

SWIDDEN

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The cultivation in swiddens (*umai*) of rice and, to a lesser extent, certain nonrice cultigens was traditionally the most important aspect of the subsistence economy of the Iban. *Bumai betaun* (making yearly swiddens) was more than just the central economic activity in the life of the Iban; in a real sense it was their life. It was the pivot around which all other aspect--cultural, ritual, social, jural, demographic--turned.

The swidden cycle normally consists of nine sequential activities--*beburong* (taking omens) and selecting the swidden site; *nebas* (slashing) the underbrush and saplings; *nebang* (felling) the larger trees; *nunu* (burning) the slashed, felled, and dried material; *nugal* (planting) in the ashes from this burn; *mantun* (weeding) the new swidden (necessary if cut from secondary forest); *nginang* (guarding) the growing crops from predators; *ngetau* (harvesting) the rice crop; and *ngangkut* (carrying in) the harvest. In addition, several nonsequential activities are associated with the swidden cycle, including *ngega' ngkayu* (harvesting the nonrice cultigens); *ngawai langkau umai* (building swidden houses); and making the tools needed in the swidden (by *nganyam* [planting], *nempa'* [forging], and *ngawai* [hewing]).

The Iban have an elaborate system of swidden classification, based on several key distinctions. One distinction involves the presence or absence in the swidden of *padi pun* (stem rice), each household's ritually pre-eminent rice variety: the swiddens in which stem rice is planted are called *umai pun* (stem swiddens), while those in which it is not planted are called *umai dijap* (opposed swiddens). A second distinction is based on the age of forest cut for the swidden--*umai kampung* (swiddens cut from primary forest) versus *umai memudai* (swiddens cut from secondary forest). A third distinction is based on the drainage characteristics of the land--*umai paya'* (swiddens in swampland) versus *umai darat* (swiddens on dryland). A fourth distinction is based on cultivation of the swidden during the first year after it has been cleared from forest (*umai kampung or dijap*) versus recultivation during the second or sometimes even third succeeding year (*umai krukoh, umai pangkal*), a practice traditionally limited to swiddens cut from older forest.

The Iban swidden system has been the focus of much theoretical debate, focusing on its environmental impact, in particular its purported reliance on primary forest. However, empirical studies have shown that the Iban swidden system remains one of the least malign ways to exploit Borneo's rain forests.

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FOREST ³/₄ categories and preferences

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The Ibanic peoples commonly recognize two types of forest³/₄*kampung* (primary forest) and *memudai* (secondary forest). These types are distinguished on the basis of tree size (trunk diameter), tree type (species), and the degree of maturity of the forest. The term "primary forest" does not mean "virgin forest", but rather denotes mostly mature substitution forest; "secondary forest" denotes less-mature substitution forest. Iban traditionally distinguished between the two types of forest, based on the differing inputs, outputs, and chronologies of swiddens that are cut from them. They historically preferred to make swiddens in primary as opposed to secondary forest, because the farming of primary forest bore decisive economic and military advantages within the context of chronic intertribal warfare. When communities farmed primary forest, the resulting swiddens did not need to be weeded, thus freeing the community's men to participate in headhunting forays during the weeding season. Without the need either to weed or to guard the weeders against headhunters from other communities, the net return to agricultural labor for swiddens in primary forest was higher than that for swiddens in secondary forest. In contrast, the farming of secondary forest not only yielded a smaller return to the community, it also placed the community on the defensive (militarily).

The factors that determine preference for primary versus secondary forest today are somewhat different. Some factors, such as increasing land pressure as a result of population growth and the introduction of perennial cash crops like rubber, favor the cultivation of primary forest because this confers tenurial rights on the cultivator. Other economic factors today favor the cultivation of secondary forest: while swiddens cut from such forest still have to be weeded, the weeders no longer have to be guarded. Perhaps the most powerful factors, however, favor the farming of both types of forest today. This confers on the household the jural advantages of primary forest and the economic advantages of secondary forest. But of most importance, this introduces valuable diversity into the household's farming system. The environmental risks of farming primary forest and secondary forest are not the same, so by farming both, the level of risk is reduced and the return on labor is stabilized. In addition, the utilization of labor is increased. The swidden fields require intense inputs of labor during short, delimited periods of time, followed by lengthy periods in which they require no labor at all. Because of the environmental differences between primary and secondary forest swiddens, their periods of active and idle labor are not the same. Thus the household that farms both can make productive use of its labor during the slack farm seasons and can thereby spread its agricultural work more evenly throughout the year.

