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THE BUSINESS OF FORESTS: HOW INDONESIA'S FOREST CERTIFICATION
SYSTEM, LEMBAGO EKOLABEL INDONESIA AFFECTS FOREST PROBLEMS IN
INDONESIA

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ABSTRACT

Indonesia is home approximately ten percent of the world's rainforests and an astonishing level of biodiversity. Approximately fifty percent of that land is still forested, yet that amount is declining every day. Deforestation is a huge problem in Indonesia, and more land is cleared each year for agriculture, expanding urban populations, and forest plantations (Durst et al 2006). Additionally, the remaining natural forests are increasingly degraded, leading to a loss of biodiversity and forest productivity (Ghazoul and Sheil 2010). Government regulations are in place to protect the remaining forests, yet the continued rate of deforestation and degradation give clear evidence that those regulations are coming to naught (Smith et al 2003). Nongovernmental organizations (NGOs) have limited resources and reach. Thus, there must be another way to protect Indonesia's beautiful and invaluable natural resources. Many consider the solution to be market based, a system that relies on the desire of humans for profit and a better life: the solution is Indonesia's forest certification system, Lembaga Ekolabel Indonesia (Elliott 2000). Under the theory of forest certification, logging operations that operate sustainably are financially rewarded and thus there are incentives for those companies to preserve and propagate natural resources (2000). As additional companies realize the benefits of certification, more and more will become certified and thus will the forests be saved. Or at least, that is the assumption. However, extensive research reveals that forest certification may not be the panacea that many hope for. Case studies throughout Indonesia reveal that certification's high cost, low monetary returns, and inability to monitor continuing sustainability greatly hinder its efficacy.

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Chapter 1 Introduction

The islands of Indonesia encompass almost 100 million hectares of forest. Those forests sequester a very significant amount of the world's carbon. They are also home to a wide variety of endangered species, and approximately half of Indonesia's population depends on forest products. However, Indonesia's forests are under threat. Land conversions to agriculture, urban expansion, and poor forest management practices directly threaten the future of Indonesia's forests. Indirectly, social problems regarding land tenure and poverty also affect the health of forests.

There are many proposed solutions and mechanisms to fight deforestation and degradation; however, in this paper we will focus on a market-based mechanism, specifically forest certification. Forest certification essentially gives a stamp of approval to sustainably produced timber products, and it is considered to be a possible solution to a wide variety of environmental and social problems, ranging from global warming and carbon sequestration to sustainable development (Vogt *et al* 1999, Apps and Kurz 1991). Many forest certification schemes claim to serve as a clear indicator of forest management sustainability, yet research has shown that many certified forests do not meet all the required standards (Vogt *et al* 1999).

In 1998, Indonesia developed its own certification scheme, the *Lembago Ekolabel Indonesia* (LEI), or Indonesia Ecolabelling Institute. Its standards, developed in conjunction with Forest Stewardship Council (FSC) standards, are designed to focus on the specific social, environmental, and production needs of Indonesian forests. However, there is significant concern that LEI's standards are not effective.

In order to understand the effects of certification, we will first look at Indonesia's forests and the problems they face. We will then discuss the development of forest certification, specifically the development of LEI, and finally, how LEI addresses the problems facing Indonesia's forests.

Indonesia and its Trees

Forest Cover

According to a 2009 analysis by the Food and Agriculture Organization (FAO), the archipelago comprises approximately 187.9 million hectares, of which forests cover approximately 93.9 million hectares or about 50% of the land. Non-forested areas cover approximately 83.3 million hectares or 44%, though about 10.7 million hectares or 6% had no data. It is important to note that there are 133.6 million hectares of state owned forest areas and 54.3 million hectares of non-forest area, but 39.1 million ha of "forest areas" aren't actually forest and are instead grass-land or deforested land, and approximately 10.1 million ha of "non-forested" areas are actually forests.

Forest Ecology

Indonesia is a country of vast forest wealth and diversity. Forest types range from the mangrove forests along the edge of islands to the high-elevation montane forests, from the densely vegetated lowland rainforests to the much sparser ironwood forests. However, it is the lowland rainforest that is most famous, both for its incredible biodiversity and its valuable timber trees. Many of the most valuable timber trees, including teak (*Tectona grandis*), keruing

(*Dipterocarpus* spp), meranti (*Shorea* spp), kapur (*Dryobalanops armoatica*), and the endangered ramin (*Gonystylus bancanus*) are found there (Sharp 1994). For a complete compendium of Indonesian forest types, see Appendix A.

However, Indonesian forests are important for more than their trees. Various threatened and endangered non-timber species, including the Java rhinoceros, the orangutan, and the carnivorous pitcher plant all call Indonesia's forests home. Should current rates of deforestation continue, all of those creatures will be in grave danger.

Conservation Classifications

Indonesia has four major forest classifications that delineate what management practices can occur on that land. The classification is determined by the forest's conservation value (i.e. the presence of threatened or endangered species,) as well as the land's production capabilities.

Conservation forest

Conservation forests are designed to protect an area's biodiversity. No human exploitation, including agriculture, logging, and any removal of natural products, is permitted on conservation forest land. However, degradation still occurs as a result of ignorance about the area's designation as conservation land or ambivalence to conservation efforts due to traditional forest use (Widayati 2010). Indigenous people see the land as theirs, and thus do not see a reason to remove themselves from ecologically fragile land. Currently, conservation forests are managed by the government, though new opportunities have opened for communities to manage those lands (Marwati 2012). Conservation forests comprise approximately 19.9 million hectares or 11% of Indonesian forest (FAO working paper 2009).

