

Transition to timber plantation based forestry in Indonesia: towards a feasible new policy

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ABSTRACT:

Indonesia's forestry sector is in a dilemma due to the long-standing disparity between high processing capacity of forest industries and the limited supply of timber. The supply crunch has led to over-harvesting in order to meet demand and resulted in a decline of natural forests. The Indonesian government seeks to revive the forestry sector and secure its long term survival through a massive timber plantation effort: 9 million hectares of new plantations by 2016. This paper shows that while timber plantations are vital for the future of Indonesia's woodworking sector, the expansion plan relies on overly optimistic assumptions about the current state of Indonesia's timber plantations, their future performance, and associated benefits. In order to ensure effective implementation of the new plantation policy, this paper analyzes its key underlying principles and identifies information gaps that need to be filled.

Keywords: wood-processing industries, illegal logging, industrial timber plantations, plantation expansion policy

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Transition vers une foresterie basée sur plantations de bois de coupe en Indonésie: cheminement vers une nouvelle politique viable

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Le secteur forestier de l'Indonésie est en plein dilemme du fait de la disparité de toujours entre la haute capacité de raffinement des industries forestières et la production limitée de bois de coupe. La crise de la production a conduit à une récolte trop poussée afin de répondre à la demande, et a résulté en un déclin des forêts naturelles. Le gouvernement indonésien cherche à raviver le secteur de la foresterie, et à assurer sa survie à long terme avec un effort massif de plantation de bois: 9 millions d'hectares de nouvelles plantations pour 2016. Cet article démontre que, bien que les plantations de bois soient vitales pour le futur du secteur du bois en Indonésie, le plan d'expansion repose largement sur des suppositions optimistes de l'état actuel des plantations de bois indonésiennes qui pourraient encourager un comportement opportuniste. Pour pouvoir assurer une gestion durable du bois dans le sein de la nouvelle politique, cet article appelle et identifie les zones de recherche plus poussées nécessaires pour contrôler l'impact de l'expansion. L'article se termine avec des recommandations pour obtenir une gestion durable des plantations de bois.

Transición hacia una nueva política de gestión forestal basada en plantaciones madereras en Indonesia

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El sector forestal de Indonesia se encuentra en un dilema, debido a la disparidad histórica entre la gran capacidad de procesamiento de las industrias forestales y la oferta limitada de madera. La crisis del suministro ha llevado a una cosecha excesiva para satisfacer la demanda y ha causado una reducción en el área cubierta de bosque natural. El gobierno indonesio busca reanimar el sector forestal y asegurar su supervivencia a largo plazo mediante un inmenso programa de plantación maderera, el cual supone el establecimiento de nueve millones de hectáreas de plantaciones nuevas antes del año 2016. Aunque las plantaciones madereras desempeñan un papel fundamental en el futuro del sector maderero indonesio, este estudio demuestra que el programa depende en gran parte de suposiciones demasiado optimistas sobre el estado actual de las plantaciones forestales indonesias que podrían fomentar comportamientos oportunistas. Para asegurar la gestión sostenible de la madera bajo la nueva política maderera, este análisis pide un estudio más detallado e identifica áreas para investigación con el objeto de monitorear el impacto de la expansión. El estudio concluye con algunas recomendaciones en aras de lograr una gestión sostenible de las plantaciones madereras.

1. INDONESIA'S FORESTRY AT THE CROSSROADS

Indonesia's forestry sector is in deepening crisis. Once among the world's leaders in round wood and plywood production, today the country's logging and woodworking sectors are in steep decline (Sugiharto 2006a). Between 2004 and 2006 alone, the export of plywood decreased by 55% from 6.2 million m³ to 2.8 million m³ (Koran Tempo, 8 November 2006). In the same time period, the export of sawn timber fell by nearly 40% from 3 million m³ to 1.8 million m³ (Sugiharto 2006b). Production and export reductions of such magnitude have had significant economic and social impacts particularly in terms of employment loss. Between 2002 and 2006, nearly one-third (800,000) of the estimated 3 million people working in the forestry sector lost their jobs (Investor Indonesia 2006a).

The decline in timber supply coupled with uncontrolled expansion of timber processing industries in Indonesia in the 1980s and the subsidized promotion of pulp and paper mills in the 1990s has also led to illegal logging¹ (Hamilton 1997; The World Bank 2006). The supply-demand imbalance that has plagued Indonesia's forestry sector for decades is the key underlying structural problem that drives illegal logging. According to the Ministry of Forestry, in 2006 the supply shortage of about 40 million m³ was met with illegally harvested logs (Sinar Harapan, 28 November 2006).

The spiraling destruction of Indonesia's forest resources has long been the cause for concern. Since 1998, Indonesia has been under pressure from international donor agencies, research organizations, NGOs and other bodies to restructure its wood processing sector in order to bring it in line with legally available and sustainable supply of timber. The Indonesian government is determined to address this concern by focusing on the supply side of the equation. In order to revive the timber industry, the Government of Indonesia will implement a new timber plantation policy that seeks to develop 9 million hectares of industrial timber plantations by 2016.

