

***SOCIAL FORESTRY NETWORK***

**SOCIAL FORESTRY IN DISPUTED UPLAND AREAS IN JAVA**

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## **INTRODUCTION**

### **Brief Description of Perum Perhutani**

Perum Perhutani, the State Forest Corporation, manages approximately 2.9 million hectares of forest land on the island of Java. This land is divided into production forests of 1.8 million hectares, nature reserves of 731 thousand hectares, and protection forests of 419 thousand hectares. In managing these lands, Perum Perhutani has two overall goals: economic profit and public service.

Perhutani has three unit/branch offices: Unit I - Central Java; Unit II - East Java; and Unit III - West Java. The scope of Perhutani's activities include: reforestation plantations, commercial exploitation, sericulture, pine resin collection, deer and crocodile breeding, and rural community development (PMDH).

### **Social Forestry in Java**

#### **History**

The social forestry programme in Java was recently given added impetus through cooperation between the Ford Foundation and the Forestry Department. The history of this cooperation is as follows:

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|-----------|--|
| 1984-1985 | Seminar/workshop on social forestry held; establishment of Policy Review Steering Committee and Technical Steering Committee; diagnostic research carried out in 13 sites in West Java, Central Java and South Sulawesi. |
| 1986      | Pilot projects begun in 13 sites (totalling 231 ha), including 5 sites in West Java, 4 sites in Central Java and 4 sites in East Java.   |
| 1987      | Follow-up and expansion of number of pilot project sites from 13 to 61 (totalling 1,561 ha).   |
| 1988      | Number of pilot project sites further expanded to 120 (totalling 3,040 ha).  |
| 1989      | Follow-up and further expansion of pilot project programme.  |

The Forest Department gave operational responsibility for all social forestry activities, in particular on Java, to Perum Perhutani. Before the present social forestry programme began, Perhutani had some experience in implementing similar programmes, such as *'The Prosperity Approach'* (a village economic development programme), *'Ma-Lu'* (*'Mantri-Lurah'*, emphasizing collaboration between the forest ranger and the village head), the *'Forest Village Development Programme'* (PMDH) and an earlier *'Social Forestry Programme'*. The basic objective of these programmes was to assist villagers in meeting their needs. Some extension technologies developed in the course of these programmes including those for *'tumpang sari'* (tree-crop intercropping), capture of scarce water, building check dams, setting-up demonstration plots for fodder production, and so on.

### **Exclusion from Disputed Areas**

These social forestry projects, in particular the new programme developed with Ford Foundation support, are being implemented on lands with critical status (viz, lands degraded from their natural state), and on lands adjacent to the village. The status of these lands is clear, they are not disputed. To date all social forestry projects have avoided the so-called *tanah sengketa* (disputed lands), referring to lands within state forests and lying under the jurisdiction of Perum Perhutani, that are nevertheless being exploited by local villagers.

### **Disputed Use of Forest Areas in Java**

#### **History**

##### **a. Peasant claims**

Some villagers claim to have originally entered the forest to carry out guerilla warfare against the colonial regime. Today the descendants of these guerillas farm the same lands (passed down to them by their parents or grandparents). Because their ancestors farmed this area long ago, these peasants feel that they have hereditary rights to do the same. In other cases, as part of a contemporary land-acquisition strategy, villagers plant perennial crops (coffee, cloves, etc), then after these plants mature, they cut the surrounding forest trees and claim the area as their own. This sequence of events is common in east and central Java (Bibrikan), in particular. These efforts by the villagers to illegally occupy the forest are based on their lack of access to land for farming, lack of employment opportunities, and low household income.

##### **b. Government claims**

Basically, the government and Perhutani claim all disputed land or otherwise illegally occupied land in the forest areas. On the foresters' *'work maps'*, therefore, the disputed areas are designated as government forest (despite the fact that the disputing villagers often relocate the boundary markers). In some areas, Perhutani forcibly insists on this designation, by burning houses and evicting the farmers.

## **Current Extent**

Due to illegal use, forest land on Java is becoming degraded and less productive, and it is estimated that about 250,000 ha have become completely unproductive (Bratamihandja, 1988). This is a source of major concern to the government, because of its belief that these forests have a vital role to play in supporting national economic development and environmental conservation.

