment for ecosystem services.

### Introduction

The Millennium Ecosystem Assessment (MEA, 2005) classified forest ecosystem services in four broad groups, i.e., provisioning services, cultural services, regulating services and supporting services. The provisioning services include all consumptive benefits like timber, non-timber forest products such as medicinal plant parts, gums and resins, and other genetic resources. Given provisioning of fresh water is one of the most important services. As per World Bank, 2016 forested watersheds and wetlands supply 75% of global fresh water for domestic, agriculture and industrial needs. The cultural services are non-consumptive benefits obtained from forests like religious and aesthetic values, habitat and recreational benefits such as ecotourism. The regulating services are the functional benefits like carbon sequestration and storage, hydrological services, watershed protection, biological control, pollination and natural hazard mitigation. The supporting services are the key services like soil formation, primary production, nutrient cycling and biodiversity, on which all other ecosystem services depend.

Despite high importance attached to forest ecosystems for providing goods and services, the

communities and private individuals often lack incentives to maintain forests in ways conducive to the production and maintenance of important ecosystem services. Most would consider ecosystem services as public goods (Weimer and Vining, 2005), which are goods defined by several characteristics like non-rivalry in consumption and difficulty in exclusive ownership. To better understand the implications of ecosystem services as public goods, consider a community with commonly allotted forest land. The community forest performs certain ecological services such as ground water recharge, carbon sequestration, topsoil stabilization, pollination, and aesthetic beauty, besides several others. The community is among many groups who benefits from these services. The distant city dwellers may draw direct benefit from the aesthetically pleasing nature of the good forest or may enjoy the wildlife they sustain. Those downstream from the community forest benefit from clean water and increased duration of water flow. Still others in the global community benefit from the carbon sequestration services performed by these forests in conjunction with others globally. However, there is no mechanism exists whereby the providers of these local, regional and global level ecosystem services could be incentivized (Steed, 2007). On the other hand, the forest based communities and the forest department

**Forest Ecosystem Services have been recognized world over for having the potential to address the challenge of forest degradation in a mechanism whereby the providers of these services are paid by the beneficiaries.**