Protection forest

Protection forests are set aside to provide valuable ecological services. Production forests are in place to prevent erosion, decrease flooding, prevent sea-water intrusion, and provide potable water through a forest's natural filtering ability. Logging is not allowed in protection forests (CITE), and protection forests are managed by public administration (FAO 2010). Currently, protection areas enclose an area of approximately 30.1 million hectares or 16% of Indonesia's forest (FAO Working paper 2009).

Production forest

Production forests produce timber products. Production forests are divided into two sub-categories:

- **Production forest:** forest designated for timber production and has few limits on the amount that can be logged.
- **Limited production forest:** forest designated for limited production because of its challenging topography or poor soil condition

Production forests are managed both publicly and privately, and include both plantations and natural forests. Today they comprise approximately 60.9 million hectares or 33% of Indonesia's forestland.

Conversion forest

Conversion forests are designated for non-forestry development. They are forests that can be converted into other land uses such as agricultural production. Biofuel and pulp timber plantations are frequently planted on conversion forestland. Conversion forests are managed both

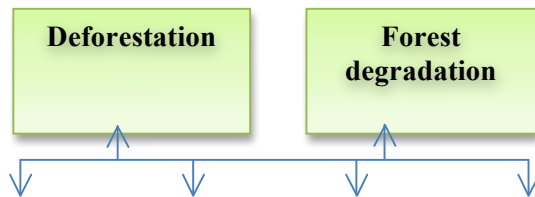
privately and publicly. Currently, conversion forests comprise approximately 22.7 hectares or 12% of Indonesia's forests (FAO working paper 2009).

Forests and the Economy

The forest products industry plays a large influence on Indonesian life. The forest products sector comprises 3.5% of the national GDP, or about USD 21 billion, and directly employs 3.76 million people as of DATE. However, those numbers do not accurately display the true economic importance of the forest products industry. Approximately 54% of Indonesia's population lives in rural areas and the people are dependent on the forest for some part of their daily life, ranging from wild foods to fuel-wood (World Bank 2009).

Chapter 2 Problems facing Indonesia's forests

The problems facing Indonesia's forests are two-fold: social and environmental. Environmental problems, specifically the broad areas of forest degradation and deforestation, directly threaten the ecological services provided by Indonesia's forests, while the social problems more indirectly affect forest health by placing a low value on good forest management. Poor forest management threatens both the social fabric of Indonesian culture and the ecological wealth that permeates natural areas (Figure 1).



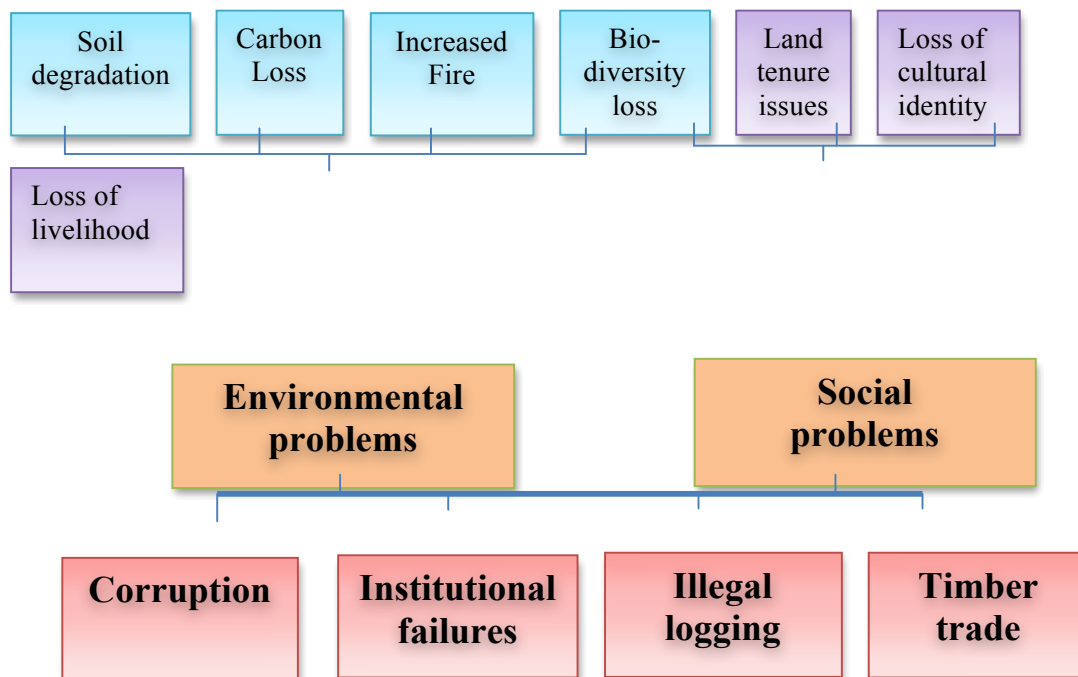


Figure 1: Conceptual model of Indonesian forest problems displaying the interrelationships between common problems affecting ecosystem health and social fabric

Ecological problems

From 1986 to 2000, Indonesia's total forest area declined by more than twenty million hectares (Forest Watch Indonesia 2001). Deforestation and forest degradation were (and still are) running rampant in many areas (Durst et al 2006). Between 1991 and 2010, Indonesia lost approximately 1.02% of its forests each year (FAO 2010), and even more forested land was degraded through forest fires, soil degradation, and poor logging practices.

These trends are environmentally problematic. Indonesia's forests account for 9.3% of the world's carbon stock, one of the top five carbon sequestering countries (Saatchi *et al* 2011). Should that amount of carbon be released, it could affect global climate change. Furthermore, Indonesia is home to a staggering amount of biodiversity. At least 3,305 species of amphibians, birds, mammals, and reptiles live within the forests, 31.1% of which are endemic and 9.9% of

which are threatened (Parikesit *et al* 2012). Without adequate forest protection, many of these species could become extinct.

