

Chapter Nine

The Potential for Coexistence between Shifting Cultivation and Commercial Logging in Sarawak¹

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Introduction

Shifting cultivators and logging companies have traditionally been considered to be in conflict with each other as they are using the same resources for different purposes. Shifting cultivation is usually a subsistence-oriented agricultural system clearing forested areas for fields with annual crops and leaving these areas fallow for varying periods. Logging is mostly a purely commercial activity using the largest valuable trees, while the logged-over areas are either left for regrowth and re-logged after a number of years or else clear-cut for development of forest plantations or industrial crops such as oil palm or rubber.

Criticism of both systems has come from different sides. Shifting cultivation has mostly been accused of being wasteful of natural resources, having low productivity and maintaining people in a vicious circle of poverty (FAO Staff 1957; Lau 1979; Watson 1989; Rasul and Thapa 2003), and negative views of this farming system persist in many government circles in countries where shifting cultivation still occupies relatively large areas (Fox 2000). Conversely, logging activities have been under severe criticism by green organisations as well as from various academic writers — a criticism not focused exclusively on the impacts on the physical and biological environment, but also on the jeopardised livelihoods and land rights of communities in areas affected by logging (Hong 1987; Colchester 1993; Jomo 1994).

Colchester (1993), for example, argues that the system of Native Customary Rights Land in Sarawak leaves the natives without clear rights to what they perceive as their land, and their rights are not adequately acknowledged when

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concessions are given.² This has led to land use conflicts, and as individual communities often lack the power to influence decisions made on land use issues, partial alienation of land has been the result. Moreover, Colchester (1993) argues that Iban community leaders have been working more for their own benefit than for their community as such, and therefore have not adequately assisted local populations in land disputes. Local resistance towards logging has mostly been reduced to blockades of logging roads, which have been rapidly reopened by the police. Colchester shows how disputes over land date back to pre-colonial patterns of state control over forest resources, and how difficult it can be for local people to resist development plans involving their land.

The other extreme is represented by Lau (1979), who declared that shifting cultivators pose a threat to state interests as they cause 'wanton destruction' of valuable timber resources and are responsible for soil erosion, pollution and siltation of waterways, pollution of the air, river flooding, and the loss of valuable genetic resources and habitats for wildlife. His main concern was related to the rapid destruction of primary forest, but the calculations behind the data have been questioned by Hurst (1990), who sees them as overestimates, and by Hong (1987), who states that the calculations ignore the fact that shifting cultivators frequently prefer secondary forest for cultivation. However, the negative attitudes towards shifting cultivation within the governmental structures of Sarawak are not surprising, given the large revenues from the export of timber and the number of people employed in the forestry sector. Moreover, politics and logging have always been inextricably linked to each other (King 1993; Ross 2001) and, as stated by King (1993: 242):

The arrangements with Chinese entrepreneurs are an important means to cement cross-party alliances between Bumiputra and Chinese political leaders; these alliances are essential in the context of Sarawak's political system.

Other authors, such as Dauvergne (1997), widened the frame of explanation to include international perspectives in the analysis of forest exploitation in Southeast Asia. Dauvergne claimed that large Japanese conglomerates control the logging operators in Sabah and Sarawak through favourable credit arrangements and thereby increase their logging rates without promoting sustainable forest management.

The opposing views on shifting cultivation and logging still persist in rather uncompromising forms, although a number of studies have tried to soften the conflict by a more balanced analysis of the systems (King 1993; Potter 1993). However, the question of whether peaceful coexistence between these two land

² For further description of the *Sarawak Land Code*, see Cramb and Wills (1990) and Cleary and Eaton (1992).

use systems can be achieved seems to have been neglected. The objective of this chapter is to investigate interactions between natural resource managers in an area in Sarawak where Iban shifting cultivators live side by side with a large logging concession. We analyse the socio-economic and perceived ecological impact of the logging operation on the Iban communities as well as the effects of Iban shifting cultivation on logging. The potential for improved coexistence between these systems is discussed on the assumption that both shifting cultivation and logging are likely to continue in the future, and it is therefore counterproductive to focus only on the negative effects and interactions rather than on the opportunities for harmonising the two systems.

