without directly involving national government or the *BPN*. In 2001, the West Sumatra provincial legislature enacted a law re-establishing *nagari* or *adat* territories as self-governing entities. Several districts' legislative bodies have used the space provided in regional autonomy legislation to pass regulations that recognise the existence of local *adat* governance units[12]. Examples are:

- Lebak District Regulation No. 32/2001 on the protection of *ulayat* rights of the Baduy People;
- The West Sumatra Provincial Regulation No. 9/2000 concerning *nagari* and district regulations on *ulayat* land (*tanah ulayat*);
- West Lampung District Regulation No. 18/2004, Community-Based Natural Resources and Environmental Management;
- The *Bupati* of Kapuas Hulu Decree No. 59/1998 on the Guidelines for Utilising *Tanah Hak Ulayat* or Similar Land and *Adat* Land Ownership Rights for Private Commercial Purposes;

Yuyun Indradi [DTE]

Collected *Meranti* seedlings from the forest for tree nursery

[12] *ibid*

- The *Bupati* of North Luwu Decree No. 300/2004 concerning recognition of the existence of the Seko *adat* Community[13].

While experience at provincial and district level recognition remains limited and the political and social processes that drove the recognition efforts are not yet well analysed, they represent that greatest progress to date. Yet, in spite of some local advances in the recognition process, evidence points to the reality that conflict - often violent - over land and other natural resources is increasing in Indonesia[14].

II. Economic Contributions of Local Natural Resource Management Systems

Without exception, the communities in these case studies depend upon forest resources for their well-being and the majority of those forests were planted by them or their ancestors.

It is common that food and other crops are integral to these agroforests since these systems are intended to produce a steady stream of products. It is also common that one product tends to 'drive the system' while others are relied upon to supplement that product when its price declines. As a result, these systems are often more resilient than those that do not provide for basic needs and tend to pay little attention to managing risk.

Such agroforests are spread on all the major islands of the archipelago and some have existed for hundreds of years[15]. The following is an indicative list of agroforest types:

[13] Local governments in Java, Sumatra, West Kalimantan and South Sulawesi respectively

[14] See, for example, Afrizal, 2007, The Nagari community, business and the state: The origin and the process of contemporary agrarian protests in West Sumatra, Indonesia, Sawit Watch and Forest Peoples Programme, Bogor, Indonesia

[15] C Fay & H de Foresta, 1998, Progress Towards Recognising the Rights and Management Potentials of Local Communities in Indonesia State-Defined Forest Areas, paper for the Workshop on Participatory Natural Resources Management in Developing Countries, Mansfield College, Oxford, April 1998

- rubber agroforest on Sumatra and Kalimantan[16];
- fruits/export crops agroforest on all islands[17];
- *damar* agroforest in Sumatra[18];
- rattan agroforest in Kalimantan[19];
- illipe nut (*tengkawang*) agroforest in Kalimantan[20].

It is not too simple to characterise the rural development dynamic in Indonesia and many other countries as an intense competition between two paradigms. The first, as described in this book, has developed over generations and emphasises plant and tree diversity or a polyculture. It is based not only on growth but also on achieving an economic and

[16] CJP Colfer, DW Gill & A Fahmuddin, 1988, An indigenous agricultural model from West Sumatra: a Source of Scientific Insight, Agricultural systems 26, p191-209; MR Dove, 1993, Smallholder rubber and swidden agriculture in Borneo: a sustainable adaptation to the ecology and economy of the tropical forest, Economic Botany 47 (2), p136-147; A Gouyon, H de Foresta & P Levang, 1993, Does 'jungle rubber' deserve its name? An analysis of rubber agroforestry systems in southeast Sumatra, Agroforestry Systems 22, p181-206; F Momberg, 1993, Indigenous Knowledge Systems. Potentials for social forestry development: Resource management of Land-Dayaks in West Kalimantan, MSc thesis, Technische Universitat Berlin; L Sundawati, 1993, The Dayak garden systems in Sanggau district, West Kalimantan. An agroforestry model, MSc thesis, Georg-August University, Göttingen

