LOCAL MANAGEMENT ARRANGEMENTS IN SESAO T FOREST, LOMBOK, INDONESIA

MAGDALENA*, DAVID LAWRENCE1, COLIN FILER2, LESLEY POTTER3, BUDY P. RESOSUDARMO4

CENTER FOR RESEARCH AND DEVELOPMENT OF CLIMATE CHANGE AND POLICY, FORDA
JALAN GUNUNG BATU NO. 5, BOGOR, INDONESIA,
*magda.gultom@gmail.com
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Abstract
The Sesaot Forest (SF) is a protection forest located at Mt Rinjani, Lombok Island, Indonesia. Formerly a successful community forest project, in 1982 it was reclassified as a protection forest by the Ministry of Forestry due to its importance as a water catchment area for the residents of Lombok. In 2009, Sesaot was reclassified as a Grand Forest Park (Tahura). Currently, the forest management authorities of SF are facing a number of critical issues such as land tenure, illegal logging and intensive resource collection. This paper describes the historical, economic, social, cultural, political and geographical aspects of the two village communities, Sesaot and Lebah Sempage Villages, surrounding the forest. Data collected includes in-depth interviews, focus group meetings, field observation and collecting as well as analyzing written materials and maps. The results shows that complex mixture of historical, economic, social, cultural, political and geographical factors are significantly affecting local management arrangements in managing the protected area. These factors are described in this paper.

Keywords: Sesaot forest, Lombok, local management, protected areas, water catchment

I. INTRODUCTION
The Sesaot Forest (SF) is part of a group of forest protection area around Mt Rinjani, Lombok Island, Indonesia (Figure 1). Formerly a successful community forest project, in 1982 it was reclassified as a protection forest by the Ministry of Forestry due to its importance as a water catchment area for the residents of Lombok. In 2009, Sesaot was reclassified as a Grand Forest Park (Tahura). (Source?). Currently, the present management authorities of SF are struggling with the issues of land tenure, illegal logging and over exploitation of forest products. In fact, it is reasonable to ask if the SF should continue to be classified as a forest park. Now within the forest one can see all kind of fruit trees grown by local people who are economically dependent on the forest resources. They collect firewood, manage their plantations and log timber from the protected area. While sustainable management of protected areas should include the local people who live around the area, it is also important to understand why local management arrangements have broken down. This paper seeks to understand how these historical, economic, social, cultural, political and geographical factors have influenced these

1 Australian National University (contributing author)
2 Australian National University (contributing author)
3 Australian National University (contributing author)
4 Australian National University (contributing author)
local management arrangements with regard to forest use and protection and recommend what can be done to restore the forest to good condition considering its vital use as a water catchment area.

Two villages Sesaot and Lebah Sempage, that border the SF, were selected as case studies. Data collection methods comprised of in-depth interviews, focus group meetings, field observation and collecting and analyzing written materials and maps.

II. METHODS

The analytical framework involved the examination of the historical aspect of the declaration of protected status, the social and cultural issues prevalent in the two villages, livelihood issues and the ongoing problem of illegal logging in the region. The study of the two villages was facilitated by local leaders, NGO staff and government officials. While most of the participants were pleased to provide information for the study some participants were reluctant to provide detail information about illegal logging. To respect the confidentiality of informants no names have been used in this paper.

A descriptive analysis was used for the quantitative and qualitative data. The analysis included graphs, tables and basic statistical parameters such as means and totals. A translator assisted with the demographic data collected in 1930 reported in Dutch. This study was also assisted by a PhD student who was familiar with the codes used in the 2000 Census data. The redrawing and overlaying of maps was facilitated by the Cartography Section of the Research School of Pacific and Asian Studies (RSPAS) at The Australian National University (ANU).

![Figure 1. Map of Indonesia](source: University of Texas, 2007)
III. RESULT AND DISCUSSIONS

A. Sesaot Forest

Sesaot Forest (SF) was reclassified in 1982 as a protection forest by the Ministry of Agriculture because of its function as a water catchment area for the residents of Lombok (Ministry of Forestry of Indonesia 2004; Ministerial Decree No.756/Kpts/ Um/10 year 1982). A number of rivers run through the forest, including the Jangkok, Tembiras, Sesaot, Betuang and Binsua Rivers and there are several natural springs rises in the mountains, the most important being the Ranget, Pengkukun, Sesaot, Aik Nyet, Pengkoak and Orong Petung Springs (Sutedjo and Suryadi, 1997).