Study Area and Methodology

The present study focuses on the Model Forest Management Area (MFMA) and surrounding lands in the Muput area southwest of Bintulu in the Bintulu Division, Sarawak (see Figure 9.1). The MFMA was jointly established by the Sarawak Forest Department and the International Tropical Timber Organisation in 1996 following the report of a mission to Sarawak in 1989/90 which suggested the introduction of more-sustainable forest management (ITTO 1990). Physical and socio-economic studies of local communities in the area were carried out before its establishment (Sidu 1995). The MFMA supports training, demonstration and research on sustainable hill-forest management, and the sustainable logging methods practised include improved planning of roads and skid trails, and extra care for the residual stand when felling and removing trees. The logging operation is run by several companies, the closest to the two communities studied in this chapter being Zedtee, which has its local headquarters at Sekawi Camp (see Figure 9.1).

Some 40 Iban longhouses are located in and around the MFMA, and this study takes as its point of departure two of these — Rumah Agau and Rumah Chili (see Figure 9.1). These Iban settlements have been present in the area since the early 20th century, while logging has been carried out since 1976. The longhouse inhabitants hold their land under Native Customary Rights, whereas the area within the MFMA is designated as part of the Permanent Forest Estate (Sidu 1995).

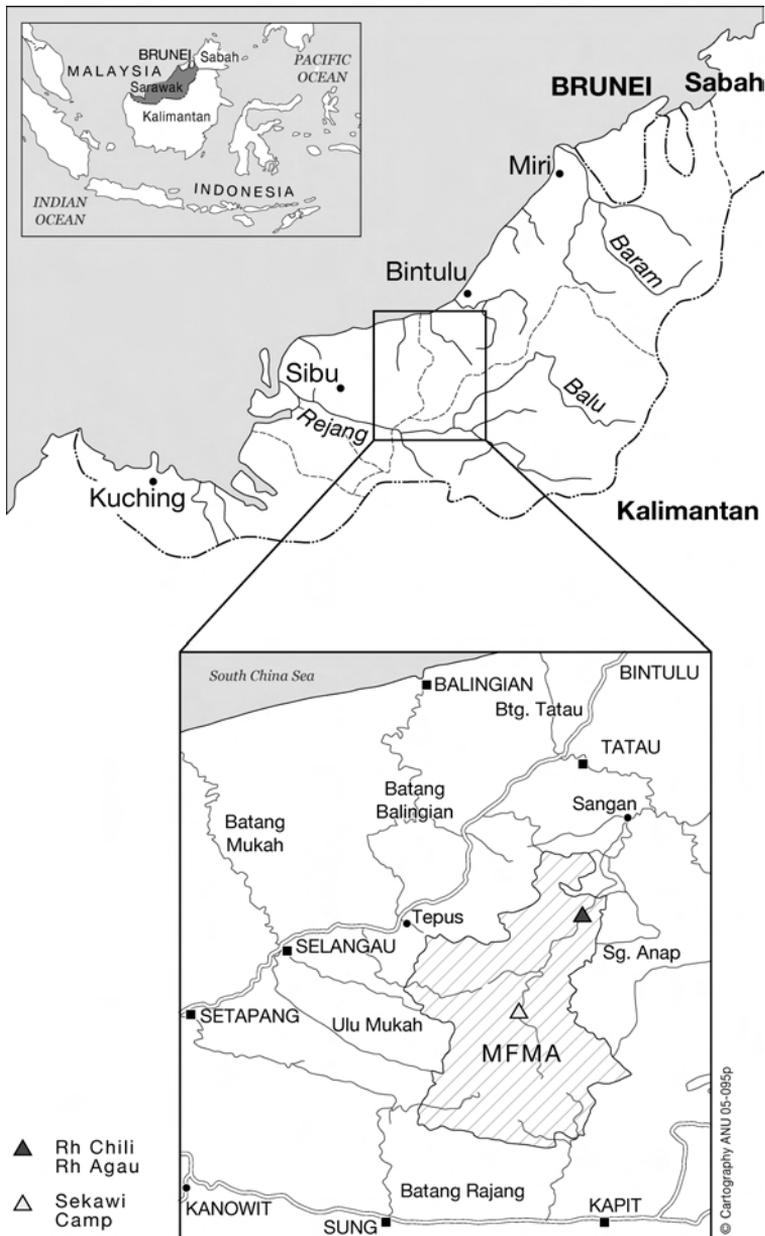


Figure 9.1. Location of Iban communities and the Sekawi logging camp in the Model Forest-Management Area

Data were collected between June and September 1999. A structured questionnaire survey was carried out covering all permanent-resident households in the longhouses — 17 households in Rumah Agau and 14 households in Rumah Chili. The topics addressed were household composition, wealth, farming

practices and off-farm activities. Semi-structured in-depth interviews focusing on farming strategies and perceptions of logging were carried out with five households in Rumah Agau and four in Rumah Chili. Finally, four focus group interviews were carried out in each community covering the following topics: forest products, off-farm labour, land tenure, and perceptions of logging.