[17] G Michon, F Mary & JM Bompard, 1986, Multistoried agroforestry garden system in West Sumatra, Indonesia, Agroforestry Systems 4, p315-338; MA Sardjono, 1988, *Lembo*: a traditional land-use system in East Kalimantan, *Agroforestry untuk pengembangan daerah pedesaan di Kalimantan Timur*, Forestry Faculty Universitas Mulawarman and GTZ; N Salafsky, 1993, The Forest Garden Project: An Ecological and Economic Study of a Locally Developed Land-Use System in West Kalimantan, Indonesia, PhD thesis, Duke University, North Carolina, USA

[18] E Torquebiau, 1984, Man-made Dipterocarp forest in Sumatra, Agroforestry Systems 2, p103-128; F Mary & G Michon, 1987, When agroforests drive back natural forests: a socioeconomic analysis of a rice/agroforest system in South Sumatra, Agroforestry Systems 5, p27-55; G Michon and H de Foresta 1995, The Indonesian agroforest model. Forest resource management and biodiversity conservation, Conserving Biodiversity Outside Protected Areas:The Role of Traditional Agro-ecosystems, P.Halliday and D.A. Gilmour (Eds.), p90-106, IUCN, Gland, Switzerland.

[19] JA Weinstock, 1983, Rattan: Ecological Balance in a Borneo Rainforest Swidden, Economic
Botany 37 (1), p58-68

[20] Momberg, 1993, *op. cit.*; Sundawati, 1993 *op. cit.*; W de Jong, 1994, Recreating the forest: successful examples of ethno-conservation among land-dayaks in central West Kalimantan, paper for International Symposium on Management of Tropical Forests in Southeast Asia, Oslo, March 1994

ecological equilibrium. The second maximizes the production of a single commercial species, or monoculture, most often integrated upwards into a global supply chain. The first is what has been articulated well in this book and is the preference and tradition of millions of Indonesians. The second relies heavily on large capital investments, inexpensive often migrant labour and government-sanctioned land grabbing. Many, particularly industrial forest plantations, also receive direct government subsidies. Efforts to make the first of these visible are what Suraya Afiff refers to as the 'counter discourse' in the previous chapter.

What needs to receive greater attention is that the first paradigm contributes significantly to the national economy. These agroforests provide approximately 70% of the total amount of rubber, at least 80% of the *damar* resin, roughly 80 to 90% of the various marketed fruits and significant quantities of the main export tree crops such as cinnamon, clove, nutmeg, coffee and candlenut[21]. In Sumatra, about 4 million ha of agroforests have been created by local people without any outside assistance[22]. An estimated 7 million people in Sumatra and Kalimantan are living from rubber-based agroforests that are spread across approximately 2.5 million ha[23].

Economists from the DFID Multi-stakeholder Forestry Programme quantified some of the economic contribution from community-based or smallholder-based management of tree crops on forest lands and estimated the size of improvements possible under different enabling policies, such as increased land availability, secure access and tenure, or improved productivity[24]. The main objective of this work was to make visible both the existing tree-based contribution of small farmers to the

[21] C Fay and H De Foresta, 2001, Progress towards Recognizing the Rights and Management Potentials of Local Communities in Indonesian State-Defined Forest Areas, in B. Vira and R. Jeffrey eds, Analytical Issues in Participatory Natural Resource Management, Oxford University Press.

[22] H de Foresta & G Michon, 1997, The agroforest alternative to *Imperata* grasslands: when smallholder agriculture and forestry reach sustainability, Agroforestry Systems 36, p105-120

[23] Fay and De Foresta, 2001, *op cit*

[24] T Brown et.al, Contribution to National Economic Growth of Community-Based Economic Activity in the Forest Zone, May 2006, DFID – MFP

national economy and to estimate increases should the Department of Forestry deregulate land use over large areas of 'Production Forest' that according to Department data, has no tree cover. The main finding was that the current economic contribution of smallholder forestry activities represents a significant and underappreciated sector in the Indonesian economy:

- Based on 2002 data, smallholder tree-based and forest-based production activities together – including agroforestry crops that emulate forest functions (such as coffee, oil palm, rubber and spice trees), non-timber forest products and private forest production (*hutan rakyat*) – contribute US$6.2 billion in economic value each year. This is over 3% of Indonesia's overall economic output and provides jobs for nearly 4 million people;
- Smallholder agroforestry crops that contribute to the expansion of tree cover are now found on 11 million ha of land and account for the vast majority of these values. Community timber and non-timber forest production are relatively small;
- Smallholder agroforestry systems are very diverse and the mix of crops varies across islands.

