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## Governing Ecosystem Services for Poverty Reduction: Empirical Evidences from Purulia District, India

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Abstract: A number of authors have recently argued that there are strong links between ecosystem services and sustainable development, particularly development efforts that aim to reduce rural poverty. We see two distinct routes by which the science of ecosystem services can contribute to both nature conservation and sustainable development. First, a thorough accounting of ecosystem services and a better understanding of how and at what rates ecosystems produce these services can be used to motivate payment for nature conservation. At least part of the generated funds can be used to compensate people who suffer lost economic opportunities to protect these services. For example, if rural poor are asked to take actions that reduce farm productivity to protect and regulate water supply, those farmers could be compensated for the reduced productivity they experience. When the benefits of natural ecosystems are explicitly quantified, those benefits are more valued both by the people who directly interact with the ecosystems and the governmental and other agencies that would have to pay for substitute sources of these services if these ecosystems should become impaired. Appreciating the value of ecosystem services can motivate increased conservation investment to prevent having to pay for substitutes later. This approach could be characterized as a "government investment" approach because the payments will generally come from beneficiaries outside of the local area, and a governmental or other agency is typically responsible for collecting and redistributing the funds. Second, a focus on the conservation of ecosystem services could improve the success of projects that attempt to both conserve nature and improve the welfare of the rural poor by fostering markets for the goods and services that local people produce or extract from ecosystems. These projects could be characterized as more "community based" because the goal is to foster the more organic, or grassroots, development of cottage industries, such as ecotourism, or the production of non-timber forest products, that are enhanced by better protection of local ecosystems. Using this framework, we discuss the factors that may have contributed to failure or success for several projects in the district of Purulia, one of the most backward districts of India and inhabited by indigenous group of people. A large majority of people in this district are dependent on environment based incomes for their sustenance. The erosion of natural resource base owing to poor governance in the district has led to the reductions in the household incomes of these people. The scale of our analysis is local or project level. The plight of poor has little to do with the production functions of ecosystem services. But for rural poor, at the local level, the status of ecosystem services can make a big difference in their daily lives.

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