Thirty semi-structured interviews were conducted among employees in the logging operation. These interviews included management staff as well as labourers, and were carried out within the logging camp and in the blocks logged at the time of study. Finally, structured interviews with government officers at different levels in the Forest Department were carried out. Follow-up interviews were conducted with several of these officers when needed.

Results and Discussion

The main finding of this study is that conflicts over land between shifting cultivation and logging in the area were insignificant. The logging operator was viewed positively by most of the Iban interviewed because of job opportunities and some infrastructural assistance, even though the operation was accused of having a negative impact on hunting, fishing and the gathering of wild products. Similarly, the logging operator did not view the presence of the communities as a serious obstacle to the logging operation. These findings are explained in more detail below.

Changes in Natural Resource Management within the Study Area

Shifting cultivation in the study area operates almost without the use of primary forest. First, both longhouses have been situated in the area since the early 1900s and can be considered sedentary. Furthermore, as a result of out-migration, the population size has not changed much in the 20 years preceding the study. This means that the habit of pioneering shifting cultivation in search of primary forest is no longer needed, as native customary rights to a sufficient amount of land have already been established through the clearing of primary forest in the past. Second, the extra labour input required for felling primary forest is not compensated by a proportionate increase in yields. Third, as seen elsewhere in Sarawak (Mertz and Christensen 1997), the Iban increasingly prefer to cultivate closer to the longhouse where primary forests are no longer present (see Figure 9.2). This may be caused by the lack of labour in households dominated by elderly people, which is an indirect effect of the improvement of roads and hence the accessibility of the area. Whereas, in other parts of the world, the opening up of new forest lands is frequently accompanied by an influx of new settlers or resettled persons (Myers 1992; Whitmore 1998), in this case it seems that the movement is reversed and has led to a stabilisation or even reduction

in the number of people living *de facto* in the communities. Good off-farm job opportunities in Malaysia are the main reason for this development.³

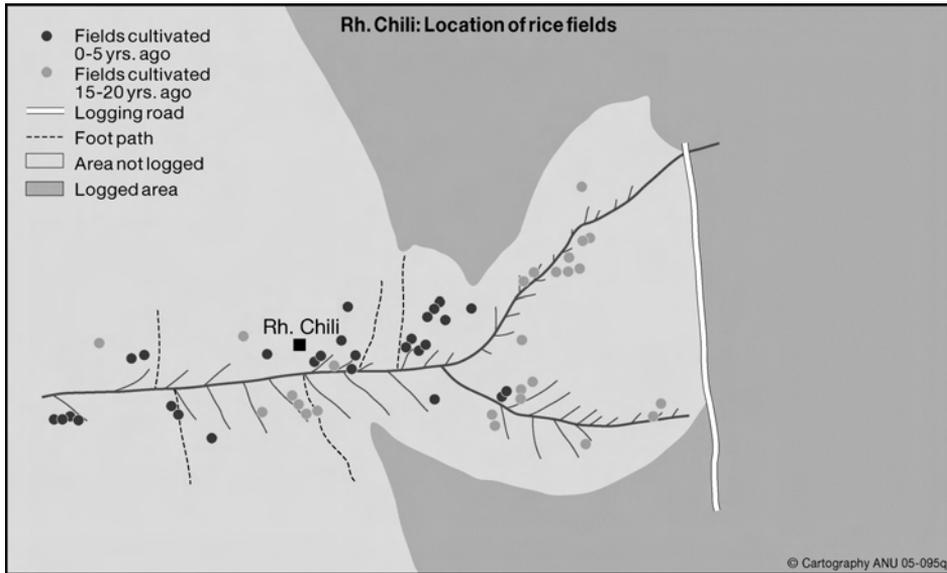


Figure 9.2. Location of cultivated rice fields in the Rumah Chili Area, 1974–79 and 1994–99

Logging was carried out prior to the establishment of the MFMA. Several areas close to both longhouses were logged from 1976 until 1996. In 1974 all longhouses in the area were asked to decide whether they would accept logging in their area or not. Meetings were held with the heads of longhouses and the *penghulus* (heads of several communities within one river catchment), who decided that, if compensated by the logging operators, they would accept logging in the area. Whether this decision was supported by the general Iban public in the area is not known.

Different logging operators initiated operations and some areas have been logged more than once. The compensation agreed upon included, among other things, a monthly payment to the longhouse head, a yearly payment to each household in the longhouse, and the landowners affected by road construction were paid compensation of one Ringgit per metre of road constructed on their land. In addition to this, some longhouses still receive diesel fuel for their generators and (to a minor extent) building materials from the operators.