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HEADHUNTING ³/₄ ecological aspects

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The historic practice of headhunting may have been linked to the question of forest preference in swidden agriculture. Headhunting was traditionally carried out during the time of year that coincides with the weeding season in secondary forest swiddens. In communities that were farming primary forest, where there was no need for weeders, the men were free (during the entire period between planting and harvesting) to participate in long-distance headhunting forays. In communities farming secondary forest where weeding was a necessity, in contrast, the men had to remain behind to guard the women weeders. The need to weed secondary forest swiddens not only reduced the net return to agricultural labor in these communities, it also constrained the community's ability to carry out attacks on other groups. The result was, in some places and some times, a strategic preference for making swidden in primary as opposed to secondary forest.

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ENVIRONMENT ³/₄ uncertainty of

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The swidden strategy in particular, and the agricultural economy in general, of the Ibanic peoples depend on their environment and its temporal and spatial variation. Several different features of spatial variation can be critical to swidden success. First of all, there is little uniformity in the distribution of swidden pests. For example, while troops of pig-tailed macaques (*Macaca nemestrina*) and bearded pigs (*Sus barbatus*) are concentrated in primary forest, sambhur deer (*Cervus unicolor*) are found in broken cover, and long-tailed macaques (*Macaca fascicularis*) tend to be restricted to the forest-lined banks of the larger rivers. Second, there is a great variation in forest cover, ranging from *kampung* (primary) to *memudai* (secondary) forest, and from normal forest to heath forest. A third aspect of spatial variation is drainage, which has two variables: the distinction between *darat* (dry land) and *paya'* (swampland), and the distinction between *lempa'* (land inundated by riverine flooding) and *mungo' or bukit* (land that is not). Labor inputs and rice yields vary in association with these features, both being highest in swiddens made within the flood zone, in swampland, and in secondary forest.

The great spatial variation in the Iban environment is matched by temporal variation. The types and numbers of pests, for example, vary considerably from year to year. Certain pests may be present in one year and absent altogether in another; and in all cases pest populations may fluctuate in size as a result of variation in reproduction or migration. There also is temporal variation in climate, especially in the pattern of rainfall. Whereas the broad pattern of rainfall is relatively constant, unpredictable short-term variation can lead to periods of drought and flood. All of these variables can be critical to swidden success: for example, rice grown within riverine flood zones will be threatened by prolonged periods of flooding, and rice planted in a swidden cut from primary forest, which must be thoroughly dried before it can burn, will fare poorly in the absence of drought.

In short, due to the uncertainty of the environment, no one value of any variable or any combination of variables is always good, at all times and in all places, for swidden agriculture. Therefore, a successful swidden strategy is not one that anticipates a single set of conditions but, rather, one that anticipates all possible scenarios (Dove 1993).

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LAND TENURE

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In most recent historical times, land tenure among the Iban was established by the first felling of primary forest. This act conferred exclusive land rights on the household of the feller(s), even after its primary forest swidden was fallowed and the land reverted to secondary forest. This "traditional" system probably did not develop before the end of the nineteenth century, however. Before that, the longhouse had a delimited territory, then as now, but individual households did not hold exclusive rights to given sections of forest within that territory.

One of the first recorded changes in this system consisted in longhouse recognition of a household's rights of *mudas* (which refers to the ritual offering of one or more pigs). If a *burong bisa* (potent omen) was observed during the planting of a primary forest swidden, the household making that swidden had to make the *mudas*. This ceremonial offering then gave that household the prior right to farm that particular section of land once more before the land became available for farming to all households in the longhouse. This was an intermediary step in developing full tenurial rights based on clearing primary forest.