Deforestation is primarily driven not by logging practices, but by agriculture and urbanization (Rudel *et al* 2009). However, agricultural fields have a higher value than forestland—one of the main reasons that forest is converted into agricultural land is because. If forests were worth more, then the trend would likely not be so dramatic. Thus, forest certification hopes to make forests more valuable so that people do not feel the need to convert their land.

Indicators of Sustainable versus Unsustainable Harvesting Practices

Sustainable:

- Control erosion
- Ensure regeneration that will continue forest structure
- Avoid riparian areas
- Leave behind tree tops and debris

Unsustainable:

- Clearcuts in vulnerable areas
- Logging in protected or vulnerable ecosystems
- Whole tree removal

However, logging practices do directly affect forest degradation. Clear-cutting in inappropriate areas (steep slopes, along riparian buffers, areas with inadequate regeneration) can increase soil erosion and can have a dramatic negative effect on forest biodiversity levels. Likewise, logging in ecologically vulnerable areas can affect biodiversity levels, as operations can disturb delicate habitats (Amlin *et al* 2012). When harvesting operations are poorly planned, machinery use can cause soil compaction which in turn influences soil water levels and soil infiltration rates. If too many seed trees are harvested in natural forests there will be inadequate regeneration (Foster *et al* 2010).

Social problems

Furthermore, social problems also plague forestland. Conflict over land tenure, unemployment resulting from changes in land ownership, and loss of cultural identity following forestland destruction are factors fuelling controversy over forest management. According to Indonesia's Basic Forestry Law, the state controls all forest resources. While it was revised in 1999 to recognize the existence of Indigenous people and allow opportunities for them to own traditional lands, loopholes in the law are such that government can re-possess the land should it find it valuable (Wollenberg and Kartodihardjo 2002). When communities are not sure that they will even be able to retain ownership of their land, they have little incentive to ensure sustainable forest practices or invest in forest certification (Durst *et al* DATE). Research suggests that communities that put a high value on their forests, particularly communities that derive a large part of their income from forest products, will work harder to ensure the continued existence of those forests (Engel and Palmer 2006).

Conflict between timber companies and local communities often occurs as a result of land tenure issues. Because the government owns most forests, it is also free to award timber concessions where it wishes. If a community is residing in that forest, they lose their rights to that land, and thus their home and livelihood (Engel and Palmer, 2006).

Thus, local communities, indigenous people, and generally populations at an economic disadvantage are all at risk from land tenure conflicts. Certification hopes to address social issues by giving local communities greater financial return on their forest products, providing a framework to address conflicts, and ensuring sustainable business practices.

Underlying causes

Contributing to the over-arching social and environmental problems are several root issues: corruption, institutional failures, the timber trade, and illegal logging; issues that are in and of themselves closely entwined. For instance, corrupt government officials benefitting from illegal logging undermine proposed institutional changes that could combat the illegal logging trade that is driven by the international timber trade.

Corruption

Corruption runs rampant throughout Indonesia, and bribery is seen as a natural part of life. Corruption is especially virulent in the forest sector because forests are typically far from population centers, thus leaving field officers and forest regulators wide opportunity for corrupt behavior (Smith *et al* 2003). Furthermore, the Indonesian government has adopted many laws and regulations designed to promote better use of forest resources which, rather ironically, generate many opportunities for corrupt officials to accept bribes, ignore regulations, or permit otherwise illegal activity (Gupta and Siebert 2004). The opportunities for corruption increases when government officials impose bribes or levies based on regulations (Henderson and Kuncoro 2004).

Corruption causes problems because environmental regulations are not adequately enforced. In areas where corruption is especially problematic, site regeneration, erosion rates, and water quality levels are all far from acceptable (Palmer 2001). The ubiquity of corruption leads to government institutions left underfunded due to insufficient tax returns. However, those same bribes help fund community actions (Henderson and Kuncoro 2004)

Institutional failures

As stated previously, Indonesia has a wide network of forest regulations and laws designed to protect forests and, more recently, forest dwellers, yet all the regulations in the world will have little impact if Indonesia does not have the institutions in place to enforce those regulations—as is unfortunately the case. The Indonesian government lacks the manpower, lacks the resources and, according to some, lacks the will to effectively enforce their laws. Some of this stems back to the corruption problem, but institutional failures also arise from a lack of government resources and planning.

Institutional failures lead to inaccurate reporting of deforestation, pollution levels, and forest degradation, which in turn means that those problems do not get the attention or help that they need. An example of this can be seen in the 1982-1983 fires of the islands of Kalimantan and Sabah. The Indonesian government reported that 96,000 hectares had burned while the World Wide Fund for Nature (WWF) reported that 750,000 hectares burned (Brown 1998). Additionally, Indonesia has repeatedly failed to adequately protect conservation and safeguard areas (Hayes 2006).

Institutional failures also have social consequences. The failures of government policies have allowed timber companies to remove local communities from their land. Often, those displaced people experience increased levels of poverty because they no longer have access to their livelihood (Padgee *et al* 2007).