Yayun Indradi [DTE]

Traditional agroforest system in Hikong-Boru Kedang, Tana Ai, Flores

This analysis of potential national policy changes shows that:

- Small reallocations of land or increases in security for investment in land productivity can yield high returns, up to US$1.4 billion per year in added revenues and possibly 1.6 million more jobs.
- These benefits would not materialise immediately, but only after investments in land and new crop plantings matured and came to market.
- The largest values come from policy changes that boost smallholder tree systems that emulate forest functions, because this is larger in area, value and employment than other activities examined.
- The largest values also come from policy changes that increase the availability of land, rather than policies that affect the productivity or benefit sharing arrangements on existing lands.
- To gain these benefits, smallholders need long-term security of access to land to make the required investments.
- Regional and national governments would benefit from increased economic activity, trade and potential tax base.

Additional studies carried out by the World Agroforestry Centre (ICRAF) show that in terms of straight profitability and in particular, returns to labour, diverse smallholder or farmer-based agroforestry systems out perform monoculture large scale plantations such as oil palm[25].

The majority of these productive enterprises take place on land classified as the 'Forest Zone'. The problems emerge when many of these areas are covered by timber plantation contracts or are under the technical control of one of the para-statal forest companies. Conflict escalates when these companies attempt to assert control over their contract areas.

[25] T P Tomich, M van Noordwijk, S Budidarsono, A Gillison, T Kusumanto, D Murdiyarso, F Stolle & AM Fagi, 2001, Agricultural intensification, deforestation, and the environment: assessing tradeoffs in Sumatra, Indonesia in: DR Lee & CB Barrett (eds.), Tradeoffs or Synergies? Agricultural Intensification, Economic Development and the Environment, CAB-International, Wallingford, p221-244

III. Politics of Forest Species

While it is clear - from the large areas of community-based agroforests in Indonesia - that local people contribute to increasing tree cover and its subsequent public environmental benefits, their role in reforesting large areas of Indonesia remains underappreciated and is as a result underutilised.

Why is this so? The simple answer is that neither the forest regulatory framework nor foresters' formal training in Indonesia accepts that the majority of trees that local people prefer are forest species. While this has been true for decades, the most recent example of this is found in the guidelines for the Department of Forestry's newest Community Forest Plantation programme: *Hutan Tanaman Rakyat*[26]. The approach to reforestation is restricted almost entirely to timber species. Virtually none of the tree-based commodities studied by DFID and ICRAF are allowed. This is because they are viewed by the Department as 'non-forest species'. Tree species such as rubber, cacao and coffee are actively discouraged[27]. The forest bureaucracy fears that the more economically productive the species, the more people will plant it and the stronger their claims will be over their lands.

There is also an odd bias against the tree species local people prefer, possibly based on the belief that they do not provide the required forest functions. For example, a timber tree such as mahogany is preferred to jackfruit which provides both fruit and timber, even though both provide roughly the same watershed protection service. All the case studies presented in this book face this problem.

[26] For more information, see DTE Newsletter no. 74, August 2007

[27] See also M van Noordwijk, S Suyanto, S Budidarsono, N Sakuntaladewi1, JM Roshetko, HL Tata, G Galudra & C Fay, 2007, Is *Hutan Tanaman Rakyat* a new paradigm in community based tree planting in Indonesia?, ICRAF Working Paper Number 45, Bogor

IV. Romancing the *Adat*

As noted in the Introduction and the previous chapter, the examples of good practice represented by these six case studies run the risk of romanticising *adat* communities and what they are capable of. Yet the authors have been careful to point out that not all *adat* communities possess or have maintained traditional systems that achieve an ecological balance. The important point is that there is an increasing body of information that shows many have. In addition to this volume, an extensive list of community-based forest management systems has been compiled by the Indonesian forest civil society network, KpSHK *Sistem Hutan Kerakyatan* (SHK)[28].