One of the most important determinants of these historic changes was the gradual cessation of chronic tribal warfare. As long as warfare was still endemic, there was little pressure to develop household rights to secondary forest, for several reasons. First, chronic warfare seemed to favor a semimigratory settlement system, which did not keep a group in one area long enough to farm both the primary and the succeeding secondary forest. Second, the exigencies of wartime obliged all the households in the longhouse to farm near one another, for joint security reasons, which made it difficult to develop individual household rights. Finally, the exigencies of warfare placed a premium on primary forest, not secondary forest, because of the need for the latter to be weeded, at considerable cost in terms of security. Therefore, during the historical period of warfare, both secondary forest itself and household rights to this forest were devalued.

As large-scale warfare gradually diminished, the relative value of secondary forest (which gives higher yields and is easier to clear and burn) began to increase, and pressure began to build for the recognition of rights to it. This pressure was greatly increased by the introduction of rubber (*Hevea brasiliensis*) cultivation. Rubber takes a decade to mature, it is likely to remove land from the swidden cycle for at least two generations, and it is more subject to buying and selling than ordinary swidden land^{3/4}all of which added to the pressure to recognize individual household rights. A final factor in this development was population growth (resulting from the historic decrease in epidemic disease, decrease in warfare-related fatalities, and increase in the level of subsistence).

Although a major part of the Iban response to these historic developments was to shift tenurial responsibility from the longhouse to the household, the picture was actually more complicated than that. For example, after household rights to secondary forest came to be recognized, some Iban amended their *adat* (customary law) so that if a household moved out of the longhouse, its land rights were forfeited to the longhouse. Initially, such lands reverted to the status of unclaimed forest. With land historically becoming a scarcer resource, however, longhouse headmen began to appropriate such lands for themselves.

Eventually, again because of scarcity, headmen were permitted only to take over the administration of these lands with all of the households in the longhouse ideally farming them in rotation.

The tenurial system continues to evolve, a recent example of which involves rights to game.

Rights to secondary forest on fallowed swidden land traditionally were not interpreted as including hunting rights. Indeed, game taken in secondary forest was deemed, under traditional *adat*, to belong to the longhouse. Recently, however, some communities have decided that game taken in swidden land fallowed less than three years previously must be divided equally between the hunter(s) and the household holding rights to that land.

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HOUSEHOLD $\frac{3}{4}$ domestic cycle; labor

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Domestic Cycle

A large, extended-family household traditionally was the Ibanic cultural ideal. Its life cycle is determined, in part, by changes in the number of consumers that must be supported by each producer in the household. A newlywed couple initially lives in the natal household of one of the spouses, because an independent existence was not yet possible for them in the traditional economy. The young couple stays with the parent family through its earliest child-producing years, when these offspring cannot yet contribute much to production. When these children have grown into more productive roles, however, and the labor resources of this junior household have been correspondingly augmented, it will leave the parent household via partition and establish its own independent household. The labor situation of the newly established household will continue to improve as its children further mature, until the first of them marry. If the child marries out, the labor situation in the household that it leaves behind is worsened; if it marries in, this situation is improved, but only until such time as the new couple start producing their own children, which again worsens the balance between household consumers and producers. This balance does not start to improve until the junior household's children have grown sufficiently to make it a viable economic unit on its own, which leads to partition again, thus bringing the cycle full course. (Note that the natal household endeavors to retain one child $\frac{3}{4}$ typically the youngest $\frac{3}{4}$ within it, to guarantee its perpetuity as a corporate unit and to look after the parent couple in their old age.)

