

Land Tenure and Environmental Degradation

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A recent IFPRI Report, *Linkages between Land Management, Land Degradation, and Poverty in Sub-Saharan Africa: The Case of Uganda* (<http://www.ifpri.org/pubs/abstract/rr159.asp>), inspired significant internal discussions at USAID on an interesting and important question: How do issues such as desertification factor into discussions about land? Some have said that the planet loses an area the size of Greece to desertification each year. While there is a general consensus about the need for land tenure, the need to preserve land itself and to prevent land degradation (including salinization) seems to float around on the margins.

In this expert opinion, I will take a closer look at the relationship between land tenure and environmental degradation and specifically address some instances in which land tenure has had a direct impact on environmental degradation.

The issues of land degradation immediately bring to mind a favorite phrase among economists and economic historians: The Tragedy of the Commons. This "tragedy" was the degradation of open access – "common" – land, which could be used by all but was the responsibility of none. The unfenced, open-access land in question was heavily degraded through overgrazing by competing sheep farmers. Each farmer had a right to use the land, but none was responsible for maintaining it. When fencing and private ownership was introduced, owners had a direct interest in and saw a direct benefit from maintaining their own land for their own sheep or other uses. Accordingly, they maintained flocks at a size that could be sustained without the "subsidy" of free grazing rights on land they did not own.

Private ownership with limited access rights (meaning the owner could keep others from using the land or set terms for use, such as rental agreements) has historically led to greater protection. This is, of course, only one of many forms of land ownership. Land can be owned publicly or privately, with private holdings belonging either to individuals ("fee simple" ownership) or groups (customary rights, or community property, for example.) "Ownership" can also include the right to use land for a given or indeterminate period (through leases from the government or private individuals, for example, or even through customary or legislative provisions) without full rights to transfer the land or its use. What history has shown, in general, is that when there is competition for land resources, private, limited-access ownership leads to better environmental protection of resources. With open access land – "the commons" - there are limited incentives to protect the resources because the costs are widely dispersed, but the benefits accrue to whoever can get them first.

Recently, some important land use developments have taken place that had a direct impact in reducing desertification. In fact, the case was picked up a few years ago when satellite photographs showed the appearance of a swath of vegetation along the Sahel in Niger that had not existed 10 or 15 years previously. It turns out that the land had been planted with trees due to a change in land policy: while all land officially belonged to the state, the state began to recognize individual ownership of trees, giving individuals a claim for long-term use of the land on which the trees were planted. Women had begun planting fruit trees in accordance with customary law (unhindered by previously adverse state policy) which gives tenure rights to tree planters. In other words, by planting trees, women became "owners" of the land, at least during the 30-50 year productive life of the trees. Eventually, the government recognized this "privatization" of what had been fairly non-productive land.

In general, individual owners protect what they own and invest in it, especially when there is more demand for land than there is supply. They do not incur costs to preserve resources if others have an equal or greater claim to the benefits. Private communal/group ownership also tends to lead to greater protection for limited access land under complex customary regimes, although overall investment tends to be lower. Customary law in Guinea-Bissau has helped move land from slash-and-burn degradation into long-term orchard investment, because, as in Niger, custom gives ownership rights (actually, "use" rights) based on the life cycle of the crop, not the intent of the user. When a Guinean woman plants a tree, she has property that she can pass on to her children, and interviews have established that many women have invested significantly in orchards on otherwise open-access land in order to create long-term property interests to give their children. Horticulture, on the other hand, gives security only during the horticultural season, after which village leaders can reassess land use. In those cases, little permanent or long-term investment is made.

To complicate the example a bit more, the "orchardization" of Guinea-Bissau, which is ongoing, is not simply an issue of land rights. It must be possible to use the land profitably (as defined by the user), which requires systemic changes in business environment. After some liberalization of the economy in Guinea-Bissau in the 1980s, individuals discovered that they could make money growing cashews, so that there was an increase in investment by poor farmers through planting cashew trees. However, the earning potential was greatly repressed by an export cartel that suppressed producer prices. When USAID helped to eliminate the cartel and introduce producer price competition, farmgate prices doubled over 5 years in a falling international market, and the rate of investment jumped dramatically. Guinea-Bissau is now one of the world's leading cashew producers. Many producers have switched to cashews and other tree crops and away from rice production - which has the lowest return on labor of all agricultural investments in the country and which inflicts the greatest soil degradation among competing land uses. "Orchardization" is helping to stem environmental degradation.

Of course, orchards can also lead to loss of biodiversity through the destruction of natural forests in favor of mono-crop orchards. Such destruction is worse, however, when the forests are not protected either through enforceable zoning or private ownership.

Historically, environmental degradation is far greater in jurisdictions that do not allow for private, limited-access ownership. The Aral Sea is a marvelous case in point. When individuals are given the right and opportunity to own and decide how to use land, they tend to protect it more than under any other land-use scheme.