Some 300 000 m³ of logs are now felled annually in the 162 500 ha that make up the MFMA. Selective logging, as carried out in the MFMA, is scheduled to allow re-entry after 25 years of regeneration. Since the operation was initiated

³ Similar trends in other parts of Southeast Asia have been described by Rigg (2001) and Breman and Wiradi (2002).

in 1976, most of the primary forest in the MFMA has already been logged, and the companies now focus on re-entering previously logged blocks rather than expanding into new areas. The logging operation is run from four main logging camps; the headquarters of the operation is the Sekawi camp located in the centre of the MFMA (see Figure 9.1). More than 600 people are employed in the operation, of whom approximately two thirds are Iban. The Iban are almost entirely engaged as chainsaw or bulldozer operators and surveyors. Only about half of the Iban workforce can be considered as locals whose homes are within a half day's travel of the main camp. Very few Iban have camp-based jobs such as those of managers, mechanics and shopkeepers. These jobs are generally more desirable as they are less hazardous and have fixed salaries with a retirement scheme, but jobs in the field-based logging operation, which are paid by the hour, can yield high wages if working hours include overtime.

The effects of low-impact logging as carried out in the MFMA have previously been described by Marn and Jonkers (1982). They show that low-impact logging can be carried out without jeopardising the economy of the operation, even while reducing damage to the residual stand. The number of trees damaged during the logging operation is still generally high, but there are different views on the extent of the problem. Kartawinata et al. (1981) and Whitmore (1998) estimate that 35–40 per cent of the residual stand is damaged during the extraction of 10 per cent of the trees. Contrary to this, Brown and Press (1992) claim that more than 70 per cent of the residual stand is damaged or destroyed by this level of extraction. These variations usually reflect the different ecological conditions and management decisions under which logging is carried out, but may in certain cases also represent different agendas and opinions on tropical rainforest utilisation.

All land within the MFMA is designated as part of the Permanent Forest Estate (Sidu 1995), despite the fact that several plots of land within the MFMA fulfil the conditions for being Native Customary Land. This has not as yet led to any conflicts. The logging operators are usually uninterested in areas used for shifting cultivation as they do not contain sufficient numbers of large, valuable trees to be profitable for logging, and regeneration of cleared plots to climax forest would take at least 60–80 years.

However, should the communities decide to claim land with logged-over forest as Native Customary Land and practise shifting cultivation in these areas, conflicts would be likely to arise because the logging operator expects to re-enter these areas after a period of 25 years. Although the extent of this practice is not known, and during the time of study no fields were located in logged-over forest, this issue is a major concern for the logging operator. The two longhouse communities had diverging opinions on the suitability of such areas. People in Rumah Agau perceived logged forest as unsuitable for cultivation due to the

disturbance of the soil caused by the heavy machinery. On the other hand, people in Rumah Chili thought areas previously logged would be very suitable for cultivation, especially because clearing of vegetation had become easier due to the presence of smaller trees. Another potential point of conflict would be the establishment of forest plantations within the MFMA, including areas previously used for shifting cultivation, as this would permanently alienate land to which local communities may have claims for customary rights. However, such plans have not yet been initiated.

The Iban communities in the study area are still highly dependent on access to natural resources extracted from the forest and rivers, and the possibility for successful hunting and fishing has diminished since the logging companies entered the area. Siltation of rivers is unavoidable when logging operations are carried out (Douglas et al. 1993), and, according to local people, fish populations have declined as a consequence. Increased human activity, whether brought on directly or indirectly by the logging operations, can have the same effect on the number of hunted animals as these flee to areas less affected by logging. The change in the number of animals and fish was described by Aiken and Leigh (1992) as the result of several factors, including habitat change, hunting by timber company workers, greater availability of ammunition, improved access to forests along logging roads, high turbidity levels, siltation, and pollution from diesel oil in rivers. Rumah Chili people notably complained of decreasing food supplies from the forest and rivers and increasing reliance on purchased products.

Changes in the Socio-Economic Conditions of the Iban Communities

Declining availability of forest products has partly been offset by other activities, thereby diminishing the dependence on natural resources. The improved possibilities for off-farm employment have enticed many younger Iban from Rumah Agau and Rumah Chili to engage in jobs outside the longhouse community. Some people find work in towns or even overseas for shorter or longer periods, but most jobs are found in the timber industry. These jobs require little education, and those within the actual logging operation, such as chainsaw operation, require skills already held by many Iban men.