Labor

In extensive systems of agricultural production like the swidden system of the Iban, labor tends to be scarce with respect to available land: there is pressure on labor. This is particularly true during the swidden stages of planting, weeding, and harvesting. Environmental factors necessitate the performance of these three stages in as short a time as possible, and this typically strains household labor resources. Households commonly respond to this pressure in two ways. First, each household usually makes not one swidden, but several swiddens, all in different microenvironments. The attendant environmental differences among the swiddens result in slightly different peak labor periods, reducing the pressure on the household's labor resources. Second, the households participate in reciprocal labor exchanges with one another. By taking advantage of slight scheduling differences among households, this practice also reduces the pressure on the individual household's labor resources. For households experiencing the most severe pressure on labor resources (because of the highest ratios of consumers to producers), a third option is to hire in labor. This practice, like the previous two, enables the household to raise the ceiling on the amount of land that it can work during the three limiting stages. As a result, it enables the household to increase the utilization of its labor force during the other swidden stages, which enables it to cultivate more land than would otherwise be possible.

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PEPPER

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Pepper (*Piper nigrum*), typically called *lada*, is one of the principal cash crops grown by the Ibanic peoples for their market and trade needs. The pepper gardens, often containing only a few hundred plants, are made on land cleared from the forest. These gardens tend to be located in uplands, because of the fear of riverine flooding in the lowlands, and on level land, because of the fear of erosion on sloping land. Cultivation is labor intensive, as unburnt timber must be cleared from the land, the stumps of felled trees dug out, and the soil hoed, before the pepper can be planted. Once the pepper has been planted, each crop requires two weedings and two applications of fertilizer. Pesticides also may have to be applied. Because commercial fertilizers and pesticides are costly for many Iban, they are often home-made. "Fertilizer" is made from burnt earth, weeds, and rice husks, combined with fresh earth hoed from the ground outside the garden. "Pesticides" are made from various combinations of tobacco, soap, and *tubai* (*Derris elliptica*).

The desirability of cultivating pepper in any given situation usually is evaluated with respect to the desirability of cultivating rubber (*Hevea brasiliensis*), which is the other principal cash crop of the Iban. The major shortcoming of pepper cultivation, in this regard, involves its relationship with swidden cultivation: pepper gardens compete with swiddens for land-use, rubber gardens do not. Land put under rubber cultivation can be subsequently used for swiddens, but land put under pepper cannot (at least not immediately). Pepper is said to take all the fertility from the soil, to eliminate its "aroma," and to make it barren. A second relative drawback to pepper is that it requires near-continuous attention, which poses a problem for the Iban during seasons of peak labor demand in their swiddens. Therefore, only households with a labor force that is large enough to be split in two can cultivate pepper. In contrast, rubber tolerates intermittent attention. Tapping can be stopped and resumed at will as labor demand in the swiddens waxes and wanes. A final drawback is associated with the lesser flexibility in the timing of pepper cultivation. Since pepper cannot be stored on the vine but must be harvested when ripe, the Iban are more at the mercy of market prices than is true in the case of rubber.

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RUBBER

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The domesticated rubber trees (*Hevea brasiliensis*) of Borneo and the rest of Southeast Asia are descended from seedlings that the British gathered in Brazil in 1876 and transplanted to Singapore. The first seedlings arrived in Borneo from Singapore in 1882. By 1908 the government was distributing seedlings to natives in the interior. By World War II, households throughout the interior were cultivating rubber trees. *Getah* (rubber) is today one of Borneo's principal resources, and it is a major source of household income for many Iban. Some rubber is produced on large plantations, with modern agricultural technology, but the bulk is produced in tiny gardens or "smallholdings" with century-old techniques. Rubber is an important source of cash or for tradable commodities used to obtain basic trade goods, pay school fees, and so on. Rubber is not viewed as an alternative to rice. Even during a rubber boom, rice cultivation usually remains the first priority. Rubber's role is to provide whatever subsistence agriculture rice cannot or does not provide.

Swidden fields are usually widely dispersed throughout the longhouse territory. This dispersal makes the location of rubber gardens potentially problematic because of the need to move back-and-forth between the gardens and the swiddens.

This difficulty is avoided by scattering the rubber gardens around the longhouse territory and exploiting them in a rotation, which matches that of the swiddens. Selection of which garden to tap in a given year is determined by proximity to that year's swidden.

The smallholder *kebun getah* (rubber gardens) of the Iban are well integrated into their shifting cultivation cycle. The key to this integration is that the Iban can use surplus land and labor resources from the swidden system to cultivate their rubber.