This paper will provide an overview of the possible economic, social, and environmental impacts of the new plantation timber policy that the Government of Indonesia is seeking to implement. This analysis will first draw upon past experiences with plantation expansion policies to project what could happen if the new timber plantation policy is implemented in its current form. The details of new timber plantation policy will then be introduced and the possible impacts of this policy analyzed. The paper ends with a call for research on the aspects and impacts of Indonesia's new timber plantation policy that are not fully understood and provides some recommendations towards more effective policy implementation.

2. IMPACT OF LARGE-SCALE PLANTATION POLICIES

Indonesia is rich in natural resources and over the years there have been many policies to expand the production of roudwood, pulpwood, oil palm, and rubber. In this section, the impact that plantation expansion policies have had over the years is described in order to help project the possible impact of the new timber plantation policy.

Economic Impacts of Large-scale Plantations

The economic decline of Indonesia's timber industry can be traced back to poorly designed policies that prioritized industrial capacity expansion and did not ensure a sustainable supply of timber. While wood-processing industries did become a strategic sector as well as key contributor to Indonesia's GDP (Gross Domestic Product), this was achieved at the price of significant imbalance between the effective demand and available, legal, and sustainable supply of timber. Already in the 1980s this imbalance was considerable and illegal logging widespread (The World Bank 2006).

It is important, therefore, to avoid similar mistakes with the current timber plantation policy, learn from the past experience with HTI plantations (*Hutan Tanaman Industri*, Industrial Plantation Forest), and have realistic expectations about employment opportunities and other benefits the new timber plantation policy. Undoubtedly the new policy will create jobs and contribute to poverty alleviation in rural areas. The new policy is also likely to boost GDP and increase national/regional tax revenues (Bull et al. 2006; Ministry of Forestry 2006). Although in that sense expansionist plantation policies are promising, they can also have a significant negative impact on the local economy. For instance, even though plantation expansion has the potential to create employment for local people, all too often migrant workers dominate work opportunities in the plantations sector, thus leading to social conflict, stalling of plantation operations, and economic stagnation (Potter and Lee 1998; Obidzinski and Barr 2005). Therefore, it is not a given that plantation expansion will improve local labor market and economic conditions.

Plantations can also displace many people and affect their sources of livelihood (urgewald 2007). For instance, village communities as well as small-scale timber growers and plantation workers often augment their incomes through collection and sale of non-timber forest products (NTFPs). However, experience has shown that expansion of pulpwood (HTI) plantations can reduce the access to natural forests where NTFP resources are to be found. For instance, prior to the establishment of pulp and paper plantations, villagers in the Siak District of Sumatra had greater access to products such as resin, firewood, honey and bush meat (Noor and Syumanda 2006). Farmers were also able to grow rice for

¹ Illegal logging refers to timber cutting beyond permit allocation or without a permit.

both subsistence and commercial purposes. The loss of these resources as a result of expanding pulpwood plantations has created food insecurity and loss of income.

In addition to the loss of local livelihood opportunities, employment generated by large-scale timber plantations is not sustained year after year because labor-intensive activities are highly cyclical. Small-scale farmers are thus unable to fully rely on timber plantations for employment, especially between year two and year seven when little labor is needed. Therefore, employment due to timber plantation expansion may not be sustainable in the long run (Cossalter and Pye-Smith 2003; Obidzinski and Barr 2005).

Social Impacts of Large-scale Plantations

The expansion of plantations has frequently led to social conflicts over access to land and land rights. In many cases, local communities do not possess official certificates of land ownership, which makes it easy for unscrupulous plantation developers to claim control over the land and expand their projects. This was particularly the case in Indonesia during Suharto's 'New Order' era when plantation owners were able to 'land-grab' with the support of the military and police. Although the fall of the Suharto regime since 1998 has brought changes, the formal legal system for land use rights, especially at the community level, remains unclear and weak (Noor and Syumanda 2006; urgewald 2007). This is exemplified by the expansion of oil palm and rubber plantations in Kalimantan which has ignored the customary tenure and effectively expropriated local communities (Wakker 2006). This has not only impinged upon local land rights and resulted in violence, but also led to extensive environmental damage.

Environmental Impacts of Large-scale Plantations

Large-scale plantations can be useful for the restoration of biodiversity if plantations are established on degraded land. However, in many cases, plantations are being established in forested areas with high levels of biodiversity. In such cases, one of the major impacts on the environment are deforestation and the loss of biodiversity. The experience has shown that four out of five existing pulp and paper mills in Indonesia have been environmentally destructive because these companies rely on forest conversion for most of their raw material needs (Cossalter and Pye-Smith 2003). Cases from oil palm plantation expansion have demonstrated significant loss in endangered species as well as forest fragmentation (Abdullah and Nagagoshi 2006; Wakker 2006).