A summary of the history of the SF is shown in Table 1. A Sesaot resident said to the principal author that he came to Sesaot Village in the mid 1950s and witnessed the early development of areas around the forest (Sesaot villager pers. comm., 7 Jan 2006). This was the year when the national government of Indonesia carried out projects to replant the SF and involved the local people. During this period, the SF was described as a limited production forest and was mainly exploited for timber (Sudaryanto 2001; Sutedjo and Suryadi 1997). Most of the logging practices in the 1950s and the 1960s were carried out by local people working for businessmen but the scale of the operations varied from short term concessions issued to private companies to the provincial forestry service (swakeholo) managed its own operations (Awang, 2003).

The logging practices in the 1950s and 1960s were considered to be unsustainable and the likely causes of the early degradation of the forest (Awang, 2003; Suryadi, 2001b). After the forest was logged, it was then planted with plantation timbers in a reforestation program instigated by the Indonesian Government that sought to reduce the pace of forest degradation and again as a program to involve
local people. By 1960s, the reforestation scheme had planted large areas of mahogany, Bayur (*Pterosperum* spp.) and Albizia (*Albizia falcataria*) (Sutedjo and Suryadi 1997). At this time, local people were also given rights to grow crops in the forest and areas of chillies and paddy rice were planted together with the commercial timbers. Locals were also allowed to plant coffee trees among the plantation timbers. The local people were willing to work with the government and to follow instructions given by officials because they received economic advantages by being engaged in reforestation project. This scheme was identical to the community forestry program implemented by the Ministry of Forestry thirty-five years later in 1995. This new scheme will be examined below.

Logging operations and the reforestation schemes attracted migrants from other parts of Lombok, mainly from East Lombok, and also from nearby Bali. These settlement areas were then supplied with roads, bridges and other infrastructure in areas close to the forest and this increased the pressure on forestry resources (Sesaot villager, pers comm., 7 Feb 2007). In the late 1960s, Sesaot Village was established near the Sesaot Forest and this housed most of the residents who were dependent on forest resources for their livelihood (Sutedjo and Suryadi, 1997). Then in 1970s the logging activities continued, leading to more damage to the forest and more people came to join the logging activities.

The creation of the SF played a significant role in the growth of the surrounding villages of y Sesaot and Lebah Sempage. People from these villages were employed in the forest and also used the resources of the region. This continued until the central government decided to reclassify the forest and restricted logging activities in the early 1980s. The importance of SF as a water conservation area for Lombok residents was the formal reason given for the reclassification of the production forest into protection forest in 1982. The policy was implemented in 1983 but as has happened elsewhere in Indonesia, this policy led to the loss of local people’s rights to access forest resources. It had a major impact on the local economy and people’s livelihoods. Some of the main implications of the policy have been the loss of job opportunities and income, restrictions on the cultivation of agroforestry gardens within the forest zone, and restrictions on collection of all forest products, such as fuel wood, fodder and construction materials (Fisher et al., 1999).

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5 The status of the forest before 1982 was limited to production forest.
Table 1. Brief Summary of the History of the Sesaot Forest