Labor is in great demand during some stages of the swidden cycle, in less demand in other stages, and not in demand between stages. Planting, weeding, and harvesting place heavy demands on labor for about four months of the swidden cycle, but during the remaining eight months of the year, swidden labor is in surplus. Rubber cultivation is well suited to taking advantage of temporary labor surpluses because it is uniquely adapted to intermittent exploitation.

Periodic idling of rubber trees actually benefits them and results in higher peak latex flows when tapping is resumed. This characteristic allows the Iban to start and stop tapping at will as labor is freed from or required in their swiddens. When work is halted in the swiddens due to ritual proscriptions, tapping usually is still permitted in the rubber groves. On the other hand, when tapping of rubber is not possible because of rain, work can still be done in the swiddens. And, when labor is possible and necessary in both swiddens and rubber gardens on the same day, the day can be divided in two (with rubber being tapped in the early morning hours, when the cooler temperature results in a better latex flow). However, tapping usually is scheduled during those months of the year when there is little or no work in the swiddens.

Much of the land planted in rubber has little or no value within the swidden system.

Rubber gardens usually are not planted on prime swidden land. Many gardens are

planted along rivers (access to water is essential for processing and also for transporting the rubber), where the constant threat of flooding is inimical to swidden rice cultivation. Rubber also may be planted in areas of *kerangas* (heath forest), where rice cultivation is inhibited by the low level of nutrients and absorption capacity of the soils. A further consideration in the allocation of land to rubber that may surpass all others in importance is establishment of tenure. Under *adat* (customary law), rubber planting establishes greater rights to a particular piece of land than does clearing the forest for a swidden. Sometimes this is the sole reason rubber trees are planted. Under colonial as well as post-colonial laws, land without this type of evidence of cultivation can be claimed as government property. Successive state and national governments in the region have tended to perceive fallow swidden fields as uncultivated. The rubber-swidden integration has, therefore, tenurial as well as subsistence implications.

The fact that swidden cultivation both meets subsistence needs and frees land and labor for use in rubber cultivation allows the Iban to cultivate rubber with a consumption instead of production orientation. They can produce not as much rubber as possible, but as much rubber as they need or want. This ability to exploit rubber at a low and variable intensity has a beneficial influence on the overall household economy: households with rubber tend to be better off than those without. When rubber-owning households experience swidden failure, they can tide themselves over to the next swidden cycle by tapping rubber. The great value of the rubber-swidden combination is that it achieves not just minimal competition for resources but mutual enhancement of resource use. This, in turn, enables politically and economically marginal Iban to participate in the market economy to a remarkable extent on their own terms.

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TOOLS: iron and stone

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Iron

Hand-forged iron tools are an important component of the swidden technology of the Iban. They traditionally forged by hand all of the iron tools used in their daily life, obtaining scrap iron through trade for this purpose. The *besi* (iron) is worked in a fire, which is stoked with charcoal from the ironwood tree (*Eusideroxylon zwageri*), and fanned with a typical Malayic piston bellows made of bamboo. The most common products of the Iban forges, and the most important tools for swidden cultivation, are the *duko'* (brush sword) and the *beliong* (adze). The brush sword consists of a heavy, slightly convex, single-edged blade, at least 50 centimeters long, which is hafted to a wooden hilt with natural resins. It is used for the initial clearing of brush, vines, and saplings on prospective swidden sites. Its cut is made at waist level or below. The adze is an equally heavy iron blade, with a small, convex cutting edge, which is fixed at an oblique angle to a wooden shaft by a rattan seating (that tightens with every stroke of the adze). It is used for the subsequent felling of larger trees, which have a trunk diameter larger than about eight centimeters. Its cut is made at chest level.