In addition to the fall in the number of species, the overall quality of ecosystem health declines as plantations expand (Mackensen and Folster 2000; Sayer et al 2004). Although the way in which intensive timber growing interacts with water resources is not fully understood, in many cases plantation expansion and cyclical harvesting of trees has negatively affected the quality and quantity of water. There have been cases where rivers have dried up due to expanding oil palm plantations in Kalimantan and pulp plantations in Sumatra

(Friends of the Earth et al. 2008; Noor and Syumanda 2006). Plantation expansion and forest conversion can also adversely impact soil quality and worsen the severity of pest attacks due to monoculture conditions on plantation estates. Evidence also shows the expansion of pulpwood plantations that involves draining of peat swamps negatively affects water supplies and increases exposure to mosquitoes and cholera (Noor and Syumanda 2006). Finally, the expansion of both pulpwood and oil palm plantations also increases the likelihood of forest fires as forest clearing exposes sub-surface biomass and forest litter to rapid drying.

3. THE PLAN FOR TRANSITION TO TIMBER PLANTATIONS: TRENDS AND INCENTIVES

The Indonesian government is determined to create a turnaround in the wood-processing sector by dramatically increasing the supply of timber. The Ministry of Forestry will implement a program for a transition to timber plantation-based forestry in Indonesia that the government authorities hope will produce a permanent solution to the supply-demand disparity.

There are several reasons why this new timber plantation plan has been developed. The government planners believe that a number of current global trends can be harnessed to Indonesia's advantage. These trends include:

- 1. Ongoing relocation of the global pulp and paper industry to the South.** The relocation of pulp and paper mills from Europe and North America to Asia-Pacific, Eastern Europe, Russia, China and South America is taking place due to more favorable cost conditions where material and labor are cheap. A number of US pulp and paper mills, for instance, have already shifted operations to China. Indonesia can either host new pulp and paper mill investment or become a supplier of raw material for the mills relocating to China.
- 2. Rising global demand for pulp and paper.** In 2005, the global demand for pulp and paper was 350 million tons and 200 million tons respectively (Jakarta Post, 29 June 2006). By 2020, these global consumption volumes are projected to double. Yet, in 2005 Indonesia supplied only 2.5% of the global demand for paper and 2.7% for pulp. Given its forest resources and plantation potential, the Indonesian forestry decision makers sense an opportunity to position Indonesia as a major player in timber plantations, as well as pulp and paper production and trade on the global scene (Wibowo 2007; Sugiharto 2007a). The government aims to achieve this by establishing 9 million hectares of productive timber plantations through HTR (*Hutan Tanaman Rakyat*, Community Plantation Forest) and HTI (*Hutan Tanaman Industri*, Industrial Timber Plantation) programs, building 4-5 additional pulp and paper mills, and boosting annual forestry revenues fivefold to \$ 20 billion by 2014 (Suara Pembaruan, 17 May 2006).

3. Global concern for the reduction of greenhouse gases (GHGs). The international concern over global warming due to GHG emissions and the mitigating measures under the Kyoto Protocol and likely post-Kyoto framework can in theory bring significant benefits to Indonesia's forestry and plantation sectors (IGES *et al.*, 2006:80). While currently the Government of Indonesia pins most of its hopes on payments for reduced carbon emissions from deforestation and degradation of the natural forest (REDD, Reduced Emissions from Deforestation and Degradation), it continues to hope that the rules and implementation guidelines for Clean Development Mechanism (CDM) will be simplified.

4. Conventions and Agreements. The Government of Indonesia has signed a number of conventions and agreements, which creates the possibility that the expansion of timber plantations will not be a completely environmentally destructive process. For instance, Indonesia accessioned to the Convention on International Trade of Endangered Species (CITES) and the Convention Concerning the Protection of the World Cultural and Natural Heritage. Additionally, the government of Indonesia is also a signatory of the International Timber Trade Agreement (ITTA), which encourages sustainable management of tropical forests. As a member of the International Timber Trade Organization, which was established by the ITTA, the Government of Indonesia expresses commitment to environmental sustainability and assures the expansion of timber plantations will be managed carefully. Indonesia has also joined several regional forums such as the Asia-Pacific Economic Cooperation Forum, Asia-Pacific Forestry Commission, FLEGT (Forest Law Enforcement Governance and Trade), and AFP (Asia Forest Partnership) (Schloenhardt 2008). These international and regional agreements and processes may allow timber plantations to expand in a responsible manner while protecting biodiversity and promoting sustainable development.

The Ministry of Forestry believes that it will be able to achieve its objectives by taking advantage of favorable global trends and creating a number of incentives that will stimulate investment in the development of timber plantations. As of 2007, government authorities have put together the following set of incentives:

- Simplified application procedures for plantation concession permits. The Government Regulation (*Peraturan Pemerintah*) No. 34/2002 on the allocation of HTI plantation permits has been replaced by the Government Regulation No. 6/2007 that removes the requirement for HTI concessions to be allocated through auction (Bisnis Indonesia, 16 January 2007).
- HTI timber plantation concessions will be valid for up to 100 years, while HTR concessions rights will last for 60 years (Koran Tempo, 2 August 2006;

Sugiharto 2007d).