## **Attendant Problems**

### **a. Impact on the environment**

A lot of forest areas have been changed by illegal occupation to other functions: *huma* (dry rice fields), *sawah* (wet rice fields), *kebun* (gardens), and *pemukiman* (settlements). The result is the long term degradation of natural forests to agricultural lands, with consequent disruption of many of the natural forest functions in the greater ecosystem. In addition, because of decreasing ground cover, erosion is increasing in the disputed areas (particularly in the rainy season). Erosion is exacerbated by the widespread practice of removing the roots of trees that have been cut (whether by peasant or Perhutani), in order to make charcoal. Occasionally, fires set to clear fields for slash-and-burn agriculture also burn out of control, affecting a larger portion of the forest than originally intended and damaging young plants in the adjacent areas.

### **b. Impact of forest production**

The direct as well as indirect consequences of the disputed use of forest land by local villagers result in a decrease in that forest's marketable timber, as well as an increase in Perhutani's costs for rehabilitating and protecting it.

### **c. Constant expansion of areas**

It is not uncommon, over the long-term, for peasants to expand their fields at the expense of bordering forests. This practice, called *maju kesis* (advancing to the side), is usually accorded tacit approval by village leaders, in return for a share of the harvest (often about 15% of the total).

### **d. Socio-political costs**

Perhutani's personnel sometimes take forcible action to remove cultivators from disputed areas, but this causes the peasants to think of Perhutani's personnel as their 'enemies'. This negative perception of Perhutani is often generalized from Perhutani (as representatives of the government) to the rest of the government, so that what was originally a local dispute over natural resource use leads to a general breakdown of relations between the rural population and the central authority.

## **Role of Disputed Areas in Perhutani Activities**

The disputed areas are usually excluded from all of Perhutani's activities and are not included in the annual planning process for reforestation. On those occasions when these areas are included in the annual planning, little effort is made to ensure that the most suitable system of planting is used. For example, when a reforestation area contains some disputed lands (because some peasants have fields there), *tumpang sari* (intercropping) is the most appropriate management system to use, because it allows the peasants to continue to grow their own crops while protecting the forest and optimizing land use. Unfortunately, in such cases *banjar harian* (contracting labourers on a daily basis) is mistakenly implemented instead. The use of such a system flies in the face of the hard reality of the use of forest lands by local villagers, who have no alternative, and who will not desist until given an alternative.

## **Drawbacks to Coercive Measures by Government**

As just noted, it is difficult to relocate forest settlements because there usually are no alternative locations outside the forest. Also, harsh measures such as burning houses and damaging fields are not humanitarian. They may also be impractical, since the settlements and fields involved are usually far more scattered than in the normal village, and hence difficult to find in the first place.

## **Thesis of the Paper**

### **Use of Social Forestry in Disputed Areas**

It is the thesis of this paper that the use of social forestry in disputed forest areas can help to solve the problems described above without need for punitive measures or actions. A social forestry programme will help to advise peasants, organize them, and make them aware of the uses and functions of the forest. In addition, social forestry can provide education, apply technology, and most importantly, clarify the status of the disputed lands. This will enable people currently seen as outlaws to become law-abiding citizens, and permit a *bagi hasil* (division of spoils) system to be established between the villagers and Perhutani. Social forestry would promote both optimal land use and preservation/augmentation of the tree cover.

### **Outline of Paper**

I will begin my analysis with a description of current peasant land uses in disputed areas. This will include data on patterns of settlement as well as agriculture, the determinants of these patterns, the resultant state of the environment in disputed areas, and a comparison with the state of the environment in non-disputed areas. This will be followed by discussion of two case studies of Perhutani-peasant collaboration in disputed forest areas. For each case, I will describe the original situation, the joint resolution by Perhutani and the local peasants, and the lessons to be drawn. I will conclude with a discussion of the need for, value of, and also special character of social forestry programmes in disputed forest areas, along with several specific recommendations for follow-up.

