

Common Property Issues, Tenure and Access Rights in Relation to Land Use Management at the Forest/Agriculture Interface

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Forest/Agriculture Interface

The forest/agriculture interface refers to those regions in which production systems based on forest products and those based on agricultural products both have influence. These regions also often contain different and frequently conflicting *de facto* and *de jure* tenural and access arrangements. Conflicts in relation to the latter are frequently between traditional users of a resource with *de facto* rights and newer users that have obtained *de jure* rights, both rights unacknowledged by other users. Where the traditional users endow the natural resource with spiritual and cultural importance, a change in usage and 'Invasion' by outsiders is seen as a threat to identity, whether livelihoods are practically threatened, or not.

Conflict is not inevitable at the forest/agriculture interface as there are examples of long-established, coexisting systems, usually characterised by mutual interdependence. Reliance of communities and farming systems on forest products is often found alongside community protection of the forest resource. Community action to protect mutually important resources requires an organisational development that is only found in established communities with a well-defined community identity. It is rarely found among

new settlers, or other heterogeneous groups that have not developed a common identity, as social disapproval is an insufficient deterrent to resource misuse. Successful management at the interface infers present sustainable use, but does not promise continued sustainability. Increasing pressures from population growth, agricultural development, and agricultural intensification will cause increased use and this may go beyond sustainable levels.

Dynamics at the Interface

Where forested and agricultural land successfully co-exist, the forest and/or its products are often vital to the farming system; for instance in maintaining soil fertility, and as a safety net for alternative sources of food and income. A dependent agricultural system will lead to protection of forests, but agricultural activities may also threaten forest resources. World-wide, the most common cause of deforestation has been agricultural encroachment and conversion of forests to agricultural land. Strong pressures produced by population growth, low incomes, resettlement schemes, need for more food crops, and market opportunities for other agricultural, livestock or industrial timber production, have provided the economic rationale for conversion (Table 1).

Table 1: Factors working for and against conversion of forest land to agriculture

Factors aiding conservation of forest land	Factors encouraging conversion of forest land to agriculture	Key policy factors
Improved agricultural yields	Greater returns from agricultural production than sustainable use of forest resources	Farm pricing policies
Economic development Important contribution to peoples livelihoods depending on the forest resource.	Low incomes Agricultural and industrial timber production.	Tax and credit subsidies Investment incentives Farm pricing policies
Urban migration	Resettlement schemes Population growth Need to increase agricultural production	Terms of logging concessions National legislation

Economic valuations of natural forest areas have traditionally focused on timber resources and tended to ignore market opportunities for non-wood products such as edible fruits, oils, latex, fibre and medicines. Valuations based solely on readily-marketable timber resources produce low net revenue figures which support the financial argument for forest conversion. Detailed accounting of non-wood resources show that these can have significant worth as cash crops and subsistence goods. The windfall returns frequently available by conversion, through timber sales, charcoal making and the high crop yields on the initially fertile land, are attractive in the short-term. Alternatives to conversion only begin to surpass returns under converted land after several years, as the productivity of the soil declines.

The relationship of agricultural colonisers to forests is very different from that of long-settled forest-edge agricultural communities. The former, with little knowledge of the forest's content, will rely largely on knowledge of agricultural production from outside the area and hence on production from the cleared agricultural land. The contribution of forest products and the forest environment to the livelihoods and culture of longer-settled communities is much greater, and hence the forest is perceived to be of greater value. The question of the value of forests and their products to local communities is crucial in stabilising the forest/agricultural interface.

Where there is outside national or international interest in preserving a unique forest environment or biodiversity in such areas, suitable benefits to the local community for such preservation need to be introduced. Economic pressures, even when they do not lead to full forest conversion, may cause increased exploitation of the forest resource which, above a sustainable level, will cause degradation of the resource. Degradation will ultimately lead to a reduction in sustainable offtake from the forest.