- The transport of plantation timber will not require SKSHH (*Surat Keterangan Sahnya Hasil Hutan*) legality certificates (Bisnis Indonesia, 11 May 2006). Instead, company invoice (*faktur*) will be sufficient.
- Timber plantation firms will be granted tax exemption for the first 8 years of operations.
- The prospective timber plantation investors will be allowed to use the available natural timber stock (natural forest cover) on their plantation concessions as collateral for commercial bank loans (Koran Tempo, 2 August 2006).
- The residual natural forest timber constitutes a substantial indirect subsidy as it can be used either as raw material for mills or sold to generate up-front cash reserves.
- The government will make available over \$5 billion in funding for timber plantation development through the Funding Body for Forest Development (*Badan Pembiayaan Pembangunan Hutan*, BPPH) at the Ministry of Forestry (Suara Pembaruan, 8 February 2007; Bisnis Indonesia, 12 February 2007). The BPPH plantation fund will come from Reforestation Fund (DR, *Dana Reboisasi*) revenues collected on the extraction of timber from natural forest.
- Areas with natural forest cover usable as bank loan collateral and already allocated for timber plantation development by the central government will be screened to ensure they are not burdened by local (district/provincial) concessions.
- Districts and provinces are allowed to assign unallocated land within the Conversion Forest category for plantation ventures (Investor Indonesia, 19 July 2006).

The incentives mentioned in this section have the potential to boost the declining timber industry in Indonesia by increasing investment, production, employment, and GDP. Although such positive results may occur, there is still a cause for concern because, as the next section will demonstrate, the new timber plantation policy contains many overly optimistic assumptions and it does not adequately address possible negative economic, social and environment repercussions.

4. POTENTIAL CHALLENGES IN IMPLEMENTING THE NEW TIMBER PLANTATION POLICY

While it is widely accepted that timber plantations are crucial for the long-term sustainability of Indonesia's forestry industries and for the reduction of deforestation and forest degradation, the plan to add 9 million ha of new timber plantations by 2016 is bound to create significant challenges to ensure economic feasibility, social equity, and environmental sustainability.

Policy Design

Although the new timber plantation policy's main goal is to increase timber yields, it is unclear the extent to which yields will actually increase in the future. This is primarily because there is little reliable information about the current extent of productive timber plantations in Indonesia. In 2005, government figures on what were said to be established HTI plantations ranged from 1.5 to 2.5 million hectares. In the same year, FAO (Food and Agriculture Organization) claimed there were 3.3 million hectares of such plantations in Indonesia (FAO 2005). In 2006, the Ministry of Forestry stated there were 3.03 million hectares of established timber plantations in the country (Ministry of Forestry 2007). As a result of these different estimates, the baseline used in the new timber plantation policy is unclear. This makes any projection of future timber growth and yield uncertain.

Furthermore, case studies indicate the planted area actually producing timber may be less than half of the officially quoted figures (The World Bank 2006:77; Sugiharto 2007c). The government states the current annual planting rate of industrial timber plantations (HTI) is 400,000 hectares and assumes it will continue in the years to come (Investor Indonesia, 3 August 2006). Community timber plantation (HTR) planting rate is assumed to be 200,000 hectares annually (Sugiharto 2007e). Both figures are disputed by forestry and plantation sector insiders (The World Bank 2006:77). They contend that Indonesia is far from planting 400,000 hectares of HTI plantations per year. Therefore, the way in which the new policy has been designed could provide a false hope of increase in timber supply.

Economic Loss

One of the controversial aspects of the new timber plantation policy is that it may result in significant deforestation. Clearing the forest for timber plantations would not only contradict the stated no-conversion commitment of the government, but it would also result in net economic loss to Indonesia's economy. A study analyzing the cumulative costs and benefits of the development of five major timber plantations and associated pulp and paper mills in Sumatra covering roughly 1.4 million hectares of forest has found that over the full cycle of the plantations' existence the net to the Indonesian economy is USD 3 billion (with a discount rate of 4% from 1984 to 2038)² (Maturana 2005). The net economic loss associated with these HTI plantations resulted primarily from the costs induced by the clearing of the forest and the destruction of forest functions. Among the plantations studied, only PT Musi Hutan Persada managed

to generate more benefits than losses. This was due to that fact that no forest clearing was involved as the company's concession was the only one covered mainly with grass and scrub. Therefore, forest conversion can lead to more economic losses than gains.

