Understanding conflict in the co-management of forests: the case of Bulungan Research Forest[1]

Y. Yasmi

Centre for International Forestry Research (CIFOR), P.O. Box 6596 JKPWB Jakarta, 10065 Indonesia.

Email: y.yasmi@cgiar.org

SUMMARY

The paper describes underlying causes of conflicts between local people in Bulungan Research Forest (BRF), Indonesia with coal-mining and logging companies. Results show that conflict between local people and mining companies was triggered by the fact that the mining operation caused water and air pollution and soil degradation. Another cause for the conflict was the compensatory facilities (e.g. clean water, electricity, compensation fee, etc.) provided by the companies to local people that were often delayed or unsatisfactory. Local people perceived that their major problem with logging activities was the adverse impact to residual plants such as rattan, eagle wood, medical plants, etc. Not only that, logging companies did not allow local people to cut trees for their own uses such as for houses or churches. The paper concludes that there is a need for negotiation among those parties involved in conflict in such a way that negative impacts can be reduced and positive impacts can be enhanced.

Keywords: stakeholders conflict, co-management, Bulungan Research Forest, conflict management

INTRODUCTION

For as long as humans have encountered one another, there has been conflict (Pendzich 1994; Walker and Daniels 1997). Not surprisingly therefore, in natural resource management conflict is increasingly viewed as a normal occurrence, unavoidable and part of everyday social processes as it appears in almost all exchanges regardless time and temporal settings (Hellstrom 2001).

There is no single definition of conflict. According to FAO (2000a), natural resource conflicts are disagreement and disputes over access to, and control and use of, natural resources. Conflict is also defined as a process in which two or more parties attempt to frustrate the other's goal attainment. The factors underlying conflict are threefold: interdependent, differences in goals, and differences in perceptions (Wall 1985 *in* Walker and Daniels 1997). Conflict will always exist to some degree in every community, but it can often be managed and resolved (FAO 2000b).

Since the 1990s the concept of collaborative forest management or co-management has gained prominence (e.g. Fisher 1995; Buck *et al*. 2001). In co-management arrangement stakeholders plan and decide upon collective actions with regard to how natural resources are to be managed. Roles and responsibilities of each stakeholder are identified based on continued negotiation and consultation processes. Co-management can foster a sense of community empowerment as local stakeholders participate in decision-making and benefit sharing. Thus it offers substantial promise as a way of dealing with resource-based conflict. That is why co-management of natural resources has

received increasing attention over recent times. However, it also becomes obvious that co-management can set into motion new conflicts or allow old ones to escalate, as different interests, knowledge levels and world-views have to be integrated. Conflict is therefore a key concept in understanding and designing co-management activities (Rhee 2000, Yasmi 2002, Anau *et al*. 2002).

In Bulungan Research Forest (BRF), east Kalimantan, Indonesia various stakeholders groups (e.g. local people, coal mining, logging companies) interact with forests. Recently, local government has attempted to use a co-management approach to enable stakeholders to co-manage forest resources. Although its implementation is still far from an ideal this is a very encouraging step forward. Indeed, one of the major problems is conflict among stakeholders. This paper describes those conflicts particularly in two settlements namely Loreh and Langap.

Study area

Located in Malianu District, BRF covers an area of 321,000 ha and is part of Asia's largest remaining tract of tropical rainforest (Figure 1). BRF is formed by three major watershed systems: Malinau, Tubu and Bahau. The people inhabiting BRF are generally known as *dayak*, a collective name used to refer to the indigenous people of Kalimantan

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[1] The views expressed in this publication are those of the author and not necessarily those of CIFOR or Forest and Nature Conservation Policy Group, Wageningen University, The Netherlands.

FIGURE 1 *Location of Bulungan Research Forest and Indonesian archipelagos*

(Sellato 2001). They are rice farmers and harvest a variety of non-timber forest products (Kaskija 2002). Anau *et al.* (2002) noticed that there were several boundary conflicts among those people. In addition, there is a large Malay population and various groups of migrants from other parts of Indonesia such as Sulawesi, Java and Timor who came to the region mainly to work with private companies (e.g. logging and coal-mining).