Tenure Rights and Access to Resources

There is a close relationship between management and the tenure arrangements under which the resource is held. Intensively-cultivated agricultural land, closest to the homestead, has the most exclusive tenure, with that further away, visited less often and with certain rights of access and use partially shared with other community members. Similarly, within communally-managed forest resources, there usually exist different tenure arrangements for different areas of forest and different rules for different products within the forest.

Forest clearance is in many situations associated with giving cultivators rights over the land, both in new settler situations and within established communities, because it is necessary to prove intention to make productive use of allocated land by clearing. The reverse may also be true, in that the planting of trees on agricultural land gives the cultivator more long-term rights to land. Indeed, many examples make it clear that it is the investment of labour which creates ownership.

Resources may be valued solely for their commercial value; contribution to subsistence needs; as a safety net or additional security; as a home and livelihood base, or any combination of these. Forest resources can be particularly important for food security, providing an important buffer during certain seasons and /or major periods of stress, particularly to vulnerable groups such as women, children and the poor. They can also supply vital nutritional supplements to diets based largely on carbohydrate-rich staples. Wild resources are of particular importance to the rural poor, women and children, especially at times of stress such as drought, changing land availability or ecological change. These groups generally have less access to land, labour and capital and thus need to draw more on wild resources that only require their own labour for collection.

Box 1: Tenure and access rights – example from communally managed forest resources in Nepal

The right to use trees and their products may be subdivided as to the type of product, where it is found and time of collection/harvest. In the communally-managed natural forests in Nepal, the forest may be open for gathering of deadfall fuelwood at all times; for fodder and lopping of dead branches at set times of the year only; and with special permission from the forest users committee to cut a living tree for timber (Speth, 1990). In general, the right to use produce under trees has been less restricted than other rights, but increasing intensity of free grazing can threaten natural regeneration of the forest system and is therefore starting to be controlled in some

areas (Carson, 1992). Specific individuals may be recognised as having special needs with regard to specific products. The village blacksmiths in some villages may have special rights to collect fuel-wood throughout the year from communal forests when they are closed to other villagers; a recognition of their greater resource needs in providing an important service to the local community. Similarly, households requiring larger amounts of fodder will collect from more trees, further away from the village, and their greater use of this particular resource is partially off-set by their expenditure of more labour in collection.

Box 2: Zonation of resource by need and type of collector; an example from Botswana:

The Tswana live in villages which are permanently sited, surrounded by a grazing zone, an outer ring of bushland and ultimately, some miles away, by farmland. A village's 'lands' can be up to 15 miles away, and major cattle-rearing areas even further away. Concentric circles of fuel-wood ownership, each with differing rules, surround the village. Chiefs ban the cutting of any trees within the village because they are valued for shade and cover. Within a 2-3 km radius, trees are regarded as the exclusive property of village women and children for firewood purposes, and non-villagers are chased off. Collectors are

expected to leave the most accessible wood for the elderly; to walk straight outwards from their homes and not use the fuel resources from the other side of the village; and may not take living wood. Village collectors with transport (always male) have to go beyond the 'collection by foot' area and to go even further away if they are after poles. They share this area with other men from the same tribal subsection. Non-local commercial traders are encouraged to travel to still remoter areas where heavier tools are used and live trees are felled at times. (Shepherd *et al.*, 1985).

Box 3: Implications for gender and generational equity of changes in resource tenure

Traditional systems of resource tenure are characterised by their multi-layered nature, with rights to use, or harvest specific products and areas of a resource held by different individuals and groups. Rights in decision-making over use and management of the resource were likewise held by a number of individuals and/or groups. Changes in tenure brought about by land titling and privatisation tend to simplify tenure arrangements and in the process, to concentrate the multi-layered bundle of tenure rights into a single ownership package. For example, under traditional systems in South Sumatra, Central Sulawesi and Irian Jaya, women had some say in how land was bequeathed. This is lost under individualised tenure systems as land certificates (includes some forested land, secondary forest as part of a swidden cycle, and forested land reserved for future cultivation) are issued in the man's name as

head of family. Similarly, rights of harvest and use of certain areas and products (frequently held by women) have been judged secondary rights to those of land (held by men). Traditionally in Central Sulawesi if a man planted a tree in a forest area, when he dies the right to harvest that tree is inherited by his wife, but land, however, is inherited by the husband's brother. In the process of land registration these separate rights are not recognised with the widow's rights to the tree ignored and a single certificate issued in the brother's name (Li and Sulaiman 1991). Where women are not allowed to hold title deeds to land, for example in India, a change from communal to private ownership will have consequences for women's access to resources. Access will now be determined by their relationship with individual men, rather than their membership of the wider community.