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1953</td>
<td>Lombok Island was occupied by the Balinese until the end of the 17th century. The island became part of the Dutch East Indies between 1894 and 1942. The Japanese occupied the island from 1942 to -1945 during World War II. Following Independence in 1945, Lombok has been part of the Sasak People Residency.</td>
</tr>
<tr>
<td>1953</td>
<td>Local logging activities in the Sesaot Production Forest. In this period, local people commonly undertook logging with assistance from business people. The forest was planted with mahogany and the government declared the natural forest logged out.</td>
</tr>
<tr>
<td>1958</td>
<td>Establishment of the West Nusa Tenggara Province.</td>
</tr>
<tr>
<td>1970s</td>
<td>Forest degradation worsened due to timber exploitation.</td>
</tr>
<tr>
<td>1982</td>
<td>The forest was reclassified as a protection forest. Proincal authorities issued a decree permitting local people to access the buffer zone around the SF but did not permit access to the core zones and the protection zones.</td>
</tr>
<tr>
<td>1995</td>
<td>The decree of Community Forestry was issued by the central government. The Provincial government and some local NGOs initiated community forestry programs in the SF.</td>
</tr>
<tr>
<td>1998</td>
<td>Protection forest management was transferred from the province to the West Lombok district.</td>
</tr>
<tr>
<td>1999</td>
<td>Establishment of Law No 22/1999 regarding regional autonomy. Commonly known as the law of administrative decentralisation. Establishment of the Nuraksa Grand Forest Park covering 3,155 ha of land where. This left the Sesaot Forest with 2,795 ha,</td>
</tr>
<tr>
<td>2000</td>
<td>The central government and the Governor issued a decree to seize waste timber. The SF was extensively logged. In this regard, Provincial Forestry Office seized the timber waste.</td>
</tr>
<tr>
<td>2003-2009</td>
<td>Illegal logging continues. Land rehabilitation programs began as part of the Gerhan or GN-RHL (Gerakan Nasional Rehabilitasi Hutan dan Lahan) program,</td>
</tr>
<tr>
<td>2009-now</td>
<td>Ministerial Decree No 598/2009 on the Reclassification of SF into the Tahura (Grand Forest Park) was issued. Illegal logging continues with the added uncertainty of the success of community forestry activities.</td>
</tr>
</tbody>
</table>

Sources: Ellsworth and White, 2004; Sedyawati et al., 2002; Harnish, 2006; Suryadi, 2001a

The restrictions have not only caused economic problems but also significant social problems in this region. There has been an increase in the number of timber thefts, illegal logging operations and forest encroachment. Some local people have been arrested and sentenced to jail for these activities and this has caused major dissent in the local communities particularly among people who have seen their relatives and neighbours imprisoned (Lebah Sempage villager, pers. comm. 8 Feb 2007). One of
the local community forestry pioneers admitted that without access to the forest, villagers have no future. He has argued that in order to survive local people must break the law.

B. Sesaot Village

1. The History and Profile of the Village

Sesaot Village was formally constituted in 1968 (Sutedjo and Suryadi 1997). It is located 8.3 km from the center of Narmada Sub District (Statistic Service of Lombok Barat Regency 2003). The village (desa) is 41.96 km² in area and actually consists of 10 sub-villages (dusun) all of which come under the name Sesaot. Three of these sub-villages border the SF. (CBS, 2005). These villages are also known as centres for nature-based tourism. The area is known as Aik Nyet, (cold water) and visitors, mostly from within Indonesia, come there to see the fresh water springs, the river and the mahogany plantations. Population growth in Sesaot has been due to local migration from within the region. There were several phases of this migration that began in the colonial period. People first moved to work as timber cutters for the Dutch colonial government in the 1930s. Then they arrived as employees of the timber logging businessmen in the 1950s. The third migration in the 1960s was when people arrived to work for the forest rehabilitation programs (Sudaryanto 2001).

It was in the 1950s that people first began developing the area around Sesaot Village. A senior resident said that he came to Sesaot in 1954 and worked to build the bridge (Sesaot Villager, pers.comm. 7 Feb 2007). At the time the only roads were muddy tracks. In general, logging practices in the 1950s and the 1960s were carried out by local people working for businessmen. In the 1960s a forest rehabilitation program was implemented by the Indonesian Government and villagers were allowed to plant chillies, paddy rice and teak. Then in the 1970s the logging activities continued. This led to more damage to the forest and more people came to join the logging activities. Following the logging, the degraded areas were replanted with monoculture plantation timbers (Director of Provincial Forestry service, Zainal, B pers comm., 7 Aug 2006). The plantation timber activities attracted more migrants and Sesaot community expanded. These migrants worked either for the logging companies or for the replanting programs in the SF.

