

COLLECTIVE ACTION AND PROPERTY RIGHTS FOR SUSTAINABLE DEVELOPMENT

Property Rights, Collective Action, and Agroforestry

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Agroforestry is about integrated agricultural systems in which trees play a prominent role. Agroforestry can provide a variety of functions or benefits for farmers and communities. The most easily identifiable are the tree products consumed by humans: fuelwood, timber, poles, fruits, medicines, and resins. A second group of benefits consists of the services provided by trees to other agricultural activities of the farmer: fodder, green manure, shade, soil conservation, and stakes. A third group includes the communitywide or even global benefits from agroforestry systems: biodiversity, watershed protection, carbon sequestration, and microclimate regulation. In this brief, we explore the role that social institutions—specifically property rights and collective action—may play in the development of agroforestry.

Different agroforestry systems require different periods of time to develop and manage. Depending upon what benefits are sought, farmers will adopt varying degrees of joint action or coordination within the landscape. Over longer time periods, property rights increase in importance; over larger areas, collective action becomes more important. The figure shows how different types of agroforestry outputs or activities will demand different levels of property rights or collective action.

Relative Importance of Property Rights and Collective Action in Agroforestry



PROPERTY RIGHTS AND AGROFORESTRY

To justify investing in trees, a household or group must have reasonable assurance of receiving the benefits from their investments. Investors must have confidence that tenure will be secure in the future. In much of the world, the rights to plant, harvest, and benefit from trees are linked to underlying land rights. In places where individuals or households have acquired land on a permanent basis, through purchase or inheritance for example, they almost always have rights to plant and harvest trees.

Complications arise when government regulations protect a particular tree, when a tree is naturally growing and perhaps predates a household's occupation of the land, or when there are overlapping rights (for example, between two families). In these cases rights to the trees may be contested. In the mailo tenure system in Uganda, both owners and long-term tenants claim strong rights to land. Customary or formal legal rules may grant certain tree rights to non-landowners. The poor may be granted collection rights to fallen tree fruits or dead branches for fuelwood, or pastoralists may be given access to tree fodder in the dry season.

There are also situations where rights and incentives to plant trees are weak. This is the case with land acquired on a temporary basis, for example, through sharecropping arrangements. Land rights may not be conducive to tree planting when the state is the *de jure* owner of all land. In some cases rights to land are conditional on certain behavior. In matrilineal societies such as in southern Malawi, husbands' rights to land are conditional on their continued marriage to the wife, and in patrilineal societies women do much of the agricultural work but lose their rights if the marriage ends. In parts of Africa, women may lack individual rights to plant trees that produce direct consumer products, although they may be allowed to plant trees for other purposes. Local custom or law often defines specific types of rights, such as the rights of neighbors to harvest products from farm boundary plantings or to plant trees that will block the sunlight to a neighbor's house.

The importance of tree tenure must also be considered at a landscape level. Where farmers have unfettered access to trees in woodlands or forests, their incentives to plant trees on their own land are reduced, even if their rights to plant are unquestioned. By the same token, if farmers lose access rights to communal land, such as when land is designated a restricted conservation area, incentives to plant trees in household plots might increase. In strong communal land tenure systems, communities may be encouraged to establish agroforestry systems that provide communal benefits, such as riverine vegetation or common dry season tree fodder reserves.

In customary tenure systems, individual rights to land are granted to those who invest in the land. In the past the major

investment required to open up new land consisted of clearing trees, and so deforestation became associated with increased individual tenure security. Today, with virgin land all but disappearing, new types of investments are more commonly made to secure tenure on customary lands. Tree planting happens to be one of the easiest and most durable investments people can make to prevent the emergence of claims to the land from other family members, villagers, or authorities. In situations where tree planting can enhance tenure security, it is not necessarily the initial level of tenure security that determines the extent of tree planting, but the expected tenure security at the time the benefits accrue. As a result, one may well observe significant tree planting in areas where tenure security is perceived to be relatively low. This tendency also applies to the state. Establishing plantations on customary land can be a way for the state to reassert its rights over customary legal systems. This larger goal of expanding control explains why local communities in various parts of Southeast Asia have burned or encroached on state-run eucalyptus plantations.

COLLECTIVE ACTION AND AGROFORESTRY

Most agroforestry systems can be established on individual plots and managed without explicit collective action. But collective action can increase the effectiveness of agroforestry, either by reducing risks or costs or by enabling positive externalities to occur. Examples include collecting and mixing tree seeds to prevent genetic deterioration, managing group nurseries to take advantage of scarce water sources, establishing grazing rules to prevent browsing of seedlings, and collectively guarding valuable tree stands to reduce protection costs.

For agroforestry systems intended to produce community-wide agricultural or environmental benefits, other types of collective action are essential for establishment and management. Examples include the coordinated planting of trees to reduce soil erosion in a watershed or to establish a community-wide windbreak (such as was done to protect dairy calves and coffee trees in Costa Rica) and the joint fencing of lands to restore natural woody vegetation for biodiversity and water management (as has been done by large farms in Australia). These examples of collective action for agroforestry are seen throughout the world.

Although nongovernmental organizations (NGOs) or external projects often attempt to create new local organizations to carry out such activities, mobilizing existing local groups can be more effective over the long term. Even if the work is new to these existing groups, they can be successful because social capital (trust and mutual obligations) and organizational systems are already established.

RELEVANT LESSONS FOR AGROFORESTRY

As shown in the figure, the importance of property rights or collective action arrangements for management incentives will depend on the particular agroforestry-related task, product, or service being evaluated. Consider the difference between timber and nontimber forest products. In the case of a timber plantation (lower right portion of the figure), incentives to invest and manage determine the level of benefits received. Since it is relatively simple to detect harvesting activities and the size of timber area is often limited, it is easy to protect the trees. In such a case, a clear private property rights system leads to an efficient management outcome. In the case of woodlands (upper left portion of the figure), the protection of nontimber products is costly but tree management is not very important because of relatively low returns to improved management for these lower-value products. In this case, collective protection under a common property regime system often works best. Finally, effective property rights or collective action arrangements need not be formalized. In many examples throughout the world, indigenous systems provide appropriate incentives for the development of agroforestry systems.

Social institutions for property rights and collective action clearly shape agroforestry investments. Agroforestry development initiatives must consider these institutions as they work with local people to identify suitable tree species, agroforestry systems, planting sites, and management systems. In the short term, there may be limited scope to modify these institutions but considerable room to work creatively within them. Over the medium to long term, the development of property rights and organizations for collective action will be critical to improved land management, including agroforestry.

In the future, property rights and collective action will play increasingly pivotal roles in defining rights and responsibilities over the externalities of tree management practices. As stakeholders recognize the need for effective management of, for example, the erosion resulting from tree felling or rights to carbon sequestration from tree planting, they will increasingly value and depend on the institutions that protect their property rights. ■

For further reading see R. Meinzen-Dick, A. Knox, F. Place, and B. Swallow, eds., *Innovation in Natural Resource Management: The Role of Property Rights and Collective Action in Developing Countries* (Baltimore: Johns Hopkins University Press, 2002); K. Otsuka and F. Place, eds., *Land Tenure and Natural Resource Management: A Comparative Study of Agrarian Communities in Asia and Africa* (Baltimore: Johns Hopkins University Press, 2001).

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