## PEASANT LAND USE IN DISPUTED AREAS

### Settlement Pattern

Settlements for disputed areas normally consist of 5-15 households, found either scattered or in groups. They may be located either at the edge of the forest or deep inside it. The houses may be either permanent or semi-permanent. Sometimes they have informal village leaders. There are both local and immigrant settlers, the latter coming to this area from elsewhere with their families.

### Patterns of Agriculture

#### **Wet Rice Fields (Sawah)**

Wet rice fields are found in the valleys (on level land). Some of these areas depend on rain for irrigation, while others have independent water sources. There is no intensive irrigation. These rice fields were established long ago and the peasants manage them traditionally. A few of them work the fields with *bajak* (ploughs) drawn by cows or buffaloes, while others use hoes. They make shelters nearby for resting, and plant cassava, etc. around these huts. Rice is harvested twice a year. There is a four-months *bero* (fallow) after the second harvest.

#### **Dry Rice Fields (Huma)**

Dry rice fields are found in fertile lands, young forest plantations, *alang-alang* (*Imperata cylindrica*) fields, and waste lands. Such lands are often not yet included in Perhutani's planning process. Most of these fields are located well inside the forest areas, some far from the farmers' houses and others near. Peasants prepare these lands for cultivation by burning the vegetation, breaking and then hoeing the ground between August and September. When the land is ready, they plant it with rice (*padi gogo*) and after the rice harvest (in February -July) they plant corn, red pepper, small potatoes (*kumeli*), beans, and so on. Rice is harvested once a year. There are no perennial crops in this area because the time to maturation is too long and they fear losing them to the forest guard. Peasants crop these fields two or three times before fallowing them.

#### **Tree Groves/Plantations (*kibun*)**

Tree groves and plantations are commonly located near houses in the forest border areas; but they may also be found far from farmers' houses in the centre of the forest. Peasants try to establish their rights to the land involved by removing border poles (*Patok*) or boundary markers. In other cases, they plant seeds stealthily in strategic areas and after these reach seedling stage or maturity, they cut the forest trees. This strategy is also

practised on waste lands and in young forest plantations. The crops in these groves and plantations are generally perennials such as coffee, cloves, rubber, coconut, durian, rambutan and bamboo. Sometimes these are mixed with annual crops such as pineapple or cassava. One likely factor in selecting these crops (versus food crop) is their value in conferring property rights on those who plant them.

## **Determinants of Land-Use Pattern**

### **Fear of Discovery vs Desire for Tenure**

Farmers in disputed areas may choose areas that are either close to the forest's edge or deep within it. Their choice depends on their long-term goals. If their goal is to gain ownership rights they choose lands that are more easily disputed. If, on the other hand, their goal is increased income, they may choose lands deep within the forest. In the former case, they may try to confuse Perhutani's personnel by moving boundary markers. They may also plant various seeds (coffee, cloves, rubber, etc) stealthily; then when plants have grown, they cut the forest trees. When farming deep within the forest they may come to the field in a large group (3-10 people), capable of openly opposing Perhutani's personnel. They wish to secure ownership rights because the land is fertile, suitable for farming/gardening, and located adjacent to their homes yet far enough to be beyond the constant monitoring of Perhutani personnel.

### **Lack of Long-Term Investment Interest**

Most farmers know that the forest area belongs to Perhutani. They do not have *hak milik* (ownership rights) and they know that their activities are illegal. Because of this, they lack long-term investment interest in these forest lands. An exception is the forest border areas, where investment is sometimes made.

### **Involvement of Urban Entrepreneurs**

Urban-based entrepreneurs strongly influence forest use patterns, particularly in coastal mangrove forests, where they give farmers capital for land clearing and fishpond constructions; they may also give farmers ideas and incentives. In all such cases, the farmer is a labourer in their employ. After each fish harvest he gets a share (averaging 15-20%). Since these entrepreneurs come rarely to the field, it is difficult for Perhutani's personnel to deal with them.

## **State of the Environment**

### **Tree Cover**

There are no trees in either wet or dry rice fields. The farmers plant only annual crop after the main rice harvest (e.g. potatoes, beans, red peppers, etc.). Many kinds of perennial crop are found in groves and

plantations, but few forest trees. In some gardens (*pekarangan*), coffee, rambutan, bamboo, etc. are found.