In the past, the Sesaot community was significantly influenced by central and provincial policies. Sesaot villagers were part of the forest replanting projects, they understood the ‘access to buffer zone’ program and participated in the community forestry and timber utilisation policies. These policies were initiated in order to alleviate the poverty of the local people. However, the community forestry program was not successful as it did not accommodate all the landless farmers of the region. Only some farmers were fortunate to have access to land and this situation led to rivalry between land owners and landless groups. Consequently, social problems have risen particularly since the reclassification of the forest in 1982 when logging and replanting activities stopped and when many villagers were left unemployed.
2. Social and Cultural Issues

Based on the Census of 2000, the major ethnic groups in Sesaot Village are native Sasak people from Lombok (87 per cent) and migrant Balinese (12 per cent) (Table 2). While most Sasak are Moslems the Balinese are Hindu. The Sasak ethnic group has dominated the culture of Lombok Island since the 1930s (Figure 4). The traditional music, the *Gendang Beliq*, the traditional meeting places, *Berugaq* and the system of customary rules, *Awiq-awiq*, have been important cultural identifiers for the Sasak. *Awiq-awiq* can be used to protect and conserve natural resource, including forest. Islam has also had a significant influence on Sasak community life. However, the traditional forest stewards of Lombok have almost disappeared and the ecological and sacred functions of forest guardianship have been lost (Astawa 2004). People are now more interested in the economic value of the forest.
Figure 3. Sketch of Sesaot Village
Source: Adapted from Sesaot Village Service, 2006
Sesaot appears a homogeneous village in terms of ethnic identity but the community is large, accessible and populated by many migrant groups. As a result customary traditions are not as strong as among more isolated indigenous peoples in Indonesia such as the Dayak Kenyah of Kalimantan. The influence of local migration from other parts of Lombok is also significant. Education levels are low. In 2003, only 2 per cent of Sesaot residents had graduated from senior high school or university (Statistic Service of Lombok Barat Regency 2003). However, Sesaot now has a junior high school in addition to a primary school and education is seen as important for the future generations.

3. Livelihood and Dependency on Forest Resources

In 2005, the village comprised 2,410 households: a total of 7,582 residents. Like other villages around the forest, 44 per cent of the people are farmers (CBS, 2005). The population density is about 181 people/ km² and the settlement is concentrated close to a main road that runs through Sesaot Village to Lebah Sempage Village. The profile of the Sesaot Village shows that 36 per cent of villagers hold a kartu sehat (a government health card) that indicates they are officially considered poor and they qualify for welfare assistance (CBS, 2005). According to local NGO observations, the daily income is low. Most people only receive cash money every six months or once a year (KMPH Sesaot, 2000). The census found that 33 people had moved out to Malaysia or to Saudi Arabia seeking work.

![Figure 4](image-url)  
**Figure 4.** The composition of major ethnic groups in Lombok based on the 1930 Census

Source: Departement Van Economische Zaken 1935

Note: Foreigners, Chinese and other Asians were excluded from the total population
Table 2. Ethnic group composition and Religious affiliations in Sesaot Village in 2000

<table>
<thead>
<tr>
<th>Religious affiliations</th>
<th>Number of People</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moslems</td>
<td>6,106</td>
<td>87.3</td>
</tr>
<tr>
<td>Christian</td>
<td>7</td>
<td>0.1</td>
</tr>
<tr>
<td>Hindu/Buddhist</td>
<td>882</td>
<td>12.6</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td><strong>6,996</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnic group identity</th>
<th>Number of People</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sasak</td>
<td>6,065</td>
<td>86.7</td>
</tr>
<tr>
<td>Balinese</td>
<td>855</td>
<td>12.2</td>
</tr>
<tr>
<td>Javanese</td>
<td>16</td>
<td>0.2</td>
</tr>
<tr>
<td>Banggai, Mian Banggai</td>
<td>9</td>
<td>0.1</td>
</tr>
<tr>
<td>Sumbawa, Semawa</td>
<td>6</td>
<td>0.1</td>
</tr>
<tr>
<td>Sunda, (Priangan+Banten)</td>
<td>9</td>
<td>0.1</td>
</tr>
<tr>
<td>Aceh, A-Tse, Achin, Akhir, Ureung</td>
<td>5</td>
<td>0.1</td>
</tr>
<tr>
<td>Bima</td>
<td>5</td>
<td>0.1</td>
</tr>
<tr>
<td>Antinggola</td>
<td>4</td>
<td>0.1</td>
</tr>
<tr>
<td>Others</td>
<td>25</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,999</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: CBS, Population Census 2000

In their efforts to fulfil their daily needs, some local people enter the forest and collect firewood and other forest products. People collect firewood not only to use it themselves but also to sell. This is illegal according to the local regulations. Activities in the SF commonly start at 6am and finish at 5 pm. and within this period villagers undertake a range of activities such as working in the gardens (kebun kontrak), driving villagers and forest products to and from the SF and selling food and drinks to working people and tourists. These activities are more intensive during harvest time from December to February when local people commonly harvest durians and rambutans.