Subsidies are also a critical issue in the new timber plantation policy. The financing of timber plantations through subsidies in the form of soft loans from the Reforestation Fund (DR) at BPPH is a risky proposition that must be considered carefully. While there is little doubt that some form of subsidy for timber plantations is probably needed³, the key issue is to ensure that subsidy allocation is transparent and that subsidies are used effectively. Since 1984, the Indonesian government has poured nearly half a billion dollars in direct subsidies into timber plantation development, mostly from DR (Bull *et al* 2006: 19). The indirect subsidies have been many times higher, mainly in the form of under-priced timber that plantation companies obtained through the clearing of natural forest. Some estimates indicate the government allowed timber plantation developers to capture nearly 98% of the value of timber from natural forests, essentially surrendering it for free (Barr 2001, Maturana 2005).

Despite such generous subsidies, out of nearly 10 million hectares of land that have been allocated since 1990 for timber plantations in Indonesia, less than 30% have actually been planted, even though a substantially larger area has been cleared (The World Bank 2006:76). This has produced the ultimate irony of reforestation fund being used to further deforestation in Indonesia. All too frequently, reforestation fund enabled unscrupulous businessmen to undertake logging as an end in itself. Frequent markup schemes also enabled plantation operators to generate profits before plantation projects were actually implemented (Barr 2001:83). There is a real concern that DR-based loans currently offered through BBPH at the Ministry of Forestry could be misused in a similar fashion.

One of key benefits that timber plantation development is expected to provide is a large number of jobs. In theory, this may be correct. A recent study by Purnomo (2006) shows that establishing a 500,000-hectare timber plantation in Indonesia could generate about 600,000 jobs in the plantation sector and 75,000 jobs in pulp and paper production. However, there are limitations on these employment prospects. Key among those weaknesses is high seasonality of timber plantation jobs, which peak in year 1 and year 7 and provide comparatively little employment in between (Cossalter and Pye-Smith 2003, Obidzinski and Barr 2005). Purnomo (2006) concludes that smallholder timber plantations mixed with other agricultural activities are a far better option than timber planting alone in terms

² This figure was calculated by multiplying the total area logged with the total economic value of logged-over forests. The HTI plantations studied included the following: Inti Indo Rayon (associated with Toba Pulp Lestari mill in North Sumatra), Arara Abadi (associated with Indah Kiat mill in Riau), Riau Forestry (associated with Riau Andalan Pulp and Paper mill in Riau), Wira Karya Sakti (associated with Lontar Papyrus mill in Jambi), and Musi Hutan Persada (associated with Tanjung Enim Lestari mill in South Sumatra) (Maturana 2005).

³ Nearly all timber plantations in the world have been established using some sort of subsidy (Bull *et al.* 2006:14)

of the number of jobs created and sustained because a mixed economy can sustain employment through the “lull” periods.

The price of timber is also an important factor. If it is not high enough, people will not be interested in out-grower schemes and they will not be seeking direct employment either. For instance, the price of plantation timber per cubic meter in Sumatra is about USD 20 which is considered barely above the cost of production (USD 2-3), while the profitability of oil palm and rubber is at least eight times higher (Straits Times 2008; MRB 2008). Such low prices for plantation timber create disincentives for the local people to actively support the development of timber plantations (Siregar et al 2007).

Legal and Social Implications

The vast areas slated for timber plantation development are fraught with legal uncertainty. While the central government admonishes local administration to honor plantation concession licenses allocated by Jakarta, local government institutions make their own, often contradictory, interpretation of concession allocation laws (Barr *et al.* 2006, Djadjono 2007). While this generates short-term benefits for the local administration, it encourages illegal activities and creates legal confusion.

The legal uncertainty in plantation projects is further worsened by the ambiguous status of community property rights inside the concession areas. Even with the introduction of what is considered a progressive and accommodating Government Regulation No. 6/2007 which provides communities the ability to manage forests, the status of community rights remains uncertain (Sugiharto 2007b). There are virtually no new developments in regard to community property or ownership rights. With plantation projects moving ahead rapidly and the process towards accommodating community property rights being uncertain at best, the implementation of plantation projects is likely to be prone to social conflict (Noor and Syamanda 2006, urgeward 2007, Wakker 2006)

Environmental Repercussions

The officially stated goal of the new timber plantation policy is to bridge the supply-demand gap and make the timber processing industry in Indonesia sustainable, thereby, reducing the pressure on natural forest. As it currently stands, however, vast forested areas are likely to be cleared for the accelerated timber plantations policy. The main land use category targeted for plantations in Indonesia is Conversion Forest which, in 2003, covered 22.7 million hectares (The World Bank 2006:23). It is generally assumed that this land-use category includes mainly forest areas that are already degraded beyond recovery, or are denuded all together. However, over 10 million hectares within the conversion forest land-use category have good forest cover. Clearing millions of hectares of tropical forest to create space for plantations would be a complete contradiction of the official stated goal of timber plantation policy, which

is to reduce the pressure on the natural forest in Indonesia. Forest clearing would also run counter to the official (although not legally binding) government moratorium on the conversion of natural forest to other uses (Colchester *et al.* 2006:67-68). As mentioned earlier, the loss of primary forests will also negatively affect biodiversity and could lead to the loss of a range of endangered species (Abdullah and Nagagoshi 2006, Wakker 2006). The water quality will also become negatively affected as in the case of past plantations expansion in Kalimantan and Sumatra (Friends of the Earth et al. 2008, Noor and Syumanda 2006).