Conclusions

It is commonly recognised that tenure regimes in sub-Saharan Africa were misunderstood by incoming colonial rulers from a far more densely populated Europe, where common property regimes had long given way to private, permanently settled, contiguous farms. Ignoring their own history, and using an evolutionist 'civilisation' model for the difference between what they were familiar with and what they found in Africa, they recognised only permanently farmed land as having an owner. Both fallows and common property resources were classified as state land and, thereby, turned into open access resources. Few independent countries have as yet challenged the tenural regimes established during their respective colonial periods and had the courage to try to revert to the kinds of land tenure which worked so well before; Tanzania being a rare exception. At the local level, indigenous tenure systems have survived where they could, and mutual recognition and respect of boundaries is usually afforded at this level. An important characteristic of these systems is their flexibility, encompassing a range of individual, household, clan and group rights.

Despite the fact that population densities have risen dramatically, there is still a role for common property regimes in many areas. The need now is for the recognition of the logic and durability of many indigenous tenure systems, and the alignment of national-level tenure laws to accommodate them.

Key issues for future research focus:

- Systems to encourage and monitor sustainable management;
- Development of supportive policy and legal frameworks;
- Strategies for re-orientation and strengthening the capability of forestry institutions;
- Development of balanced interdependence between farming and forestry systems;
- Articulation of CPR management systems with formal state systems;
- Improving equity with regard to socio-economic groupings, gender and inter-generational aspects.

Table 2: Common property: hypothesised myth and empirical reality

Myth	Reality
1. Individual gain provides a stronger motivation than communal good and as a result CPRs are over exploited.	1. Individual survival and security, both in terms of material resources and social identity, is dependent on community survival and support, particularly within a harsh environment.
2. As a CPR becomes more valuable and/or there is an increased pressure to use that resource, over-exploitation and a cycle leading to degradation is inevitable.	2. If increased pressure on CPRs comes from within the society of the original resource users, they will evolve responses to manage it. However, if it comes from more powerful outsiders, CPR organisational rules will be ignored, and local protests over-ridden.
3. CPRs are 'impure' public goods (where one person's use subtracts from the use of others). This subtractability works in two ways; firstly any user of the commons subtracts from a flow of benefits to another- secondly, cumulative use by increasing numbers will eventually lead to a reduction in the productive capacity of the resource.	3. In reality, CPR management decisions are constantly taken and enforced. 'Free riders' are quickly sanctioned. The economic model fails to understand the interdependence of the kinds of communities which manage CPRs, share maintenance of canals, forest paths, bridges, springs and canal, etc. Active management, such as tree-coppicing which stimulates further growth and production of poles and fodder, can increase the value and usefulness of a resource.
4. Privatisation of the resource is the most efficient and effective way to control access and provide the motivation to stop degradation.	4. Common property ownership is the most egalitarian way in which to manage resources. Privatisation of CPRs has led to increases in inequalities as the more powerful and influential are able to secure more of the commons as private property for themselves and their families.
5. Common property management is an inefficient way to manage resources. Such systems rarely maximise production.	5. Common property management is the most efficient way of managing certain resources, for example rangeland with limited seasonal water sources. Maximising production is not always the user's main aim. Reducing or spreading risk is often important, together with the presence of a safety net in times of hardship.

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[NRSP Forest/Agriculture Interface Project 6386 - Review of Common Property Resources and Rights of Tenure in Land Use Management and Planning at the Forest/Agriculture Interface]