Villagers who have houses beside the district road also have roadside stalls (warung). Several people have small businesses making furniture and processing fruit. Some villagers also have some food stalls near Aik Nyet, where local tourists come to enjoy the forest, river and water fall. The tourism activities
in this area have not contributed significantly to local income because they have not been managed properly by local government (District Forestry Official, Zainal, Bpers comm. 6 Aug 2006).

Although several livelihood options are available to Sesaot villagers it is also apparent that these are based on forest product exploitation. In the neighbouring village of Lebah Sempage where population density is higher and more people are classified as poor, the situation is even more problematic. Since many Sesaot residents work in the SF, daily conflicts with government officials are common. In addition, conflicts between farmers and timber poachers arise frequently because when people steal timber from farmers’ gardens they often damage the gardens. On several occasions, conflicts between local environmental activists and illegal loggers have also occurred and this has resulted in threats and intimidation.

LEBAH SEMPAGE VILLAGE

1. The History and Profile of the Village

Lebah Sempage Village was established in 2001. Formerly it was part of Sesaot Village. During the fieldwork in 2006, the village head had just finished his duty for the past five years and the village was waiting for the election of the Kepala Desa. For the last five years the outgoing head had been involved in the reforestation program in SF conducted by the University of Mataram, OISCA (Organisation for Industrial, Spiritual and Cultural Advancement) and the District Forestry and Plantation Service. The former Kepala Desa has been supportive of the reforestation program.

Lebah Sempage is located 10.8 km from the central Narmada Sub district but is only 9.86 km² in area (Statistic Service of Lombok Barat Regency, 2003). Consequently, the village is surrounded by the SF and of the eight sub-villages, six actually border the SF. For this reason access to the forest resources is easier for the Lebah Sempage people than for the Sesaot villagers. Some villagers have gardens close to their houses and close to the SF. The location of illegal activities is more difficult to monitor than in Sesaot Village. Currently, illegal logging forms a normal part of the life of the average Lebah Sempage villager. Every day, convoys of trucks with illegal timber pass the forestry offices at Kumbi and Jurang Malam (Figure 5). These trips usually pass Lebah Sempage on the way to Sedauh Village where buyers and some sawmills operate.

2. Social and cultural issues

Many villagers are local migrants from other parts of Lombok, and most of them are from the Sasak ethnic group (Table 3). Like Sasak people in Sesaot Village, the traditional music, the Gendang Beliq, the traditional meeting places, Beruqaq and the system of customary rules, Awiq-awiq, are cultural identifiers. The people are socially and culturally homogeneous and come from a Sasak Moslem heritage (Table 3). By 2005 there were 27 Moslem religious buildings in the village but there were no Hindu temples as in Sesaot Village. The influence of other religions is very limited and Islamic culture
dominates. Because of the cultural and religious unity a young experienced NGO staff member found it easier to work in the community and establish projects there than in Sesaot Village that is less united.

The level of education is similar to that in Sesaot Village (Statistic Service of Lombok Barat Regency 2003). Although the people of Lebah Sempage have a low standard of formal education the community now has several elementary schools and the youth are able to travel to Sesaot to attend junior high school. To pursue tertiary education (senior high school and university) people have to go to Narmada center where the senior high school is located to Mataram town where the universities are located but the financial cost of education is a problem and the parents have not found it easy to send their children to higher education and training (Lebah Sempage villager, pers comm. Feb 2007).

Figure 5. Sketch of Lebah Sempage Village
Source: Adapted from Lebah Sempage Village Service, 2006
Table 3. Religious affiliations and Ethnic identity of population in Lebah Sempage Village in 2000

<table>
<thead>
<tr>
<th>Religious affiliations</th>
<th>Number of People</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moslems</td>
<td>5,668</td>
<td>99.8</td>
</tr>
<tr>
<td>Christians</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hindu/Buddhist</td>
<td>9</td>
<td>0.2</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td><strong>5,678</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Number of People</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sasak</td>
<td>5,630</td>
<td>99.2</td>
</tr>
<tr>
<td>Bali</td>
<td>9</td>
<td>0.2</td>
</tr>
<tr>
<td>Javanese</td>
<td>7</td>
<td>0.1</td>
</tr>
<tr>
<td>Sariung</td>
<td>5</td>
<td>0.1</td>
</tr>
<tr>
<td>Sawa</td>
<td>5</td>
<td>0.1</td>
</tr>
<tr>
<td>Others</td>
<td>22</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td><strong>5,678</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: CBS, Population Census 2000