In addition to affecting forest cover, it is expected that with each successive rotation of timber plantations soil quality will deteriorate (Makensen and Folster 2000). This is especially true in Indonesia where improved genetic stock and efficient fertilization technologies are not used widely (Pirard 2007). Finally, despite government claims that in 15-20 years plantation timber supply will be sufficient to fulfill all timber needs in Indonesia, collaborative research by the Center for International Forestry Research (CIFOR), Bogor Agricultural University (IPB), Department for International Development-UK (DFID), and the World Bank shows that even if the plantation expansion is implemented flawlessly, there will continue to be a timber shortfall for a considerable time to come (MFP 2006). It is therefore doubtful whether timber plantation development on its own can balance the supply-demand disparity in Indonesia.

5. TOWARDS A FEASIBLE TIMBER PLANTATION DEVELOPMENT POLICY IN INDONESIA

There is little doubt that timber plantations are critical for the future of Indonesia’s wood-processing industries. The supply-demand imbalance affecting these industries for decades can only be addressed through a strategic program featuring timber plantation development as a key component. Since nearly 50 million hectares of land in Indonesia are thought to be deforested or degraded and in need of rehabilitation, timber plantations could provide a framework for such rehabilitation processes. Rehabilitating degraded lands and in the process growing timber for Indonesia’s woodworking industries would indeed be an optimal situation with multiple benefits. Under such a scenario, the government target of developing 9 million hectares of new timber plantations by 2016 is in principle a positive and promising proposition.

However, there are numerous challenges that come with radically accelerating the development of timber plantations. In order to ensure that this policy does not backfire by offering little or no contribution to alleviating the supply-demand imbalance in Indonesia’s forestry sector and instead accelerates the destruction of the remaining natural forest, it is critical to analyze and address the shortfalls of the new timber plantation policy.

The research needed to ensure sustainable establishment and management of timber plantations will have to begin with determining a solid baseline data on the current status of

timber plantations in Indonesia and their performance. This is because any future performance projections are meaningless without a clear understanding of the current situation. Since a range of varied estimates is being mentioned on such basic issues as the area planted, annual rate of planting, timber growth, and yield, it is important to reconcile the existing estimations and produce an authoritative “state of timber plantations” in Indonesia. Acquiring the correct baseline data will also help determine the extent to which timber plantations can be expanded while minimizing negative ecological impacts and keeping deforestation and forest degradation to a minimum.

Once a comprehensive assessment of the “state of timber plantations” in Indonesia is available and the effective plantation area, annual planting rate, timber growth and yield are known, it is critical to assess the implications this information will have for the supply-demand equation in the forestry sector. Reliable data on the performance of timber plantations to date will shed light on the feasibility of timber plantation development and production targets through 2016, thus ascertaining the realistic supply of timber that can be expected. This in turn, will provide a definitive answer to the questions of whether, and if so to what extent, simultaneous industrial downsizing is necessary, and whether or not an upgrade or expansion of timber processing industries is possible.

In addition, it is important for the government to realize that the accelerated development of timber plantations, even if strengthened by realistic data and reliable projections, will be counterproductive if these plantations are allowed to be established at the expense of natural forests. While in the short term it may create some benefits, overall it will result in significant costs being absorbed by the Indonesian economy. The declared goal of the expanded timber plantation program is to redress the supply-demand imbalance in Indonesian forestry and by doing so, reduce the pressure on natural forests. Under the current forest classification system, nearly 10 million hectares of tropical forest are slated for conversion to make room for timber and other plantations. Therefore, it is critical for the remaining natural forest to be excluded from further conversion. At the same time, the current legally non-binding commitment of the Indonesian government to halt the conversion of natural forest to other uses should become a law.

The current funding system for the development of timber plantations urgently needs at least two key modifications to ensure that it supports responsible timber plantation entrepreneurship. First, the regulation allowing timber plantation concession holders to use the remaining natural forest cover on their concessions as collateral for commercial bank loans should be removed. This is because, as past experience shows, it will encourage rent-seeking behavior whereby profiteering from subsidized bank loans and subsequent clear-felling of the forest will become an end in itself. Second, the use of the reforestation fund for timber plantations should be limited to community-based plantation projects (HTR) only and additional regulatory measures should be put in place to ensure that community-based

timber projects are not co-opted by unscrupulous business interests seeking to take advantage of subsidized funding. More emphasis should be placed on encouraging large scale timber plantation investment by easing bureaucratic bottlenecks and streamlining administrative procedures rather than injecting direct subsidies through soft loans. It is also important that indirect subsidies, such as near tax-free natural forest timber, be removed. This will help ensure that serious and capable timber plantation investors enter the fray.

