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## Whereabouts devolution and collective forest management?



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#### ABSTRACT

Devolution in forestry generally refers to the transfer of some degree of central government authority to local responsibility. It commonly takes the form of recommendations by external advisors in developing country situations who encourage formally organized decision making by a local political community. This paper reviews the literature on local tenure, the summaries of case studies in forestry, and the broader history of experience with collectives and cooperatives with the objective of identifying the characteristic cases where some form of collective or community forest management might be successful. The paper identifies four cases. It concludes that, at some level, smaller groups of managers may cooperate in labor and capital intensive activities like fire control or harvesting, or in specialized activities beyond their personal expertise, activities like processing and marketing their products. Successful and sustainable community-wide collective enterprises seldom include agricultural or forest land—with the possible, and likely impermanent, exception of low-valued open access land beyond the perimeter of agricultural crops and managed forests.

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#### 1. Introduction

Devolution away from complete central government control, incorporating a role for local communities in the less centralized management of public forests, is a central theme—and a frontier issue—of modern forestry. It takes various forms: public participation in the United States, joint forest management in India, community forestry in Nepal, and the further devolution from local collectives to increasingly individual management in China. It is a newer concept of the last 50 years as applied in these, and other, examples. On the other hand, some communities in central and eastern Europe have longer, perhaps centuries longer, experience, not with the process of devolution, but with seemingly permanent village forest management which, of course, is the recommended objective for many proponents of devolution.

Some see local community involvement as a means to reduce central government budgets. Others see it as a means to reduce conflict in management and use of the resource. Still others come to the topic from interest in land tenure which they recognize as a core issue in any of several broader policy concerns (and many do understand the overlap among these perspectives). The widespread and severe forest degradation and deforestation that typifies many developing countries today generates international interest in and broader support for the reform of forest tenures. And from this interest, forest tenure has become a crucial focus of policy and analysis for international agencies, non-

In fact, there is a vast collection of experience in devolution and local collective action in forestry. It shows that collective action, commonly identified as "community forestry" has been successful in some cases under some circumstances and for some period of time but, like most reasonable ideas, its effective application is not universal. Perhaps it is time to examine the experience more closely—with the intention of identifying both the characteristics and the limitations of successful devolution and effective community (or collective) action. This experience and an understanding of its characteristics can provide focus and, thereby, improve the advice of those who recommend community forestry so widely and in so many developing country situations. That is the objective of this paper.<sup>1</sup>

Examples from Ethiopia, Ghana and Paraguay show that the benefits of the transfer to local management often depend on the specific arrangements for establishing and maintaining the land use rights (Deininger and Jin, 2006; Besley, 1995, Carter and Olinto, 2003). Presumably, the institution associated with the least-cost arrangement for establishing these rights will be most effective and we can imagine that, in some cases, the least-cost arrangement may involve collective decision making by one local group or another, while in others it may

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governmental organizations (NGOs), and academic researchers interested in topics as varied carbon sequestration and global change, biodiversity, and erosion control and watershed management, as well as poverty and general economic development.

<sup>★</sup> This article is part of a special section entitled "New Frontiers of Forest Economics: Forest Economics beyond the Perfectly Competitive Commodity Markets", published in the journal Forest Policy and Economics 72, 2016.

<sup>&</sup>lt;sup>1</sup> In another recent review, Yin et al. (2014) conclude that the experience with collective action in forestry is well-documented in case studies from India and Nepal, but limited elsewhere, and that rigorous evaluation, especially of the link between tenure and the condition of the forest, is lacking.

rely on individual private action—but we should certainly be careful about suggesting any broad and general preference without examining the specific local conditions more closely.

The more rigorous recent analyses tend to emphasize the experience of agriculture and that experience is almost exclusively with individual private management. Should we expect the same for forestry? Do we conclude that individual private management is the inevitable final preferred solution for all devolving land management? On the contrary. The important evidence goes beyond the experience of these recent agricultural assessments. There is a long and informative global history with collective activity. It includes larger scale collective action as in public management of resources of national or global value such as Yellowstone, Sagarmantha, and the Serengeti. On a different scale, it includes 17th and 18th century New England town commons in the US, 20th century grazing land for livestock in Botswana (Runge, 1981), and those long-standing locally managed village forests in East and Central Europe.<sup>2</sup> It also includes nearly universal successful agricultural experience with collective participation in some activities (irrigation, harvesting, and marketing) but less success in others (land ownership and management).

The objective in this paper is to call on these experiences, and others as well, to propose, first, the characteristics of successful devolution from state-owned management of forest properties and, second, the characteristics suggesting preference between either collective or individual household management at the local level.

