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HIGHLIGHTS

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CREATING fair and effective policies and institutions to govern land and tree tenure is a prerequisite for eradicating poverty and protecting the environment in the humid tropics.



H. de Foresta

A natural forest? No, an example of a complex agroforest dominated by damar trees in Krui, West Lampung.

The Krui Agroforests: A model of sustainable community-based management

The lands of the Krui people of Lampung Province in southwest Sumatra are a shining example of productive and sustainable agroforestry. The Krui have devised a system that meets their immediate needs for food and cash while also providing them with diverse sources of income in the medium to long term.

In the valley bottoms, the Krui grow rice in permanent irrigated plots as their staple crop. In contrast, in the uplands they cultivate a succession of crops, building to a climax that mimics mature natural forest. In the first year they clear their land by slashing and burning the vegetation; they then sow upland rice. After the rice harvest they plant coffee, pepper and fruit trees, which grow to medium height and provide an income from about year five. At the same time they plant tall-growing timber species, including the damar tree (*Shorea javanica*), a source of valuable resin that provides a steady flow of income over the long term. These trees reach maturity after about 15 years, when the forest canopy closes and the medium-height bushes and trees become unproductive. The damar is tapped for

its resin throughout its productive life, then felled for timber when this ends after around 70 years. Other timber species may also be felled from time to time to meet cash needs or to create space for replanting, but the tree cover is never again destroyed in its entirety.

Combining environmental and economic benefits, the Krui system offers considerable advantages over many other systems that replace or exploit natural forest.

Let's look at the environmental benefits first. Because it involves burning only once, the Krui system minimises smoke pollution, carbon emissions and hence global warming. The system also conserves precious biodiversity and wildlife. For example, sample plots in Krui agroforests contain approximately 50% of the bird and plant species found in a similarly sized area of primary forest, whereas sample plots in oil palm plantations—the system to which much primary forest is converted—typically contain less than 5%. Scientists have recorded the presence of a wide variety of mammals in the damar agroforests, including 17 species protected by Indonesian law.

The agroforestry system developed by the Krui people of southwest Sumatra is a model of productive and sustainable community-based management. Indonesia has taken a bold first step along the path of tenure reform—one that offers lessons for other countries facing similar opportunities to devolve management to the local level.

Densities of primate populations (macaques, leaf monkeys, gibbons and siamang) observed in sample plots of damar agroforests are similar to those observed in natural forests, and at least 92 bird species have been identified. Lastly, by regulating stream flow and controlling soil erosion, the Krui agroforests help to protect and sustain the productivity of cropping areas further downstream.

Economically, the defining characteristic of the Krui system is its ability to deliver broad-based growth in which the poor can participate. In the Krui agroforests, damar resin provides a regular monthly income that is supplemented by seasonal revenues from fruit trees such as duku and durian, while rice paddies provide the staple food. The diversity of this type of system, together with its low dependence on external inputs, creates an economic stability that is rare among poor societies. Studies conducted by ASB scientists in the late 1990s found that damar agroforests provided returns to labour that were more than double the average rural wage rate in Sumatra.

But community-managed agroforests deliver more than just stable economic development; they also derive from and contribute to social cohesion, reducing the pressures that induce migration to urban or other rural areas.

A community under threat

In 1991 the Krui system came under threat as a direct consequence of Indonesian government policy. The Suharto government, which had a long history of appropriating traditionally managed land and re-allocating it to public or private ownership, declared large areas of the Krui agroforests to be State Forest Land—a classification that would allow logging followed by conversion to oil palm plantations. A forestry company was awarded the right to harvest an estimated 3 million trees—trees that had been planted by the local people.

The response was dramatic. The Krui stopped planting damar and other tree

species, saying that they would not resume until they were certain they would be able to reap the benefits of their work. From both within and beyond the Krui lands came a chorus of disapproval, as environmental campaigners learned that a system renowned worldwide as a model of sustainable forest management might be lost forever.

Ground-breaking reform

In 1998, the government issued a new decree reversing its position. This decree, which declared the Krui system to be a unique form of forest use, recognised the legitimacy of community-managed agroforests in Lampung Province and restored the rights of the Krui to harvest and market timber and other products from the trees they plant. Responsibility for managing the forest resource was explicitly devolved to local people.

The decree is a powerful instrument for restoring social justice and promoting sustainable development. In the short term it benefits at least 7,000 families in the 32,000 hectares of reclassified Krui lands. If this pilot scheme is successful, the principle of local management could be extended to benefit hundreds of thousands of rural Indonesians in similar areas. Indonesian NGOs have identified at least 50 other communities across the archipelago that have developed production systems comparable to the Krui case and hence ripe for replication of this approach to reform.

Although this groundbreaking reform had no precedent in Suharto's autocratic Indonesia, it did not arise out of nothing. It was carefully prepared through a process of dialogue and consensus-building that began soon after the 1991 threat to the Krui lands. A consortium of research institutes, NGOs, local government offices and universities came together to study the Krui system and document its social and environmental benefits. By providing credible scientific backing, the consortium was able to support local communities in their efforts to get themselves recognised by the central government, which had previously classified their lands as 'empty'.