3. Livelihood

In 2005, the village comprised 1,914 households with a total of 6,473 residents: 76 per cent were farmers (CBS, 2005). The population density of 656 people/km² is significantly higher than in Sesaot Village (181 people/km²). As in Sesaot Village, many farmers have gardens in the SF but there is no tourist activity in the Lebah Sempage area. Consequently, livelihood options are limited. Statistics indicate that 41.6 percent of households hold the kartu sehat. This indicates they are officially designated as poor and this means that more poor people in this area than in the Sesaot Village region. Illegal timber cutting is a major activity and it is apparent that several local people have become rich because of illegal logging. These people are easily identified by the quality of the housing and their possessions (Sesaot Village Head, pers comm., 9 Feb 2007).

4. Illegal Logging

Illegal logging is a complex network of power and influence that operates within various economic, social and political dynamics (Casson and Obidzinski 2002; McCarthy 2002; Ravenel and Granoff 2004; Rosenbaum 2004). The nature of corruption and its relationship with illegal logging is also complex and this has been examined clearly by Smith et al. (2003). The Indonesian army is often mentioned as having a key role in these illegal logging activities.
et al. 2003). Due to the nature of illegal logging in the SF, it is difficult to accurately document the volume of timber involved in the illegal activities although, according to Lebah Sempage villagers, there are between five and ten trucks each day coming from the forest with an estimated load of about 20 m³ per vehicle. The people involved in illegal logging come from a range of ages, residential addresses and status. Nor is it restricted by gender (Figure 7). These people include villagers, local businessmen, members of the police and the army and state officials (Surya Citra Televisi 2007a; Surya Citra Televisi 2007b). The diversity of people engaged in these illegal operations is well known and reported by many media in Indonesia but the operational networks are solid and therefore difficult to break up. Corruption and cronyism are well entrenched in the political system at all levels. Cutters start their work before 4.30 am and finish at around 12 noon. From 2pm carriers start bringing out timber from the forest and store it, ready for the collection trucks. Several trucks will transport the timber to ordering agents or purchasers. At the end of the day, around 5pm-6pm, the trucks can be seen travelling along the public road that passes the forestry office and the settlements. There are a number of important groups involved in illegal logging operations:

- **pencepul (collectors)** coordinate the operation in the field and approach the state officials ensuring that sawn timbers can be delivered to purchasers. They have the capital and act as the 'paymasters'.
- **purchasers** may be individuals or sawmills and may be locals or outsiders; most are from Mataram, Senggigi and Northern Lombok.
- **chainsaws owners.** These people can also be collectors. The owner of the chainsaws will send cutters and cutters’ assistants who are able to process two or three trees per day.
- **carriers (pemikul).** They may be children, generally over 11 years old, or men and women of any age. They carry the sawn timber from the forest to the place where collectors wait, count the product and pay them.
- **drivers.** They collect and deliver the timber. They not only transport wood but also fruit or other non timber forest products out of SF.
- **guards and watchmen;** who can include drivers of ojek, policemen or even forestry officials themselves (Group discussion 2006).

Collectors play significant roles in the operation of illegal logging around Lebah Sempage Village. They also stand to benefit most from the operations. The collector, who may be a male or a female, is the manager who organized the entire operation in the forest. The collector provides money for running the operations and also searches for buyers for the cut timber. In many cases, the collector has family or business connections with other involved parties. Generally, they are difficult to apprehend because they undertake the operations in the forest with help of local people, security guards, drivers and government officials such as the police, military or forest rangers. Illegal logging activities in the SF have occurred ever since the forest was first established. Discussions with some people involved in