## **Erosion**

Erosion patterns vary with land management techniques. In the dry rice fields (*huma*), the method of land clearing and the use of hoes and terracing affects the rate of erosion. In the wet rice fields (*sawah*), the nature of irrigation influences the rate of soil loss. In home gardens and forest plantations, erosion rates are moderate.

## **Comparative Analysis of Environment**

### **Compared to State Forests with no Peasant Use**

State forests that are free from any local peasant land use usually have better tree cover than those in disputed areas. In many such forests Perhutani uses the contract system (*banjar harian*) involving the villagers, to maintain the forest plantation by weeding and pruning. Enrichment planting is also done when any forest tree dies. The ground cover in such plantations is established between the fourth and sixth year. Common ground covers include grasses and shrubs such as *Lantana camara*.

In state-managed forests, the land is not exploited as intensively as in the disputed areas. For instance, there is no burning, no hoeing, and no breaking of ground, not even during logging and reforestation. For the latter, land clearing is done by cutting groves of trees; the ground cover is not disturbed. Under such conditions, erosion levels are relatively low.

### **Compared to State Forests with Approved Peasant Use**

In the *tumpang sari* system practised in these forests, the survival rate of seedlings and poles is more than 90%. Enrichment planting is always done by the farmer and the forest trees benefit from the weeding and fertilizing that the farmers do to their annual crop. Again, therefore, the tree cover is better than in the disputed areas.

The *tumpang sari* system employs terracing as well as intensive inter-cropping of *Leucaena* and grasses to prevent erosion. Small drainage ditches (*parit*) are also built. All of these measures keep the rate of erosion lower than in the disputed areas.

### **Compared to the Peasants' Own Land**

The peasants plant many kinds of trees (incl. perennials and forest trees such as *Albizzia*, bamboo, etc.) on

their own land. Peasants think it is most important to use this land intensively. The tree cover here, is also better than on disputed land.

The peasants terrace the slopes of their own fields and on the steepest slopes they also bank the terraces. this reduces the rate of erosion compared to disputed land.

## EXAMPLES OF PEASANT-PERHUTANI COLLABORATION IN DISPUTED AREAS

### Cikeong Mangroves

#### **Former Situation**

For a long time, mangrove land management has included the building of fishponds where peasants raise fish for sale. Probably because of a lack of control (on the part of the Perhutani), problems have arisen, particularly related to the building of illegal fishponds. There are two kinds of fishponds: old and new ones. Problems include stealing of fish, illegal cutting of firewood for cooking and processing fish (by steaming), deteriorating forest security, and the felling of mangroves to enlarge fishponds. The last activity involves the conversion of the older and less destructive type of fishpond (called *pola empang parit* and shaped like canals) to the newer, and more destructive type (called *pola empang parit terbuka*, shaped like a simple square).

Outside entrepreneurs (*pihak ke tiga*) have been involved in this process. They put up the capital to meet the costs of building new fishponds, renovating old ones, stocking them with fish, and maintaining them. They also gave ideas and incentives to the farmers, who in some cases were reduced to mere labourers.

Problems associated with this system are numerous. Farmers were not happy. They wanted to change their status from labourer to owner of fishponds so as to increase their income. They were limited by a lack of capital and by their use of traditional management methods (because of the lack of extension input from the government).

Perhutani was unhappy with the former situation because the legal status of the fish farmers was unclear. Perhutani also did not have enough staff to deal with forest security, illegal cutting of mangroves for firewood. Not did they obtain any revenue from the fishponds.

The system was also bad for the environment because unregulated construction and expansion of fishponds was reducing the area and density of the mangroves. As a direct consequence of this, the fish and animal population, native to the mangrove habitat, was disturbed as well.

#### **Resolution**

Perhutani personnel overcame these problems by using the social forestry approach. Their strategy involved the following:

- collecting the farmers and organizing them;
- giving the farmers technical advice on land management and marketing systems;
- clarifying the status of land and drawing up management agreements between Perhutani and the farmers (legalizing the farmers' status).

The main objective of this strategy, besides clarifying the status of disputed land, was reforestation of waste lands.