Meeting the challenge of reform

One of the central challenges facing Indonesia's Forestry Department is to rethink the meaning—and hence the boundaries—of State Forest Land. At Independence in 1946, the tenure system applied by Indonesia's Dutch colonial masters to forest areas was adopted by the new national government without adjustments to take community management into account. State Forest Land was, and still is, defined as 'forest located on lands where there are no ownership rights'. By this definition, far less land should be included in this category than the 70% of Indonesia's land area over which the department currently claims jurisdiction. Much of this land is in fact agroforest, not forest. And it is lived in and used by millions of people, many of whose families have been there for generations.

The department has demonstrated its awareness of the injustices caused by

the current tenure system. In 1998 it invited a number of NGOs to participate in a working group whose purpose was to delineate 'community enclaves' in State Forest zones—situations similar to that of the Krui, in which management could be devolved to local institutions. The NGOs are currently aiming to get large areas reclassified on the basis that their original gazetting as State Forest Land did not follow the proper procedures, which stipulate that local communities must be informed. Other measures taken by the department include the issuing of guidelines for the resolution of conflicts over land use and the promulgation of two further decrees. One of these decrees grants cooperatives or community organisations the right to manage forests and harvest forest products, and the other recognises the rights of traditional forest user groups.

This process of 'getting the Krui agroforests on the map' was followed by a more intensive phase of representation and negotiation. The consortium conveyed requests to the government from village leaders for dialogue on the status of their land, arranged field visits for key government officials and organised a workshop to present research results and discuss the tenure issue. Throughout these discussions, local people expressed—clearly and forcefully—their hope that they would be able to pass down the damar agroforests to their 'children's children'. These activities were reported in detail to the Minister for Forestry, who signed the decree 6 months after the workshop.

In the volatile political climate of the new Indonesia, the final outcome of the reform process remains uncertain. The reformers could yet be thwarted by a powerful alliance of private sector interests and government officials intent on expanding their personal fiefdoms. As the policy dialogue continues, researchers and decision-makers will keep a close eye on the Krui pilot scheme, looking to identify the benefits and detect any unforeseen problems. What happens here has the potential to make or break Indonesia's process of tenure reform.

Lessons learned and the potential for South-South exchange

Several lessons emerge from the Krui experience that may be of value to the broader international community. First and foremost, reform is possible. The necessary point of departure is the recognition, now widespread in Indonesian government circles, that past policies have failed. Taking the first steps along the path of reform requires political courage and leadership, but the benefits can quickly become evident, paving the way for further advances.

Second, tenure reform is more likely to occur when there is local pressure for change. Krui village leaders, local government officials and national NGOs were key players in the negotiations that led



Krui women transporting products from the damar agroforest.

to the 1998 decree. These groups were able to speak with conviction on the merits of the Krui system, which had been documented through research—another key ingredient for success (see below).

Third, the scientific evidence collected was essential to legitimise the Krui system in the eyes of professional foresters and to refute arguments by vested interests intent on taking the land. In the Krui case, biodiversity assessments, silvicultural studies and participatory mapping played valuable roles in documenting the system's environmental and social benefits. This scientific backing not only lent credibility to the case presented by the community and its local supporters, but also

strengthened the hand of reformers in central government.

Finally, strong local institutions are essential if management is to be successfully devolved. In the Krui area—as in other areas where society remains cohesive—long-standing social networks, shared belief systems and associated rules and norms have evolved that enable the community to organise itself to take and implement decisions for the common good. Unlike migrants or more recently settled populations, communities like the Krui can draw on these deeply rooted local traditions to help them deal with the inevitable conflicts that arise while managing the natural resource base.

Beyond Krui: Smallholder rubber agroforests in Indonesia

While the 32,000 hectares of Krui agroforest protected by government decree provide a powerful symbol, they represent only a fraction of the total land area dedicated to sustainable agroforestry in Indonesia. In Sumatra alone, approximately 4 million hectares of various types of agroforests are managed by local people, without any outside assistance.

Most extensive among these smallholder agroforests are the rubber-based systems, called 'jungle rubber' because of the wild woody species that grow among the rubber trees. An estimated 7 million people in Sumatra and Kalimantan make a living from the rubber agroforests that make up approximately 2.5 million hectares of these provinces. Overall, Indonesia's agroforests produce at least 70% of the country's rubber.

Indonesia's experience in reclassifying the Krui lands is relevant to other countries facing conflicts over land use in forested or formerly forested areas. Among them is Cameroon, where a long history of misunderstanding and conflict between local populations and successive governments has compromised the collective and common property nature of land in the forest. Whereas forestland in Cameroon has traditionally belonged to clans or individual families in local village settings, a series of government laws have strived to transfer this communal form of land ownership into public or private hands. A host of critical issues surrounding this shift in Cameroon—including conflicting interests related to logging and agro-industrial development, the

safeguarding of protected areas from human encroachment, and the conservation of natural resources—all bear strong resemblance to the Indonesian case.

The costs of failing to recognise the tenure rights of local communities are high. They are experienced in widening gaps between rich and poor, increased migration, violent conflicts over land, high rates of deforestation, loss of biodiversity, devastation of soil and water resources, widespread smoke pollution and increased global warming. If the environmental and social problems that plague the world's humid lowland tropics are to be resolved, tenure reform is not an optional extra but a vital necessity.

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