Illegal logging

Illegal logging is a large problem throughout Indonesia that has far-reaching ecological and social consequences. To quote Duncan Brack, an expert on illegal logging, “Illegal logging

occurs when timber is harvested, transported, bought or sold in violation of national laws” (Brack 2003). The Indonesian government continues to try to fight illegal logging by entering bilateral agreements with the UK (April 2002), Norway (August 2002), China (December 2002), and Japan (June 2003) stating that those countries will not import any illegally logged Indonesian timber. However, those agreements can be easily circumvented by trading through a third country and have proved ineffective in many areas (Humphreys 2006). According to Indonesia’s Ministry of Forestry, illegal logging costs the country \$3.7 billion annually (NRM Headline news 2003), thus exacerbating poverty levels through loss of resources. Because illegally logged timber is frequently inexpensive, it distorts forest product markets by reducing business from legitimate logging companies (Tacconi 2007). In Indonesia, illegally logged timber accounts for as much as forty percent of harvested logs (Brack 2003). Illegal logging has contributed to deforestation and biodiversity loss because the area is frequently clear-cut and then abandoned because loggers have no economic incentive to continue caring for the land (Humphreys 2006).

The timber trade

Not all of the blame for social and environmental problems can be directly placed on Indonesia. The international timber trade has significantly contributed to exacerbating problems with forest management. Many countries, most notably the Asian countries that are common importers of Indonesia’s timber, have not made ensuring a legal chain of custody of timber a priority (Anderson and Hansen 2004). The quest for cheap timber has trumped care for the environment so that there is not enough demand for certified timber (Durst *et al* 2006). By not checking the source of timber, or not caring, buyers undercut Indonesia’s efforts to produce sustainably logged timber. Because the timber trade rewards companies that produce large

volumes of cheap timber, many areas feel little incentive to practice sustainable forestry and instead engage in unsustainable practices.

In short, Indonesia's forests are in trouble, and poor government policies have played a major role, especially its complex system of forest management and government corruption. Because the government has failed to adequately protect Indonesia's forests and forest residents, many argue that forest certification, as a market-based enterprise, is a solution for the problems facing Indonesia's forests.

Chapter 3 Lembago Ekolabel Indonesia

The Inception of Certification

The idea of forest certification surfaced in the 1980s following the international environmental movement and increasing concern over the deforestation rates of tropical rainforests. Laws and regulations to protect forests had proved inadequate and environmentalists were seeking a solution that could help relieve the burden of protection from overworked governments. The first forest certification program, the Smartwood Program (an offshoot of the Rainforest Alliance) formed in 1989. The Forest Stewardship Council, a collaborative effort between forest product companies, environmental NGOs, and various social interests, formed in 1996. The Forest Stewardship Council is especially noteworthy because it has partnered with LEI

What is forest certification

Forest certification is a system that recognizes well-managed forest operations. It considers the ecological, economic, and soil components of forest management and recognizes companies that manage those components sustainably. While there are other types of forest certification, Indonesian forest certification systems primarily utilize third-party forest certification in which an accredited certifying organization conducts an on-the-ground evaluation of forest management based on a set of standards established by that certification body, in this case LEI.

The development of Indonesian Certification

Indonesia's road to certification, along with the rest of the world's, began in the 1980s during discussions with the International Tropical Timber Organization (ITTO) after Indonesia's deforestation and forest degradation rates attracted international attention. These discussions ultimately resulted in the Guidelines for Sustainable Management of Natural Tropical Forests and while these guidelines were by no means binding, they provided a variety of recommendations for sustainable forest practices. Furthermore, they opened the Indonesian government's eyes to the idea of forest certification and provided the basis for future certification standards (Elliott 2000).

Forest certification was further considered when the international timber market began to grow hostile towards Indonesia's unsustainably logged timber. In 1992, Austria passed a federal act requiring tropical timber and timber products to be labeled as to whether or not it was sustainably produced (Mattoo 1994). While international pressure, headed by Indonesia and Malaysia, convinced Austria to revise the law to voluntary labeling, the fact remains that

pressures were increasing for Indonesia to expand its production of sustainably produced timber. Various NGOs throughout Europe and North America have threatened Indonesian forest-based exports, and it is estimated that 40% of forests exports could be affected by ecolabelling requirements—an appallingly large amount for a country dependent on its forest products exports (Muhtaman and Prasyeto 2006).

Inception of the Lembaga Ekolabel Indonesia

Indonesia knew that something needed to be done about its forest management policies, and certification seemed to be an increasingly viable option. With the rise of the Forest Stewardship Council (FSC), Indonesia knew that it could either follow previously set international standards, or develop its own forest certification system and standards. Indonesia chose the latter, ultimately leading to the construction of the LEI (*Lembago Ekolabel Indonesia*, or the Indonesia Ecolabel Institute) (Muhtaman and Prasyeto 2006).

While there are several forest certification groups at work in Indonesia including Smartwood and FSC, the Indonesian government made the decision to develop its own forest certification system, the *Lembago Ekolabel Indonesia* or Indonesia Ecolabel Institute in order to more closely address the environmental and socio-economic needs of Indonesian forests. LEI has thus developed standards for plantation (state and private owned), natural (state and private owned) and community-based forest management (CBFM) (www.lei.or.id). Additionally, LEI has established standards to certify timber products chain of command, meaning that those products have been certified to have been produced legally.