A good place to begin when addressing the 'romancing issue' is the question: where is the evidence that the forestry industry or bureaucracy in Indonesia have proven to be capable of managing forests sustainably? The rise in prominence of both coincides directly with the huge spike in deforestation levels across the archipelago over the last 20 years (see Chapter 1).

Evidence provided in the case studies and elsewhere that points to the economic and protective values of local traditional knowledge and practices can no longer be ignored. This should not be surprising. Many local communities have inter-generational relationships with their lands and forest. They understand basic rural ecology in the same way city people are familiar with and understand their urban landscapes. They retain connectivity with their surroundings that results from daily and seasonal interactions with their landscape.

In the best of circumstances, this leads to a balance between exploitation (of soil nutrients and structure for agriculture and agroforestry) as their 'natural' biomes such as various types of tropical forests. Most important, these communities, in order to survive as a people, most often prioritise the well-being of future generations. This does not mean that local individuals or communities do not make poor decisions over the management of their environment. When the best of circumstances are not present, this can and does happen.

[28] www.kpshk.org

The 'romancing' argument is also not based on sufficient data that demonstrates local communities are not managing their natural resource well. It is particularly insidious in that it judges local people as guilty until proven innocent by placing the burden of proof of sustainable management on the shoulders of the community. As implied by Afiff in the previous chapter, this becomes even more difficult for local people to swallow when they see government officials, as their judge and jury, allowing forest and plantation industries to destroy and convert large areas of natural forest, many of which local people depend upon for their economic, environmental and often spiritual well-being.

Yet, it is important to recognise that the romanticisation of *adat* communities does happen and there are *adat* leaders who have proven themselves unworthy or incapable of protecting the interests of their community. The reasons for this vary from location to location. One common problem is the failure of traditional leadership structures to cope with the rapid surge and high levels of external pressure on their community's resources.

Many *adat* communities can be seen as 'states within a state'. While few if any of these communities seek full self-determination, many continue to relate to the Indonesian social and political system using their own governance structures[29]. It is not unusual, for example, for the village or *adat* 'head', as seen by the outside world, actually to be playing the role of a foreign minister, negotiating with outside interests but being subordinate and accountable to a larger *adat* leadership structure. When pressures from the outside world become too great, it is not surprising some systems of accountability break down. As many of these communities have only entered the cash economy in the last one or two generations, the strain can be too much for the *adat* leadership. It can be the equivalent of a local leader in the United Kingdom being offered a million pounds to facilitate the entry of large-scale industry on village lands at only a minimal legal and political price to him/herself.

[29] A study by the World Agroforestry Center showed that all the *adat* communities visited were interested in managing their own political and social affairs up to what the Indonesian political system defines as district level (*kabupaten*). See World Agroforestry Centre, the Indigenous Peoples' Alliance of the Archipelago and the Forest Peoples Programme, 2003, In Search of Recognition, ICRAF, AMAN, FPP, Bogor, Indonesia

Yuyun Indradi [DTE]

Indigenous women and traditional weaving, Tana Ai, Flores

V. Indigenous Forest Management? Is it time to refine our understanding?

One of the most important and perhaps provocative lessons that emerge from the case studies is that 'forestry' is but one component of the natural resource management systems described in the chapters. What is at play in these areas is more a matter of *adat* landscape management where a variety of land use and livelihood strategies is constantly evolving. It is not unusual for *adat* communities to be uncomfortable with the term *hutan* or forest. Many feel using this term empowers the government, particularly the Department of Forestry, to claim control over these 'forest' areas in order to protect their designated 'functions' as they are mandated to do by law[30].

What the case studies reveal is that in most *adat* landscapes, there are remnant natural forests and the sustainable management of these areas is

[30] C Fay & MT Sirait, 2003, *Mereformasi para reformis di Indonesia pasca Soeharto* in: I A Resosudarmo & CJ Colfer (eds.), *Ke mana harus melangkah: masyarakat, hutan, perumusan kebijakan di Indonesia*, Yayasan Obor Indonesia, Jakarta, Indonesia, p156-175

taken seriously by indigenous people[31]. Whether proportionally large or small, these forests make up an important component of the landscape mosaic by providing multiple services, from pest management for adjacent agroforestry and agricultural areas to balancing wet and dry season stream flows.