Stone

The principal stone tool commonly used by the Iban is the *batu ansah* (whetstone). It is used daily to sharpen the edges of adzes, brush swords, and other cutting tools. Most whetstones are just common rocks from river beds, selected for their density and the presence of a flat side against which a blade can be easily stroked. Whetstones called *batu umai* (swidden stones), however, are believed to have been given by spirits to the ancestors of the Iban. These whetstones, which have been passed down as heirlooms to contemporary generations, are used only during the clearing of forest for swiddens and are the object of great respect and frequent rituals. They are the titular subject of the *gawa' batu* ([whet]stone feast), the major ceremony that concludes each swidden cycle. Similar veneration is extended to certain other stones, in particular the few stone relics that remain from Borneo's megalithic era. Such stones are typically found in the possession of shamans, who regard them as having curative power. They are often given the same names as the contemporary iron tools that they resemble, as in *batu beliong* (adze stone) and *batu kapak* (axe stone). (Another example, of a stone shaped like an arrowhead, is called *batu melaban* [fighting stone].) In most cases, however, these stones are given names such as *batu prahit* (thunderbolts) and *batu nitar* (lighting stones), which associate them with thunder and lightning. This perception of stone-cutting tools, as the instrument with which the god of lightning fells trees, represents the cultural memory of the time when prehistoric men felled trees with stone tools.

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Beliong (Adze)

LONGHOUSE

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Communalism

The Iban *rumah* (longhouse) is first and foremost a place of residence. The longhouse, which is well constructed and may be used for more than a generation, is a permanent, multihousehold structure located in the center of its own, distinct territory. The structure consists of apartments separated by interior walls; a closed walkway and an open drying platform running its length in the front; cook houses attached to each apartment in the back; and overhead storage areas for each unit (see Figure 1).

The other two units of residence in the village settlement pattern are the *langkau* (farmhouse) and the *dampa'* (subsidiary longhouse). The farmhouse facilitates access of a household to a particular section of forest during the agricultural year, whereas the subsidiary longhouse facilitates access of a small group of households to a particular stretch of forest for two to three years. A household will live in its farmhouse during periods of intense labor and return to the longhouse in the off-season.

The popular perception of a "communal" longhouse is a false inference from the physical appearance of the longhouse and the tendency of its inhabitants to work in large multihousehold groups. The unbroken expanse of the longhouse roof conceals the fact that the Iban longhouse is in fact a series of discrete entities^{3/4}the independent family units of a competitive and egalitarian society. The fact that these apartments are joined one to the other to produce the longhouse detracts little from this essential autonomy. It is true that some parts of the longhouse are constructed and maintained by the group as a whole. The steps up to the longhouse, and the walkway from the longhouse to the river, are typically constructed, owned, and maintained by the entire community. With these exceptions, and although households may exchange labor during longhouse construction, each household is solely responsible for the construction and subsequent maintenance of its own cross-section of the longhouse. This is reflected, in time, in the appearance of the longhouse. The longhouse roof eventually presents a patchwork-quilt look, with the more affluent or industrious households showing new shingles and the less-favored ones having more weathered shingles.

As for labor, the organization of labor within the longhouse focuses not on the communal good but on the private good of individual households. The traditional organization of labor among households is based on the reciprocal exchange of labor between households, not the "pooling" of labor by the longhouse as a whole. Indeed, the occasional attempts to implement communal projects for the good of the group inevitably are plagued by lack of leadership and organization, and by disputes over unequal contributions and returns. For example, a multihousehold labor group working on the longhouse walkway typically experience some conflict over the amount of labor contributed by each of the longhouse's households, whereas a group working in a private swidden typically will not. This does not mean that longhouses are uncooperative, but only that they are reluctant to expend their scarce labor resources in situations where the personal benefit of the individual household unit is unclear.

Tenure

Each longhouse has a demarcated territory or "reserve," which typically follows the drainage basin of a major watercourse. Territorial rights consist largely of the right to fell primary forest in that territory and to deny this right to any other household from another longhouse. These territorial rights are residual in nature. But primary rights, meaning rights to use and devolution (gift, exchange, sale, or inheritance), are held either by individual households or by small clusters of households related through partition. Primary rights to land are created by, and then belong to, the household that first fells the primary forest on a given piece of land while making a swidden there. That household then has the sole right, during the ensuing years, to clear the regrowth or secondary forest on that land to make further swiddens. There is considerable variation in landholdings between households based on the number of years the household has been in existence, the number of adult workers it has, and the amount of primary forest it has been able to clear. Thus, the existence of territorial rights at the longhouse level as a whole neither necessitates, nor leads to equality among households in terms of land rights.