Table 1: Purpose of each type of LEI certification.

| Certification type | Purpose |
|---------------------------|---|
| Chain of command | <ul style="list-style-type: none"> • Increase transportation and industry efficiency |

| | |
|--------------------------|--|
| | <ul style="list-style-type: none"> • Identify “legal” status of timber/forest product • Define actions towards forest resource security |
| Plantation forest | <ul style="list-style-type: none"> • Ensure sustainable production in a plantation system • Confirm ecologically healthy methods of plantation maintenance • Identify sustainable business practices • Guarantee cohesive company and community relations |
| Natural forest | <ul style="list-style-type: none"> • Ensure continuance of forest ecosystem health and forest products • Acknowledge sustainable business practices • Guarantee cohesive company and community relations |
| Community forest | <ul style="list-style-type: none"> • Ensure forest products not produced in protected areas • Give community forest operations access to global market for sustainable forest products • Ensure continuance of forest products and forest ecosystem health • Identify sustainable business practices |

Source: www.lei.or.id

The LEI is a result of intergovernmental cooperation, coordination, and investigation. As such, LEI and the Multidimensional Poverty Index (MPI) formed a working group to develop the criteria, which were ultimately derived from the criteria and standards of the ITTOs, as well as the standards of the FSC. The LEI worked closely with the FSC in order to develop and accelerate the promotion of Indonesia’s forest certification. Together in a Memorandum of Understanding, the groups identified six focus areas for collaboration, which are as follows:

1. A gap analysis of the standard setting, accreditation and certification procedures of both systems, conducted by an independent party and with feedback both from LEI and FSC.
2. An analysis of the compatibility of the LEI standards as national FSC Forest Management standards, conducted by a team jointly appointed by LEI and FSC.

3. An analysis of the compatibility of the LEI and FSC chain of custody standards, conducted by a team jointly appointed by LEI and FSC.
4. An assessment on challenges and opportunities for co-labeling of LEI and FSC certified products for domestic and export markets.
5. A thorough assessment of the challenges and opportunities for LEI and FSC certification of plantations in Indonesia, reviewed by an expert panel jointly established by both parties.
6. LEI and FSC will exchange information and lessons learned on certification of community based forests.

Additionally, LEI is a Constituency Based Organization (CBO), the first organization in Indonesia to employ such a system. Under this constituency based program, LEI has pledged to work with its members to continue developing and adapting its standards to promote sustainable forest management. In order to fulfill this mandate, LEI has created a credible certification system, worked with various timber companies to implement Sustainable Forest Management Plans, and developed training plans for certification assessors.

LEI Standards

LEI uses both systems-based and performance-based standards. Systems standards focus on how forest management units (FMUs) review and evaluate their objectives. Thus, it is not the forest that is assessed and certified, but system of management. Performance standards, on the other hand, do evaluate the forest. They examine the ecology of the forest and use environmental indicators (Humphreys 2006). Because each type of standards has its weaknesses, LEI chose to develop both systems-based and performance-based standards. LEI's standards focus on the social, environmental, and production aspects of good forest management. The general standards

described in Table 2 were developed to address the major problems facing the forest products.

The standards are based on LEI-5000, a document describing the exact requirements of each standard.

Table 2: Standards and qualifiers of LEI certification. Aspects are general certification categories while standards indicate the focus of that particular area. The qualifiers further elucidate the purpose of the standard.

| ASPECT | STANDARD | QUALIFIERS |
|----------------------|--|--|
| Social | Tenure system | Must acknowledge land claims based on traditional ownership |
| | Economic development of local community | If the local community relies on forest products for their livelihood, the FMU cannot disturb those activities |
| | Guarantee of social/cultural identity | Problems with the workforce or the local community cannot be solved either physical or non-physical force |
| | Guarantee of community nutrition and health | The FMU must be cognizant and sensitive to the impact of its activities on the community's health |
| | Guarantee of worker's rights | Workers have rights to unionization, healthy and safe working conditions, and adequate salary. Unjust contract termination is prohibited. |
| Environmental | Condition of vegetation | Forest structure and vegetative condition cannot change drastically, either within protected and unprotected areas. |
| | Condition of the wildlife | Logging activities should not diminish biodiversity or disturb animals and their habitats. |
| | Soil and water conservation | Logging and other forest exploitative activities should not negatively affect erosion levels or water quality, and the FMU must have equipment for monitoring and evaluating environmental impact |
| Production | Area status and security | The area managed by the FMU must be free of land-use conflicts in the long term, with both horizontal conflict over traditional land uses and vertical conflict over inconsistent policies on land use allocation must be readily addressed, with the FMU being active in resolving those conflicts. |
| | Planning and harvesting techniques | All harvesting have a clear and detailed, especially in concern to yield schedule. Infrastructure preparation must follow set standards. All timber harvesting must emphasize environmentally friendly methods. |
| | Silvicultural system and rehabilitation | The silvicultural system should guarantee continued regeneration in order to ensure continued production in accordance with the forest condition |

| | | |
|--|--|---|
| | Timber management and reporting | All logs, whether at the felling site, log landing, or log pond must be clearly identifiable. |
| | Organization and administration | A professional organization is supporting the FMU operations and Standard Operating Procedures (SOP) are prepared, especially for forest fire management. |

Social standards

LEI's social standards focus on five main subjects. First the tenure system is evaluated. In order for the forest management unit (FMU) to pass this criterion, traditional community ownership must be acknowledged. Second, certifiers assess the economic development of the community. The FMU cannot negatively affect the livelihoods of local people, and must offer viable opportunities for employment should their operations disrupt normal local occupations. Third, the FMU must guarantee social and cultural integrity, meaning that the forest management unit cannot use physical or non-physical force to eliminate problems with their workers or the local community. Fourth, the FMU must monitor the impact of its activities on community health and ameliorate any that cause non-salubrious consequences. For example, if the FMU is utilizing forest management practices that negatively affect water quality, then that FMU would not be certified. Finally, the FMU must guarantee workers' rights. The company can't fire workers without cause, and it must ensure both safe working conditions and a working wage.