The ongoing logging operation has led to the construction of a main logging road running through the study area. This has improved market access considerably as the travel time to the nearest towns has been shortened. Furthermore, the logging camp itself is an important market place, and various products such as durian, vegetables and fish are sold along the logging road. Another effect of the easier market access is an increase in cash-crop production, mainly rubber and black pepper. Sidu (1995) found that cash crops were cultivated mostly by the communities with the best market access.

Cash-crop schemes are mainly introduced by the Department of Agriculture, and although the communities express an interest in these schemes, they have only been adopted by a few families. Cash crops tend to be labour-intensive, and their prices fluctuate, making them unreliable as a stable source of income (Cramb 1988; Wadley and Mertz 2005). Extended periods of low world market prices might explain why black pepper gardens in both communities sometimes lack maintenance or are even abandoned, and why potentially productive rubber trees are being felled and the land converted to hill rice fields.

A more recent, but economically important, activity for the communities is the substantial extraction of logs of the illipe nut tree (*Shorea macrophylla*), which has been made possible by an entrepreneurial middleman at the mouth of the Muput River. This activity was carried out by the majority of households in the two longhouses. For some households the selling of logs was the most important income-generating activity. The more than 500 tons of logs sold during 1999 must be expected to exceed the future amount available for extraction.

Interactions Between Actors and the Potential for Greater Coexistence

Many aspects of the coexistence between the Iban population and the logging operator seem to work well. One initiative improving the coexistence could be directed to finding remedies for the decline in availability of forest and river products. Construction of fish ponds has already been carried out with machinery from the logging operation, and an expansion of this activity seems obvious as it substitutes for the decline of fish in the rivers and may provide income-earning opportunities. More areas close to the logging road could be converted into fishponds with a minimum of effort if machinery from the logging operation were used more frequently. In line with this, a focus could be directed towards animal husbandry, thereby partly substituting the decline in the presence of wild animals. The Department of Agriculture has supported this activity through the Animal Husbandry Improvement Scheme, but only to a limited extent. The logging camp itself could be a potential market for such products.

The remote location of the communities means that off-farm employment normally implies moving away from the longhouse and only returning for a few days each month. The logging operator in the study area employs many people from the longhouses situated within or close to the MFMA, but the majority of the employees are from other parts of Sarawak, and a few even from Kalimantan. Employing people from areas far away is part of the policy of the logging operator as these people are perceived as a more reliable workforce. Employees are required to stay in the logging camp permanently and only return to their community for for or five days each month, but local employees tend to return to their home more often without approval from the camp manager. Although the Iban have a tradition of male labour migration (*bejalai*), and do not consider

it a major obstacle to have to travel to get a job (Kedit 1993; Wadley 1997), the local population prefers to engage in jobs close to the longhouse. Furthermore, if the local workforce were able to return from the logging camp to their home once a week instead of once a month, it would be easier to fulfil obligations within the longhouse. The present routine seems to have been made with the intent to allow workers living far from the MFMA to return to their homes. Changing the employment policies and working routines could probably facilitate a higher proportion of local employees in the logging operation and further improve the coexistence between the local population and the logging operator.

As logging is a widespread practice throughout Sarawak and is probably bound to continue in the future, it is important to emphasise the positive impacts of concessions with long time spans (ITTO 1990). Long-term concessions would create an incentive for the concessionaire and logging operator to adopt low-impact logging procedures, thereby allowing for a second entry. At the same time, knowing that the operation will continue in the area for a long time should encourage both the local population and the logging operator to establish good relations and develop the potential for mutually beneficial coexistence.

Conclusion

Based on the interviews with two communities and staff in the logging camp, it can be concluded that coexistence between shifting cultivators and loggers in the study area is relatively smooth. At worst the longhouse inhabitants are indifferent to the logging operation, but most informants are satisfied with the logging activities, which have facilitated an improvement of the standard of living. At the same time the logging operator is indifferent towards shifting cultivation as long as it is carried out without the use of primary and logged-over forest within the MFMA.

The conflict scenarios presented by Lau (1979) and Colchester (1993) seem not to be applicable to the study area, and even though the MFMA is a trial area for sustainable forest management and as such could be considered an unrepresentative showcase, this study demonstrates the potential for mutually beneficial coexistence between actors traditionally considered to be in conflict with each other. It is by no means impossible that similar arrangements could be secured in other logging areas, particularly where the purpose of the logging operation is to maintain the Permanent Forest Estate for long-term timber production. In State Land Areas designated for conversion to plantations, the situation may be different, as communities are likely to be subjected to more pressure to engage in long-term leases of their customary land to oil palm plantations in joint venture arrangements (Majid Cooke 2002; Ngidang 2002).

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