#### 2. A most general statement

The question of what agent or institution, formal or otherwise, can successfully and sustainably manage a land or forest resource is largely dependent on who bears the costs and who receives the benefits of the resource management. Both relative differences in and also absolute levels of the costs and benefits of management matter and both may vary substantially over the course of a region's or a country's economic development. Of course, this statement is very general and it is true for all resource management, private or collective.

The difficult cases for private management and, accordingly, the classic cases for public or collective management occur where the benefits of resource management are distributed widely and largely without incremental cost (or, use by one does not diminish the remaining benefit available for another), and the unit operating costs are significant but declining with the scale of management. There must also be some uniformity within the distributions of benefits and costs. Otherwise the greater benefactors will seek ways to exclude the lesser and those who absorb disproportionate costs are likely either to claim disproportionate benefits or to withdraw from participation.

Making the same points out from a different perspective: collective resource management suffers if others who are non-participants in the management are able to obtain benefits from the resource without contributing to the costs. That is, collective management fails if there are significant free riders in the use of the resource and especially if there are free riders whose values for the resource are in conflict with the values of the active community of collective participants in resource management.

To illustrate these very general statements more clearly, consider at least four recognizable and very real classes of examples—always with the intention of identifying the characteristics of successful collective management as well as the factors that may limit its success.

# 3. The first general case: broad national and even global resource values

The most obvious cases for collective resource management are indivisible assets whose values are shared broadly, nationally or even globally. Grand Canyon and Yellowstone National Parks in the US are good examples. Each is an expansive land area that could be divided into smaller parcels but the attraction of Grand Canyon, for example, would diminish if the North and South Rims or upper and lower canyons were managed for different values or even if only managed to different quality standards. Furthermore, the undivided value of each, Grand Canyon and Yellowstone, is shared globally and this value does not diminish as each new visitor partakes in its experience.

Both of these national parks also meet the criterion of declining marginal costs. There was an initial fixed cost for each, whether considered from the perspective of its natural creation or from the perspective of its institutional establishment and organization. Moreover the incremental cost of providing either park's environmental services for another participant is small and declining. Finally, because their values are shared so very broadly it is fair that each park's management costs are also shared broadly. Management by a national agent such as the US National Park Service seems appropriate.

Grand Canyon and Yellowstone are obvious cases for collective management and few would deny the merit of collective responsibility for either of them. Nevertheless, both have their "private" challenges and we will see that the class of similar challenges can become very important for some similar global natural assets. Two of these challenges are i) illegal trespass and ii) recognition that some categories of use within these national parks are not collective.

Despite clearly marked boundaries, well-maintained entrance points and frequent patrol by park rangers, some who use the Yellowstone, particularly big game hunters and snowmobilers, do enter the national park illegally from time to time. The probability of their detection and the penalty when detected relative to the reward from hunting and snowmobile activities in neighboring forested properties combine to limit the level of trespass in Yellowstone.

Regarding the second, non-collective services within the boundaries of the public resource, it is the overall Yellowstone experience that is a public value. Food, lodging, and guide services within the park are private services. The US National Park Service manages the former with entrance fees and a rationing system contained within an overall management plan for the park. It manages those selective private services by auctioning concessions to private agents who provide the services also within the constraints of the park's overall management plan. Therefore, we see that even the apparently very public and appropriately collectively managed Grand Canyon and Yellowstone National Parks have their private components. Few, including the US National Park Service itself, would argue for 100% collective management and provision of all of these parks' services.

Of course, as we survey the globe, we observe other natural resource assets comparable to Grand Canyon and Yellowstone. Canada's Banff and Jasper National Parks are examples. Sagarmantha (Everest) in Nepal and the Serengeti in Tanzania and adjacent areas of Kenya are also examples, but the different distributions of value taken from these resources and the different levels of local economic development create new order for the challenge of their management.

The values of Sagarmantha and the Serengeti are similarly global. Tourists come from far and wide to visit them. Sagarmantha and the Serengeti also share with Grand Canyon and Yellowstone the standard public good criterion of small and even declining management costs for an incremental visitor.

<sup>&</sup>lt;sup>2</sup> Peter Herbst alerted me to the central and eastern Europe experience in personal conversation. October 13, 2014.

<sup>&</sup>lt;sup>3</sup> See any public finance textbook for a review of public goods. The standards used to be Musgrave (1959, p. 43), Shoup (1969, pp. 66–74, 83–85, 94–96) and Broadway (1979, pp. 311–90). While there are newer textbooks, the organized discussion of public goods is largely unchanged.

<sup>&</sup>lt;sup>4</sup> Consider the change in resource value if the river corridor were dammed and lower elevations in the canyon were flooded, as once proposed, while the upper canyon wall and rim remained unchanged. See McPhee (1971, pp. 151–208).

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