Environmental standards

LEI's environment standards focus on three main subjects. The vegetative condition, in which forest structure, which is comprised of plant biodiversity and structural diversity, cannot

change drastically in either protected and unprotected areas. Wildlife cannot be unduly disturbed by logging activities so that their biodiversity levels are negatively impacted. And finally, soil and water quality cannot negatively change following logging operations. In order to ensure that all of these criteria are met, the FMU must have adequate equipment and employment to ensure adequate monitoring and evaluation of its environmental impact.

Production standards

LEI's production standards focus on five main conditions. First, the forest must be relatively clear of land and land tenure conflicts. The FMU must have consistent policies in place that alleviate both horizontal conflict regarding traditional land use and vertical conflict regarding unclear policies for land use allocation, and be active in resolving any conflicts that appear. Harvests should have detailed plans, especially regarding the yield schedule, that enable timber harvesting to be done with environmentally friendly methods. Post-harvest silvicultural systems need to be in place to guarantee continued reproduction and forest health. In order to ensure that adequate records are kept, all logs at the felling site, log landing and log pond need to be clearly identified and reported. And finally, the FMU operations must have Standard Operating Procedures (SOP) in place and the FMU must be supported by a professional organization.

However, certification is expensive, and many of the timber production companies in Indonesia are small and cannot afford the costs. This poses a problem as community-based timber companies, the very companies that LEI's standards promise to protect and promote, are also the very ones that cannot afford certification. Such a cost barrier, coupled with the increasing the international timber market's marked preference for sustainably managed timber products; result in decreased possibilities in the timber market. However, LEI has developed a

program to help alleviate the costs for community forests. While most plantation and natural forest owners pay their own costs, community forest owners can get financial assistance from ENGOs or develop a payment plan.

International acceptance

International acceptance has been a major barrier to LEI's use. Because LEI's standards weren't internationally recognized, many markets remained closed and thus many companies did not feel motivated to become certified. Various environmental groups allege that LEI is merely a mechanism to allow concessionaries the freedom to continue their usual practices (Vogt *et al* 2000). There have been assertions that certifications are awarded before companies have met all the requisite standards, though LEI argues that this has not happened.

However, in DATE, LEI began working with the Institute of Global Environmental Services (IGES) to study how global markets would respond to community based forest management certification, and with Friends of Earth Japan to introduce LEI certified products to the Japanese timber products market. According to LEI, the market has thus far responded well, as LEI certified products are now recognized in the Green Procurement Policy of Japan (www.lei.or.id). Large companies including Maison du Monde, a French furniture chain; Sasu's Playhouse, a Finnish furniture company; and Pottery Barn in the United States have all recognized the Indonesian Ecolabelling Institute as a viable indicator of sustainable forest management. This means that LEI certified products are increasingly recognized as a valid option for sustainably produced timber products. By gaining such international verification, certified companies have gained a foothold in the international market for sustainably produced timber.

Chapter 4

Ultimate Effects of Forest Certification

After fifteen years in existence, LEI has certified 411, 690 hectares of natural forest under three management units, 970,112 hectares of plantation forest under three management units, and 26, 719 hectares of community forests in 12 villages, totaling 1,407,542 hectares. However, those number do not indicate LEI's success. The question remains: Has Indonesia's certification developed a set of standards that address the environmental and social problems of Indonesia's forest?

Social issues

Assessing LEI's impact on communities is difficult to ascertain because there are relatively few studies that have baseline information on communities before their forests were certified, and there are rarely follow-up studies. However, anecdotal evidence and comparisons between like communities have been used to develop general conclusions about LEI's social impact.

LEI claims that certification helps give community forests an advantage in the forest products market. A case study from Selopuro, a small village in central Java, shows that the market effect can actually be difficult to determine. Selopuro was the first certified sustainable community forest. Following certification, timber was sold at a 25-30% markup (Takahashi 2008). The extra money helped to alleviate poverty levels in the village, and village members hoped that profits would continue to rise. However, thus far the village has been unable to keep up with demand for timber because the standards for CBFM do not allow the community to

produce large amounts of timber on a regular basis. Thus, the actual economic benefit of certification is limited (2008). This poses a significant limitation for LEI's efficacy because there needs to be an economic incentive for people to change, especially in poverty-ridden villages.

Community response has been limited because villages are responsible for compiling their own papers to begin the certification (Takahashi 2008). Because many villages do not have the budget to do so, it hinders LEI's potential among community-based forests. In order for LEI to be more effective it needs to provide more resources for villages to begin the process in community-based forest management certification.

In certain areas, interactions between local communities and timber companies have improved as a result of forest certification. The standards of certification dictate that in order to be certified, participating companies must maintain good community relations by resolving land conflict without force, avoiding removing local people of their livelihoods, and maintaining lucrative and safe working conditions for all workers (Table 2). Because of this, many companies have reduced the number of conflicts with local people (Padgee *et al* 2007). Additionally, some companies have developed community partnership programs that further promote community relationships.

For example, *Xylo Indah Pratama* (XIP) implemented a *pulai* planting program that works with local people to increase land productivity. Under this program, XIP funds site preparation and establishment costs of the mini-plantations in return for management control over the land until the trees are harvested at the end of the ten-year cutting rotation. With this program, land that originally lay fallow can now be put into production, thereby increasing farmers' income, promoting the local economy, and overall improving relations with that community (Muhtaman and Prasyeto 2006).

Ecological problems

LEI standards state that certified companies utilize ecologically sound and stable forest management practices. However, there exists significant debate about the ability of those companies to actually maintain those standards.