During the past years Malinau witnessed a growing influx of outsiders, particularly from timber and coal-mining companies. This resulted in increasing competition for land and various products of commercial value. Two mining companies that started their venture in 1995 have significant influence in the region with a total concession 1, 030 ha. Its monthly production is around 10, 000 tones of quality coal with a large portion (around 70%) exported to Japan and the Philippines. Domestic use is very modest. In addition to mining companies, a state owned logging

enterprise called PT Inhutani II has operated since early 1991 with a total area of 48 300 ha and annual log production up to 30,000 m³ (PT Inhutani II 2001). There are two relatively small and new logging companies (locally known as IPPK[2]) that emerged after the autonomy policy took effect in 2000 (Barr *et al.* 2001, Yasmi 2002).

Two settlements, at Loreh and Langap, were selected for two main reasons. Firstly, the relatively short nature of the fieldwork necessitated maximum utilisation of information provided by previous studies. Secondly, the site needed to be accessible and present various activities related to forests where conflict among stakeholders was evident. There are four villages in Loreh and three villages in Langap (see Table 1). Fieldwork and secondary data collection including literature reviews were conducted between June and August 2000.

Methods

Semi-structured interviews were conducted with 70 respondents chosen randomly in each of the villages. The number of respondents in each village was proportional to its population. According to Bernard (1995), a sample size in the range of 30 to 50 is sufficient for exploratory and in-depth work.

The interviews focused on the underlying causes of conflict based on respondents' perception and understanding of the situation. Respondents were asked about how they perceived the activities of logging and mining. If they said that they were unhappy about it, then

TABLE 1 *Number of respondents for semi-structured interviews*

Settlement	Village	Population	Number of respondent
Loreh	Long Loreh	625	23
	Sengayan	232	8
	Pelancau	243	9
	Bila' Bekayu	143	5
Langap	Langap	430	16
	Long Rat	102	4
	Nunuk Tanah Kibang (NTK)	146	5
	Total respondents		70

[2] IPPK (Ijin Pemungutan and Pemanfaatan Kayu) is an Indonesian term for a small scale logging concessions (i.e. area ranging from 100–2,500 ha) that is currently sprouting in East Kalimantan.

they were asked what factors made them to feel that way. They were encouraged to describe in detail what they perceived as the causes of tension with the companies. An interview protocol was used to guide the researcher during the interview process and all interviews were undertaken with the help of a local translator. An involvement in farmers' daily activities in their rice fields was another important way to absorb information by providing opportunities to discuss various issues with them in an informal way.

To analyse the data, the interview texts were condensed and coded into one or more underlying causes of conflict. A database of coding was established and the data were analysed qualitatively through query-making from the database (Neuwman 1997). Calculation of the percentage of each underlying causes was undertaken.

It should be noted that the interpretation made in this way is not free from subjectivity. The interview data is the researcher's own construction of other people's views of what they and their conflict partners have said or done in various conflict situations. However, Hellstrom (2001) argues that this is acceptable and, furthermore, is almost inevitable in most cultural research where the line between the mode of representation and substantive content is difficult to draw.

DESCRIPTION OF CONFLICT AMONG STAKEHOLDERS IN BRF

Conflict between Loreh and mining and logging companies

There are at least four stakeholder groups in Loreh: Loreh's people, coal-mining companies, logging companies and CIFOR. The mining companies are PT BDMS and PT John Holland. Additionally, there are three logging companies nearby: Inhutani II, a state owned timber enterprise, and two IPPK (small-scale logging) called CV Surip Wijaya and CV Sebuku Lestari.

Several issues triggered conflict between local people and mining companies (see Figure 2). All respondents perceived water pollution caused by mining activities as their major 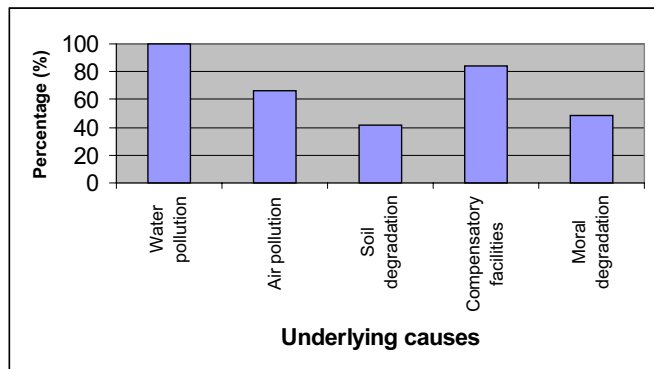concern. The pollution was caused by the fact that the waste from mining activities was channelled to the nearby river. Because local people are still very much dependant on river (e.g. for bathing and washing) the pollution has been their major threat. The second issue in this conflict has been the compensatory facilities. Around 80% of respondent perceived that compensatory facilities such as clean water provide by the companies were far from satisfactory. They had often complained because not enough clean water was provided for the whole community. For instance, there were only two water tanks for the entire settlement. The companies also promised to support the villages with electricity as compensation to their operation but very often the power ran out due to the lack of fuel for power generation and some houses were not even connected to the power.

