

Buhid shifting cultivators adapt land use

Chris Erni

Shifting cultivation is still the main source of livelihood for most upland communities in Southeast Asia. Annual cropping is inter-linked with other complementary livelihood activities like animal husbandry, hunting, fishing, gathering, crafts and wage labour. These indigenous communities have co-existed with their natural environment for centuries, each transforming the other in a dynamic process of change.

Over the last 30 years, the Buhid of South central Mindoro in the Philippines have adapted their shifting cultivation practices considerably. In the upper Fay valley, which is several hours walk from the nearest road, this has led to more intensive and careful land-use practices. These have made it possible to sustain the livelihoods of a growing population on their old ancestral lands. This article looks at the process of land use intensification among the Buhid.

Scarcity of swidden

Traditionally, the Buhid have been highly mobile and a family's response to scarce resources was to move elsewhere. With rich resources, a rather opportunistic shifting cultivation strategy prevailed. Forest and other resources appeared unlimited; only a few permanent crops were planted and little attention was given to preventing invasions of *imperata* grasses and outbreaks of fire in fallow and grassland.

As options to move elsewhere became fewer and fewer some communities developed other responses. The process

The Buhid refer to a newly cut and burned field as a *namay*. It remains a *namay* until the cereal crop, rice or maize, is harvested. Although they have more specific terms for the subsequent stages, fields are generally classified as *talun*. This includes fields that are dominated by a crop such as sweet potato (which may be called *talun kamote-ban* - from *kamote* for sweet potato), for example, right through each subsequent stage of fallow vegetation to mature secondary forest.



Photo: Chris Erni

of adaptation was hastened by an increasing scarcity of swidden land caused by a rapid rise in population. Families evicted by cattle rangers had migrated into the area and laid claim to Buhid ancestral land. There was also some natural population growth. Slash and burn practices had led to large areas of former forest being converted into unproductive grasslands; shortened fallow periods and badly managed fallow land further worsened the situation. While the initial expansion of grasslands created more favorable conditions for some animals, like the deer traditionally hunted by the Buhid, it also attracted the interests of cattle rangers who, until the late 1980s, controlled large areas of Buhid land.

Intensification of land use

A few families were able to create paddy fields but, for most, intensifying land use meant more intensive forms of shifting cultivation. Conscious fallow management has been adopted in which the growth of woody vegetation was encouraged and efforts were made to stop the spread of fire to fallow land.

Furthermore, a more intensive cropping pattern was practiced. The cropping period was extended, new crops introduced and agroforests started to contribute significantly to both food self-sufficiency and cash income.

Three factors contributed significantly to these changes:

- The climatic conditions in the central and eastern uplands with almost year-round precipitation allowing almost continuous root-crop production;
- Flexibility regarding crop preferences. With the absence of a culturally prescribed rice-preference, crops better suited to prevailing conditions could be

introduced. The bulk of calorie intake comes from root crops and plantains. Rice for ritual and social purposes is purchased from other farmers with more suitable soils or from the lowland markets.

- Access to new crops and a keen interest in experimenting with them.

The differences between the extensive and intensive forms of swidden farming that has evolved during the last three decades can be summarized as follows:

Fallow management

Fallow is an intrinsic part of shifting cultivation. But for many decades, outside observers, even trained agronomists, have misunderstood its function and value. Fallow land was often seen as "abandoned land". The cultural bias of foreigners or "lowland people" obscured the fact that its function could be compared to a clover crop on a former maize field.

Fallow has the following important effects:

- Eradicates weeds;
- Restores soil fertility and brings back soil-life;
- Provides forage land for livestock;
- Is a source of domesticated, semi-domesticated or wild food plants, and of protein from large or small wild animals;
- Is a source of herbal medicine, raw material for all kinds of domestic tools, crafts and other products of potential commercial value.

Since Buhid shifting cultivators usually create one or more new fields every year, a household usually possesses a number of fallow fields of different ages and at different stages in the natural succession of the forest community. Thus, the diversity of available useful resources is very high,

probably even higher than in an undisturbed forest. This has a lot to do with the fact that the fallow vegetation is being “managed”. A fallow field is anything but “abandoned”. In addition, most shifting cultivators in Southeast Asia have relatively poor upland soils and cannot draw on the type of nutrient stocks available to farmers working on relatively rich alluvial lowland soils. They are therefore strongly dependent on the ecological processes involved in the species succession of fallow vegetation. Good fallow management, therefore, is vital to them.