Farmers were ready to participate in reforestation and protection of the mangrove forests. In support of the reforestation efforts, the farmers returned to the more conservation-minded patterns of fishpond construction (based on a canal-like rather than square-shaped design). In this collaboration with Perhutani, the farmers provided all the labour, and were also responsible for planting mangrove trees (*Avicenna* sp, *Rhizophora* sp, and *Bruguira* sp). Most importantly, they ceased their illegal cutting.

The chief benefit of the new arrangement for Perhutani with the fish farmers is that the security of the existing forest is guaranteed. Forest peasant groups have the responsibility of protecting their areas and indirectly protecting the mangrove area (no stealing, cutting, etc). The growth rate of forest plantations is higher (more than 90%) than it had been, because of enrichment planting. There are no permanent waste lands. With the traditional canal-type fishponds, the overall forest cover is better and the size of openings in the forest is less. The most important benefit for the farmers is that they can manage the fishponds legally. They are now organized in forest farmer groups (KTH), which are advised by Perhutani. The building and maintenance of the irrigation system is now handled by shared labour (*gotong royong*). The KTH have begun to pool capital, and for the future they are planning a cooperative/marketing system. As a consequence of these actions, the farmers have been able to increase their incomes as well as secure their legal status.

The environment is benefitting from the new arrangement as well, through preservation of the mangroves, mangrove fauna, biological diversity, and coastline. But most important, the mangrove ecosystem is now being used in a sustainable way.

## **Indramayu**

The second case study to be discussed in this paper is drawn from Indramayu.

### **Former Situation**

The state forest land in Indramayu is flat, swampy, and used by Perhutani for the cultivation of *kayu putih*. Local farmers also use the land, for the cultivation of wet rice. The farmers' reasons for cultivating this state land included their lack of any other land, their lack of cash income, and their lack of any other livelihood outside farming.

Problems associated with this system were numerous. Farmers were unhappy because their use of land was illegal and thus they had no access to government extension assistance. The Perhutani was unhappy because its plantations of *kayu putih* were frequently disturbed by the wet rice cultivators.

### **Resolution**

Perhutani took several steps to resolve this impasse. First, it organized and advised the peasants. Their occupancy of these lands was legalized by the negotiation of an agreement. These contracts are renewed on

an annual basis. In addition, Perhutani involved the farmers in the management of its *kayu putih* plantations, on a share basis. Perhutani has also increased security in the forest area with cooperation from the peasants.

The role of the local farmers under this new arrangement is to maintain the *kayu putih* plantation, harvest the leaves, and carry out enrichment planting. In return for this contribution of labour, the farmers are allowed by Perhutani to plant wet rice in the plantations on an inter-cropping basis (*tumpang sari*), and they are also given a share in the *kayu putih* harvest.

The chief benefit of this new arrangement for Perhutani is a guaranteed labour source for various plantation activities, including protection, maintenance, and picking of *kayu putih* leaves. The chief benefit for the local farmers is that they are paid for their labour and receive a share of the *kayu putih* harvest. They are also given advice and extension services. Most important to them is the fact that they can use the land legally, and future use is assured as well.

### **Lessons of Cikeong and Indramayu**

#### **Causes of Disputed Uses of Forests**

The most obvious lesson of the Cikeong and Indramayu case studies is that farmers occupy forest areas illegally because they are landless or marginal farmers. Their incomes are low (below the poverty line), they lack job opportunities, and their only livelihood is farming. Their land disputes with the government arise therefore, due to lack of alternatives and not due to ignorance or tradition.

Another lesson from the case studies is that outside entrepreneurs are often involved in illegal uses of state land. They provide the capital, incentives, ideas, and equipment, limiting the role of the farmer to that of a labourer. This involvement is often not recognized by Perhutani personnel.

#### **Optimal Role of Perhutani**

The two case studies provide several lessons as to how Perhutani can best deal with the problem of disputed state forest areas. First, it must survey the use being made of the disputed land by local farmers. Then, it should meet with the farmers to discuss how the area could be managed optimally and legally. Advice and extension services must be provided by Perhutani or by other agencies through inter-sectoral coordination (e.g. the Fisheries Office and Agricultural Office). Perhutani should also provide security for long-term investment and use by the local farmers. Most importantly, Perhutani must control and monitor land use, and heighten the farmers' awareness that they are utilizing forests that belong to and hence must be protected by the state.