Other underlying causes were air pollution, soil degradation and moral or cultural degradation. Air pollution was originated by trucks transporting coal from the village to Malinau city. The pollution was very unpleasant mainly during dry season during which there is almost no rain. With regard to soil degradation, 40% of respondents thought that due to opening up of the area topsoil was removed, thus become difficult to cultivate. The companies promised to return the land affected by mining activities back to how it was before and to ensure that those lands would be cultivatable. But, the ex-mining sites were no longer cultivatable. Around 50% of respondent were concerned with the impact of migrants coming to their village. They felt that their culture was being threatened by outside culture. For instance, migrants seldom respect local elders. They made noise during the night in the village by singing and playing music. This was not acceptable to many of the local people and they thought that the companies should pay attention to this issue. Annex 1 illustrates detailed causes of this conflict and the effect felt by local people in Loreh.

This conflict became increasingly complex as it rapidly heated up. People staged several protests to the companies and physical intimidation took place. In the latest protest people closed the road and forced mining activities to stop for three days.

Another conflict in Loreh took place between local people and logging companies. The underlying causes of
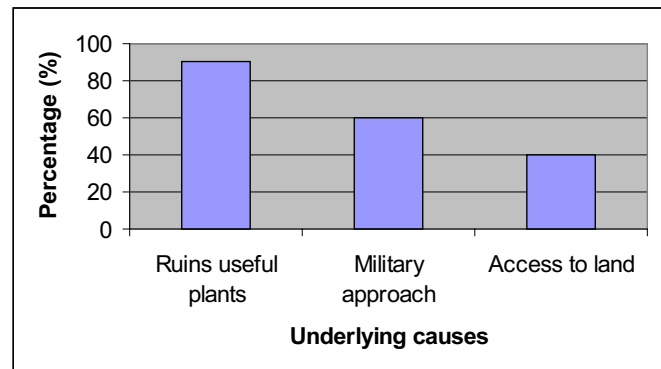

FIGURE 2 *Underlying causes of conflict between local people and mining companies in Loreh*

FIGURE 3 *Underlying causes of conflict between local people and logging companies in Loreh*

this conflict are shown in Figure 3. Ninety percent of respondents argued that logging companies damaged many important trees and several other useful plants and non-timber products in the forests (e.g., rattan, leaves, medical plants, etc.). Moreover, the companies prohibited people to open new farming areas and often used a 'military approach' to deal with them. Sixty percent of respondent said that they were often caught by the forest guards for cutting trees although it was only for their own use for house or church. Another cause of this conflict was access to land. People felt that they could not open land for farming because logging companies claimed that all forest belong to them. Local people were often told that they had no right to open any forest land and that they needed permission to do so from the companies. Annex 2 provides list of underlying causes of this conflict in more details.

In contrast to the conflict with mining companies, conflict with logging companies was not so serious. The conflict remained low in intensity although it has the potential to get worse. Communication was still used to negotiate the position although people often felt disappointed. However, no intimidation or physical attacks were reported.

Conflict between Langap and logging companies

In the conflicts between the people of Langap and two logging companies, Inhutani II and CV Hanura (small-scale), the case and the issues being contended were almost comparable to that of Loreh (see Annex 2). Below are two interview excerpts that show the underlying causes of conflict between local people and logging companies.

"We have some problems with Inhutani II in Langap. Firstly, because they damage plants useful for us such as rattan, medical plants, leaves, gaharu (eagle wood), etc. Secondly, they do not acknowledge our right to the forest as they often said that all forest belong to government and people have no right to the forest products"

"The problem we have with CV Hanura is that they often postpone their promises. For instance, they have agreed to pay Rp 30,000[3] per cubic meter of log as compensation for the community. However, they have not yet paid this to us. We suspect that if they do not pay this soon they will run away for free".