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SWAMP RICE SWIDDENS

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The subsistence economy of the Iban traditionally was based on the swidden cultivation of dry rice and, to a lesser but not unimportant extent, swamp rice. Cultivation of this swamp rice is an interesting feature of the overall swidden system. The swamp-rice varieties are distinguished from the dry-rice varieties by longer roots and an ability to tolerate the greater water stress found in swampland.

The cultivation of swamp rice follows a different sequence than that of dry rice. First, swampland is cleared of its vegetation, which typically consists of grasses and sedges. The cleared vegetation is dried in the sun and then burned. If the grass cannot be burned, it is either mulched into the earth or carried out of the field. Within a few days of the burn, part of the swamp swidden is sown with seeds just as in the dry swiddens. About one month later the newly sprouted seedlings are thinned out and transplanted throughout the swidden to a uniform density. The cultivation cycle is completed with the succeeding stages of guarding the crop against pests and then harvesting it.

The yield of swamp-rice swidden is exceptional when considered per unit of area. Since swamp-rice swiddens require more labor during the swidden cycle, however, the return per work-day is only slightly higher. But the importance of the swamp-rice swiddens lies less in their relative yield than in the fact that this technology permits exploitation of an environmental niche that would remain otherwise unexploited and thus achieves greater use of the total environment than would be achieved by cultivating dry-rice alone. This, in turn, enhances the overall diversity of the swidden system. The greater the diversity, the lesser the likelihood that inimical environmental conditions will destroy the entire rice crop in a given year. This diversity also enables the Iban to maximize use of their labor resources.

The swidden cycle is characterized by intensive labor during certain times of the year and by slack periods in which labor is perforce idle at other times. Because the cycles of dry-rice and swamp-rice cultivation differ to some extent, the number and length of slack periods can be minimized by making both types of swiddens.

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WOMEN - status in agriculture

Michael R. Dove and Tammy Castleforte

Historically, Iban women performed the major part of swidden work. Men, who devoted much of their labor to military activities, *bejalai* (travel), and the gathering of forest products, performed a smaller part of the swidden labor. With the cessation of intertribal warfare, and with the postwar intensification of all sectors of the economy, these respective roles have changed.

Beginning with the cessation of head-hunting, men increased their participation in the swidden economy. While maintaining their traditional role in slashing and felling the forest, they now also perform one-third to one-half of the weeding and harvesting, which were formerly the exclusive domain of women. Women's contribution to swidden labor has not decreased as a result of men's additional inputs, however. A historical intensification of labor in swidden cultivation has allowed women to maintain a constant contribution to this sector of the economy. This intensification of labor, among men as well as women, is reflected in the fact that swiddens are larger today than before, in addition to the fact that they require more labor per unit of area.

As men historically increased their role in the agricultural economy, women took on much of the responsibility of rubber-tapping. The women were able to do this by timing their rubber-tapping when there was no work in the swiddens for them. As a result, development of rubber-tapping has enabled women to not only maintain their role and status in the agricultural economy but also to increase them.

A related development with implications for women's status is land rights. Iban women commonly know more about the history of local land use than do men, because they are more likely to marry within, and thus remain within, their natal longhouses. This affords them the opportunity to accumulate this knowledge and to pass it down through the female line. Women's special knowledge of land use and tenure is manifested in the adjudication of land disputes, wherein women often provide the definitive "expert" testimony. As competition over land and individual rights to land increase, women's monopoly of this body of knowledge may further add to their status and power in society.

Women among the Iban have long enjoyed high status not just in agriculture but in society as a whole. This status is reflected in the historical absence of bride-price, dowry, polygamy, selective infanticide, or a unilineal descent system. During the relatively recent intensification of subsistence agriculture, although women's roles have changed somewhat, their status has remained high, and they have continued their prominent role in the agricultural economy.

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