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6 Data from observation and interviews with local people and local NGOs during the fieldwork August 2006
illegal operations reveal that economic factors are the most significant drivers of the activities (group discussion, 2006). The situation is not unique to SF. The economic situation and local poverty are also significant drivers of illegal logging operations in other protected forests in Indonesia such as Gunung Palung National Park (Hiller et al. 2004). Villagers involved are aware that these activities are risky. The risks include unsafe working practices in the forest, the possibility that they may be caught by the forest rangers or the police and sentenced to jail, and social punishment by their friends and neighbours. However, the amount of money that people can earn, compared with other low paid or unskilled jobs, is enticing and poor people are prepared to run risks in order to earn quick cash. A simple analysis of money distribution in illegal activities shows that the timber collectors get the highest share per cubic meter among the various actors, except for the buyers controlling the marketing of the product (Figure 6). Some strategies that determine the success of illegal activities are:

a. good coordination and communication between cutters, collectors, transporters and buyers,
b. good contacts with corrupt state officials,
c. remaining out of contact with honest state officials who cannot be bribed,
d. operating at times of good weather when no joint police/military operations are planned, and
e. avoiding troublesome tree spirits (this is especially strong among people who hold strong animist beliefs) (Group discussion 2006).
The failure of the state to control illegal activities is also significant, as is the corrupt involvement of state officials. The efforts made by state forestry managers to protect the forest are often unsupported by local people. Lebah Sempage villagers, for example, tend to be more supportive of illegal logging, as evidenced by the fact that several operations to combat illegal logging were hampered by protests from local people (Rosenbaum 2004). Conflicts between forest rangers and carriers are common. In many cases, carriers run away but if the carriers are caught, the forest rangers usually damage the illegal timber, disarm the carriers and then release them. In other cases, carriers are able to bribe officials. The individual official is commonly not brave enough to enforce the law because of fear of physical threat and assault (District forestry official, pers comm., Feb 2007).

Larger scale conflicts could occur between the local communities and state officials during joint operations conducted by police and the military. On 1 March 2007, for example, it was reported that hundreds of Lebah Sempage villagers protested against forest rangers and policemen who had captured two villagers who it was alleged had been involved in illegal logging (Surya Citra Televisi 2007b). The forest rangers released the suspects after the protests, but the following day, soldiers, policemen and forest rangers came to the village and confiscated timber that was being hidden by local people (Surya
Conflicts within the local communities group have emerged from the different perceptions of the scale and nature of illegal logging. Some people are concerned with the condition of the SF. However, in general, these villagers are afraid to act as they believe that threats of intimidation by criminals will cost them their property.

Some local people have also witnessed the involvement of the police, soldiers and forest rangers in the illegal activities. This was the reason why some Lebah Sempage villagers feel safe in participating in illegal logging operations. They believe that they have the support of powerful officials. However, allegations of police involvement have been subsequently denied by the West Nusa Tenggara police office when confronted by media investigations.

In addition, every time joint patrols are implemented, the illegal activities stop. This is because the information has been leaked by government officials who are involved in illegal logging. Furthermore, the involvement of the relatives and friends of government officials in illegal activities may also lead to the leaking of information about planned joint patrol programs. The result is poor law enforcement of forestry regulations in and around Lebah Sempage. Villagers witness these activities every day and the history of law enforcement and the known involvement of state officials only serve to strengthen people's poor impression of state apparatus. Few villagers are willing to be witnesses against such powerful opposition.

![Figure 7. Carriers of illegal timber in Lebah Sempage](photo_taken_by_magdalena_2006)
CONCLUSION AND RECOMMENDATION

History showed that local people around SF has been dependent on the forest since the 1950s. The 1985 reclassification of SF from production to protection forest has caused significant social and economic problems. The 1985 reclassification also failed to sustain forest cover. The multiplicities of historical, economic, social, cultural, political and geographical factors that have influenced local arrangements on forestry resources do not fully support forest protection and conservation. Lessons learnt from this study will be useful to understand and anticipate the impacts of the 2009 reclassification of SF from protection forest to grand forest park (Tahura).

This study suggests that the reclassification of Sesaot Protection Forest to a Tahura, will most likely fail to protect the forest cover listed ins the 1985 reclassification. Poverty is the most significant driver of illegal forestry in the SF. Until the economic dependency of people on SF is reduced the forest will continue to be subjected to unsustainable use. Community based forest management, such as an improved community forestry program with clear boundaries, right and responsibilities for all involved stakeholders is the best solution to this seemingly intractable management problem.
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