The legal uncertainty resulting from unclear status of community property rights in timber plantation areas needs to be addressed if the planned plantation projects are not to be mired in conflict and stagnation. At the very least, the supporting government regulations and district/provincial level legislation necessary to operationalize the usufruct rights associated with village forest, community forest, and community plantation forest put forth in the Government Regulation No 62007 should be implemented without delay. A range of accompanying regulations on community participation in plantation ventures (e.g. profit sharing, employment and infrastructure) should follow.

Once timber plantation data are clear, costs and benefits of the plantation program assessed, funding mechanisms transparent and community property rights clarified, the final step towards informed and feasible timber plantation policy should include a formulation of an appropriate combination of large and small-scale timber plantation projects for the national timber plantations portfolio. Such an approach would help avoid the problem of the timber plantation sector being dominated by a limited number of politically connected conglomerates. Doing so would help ensure optimal outcomes for Indonesia’s woodworking industries, remaining natural forest, and rural livelihoods.

REFERENCES

- ABDULLAH, S.A. and NAGAGOSHI, N. 2006. ‘Forest fragmentation and its correlation to human land use change in the state of Selangor, peninsular Malaysia’ in *Forest Ecology and Management* 241: 39-48.
- BARR, C. 2001. *Banking on sustainability: structural adjustment and forestry reform in post-Suharto Indonesia*. WWF, Washington D.C. and CIFOR, Bogor.
- BARR, C., RESOSUDARMO, I.A.P., DERMAWAN, A., McCARTHY, J. with MOELIONO, M. and SETIONO, B. (eds.) 2006. *Decentralization in Forest Administration in Indonesia: Implications for Forest Sustainability, Economic Development and Community Livelihoods*. CIFOR Bogor.
- BISNIS INDONESIA. 2006. Angkutan kayu HTI bebas SKSHH. *Bisnis Indonesia*, 11 May.
- BISNIS INDONESIA. 2006. RI Berpotensi Dominasi Industri Kehutanan. *Bisnis Indonesia*, 19 June.
- BISNIS INDONESIA. 2006. Korindo Tambah Investasi Rp2 Triliun di Hutan Tanaman. *Bisnis Indonesia*, 7 August.
- BISNIS INDONESIA. 2007. Dephut agar cegah