When examining the terms local people use to describe or name their *adat* landscapes, nearly without exception, the word *hutan* (forest) does not appear[32]. In West Kalimantan, Dayak communities use the term *tembawang* while in East Kalimantan it is *lembang.* In West Lampung, the Krui people refer to *repong.* In each of the examples outlined in this book it is likely that, if asked whether their agroforestry system was 'a forest', local people would answer no. They would instead have a local expression that essentially describes forest gardens. These forest gardens cannot be described as natural forests. Yet, while having lower levels of biodiversity, many mimic the environmental services natural forests provide - such as habitat and hydrological stabilisation and carbon sequestration.

This raises the question, why do researchers, environmentalists, local NGOs and others use the English label 'Indigenous Forest Management' when the actual area of natural forest in most *adat* landscapes is, on the whole, quite small? In the post-1992 Rio Earth Summit world, 'forests' have attracted much attention and opportunities for local people to bring a spotlight onto their indigenous natural resource management systems. But the disjunction with how local people themselves, in their own language, articulate these systems should no longer be ignored. A more accurate term - and one that would cover most of local approaches - would be 'Indigenous Integrated Natural Resource Management'.

Globally too, the debate on defining the term 'forest' continues. While appearing at first to some as pedantic or semantic, the politics of definition deserves more attention (just as Affif noted the need to give more attention to politics concerning the definition of indigenous peoples).

[31] While in most *adat* landscapes natural forest is proportionally a small part of the landscape, this is not the case in Papua and parts of Indonesian Borneo.

[32] See also Introduction, p9

Yuyun Indradi [IDTE]

Indigenous children, Sembalun, Lombok

While each country has its own legal definition of forests (most often found in forestry legislation), a global definition remains problematic. The Food and Agriculture Organisation (FAO) definition is most ubiquitous but, on examination, is hardly a definition at all. As part of its Global Forest Resources Assessment, the FAO surveyed 650 definitions from 132 developing countries. The global definition they settled on says a forest is "a land area of more than 0.5 ha, with a tree canopy cover of more than 10%, which is not primarily under agricultural or other specific non-forest land use. In the case of young forests or regions where tree growth is climatically suppressed, the trees should be capable of reaching a height of 5m *in situ* and of meeting the canopy cover requirement"[33].

Contrary to expressed local interests, the application of this generous definition in Indonesia would classify many *adat* territories and land use systems in Indonesia as forests and legally place the regulation of these areas in the hands of the Department of Forestry. Interestingly,

[33] Controversially, the FAO definition includes tree plantations, but specifically excludes agroforestry systems as a form of 'deforestation for agriculture'. See FAO, 2000, Global Forest Resources Assessment, Rome, ftp://ftp.fao.org/unfao/bodies/cofo/cofo15/X9835e.doc

the Indonesian legal definition of a forest is "a unit of ecosystem in the form of lands comprising biological resources, dominated by trees in their natural forms and environment, which can not be separated from each other" (emphasis added)[34]. While the question of just what "trees in their natural forms" are has not been fully debated, it can be interpreted to mean natural biomes. This would mean only a fraction of most *adat* landscapes could be legally defined as forests.

In practice, a forest area is defined exclusively by the Department of Forestry from desk surveys. This is how more than half of Indonesia has become 'the forest zone' irrespective of whether there is tree cover or not. In a closed process similar to that which led to the FAO definition, local voices and other experts play little or no role in the forest area definition. As a result, civil society organisations, including local communities are joining forces to undo what has been done.

Looking at indigenous natural resource management first through the eyes of local people or an *adat* landscape lens has advantages in that it does not throw that resource management system straight into the 'forestry box'. It provides an entry point that allows for a combination of natural resource management activities across sectors. Forestry, as a component of an *adat* landscape may or may not be central to that landscape dynamic. Most important, in the case of the systems described in this book, it respects them for what they are: a combination of cross-sectoral and mixed economy land use strategies.

[34] Forest Law No. 41/1999, Article 1 *op. cit.*

Sulistiono [AMAN]