## CONCLUSION

The overall mission of Perhutani is to deliver economic benefits and provide public service. Social forestry programmes are accepted as one way to achieve this mission. It is now time for social forestry programmes to be considered as a way of resolving government - villager impasses in disputed forest areas. These problems, while serious, may be solved by increasing the prosperity of the villagers through social forestry. This would help to improve the relationship between the villagers and Perhutani personnel which is one of the most important factors in successful reforestation. It is hoped that the use of social forestry in disputed areas will lead to an optimal land use management system and provision of benefits for both Perhutani and villagers alike. Several conclusions can be drawn from this discussion.

### **Need for Social Forestry in Disputed Areas**

#### **Absence of Realistic Alternatives**

Social forestry is one of two ways to manage disputed land. The other way is to take punitive action against the illegal occupants. This type of action often backfires and has high social and political costs. Doing nothing is not an alternative either. The antagonistic relationship that exists between farmer and forester cannot be left unresolved. The status of disputed land cannot be left unclarified. Indeed, the need for social forestry in disputed lands is so high that it should be given higher priority there than in non-disputed lands.

#### **Greater Degradation of the Environment**

Land-use by local villagers in disputed forest areas involves unregulated clearing of vegetation by burning, hoeing, and breaking ground. Such land use practices can be principal factors in soil loss and coastal erosion (in the case of mangroves), and ultimately lead to degradation of national forest resources.

#### **Less Incentive for Sustained Yield Use of Resources**

Without guarantees of continued access, villagers farming in disputed areas have no incentive for investment beyond one crop. This is especially true in the least-secure areas in the centre of the forest. In addition, the farmers of such areas have no access to extension services, they use traditional farming methods and low quality seeds, no fertilizer is applied, no trees are planted and no terracing is done.

## **Added Benefits of Social Forestry in Disputed Areas**

### **For Farmers**

The long-term security that social forestry brings frees the farmers from the threat of arrest and from reliance on outside entrepreneurs. It also allows them to enjoy the benefits of government extension services, as well as those from long-term investment in the land.

### **For Perhutani**

Perhutani benefits most from the legalisation and clarification of the status of disputed land. This permits these lands to be included in Perhutani's planning process. In addition, there are improvements in forest security, tree cover, and Perhutani's public image. With the cooperation of the farmers, reforestation and enrichment planting efforts are more likely to succeed. Finally, there is reduced expenditure on protection, and revenue gains from Perhutani's share in the produce of joint agroforestry programmes.

## **Differences between Social Forestry in Disputed and non-Disputed Areas**

Social Forestry programmes in disputed areas will necessarily differ from those in non-disputed areas. In disputed areas, there is no pre-selection of farmers; Perhutani has to work with whatever farmers are present. In non-disputed areas, on the other hand, participants can be chosen by Perhutani for their interest and motivation. The eventual goal of Perhutani in the disputed areas is to relocate the peasants; whereas in the non-disputed areas, its goal is to work with the peasants and involve them in Perhutani activities. In the non-disputed areas, sustainable use of resources is more possible because of the greater certainty of continued access to land; but in the disputed areas, the focus must be on shorter-term increase in income. The relationship between Perhutani and the farmers in the non-disputed areas allows Perhutani to become more involved in agriculture and increase productivity in the area; again, this is less likely in the disputed areas. Due to the tension that exists in the disputed areas, the community organiser probably cannot act as forest guard as well; in the non-disputed areas, in contrast, one individual may be able to fulfil both functions.

## RECOMMENDATIONS

The issues raised in this paper should be discussed in a seminar attended by high-level Perhutani personnel (central and provincial level). It is necessary to get the reactions of these officers in order to identify alternatives and to develop a plan.

It should also be realized that the analysis in this paper is not yet supported by systematic data. For this reason, field studies of this topic must be done to reach more reliable conclusions.

Finally, the results of the aforementioned field studies should be analyzed and then, on the basis of this analysis, pilot projects should be designed. The objectives of these pilot studies should be to identify methods and strategies that are suitable for different environments. The results of the pilot studies could then guide a more widespread implementation of social forestry in the future.