Figure 4 demonstrates that 80% of respondents blamed logging companies for damaging many trees and plants useful for local people. As in the case of Loreh, the companies caused damage to medical plants, rattan and gaharu (eagle wood). Sixty percent of respondents perceived that the way logging companies dealt with people was not acceptable. For example, if people cut trees in the
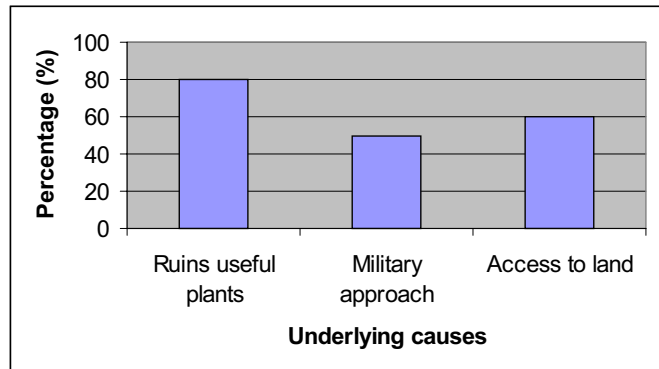

FIGURE 4 *Underlying causes of conflict between local people and logging companies in Langap*

forest even only for their own uses such as for house and church they were often threatened by forest guards, which was very similar to the case of Loreh. Moreover, as in the case of Loreh local people felt that their access to forest land was very limited and they could not carry out shifting cultivation as freely as they expected.

DISCUSSION AND CONCLUSIONS

Conflict between local people and companies (i.e. logging and coal-mining) operating in a forest landscapes such as BRF might be related to environmental pollution (e.g. water and air pollution), damages to community resources, access to forestland and forest resources or delay in compensatory facilities.

In the case studies presented conflict between local people and companies was common and the basis of the conflicts were concerned with access to forestland, damage to community resources, behaviour of employees of certain companies, and impact of activities to the environment, etc. In both cases, it was clear that the interdependency between stakeholder groups towards forest resources created the conflict (Wall 1985 *in* Walker and Daniels 1997).

The problems and issues in the two settlements towards the logging companies were similar. Damages to community resources such as rattan, gaharu and medical plants, and issue of access to forest land were the major problems that induced the conflict.

This study has indicated that respondents frequently referred to *problems* they encountered in relation to their interaction with other stakeholders groups as a *conflict* which in turn led to a view that they needed to *fight* against those who caused such problems. For instance, people in Loreh fought the mining companies in order to be compensated for river and air pollution, for loss of land, etc. The implication is that conflict must be acknowledged as an integral part of the resource use system. How such conflict is handles is dependent in part on peoples' perceptions of the conflict.

The key task facing conflict resolution in BRF is learning how to manage its occurrence. The overall goal should not be to eliminate conflict; instead, it should be to

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[3] US$ 1 is about Rp 9,000

adopt procedures or mechanisms for maximising its potential benefits while minimising its potential drawbacks. To achieve this, particularly in the case of BRF, requires collaboration among conflicting groups and the use of negotiation skills. Although there had been several attempts at discussion and negotiation among conflicting parties involving community's leaders and key person in the companies the role of local government has been minimal. Consequently what is needed in dealing with forestry conflicts, such as those in BRF, is not only co-management but also wider, integrated and proactive approaches to conflict management. More importantly, there is a need to include conflict management measures within current policy domains, which are currently very directive and target oriented. This should happen not only at the

community level but should also be extended to the district and regional level.

It is understandable that choosing the appropriate mechanism through which to address a particular conflict is in itself a strategic choice. No single mechanism can be applied in any conflict situation as different situation and context might require different mechanisms (FAO 2000b). However, understanding the conflict situation (e.g. the underlying causes and the intensity) could provide useful insight to the resolution mechanisms.

