



The contribution of agroforestry systems to reducing farmers' dependence on the resources of adjacent national parks: a case study from Sumatra, Indonesia

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Abstract

There is much debate about the way conservation and development are best integrated to reduce the encroachment pressures of poor rural communities on the biodiversity resources of protected areas in the tropics. One frequently recommended instrument is to intensify farming systems in the adjacent areas, so as to decrease the need to harvest resources from national parks. This study examined this issue by analyzing the effects of different household land uses in villages near a national park on their propensity to harvest resources from the park. In the northern part of the Kerinci Seblat National Park (Sumatra Island, Indonesia) the park buffer zone is comprised largely of community or village forests and human settlements. The village forests were formerly managed as production forests and provided significant cash income to the village. They were converted into farmland, particularly to mixed-tree gardens or agroforests. Natural forest coverage has now declined to 10% of the former area within village forest land. We analyzed the characteristics of the mixed gardens and village forests, and their practical contribution to reducing farmers' dependence on the adjacent national park resources. Households with farms that were more diversified were found to have much less dependency on the national park resources. Households that farmed only wetland rice fields registered the highest value of forest products obtained from inside the park. Households that farmed only mixed gardens had an intermediate level of park resource extraction, while those that had farms composed of both components (i.e. wetland rice fields and mixed gardens) had a dramatically lower level of economic dependency on park resources than households in either of the other two categories.

Introduction

The classical method of preserving a natural area has always been to declare it off-limits and to enforce exclusion by local people (Wells and Brandon, 1992). Recently, an alternative approach has been receiving much attention: Linking enforcement to some form of compensation to the communities that are directly affected by the

presence of the natural area. This enables them to recover some benefits from foregoing their use of the protected area's resources. Conservation would be ensured by reconciling the management of protected areas with the social and economic needs of local people. These projects have come to be known as integrated conservation-development projects (ICDPs).

Management plans for parks and multiple-use