Many certified companies have scored relatively poorly on environmental indicators, implying that the LEI label is not an entirely reliable indicator of sustainability. The low scores primarily arise from difficulty understanding or implementing the environmental indicators and standards (Rametsteiner and Simula 2003). Areas of particular concern were biodiversity protection, conservation area management, procedures and strategies for logging-road construction, and monitoring and evaluating environmental impacts (Muhtaman and Prasyeto 2006). In order to improve their knowledge of beneficial environmental practices, many of the more environmentally successful companies work with ENGOs and other relevant organizations (Vogt *et al* 1999). The fact that the companies need external assistance in order to execute LEI's standards clearly indicates LEI needs to either develop education programs or ensure that certified companies clearly understand the environmental standards.

One of the biggest ecological improvements as a result of certification is the introduction of reduced-impact forestry (RIL). RIL is designed to mitigate the deleterious effects of tree felling, yarding, and hauling (Putz *et al* 2008). The program's methods were so successful with certified bodies that the Indonesian government issued a letter from the Directorate General of Production Forest Management (No. 274/2001) stating that low-impact forestry needed to be implemented in all forest concessionaries, not just on certified forests (Muhtaman and Prasyeto). While its impact in specific areas varies, overall RIL has helped to decrease the negative impacts of logging.

Certified companies have proved that they not only utilize sustainable forest management practices but also their contributions to ecosystem management. Various certified forests have expanded their forest conservation lands. An excellent case study, Diamond Raya Timber (DRT) has begun conserving approximately ten percent of its forest area in every logged area to function as a wildlife corridor and as a seed source for natural regeneration. The company has also implemented a mangrove ecosystem study in conjunction with the Indonesian Research and Science Institute and Bogor Agriculture University (Muhtaman and Prasyeto 2006).

However, despite its positive ecological contributions, DRT's certification has been hotly contested. DRT lies within a high conservation value forest that is home to endangered species such as the Sumatran tiger and ramin (Colchester and Ferrari 2007). Logging has disturbed the tiger's habitat, and many ramin trees have also been felled (monagobay). The case of DRT in which a certified company has very mixed ecological impact is not unusual, and it is one of the reasons that many companies are hesitant to purchase LEI certified products.

Conflict has arisen over the appropriateness of LEI certifying forest plantations. Arguments against certifying plantations state that plantations are monocultures and little different from agricultural fields, reducing biodiversity and destroying natural forest diversity. And such arguments have merit. Studies have found that oil palm plantations, a growing (literally) trend in Indonesia, can have less than half the number of vertebrate species as natural forests and, across all taxa, there is approximately an 85% reduction in species diversity from primary forest to plantation forest ((Danielson *et al* 2008, Fitzherbert *et al* 2008). Plantation forests can act as a barrier to animal migration because they lack the biological and structural diversity of a natural forest (Maddox *et al.* 2007, Struebig *et al* 2008). Additionally, the use of fire as a method for clearing land kills seeds, seedlings, and sedentary animals (Cochrane 2003). With repeated use, fire can lead to the development of altered forest ecosystems and biodiversity levels (Mutch *et al* 2003, Van Nieuwstadt and Sheil 2005).

Because of these problems, some argue that plantations should not be considered for certification. LEI certification is supposedly an indicator of environmentally friendly forest management, and opponents to plantation certification say that too little can be done to alleviate the environmental problems of plantation forests. Most of the reductions in biodiversity are due to reductions in plant diversity and habitat structural complexity (Aratrakorn *et al* 2006), and in order for the plantation to remain productive, opportunities to mitigate those problems are limited. Environmental non-governmental organizations (ENGOS) oppose the certification of plantations and allege that by certifying such forests, LEI is undermining its environmental goals and standards.

However, other studies have found that plantations have distinct benefits that make them viable options for certification. Plantations reduce pressures on natural forests, allowing more areas to be classified as protection and conservation forest (Sedjo and Botkin 1997). Furthermore, plantations also provide valuable ecological services, sequestering carbon and filtering pollutants out of water and air (Fitzherbert *et al* 2008). LEI argues that certifying promotes these services and encourages communities to value their forest land.

Overall, LEI is a tenuous indicator of environmental sustainability. Certified companies have an obligation to protect and provide for the environment, yet that obligation is not always executed.

Corruption

One of LEI's goals is to create "a transparent verification process relatively invulnerable to corruption (Salim *et al* 1997). And to an extent, that goal has been reached. FMUs are required to disclose management plans to the local communities and interested public. This creates a level of transparency that helps to fight corruption (Hinrichs 2005).

However, corruption is still a problem that affects Indonesian forestry, including bodies certified by LEI. Plantation sites that were awarded by corrupt officials are given the change at certification. Many experts argue that the practice promotes the corrupt process of awarding timber concessionaries, many of which are located on high conservation value land (HCFV) (Dudley 2005).

Overall, though, there is a dearth of information concerning the level and impact of corruption within LEI. Many studies mention corruption in passing as something that LEI needs to address in order to gain greater acceptance at the international level, yet few studies have directly studied corruption. As such, data to assess the exact effect that LEI has had on corruption is limited.

Government institutions

The failings of forest certification emphasize the need for adequate government policy and the ability enforces those policies. While it was heralded as the beginning of the end of poor forest practices, forest certification, at least in Indonesia, is not a panacea designed to fix the government's flaws. Instead it is a market-based system that appeals to consumers to favor ecologically sound timber products, thus providing a market incentive. Only good government policy and the enforcement of those policies will lead to the best possible forest management. Furthermore, forest certification cannot do anything to allay issues with land conversion from forest to other uses such as agriculture, mining, and settlement. It is up to the government to regulate or at least manage such changes, yet some argue that the government has expected certification to solve that issue as well.