Although there is a common perception that getting stakeholders to work together in co-management arrangement would be a proper approach to sustainable forest management (e.g. Fisher 1995; Buck et al. 2001), it seems that the problems associated with forest management

ANNEX 1 *Underlying causes of conflict between local people and mining companies in Loreh*

Underlying causes	Effect to local people
Water pollution	• Dirty water for bathing • Dirty water for washing • Dirty water for drinking • Children can no longer swim on clean river • Many fish die
Air pollution	• Some children difficult to breath • Influenza/flu • Cough and fever • Too much dust during day time • Some elders have lung problem • Eye irritation to some people • Itchy skin • Clothes become dirty • Dust enter houses
Soil degradation	• Uncultivable land for farming • Less land for agriculture • Deep holes filled by water during wet season and form big pond
Delayed or unsatisfactory compensatory facilities (i.e. water, electricity and compensation fee)	• Not enough clean water • Not enough water tanks • Must queue to get drinking water • Not enough electric power to all houses • Not enough provision of fuel for generator • Amount of fee for compensation is decided by the company and not consulted to local people • Mining companies do not pay compensation fee as agreed • Mining companies do not help enough to build church • Mining companies do not help enough to build office for traditional leaders (locally known as *balai adat*) • Mining companies do not help enough to renovate village hall
Moral degradation	• Elders not respected • To much noise during the night • Drinking habits • Gambling in the village • Teenagers do not go to church • Parents worry on their girls, pregnant without marriage • Some migrants take local girl to town during weekend without permission from their parents

ANNEX 2 *Underlying causes of conflict between local people and logging companies in Loreh and Langap*

Underlying causes	Effect to local people
Ruin useful plants	• Damages to gaharu (eagle wood) • Damage to rattan • Damage to medical plants • Damage to young trees • Damage to honey trees • IPPK cut small diameter trees • Damages to some useful leaves useful for wrapping material • Damages to roots of tree useful for medical purposes • Some trees are wasted and left in the forest • Some IPPK destroy people's farming area
Military approach	• Forest guards are very arrogant • People are caught if cutting trees in the forest • Difficult to get tree for house construction • Difficult to get trees for church • Difficult to get trees for bridge construction • Chainsaw and other equipment for cutting trees belong to local people are confiscated • Logging companies often call police if they have problem with local people
Access to land	• People have no right to forestland • People can not open new area for shifting cultivation • People have to get permission if they want to open a new land for farming

go beyond such a simple model. For example, conflicts among stakeholders groups stemming from some management practices such as those causing river and air pollution, denial access to forest resources, etc. would not be resolved by simply providing alternatives to the same goods and services. Moreover, co-management in itself can set into motion new conflicts or cause old ones to escalate.

For that reason it is necessary to go beyond co-management and not get trapped in it if the intention is to seek better and sustainable forest management and at the same time reduce social conflicts. Consequently what is needed in dealing with forestry conflicts is not only co-management but also wider and integrated approaches to conflict management in a proactive manner (FAO 2000b). This requires an anticipation and expectation of conflict.

Although in many cases negative impacts are often more prominent in conflicts, an increasing number of authors contend that conflict should not only be viewed as dysfunctional but should be used as a catalyst for constructive changes (e.g. Castro and Nielsen 2001, Upreti 2001). In some circumstances conflict might be necessarily created to induce changes. When the manifestation of conflict leads to necessary policy, economic, social and management changes, it is valuable and of importance. Castro and Nielsen (2001) further argue that conflict can be used as a starting point for co-management. However, an institution ready to support this must be well-prepared from the beginning in terms of the co-management arrangement. This remains a major challenge for local government in BRF.

In line with this approach to thinking about conflicts, it is evident that questions about the potentials and adequate

institutional designs of active conflict utilisation are increasingly appearing on political as well as research agendas (e.g. FAO 2000a and FAO 2000b). So far, most of the studies have concentrated on the description of conflicts. This formed an important step in the understanding of natural resource management away from harmony ideals to conflict conceptualisations. The next step that needs to be made is to understand the mechanisms of actively coping with conflicts in natural resource management, in order to avoid the negative impacts and to further their positive impacts. Some initial studies have been made in this respect, but are mainly limited to business management and organisational environments (e.g. Glasl 1999). Governance structures and natural resource management settings in this respect have not received much, if any, attention.

In consequence, the next step is to highlight the potentials of conflict and to understand the institutionalisation of conflict capabilities in order to achieve positive and desired social changes within co-management settings. In contrast to the prevailing understanding of co-management approaches, which focuses on settlement or avoidance of conflicts as central importance in their conflict management, the effort in the future should focus on the active utilisation of conflicts for contributing towards achieving the ultimate aim of the co-management efforts.

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