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## LAND TENURE AND NATURAL RESOURCE MANAGEMENT A COMPARATIVE STUDY OF AGRARIAN COMMUNITIES IN ASIA AND AFRICA

KEIJIRO OTSUKA AND FRANK PLACE, EDITORS

When rising populations put pressure on limited land and other natural resources, the result—in the absence of technological and institutional innovations—is poverty and unsustainable use of natural resources. Poor farmers who suffer from food shortages and food insecurity often seek to expand cultivation by removing natural woody vegetation. Such deforestation is common in poor regions of developing countries, and it seriously degrades the natural resource base. Although researchers well recognize land degradation and deforestation at the global level, they have given little attention to understanding the underlying causes of these undesirable trends. To achieve sustainable development, policymakers urgently need knowledge on how to prevent excessive use of natural resources, enrich the natural resource base, and reduce food insecurity and rural poverty. The book *Land Tenure and Natural Resource Management* examines how property rights affect long-term management of forestland, rangeland, and farmland, as well as tree resources and other minor forest products.

The volume focuses on two major land tenure institutions—customary land tenure and common property. Contributors to the book examine a number of key issues concerning these institutions, which are by no means static, rigid, and culturally predetermined. What are the characteristics of these two land tenure institutions? What factors affect their evolution? What are the consequences of such evolutionary changes on land use and natural resources management? Are customary land tenure institutions efficient in allocating and providing management incentives for land and other natural resources? Under what conditions is the common property regime viable and efficient in managing forest resources?

To derive generalizable conclusions, researchers examined these issues in such diverse areas as southwestern Ghana, north-central Uganda, most of Malawi, western Sumatra (Indonesia), northern Viet Nam, both hill and inner Tarai regions of Nepal, and central Japan. They conducted community, household, and forest surveys and combined these primary data with secondary data, including remote sensing data where available. Overall, their findings point to major policy implications in four areas.

### LAND RIGHTS IN CUSTOMARY TENURE AREAS

According to customary land tenure rules, individuals who make efforts to plant and manage trees are rewarded with strong individualized land rights. Thus land rights institutions in customary land tenure areas have been evolving toward individualized ownership systems, which provide strong incentives to develop agroforestry—especially the growing of commercial trees—on various land types including degraded, sloping land. The development of agroforestry contributes not only to the efficient use of resources, thereby improving the incomes of poor farmers, but also to the restoration of a tree-rich environment.

Successful land titling programs in these areas would reinforce demands for individualized tenure. If land is collectively owned, however, land titling programs aimed at establishing private rights will create conflicts among family members, which leads to tenure insecurity rather than security.

## COMMON PROPERTY MANAGEMENT

The common property system, in which community members jointly own and use tree and other forest resources, is efficient in managing nontimber forest products. Many examples of successful management are found, for example, in the hill region of Nepal and prewar Japan. The common property system, however, does not provide proper incentives for the management of timber forests, whose value is responsive to good management. Thus a common property forest regime is effective when the predominant forest resources are minor forest products, whereas high-value tree production is less amenable to community management.

This finding suggests that social forestry projects should redesign their incentive systems. In particular, they should replace the system of equal sharing of benefits with systems that provide appropriate incentives to individual farmers to manage timber trees and other valuable products. One way is to grant complete tree ownership rights to individual community members. The element of community management should be maintained, however, for protection of trees. It is also important to provide profit incentives to grow and manage timber trees by promoting the marketing of harvested trees.

## DEVELOPMENT OF AGRO-FORESTRY TECHNOLOGIES

Given the existence of strong incentives to manage agroforestry plots on sloping lands under communal ownership, it makes sense to develop and disseminate profitable agroforestry systems. Actions might include developing improved germplasm of high-value trees, improving techniques for propagating useful tree germplasm, improving the flow of information on these new technologies, and providing proper incentives for private germplasm delivery systems to develop. To date, however, research and development on agroforestry technologies, particularly on commercial trees, have been grossly inadequate relative to R&D for more traditional annual crops. In addition, research on sustainable tree management must be carried out for wide areas of abandoned land that were formerly planted with coffee, cocoa, and other tree crops.

## MARKET DEVELOPMENT

Market development is critical to generate the degree of intensification that will enable rural people to lift themselves out of poverty without mining their surrounding resources. Increased spending on rural road construction is a key component of such development, and policymakers well understand this point. Although developing roads may accelerate deforestation by making timber harvesting more

profitable, it will also accelerate the development of agroforestry and timber plantations where primary forests have already been cleared. Further, the development of product markets has been found to foster the development of markets for labor and capital and will increase the demand for individualization of land rights. Thus, market development is a vital strategy in improving natural resource management.

## CONCLUSION

The problems of deforestation and land management are intertwined with the problems of poverty and food security in rural areas. There is no single-faceted or uniform approach to policy that can successfully address this complex problem. Solutions will need to be multifaceted, involving efforts to strengthen institutions for managing natural resources and to raise the profitability of agriculturally based rural livelihoods by developing technologies and improving markets. This approach strives to optimize private efficiency and hence growth that leads out of poverty, while at the same time providing a better environment for other socially desirable outcomes.

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