Illegal logging

LEI's standards are designed to give consumers surety that their timber products were legally and sustainably procured. However, just because that is the program's intent does not mean that it is actually executed. Research has shown that the chain of command breaks down if lumber is not adequately secured, in which unsecured means that there are opportunities to slip illegally logged timber into the production line, either at the felling site, log landing, or log pond. Unfortunately, with each new regulation against illegal logging, those engaged in illegal logging develop new methods to circumvent those means. A field study by ARuPa has discovered several methods of "laundering" lumber so that it can be claimed to be legal (Muhtaman and Prasyeto 2006). Certain teak plantations, for example, have developed intricate systems to bypass regulations, doctoring logs and utilizing third party sellers so that wood product companies can claim that all their lumber comes from sustainably produced forests (Smith et al 2003).

However, certified companies have reported minimal levels of illegal logging (Brack 2003). Due to the advent of log tracking systems and increased watchfulness of participating communities, forest certification minimizes, if not eliminates, illegal logging efforts (Smith et al 2003). While LEI certification is not a guarantee that the timber was not illegally logged, it is nevertheless an indicator that the timber is less likely to be illegal than non-certified products.

The timber trade

Many of LEI's weaknesses are not, however, a direct result of systemic failings of the certification system. Instead, they result from a failing of the market. One of certification's main draws was that buyers would pay a premium price for certified timber. Unfortunately, that has not happened. Markets have instead stopped purchasing non-certified wood and wood products.

However, not enough markets have closed their doors to non-certified timber for those to make an overwhelming difference in the need for certification. For as each market closes their doors to uncertified timber, another opens its doors, or more accurately, its pockets, to cheap and uncertified timber. However, certification has helped to dampen the swings in demand for forest products, thus allowing certified products to have greater market penetration.

Chapter 5 Conclusion

LEI certification addresses complex social and environmental problems, and solutions for those problems will require complex solutions—much more than certification can offer.

However, forest certification serves to provide an economic incentive to begin those changes that Indonesia so desperately needs.

LEI has had a significant environmental effect by providing an incentive for environmentally sound forest practices. The popularization of RIL and the greater accountability for forest management practices has improved many certified companies' ecological impact. However, ignorance on various standards, especially concerning evaluation and monitoring environmental changes, has seriously limited LEI's efficacy. In addition, much conflict has arisen over the fact that timber concessions in HCVMs are able to be certified. Ultimately, LEI's environmental impact has positive attributes but leaves much room for improvement. It is a step in the right direction for sustainable management, but work between forest companies, LEI certifying bodies, and NGOs is imperative to enhance the validity of LEI's environmental standards.

LEI's social impact is also mixed. Community relations between certified companies and local communities tend to have less conflict on average. Furthermore, community-based forest operations have the opportunity to certify their forests, giving them space in the forest products and allowing a mark-up on those products. However, conflict between certified companies and communities still exists to such a degree that many NGOs are concerned about LEI's validity. Concessionaries can still remove communities from land; they must just give communities the opportunity to receive compensation for that land. Furthermore, even though companies must be

transparent with their management practices, communities have little recourse should they disagree with certain practices. LEI certification provides an excellent base for improved community relations, but certifying bodies must ensure that standards are followed in order for it to be effective.

There is not enough research to accurately assess corruption levels in LEI certified companies. While transparency has reduced blatant venality, corruption is nevertheless an ingrained aspect of Indonesian life, and it is very unlikely that it does not affect a great portion of certified companies.

LEI certification was not designed to replace government institutions. Thus, it has little effect on institutions currently in place. However, certification does provide a resource that both timber companies and communities can utilize in order to develop better forest management practices. Ultimately, it would appear that forest certification's main benefit has been to recognize the need for better forest policies and to create discussion regarding those processes. Through forest certification, the Indonesian government has made a stand saying that it would like to promote better forest policy. While government's forest policy has not changed as a result of LEI certification, and there have not been drastic changes in either recognition of indigenous rights or environmental protection, the various standards of the LEI have led to important talking points that show the inadequacy of various policies.

Perhaps LEI's greatest impact lies in the reduction of illegal logging. The chain of command helps to reduce the opportunity for illegal logging. Companies have to track their timber to ensure that it is secured and opportunities to slip in illegally logged timber are limited. However, illegal logging is still very common in Indonesia, and those engaged in the practice can be very creative about finding ways around regulations. Certification has not stopped illegal logging; it has merely provided a market incentive to avoid the practice.

LEI certification has a limited effect on the timber trade. First off, it is a market tool; it does not create a market. That said, it has helped to increase the supply of certified timber and provided a market opportunity for ecologically-minded consumers to purchase environmentally sound timber products.

While case studies provide valuable information, there need to be more studies with baseline information in order to accurately assess social and environmental trends in certified companies and to understand how LEI deals with corruption, institutional failures, illegal logging, and the timber market. There needs to be both greater global awareness of the problems facing forests and the ability for consumers to dictate how forest products are obtained. Just as the organic label has helped to revolutionize the food-purchasing business, so forest certification has an opportunity to revolutionize the process of purchasing timber products.

In order for LEI to become more effective, there needs to be more awareness about the certification system. Even within Indonesia, there are areas that have not heard of forest certification or LEI. Additionally, LEI should provide opportunities for companies to learn good silviculture and how to evaluate and monitor forest health. Furthermore, because there is an education gap on effective forest management practices, development of an introductory method of forest certification so that timber companies are certified as they improve their practices and not all at once could improve opportunities for better forest management and certification improvements.

Paradoxically, LEI is a flawed institution that is nevertheless moderately effective. If purchasing Indonesian timber products, LEI certification acknowledges companies that are at the least making an effort towards better forest management practices, and thus can be used as an indicator to purchase both environmentally and socially beneficial products.

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