Management of species succession

The Buhid consciously influence the pattern of species succession in fallow vegetation. In the second or third year of a new swidden cycle plantains, Tania (Cocoyam, *Xanthosoma sp.*), and fruit trees (mainly Jackfruit) are planted. The shady and moist environment that is created in this way helps the preferred fallow plant community, vines, herbs, shrubs and trees to germinate and establish themselves. In this way the fallow is enriched with domesticated plants, its productivity is extended and invasion by *imperata* grasses is halted. Tania, fruit trees, plantains and bananas continue to be productive although this will decline as nutrients decrease.

In the early growth stage, when the field is weeded regularly, species succession is managed quite intensively. As the vegetation becomes more mature, the degree of management is reduced until finally human intervention may be confined to an occasional clearing of competing vegetation to enhance the growth of a fruit tree, or to maintain a banana or plantain patch.

The enrichment of fallow vegetation and intensive management motivate farmers to protect their valuable fallow from fire.

Crucial crops

Crucial for the more intensive planting of perennials was the introduction of a very productive and at the same time hardier variety of plantain, called *sab-a*. This variety can tolerate the presence and shadow of trees and is therefore very suitable for enrichment planting in fields that are left fallow.

Tania was planted for the first time about 30 years ago and spread rapidly among the communities living in the higher and moister parts of Fay creek. Tania is a perennial plant and produces starchy tubers that have become an important part of local diet. It tolerates semi-shadow and is therefore often planted in the forest alongside creeks. But it is mainly planted in swidden fields during the later stages of cropping and is sometimes combined with plantains and fruit trees.

Agroforests

More recently, some Buhid farmers have transformed their swidden fields into agro-analog forest. This is a form of *talun* that results from progressive species succession management on a swidden field. Eventually the original natural forest is entirely replaced by a man-made forest. Such a *talun* provides food (Tania bulbs, plantains, fruits) but also the much cherished betel nut, coffee and other cash crops such as cacao and bamboo.

Since the Buhid diet is heavily dependent on highly productive root crops and plan-

tains and since some fields have been transformed into agroforests, smaller amounts of land have to be slashed annually for new fields. Today, the Buhid in the Fay valley usually cut only two small fields that measure about 0.3 ha per household.

Land tenure

The development of improved fallow management and the establishment of permanent agroforests was accompanied by changing land rights. Over time, there has been a move from weakly defined communal land rights that approximated an open access regime to individual rights. Intensive fallow management will only work if others can be prevented from using the land while it lies fallow. The increased investment involved in planting perennials was both a reason and a means for transforming traditional land rights. According to traditional law, individuals do not own land: they own the plants on the land. Planting perennials was, and still is used as a way of establishing indirect control over land since swiddening a piece of land with young perennials requires the permission of the owner.

The concept of individual land holdings eventually prevailed. In the early 1990s, there was considerable competition between new and traditional concepts of land rights and there were many disputes. In most areas, individual land rights over swidden land are now fairly well established and is the result of a process that has taken place within the context of indigenous law over the last 30 years.

Outsiders are contesting land resources in the Buhid ancestral domain. The Buhid have managed to retain or regain large parts of the land that had fallen under the control of pasture leaseholders. Some areas in the plains and foothills, however, have been lost to settlers. Since June 1998, the Buhid have a Certificate of Ancestral Domain Claim (CADC) for the entire 94,000 ha ancestral area and have applied to have it turned into a Certificate of Ancestral Domain title. Unfortunately, this has not yet been granted and as long as access to natural resources remains uncertain, it is very difficult to further intensify land use.

Chris Erni, Programme Coordinator Asia, International Work Group for Indigenous Affairs (IWGIA), Classensgade 11 E, 2100 Copenhagen O, Denmark. ce@iwgia.org

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	Extensive form	Intensive form
Cropping pattern and sequence	<ol style="list-style-type: none"> 1) Maize or rice 2) Sweet potatoes, some vegetables and other root crops 3) Fallow 	<ol style="list-style-type: none"> 1) Maize or rice 2) Sweet potatoes, vegetables and other root crops 3) Colocasia, plantain, banana or fruit trees 4) Fallow or transformation of fallow into agroforest
Perennials	Some bananas, plantains and fruit trees are planted in settlements	Some fallow fields are transformed into agroforest plots, with a mixture of perennials, amongst others coffee for cash
Subsidiary activities	Hunting, fishing and gathering of wild plants are important	Hunting less important; fishing and gathering of wild plants important
Animal husbandry	Extensive pig and chicken husbandry	Extensive pig and chicken husbandry