- konglomerasi areal HTI. *Bisnis Indonesia*, 16 January.
- BISNIS INDONESIA. 2007. Badan Pembiayaan Kehutanan Terbentuk. *Bisnis Indonesia*, 12 February.
- BULL, G., BAZETT, M., SCHWAB, O., NILSSON, S., WHITE, A. and MANGINNIS, S. 2006. Industrial forest plantation subsidies: impacts and implications. *Forest Policy and Economics* 9:13-31.
- COLCHESTER, M., JIWAN, N., ANDIKO, SIRAIT, M., FIRDAUS A. Y., SURAMBO A., and PANE, H. 2006. *Promised land. Palm oil and land acquisition in Indonesia: implications for local communities and indigenous peoples*. Sawit Watch, World Agroforestry Centre, HuMA, Forests Peoples Programme. Bogor, Indonesia.
- COSSALTER, C. and C. PYE-SMITH. 2003 *Fast-Wood Forestry: Myths and Realities*. Bogor: Center for International Forestry Research.
- DJADJONO, A. 2007. Menyongsong Reforma Agraria. *AgroIndonesia*. 26 December-2 January.
- FRIENDS OF THE EARTH, LIFEMOSAIC, AND SAWIT WATCH (2008) *Losing Ground: The human rights impacts of oil palm plantation expansion in Indonesia*. Available from: <http://www.foe.org>
- HAMILTON, C. 1997. The sustainability of logging in Indonesia's tropical forests: a dynamic input-output analysis. *Ecological Economics* 21(3):183-195.
- IGES (Institute for Global Environmental Strategies), Ministry of the Environment Japan, Ministry of the Environment Indonesia, CER Indonesia. 2006. *CDM country guide for Indonesia*. Tokyo: Ministry of the Environment.
- INVESTOR INDONESIA. 2006. KPEN: Tata Kembali Sektor Kehutanan. *Investor Indonesia*, 23 June.
- INVESTOR INDONESIA. 2006. 45 Izin Pelepasan Hutan Terancam Dicabut. *Investor Indonesia*, 19 July.
- INVESTOR INDONESIA. 2006. Korea Sepakat Kembangkan HTI 500 Ribu Ha. *Investor Indonesia*, 3 August.
- JAKARTA POST. 2006. APKI to phase out natural-forest timber by 2009. *Jakarta Post*, 29 June.
- KOMPAS. 2006. Kayu Alam Distop Total Mulai 2014 Laju Degradasi Hutan 2,87 Juta Hektar per Tahun. *Kompas*, 28 April.
- KORAN TEMPO. 2006. Indonesia Gandeng Investor Korea Selatan Bangun Hutan Industri. *Koran Tempo*, 2 August.
- KORAN TEMPO. 2006. Ekspor Produk Kayu Terpuruk Tajam Nilai Ini Terendah Sepanjang Sejarah. *Koran Tempo*, 8 November.
- MACKENSEN, J. and FOLSTER, H. 2000. Cost analysis of a sustainable nutrient management of fast growing tree plantation in East Kalimantan, Indonesia. *Forest Ecology and Management* 131(1):239-253.
- MAYALYSIAN RUBBER BOARD (2008) *Daily Rubber Physical Prices*. Available from: <http://www3.lgm.gov.my/mre/dailytonne.aspx>
- MATURANA, J. 2005. *Economic costs and benefits of allocating forest land for industrial tree plantation development in Indonesia*. CIFOR Working Paper No. 30, Bogor.
- MFP (Multistakeholder Forestry Programme). 2006. *Timber industry revitalization in the 1st quarter of the 21st century*. Policy Brief.
- MINISTRY OF FORESTRY. 2006. *Rencana pembangunan jangka panjang kehutanan tahun 2006-2025 (Long-term forestry development plan 2006-2025)*. Jakarta: Ministry of Forestry.
- MINISTRY OF FORESTRY. 2007. *Road Map revitalisasi industri kehutanan Indonesia (Road map towards revitalization of Indonesian wood-processing sector)*. Jakarta: Ministry of Forestry.
- NOOR, R. and R.SYUMANDA. 2006. *Social conflict and environmental disaster: A report on Asia Pulp and Paper's operations in Sumatra, Indonesia*. Montevideo: World Rainforest Movement.
- OBIDZINSKI, K. and BARR, C. 2005. *Forestry sector employment in Indonesia's Riau province*. Research report for WWF-US and CIFOR, Bogor.
- PIRARD, R. and L.C. IRLAND (2007) 'Missing links between timber scarcity and industrial overcapacity: Lessons from the Indonesia pulp and paper expansion' in *Forest Policy and Economics* 9: 1056-1070.
- POTTER, I. and LEE, J. (1998) 'Tree planting in Indonesia: trends, impacts and directions.' Occasional Paper No. 18. Center for International Forestry Research (CIFOR), Bogor, Indonesia.
- PURNOMO, H. 2006. Trends and future scenarios of forestry and other land uses employment in Indonesia: a modeling approach. *Economics and Finance in Indonesia* 54(1):1-24.
- SAYER, J., CHOKKALINGAM, U., and POULSEN, J. 2004. The restoration of forest biodiversity and ecological values. *Forest Ecology and Management* 201(1):3-11.
- SCHLOENHARDT, A. (2008) *The illegal trade in timber and timber products in the Asia-Pacific region*. Research and Public Policy Series No. 89. Canberra: Australian Institute of Criminology.
- SINAR HARAPAN. 2006. Dephut Segera Kembangkan HTI 3.6 Juta Hektar. *Sinar Harapan*, 28 November.
- SIREGAR, U.J., RACHMI, A., MASSIJAYA M. Y., ISHIBASHI, N., and ANDO, K. 2007. Economic analysis of Segon (*Paraserianthes falcataria*) community forest plantation, a fast growing species in East Java, Indonesia. *Forest Policy and Economics* 9(7):822-829.
- STRAITS TIMES (2008) 'Palm Oil Prices Will Recover' 25 November 2008. Available from: http://www.straitstimes.com/Breaking%2BNews/Money/Story/STIStory_306737.html
- SUARA PEMBARUAN. 2006. 2014, Kehutanan Sumbang US\$ 20 Miliar. *Suara Pembaruan*, 17 May.
- SUARA PEMBARUAN. 2007. Dephut Siapkan Rp 11 Triliun Untuk Pembangunan Hutan Masyarakat. *Suara Pembaruan*, 8 February.
- SUGIHARTO. 2006a. Kinerja Industri Kehutanan Makin Buruk. *AgroIndonesia*, 19-25 December.
- SUGIHARTO. 2006b. Revitalisasi Bukan Hitungan Hari. *AgroIndonesia*, 19-25 December.

- SUGIHARTO. 2007a. Eropa Berminat Investasi Pulp. *AgroIndonesia*, 23-29 January.
- SUGIHARTO. 2007b. PP No.6/2007 Resmi Disahkan. Awal Bangkitnya Kehutanan Lagi. *AgroIndonesia*, 16-22 January.
- SUGIHARTO. 2007c. Mimpi Dengan Dua Juta Hektar. *AgroIndonesia*, 30 January-5 February.
- SUGIHARTO. 2007d. HTR tidak dapat diwariskan. *AgroIndonesia* 4(137):6.
- SUGIHARTO. 2007e. Agenda baru memberantas kemiskinan. *AgroIndonesia* 3(131): 4.
- TEMPO INTERAKTIF. 2006. Jatah Tebangan Kayu Naik Untuk Penuhi Target Ekspor Rp 74 Triliun. *Tempo Interaktif*, 22 July.
- UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION (2005) *Forest Resources Assessment Global Tables*. Available from: <http://www.fao.org/forestry>
- URGEWALD (2007) *Banks, Pulp and People: A Primer on Upcoming International Pulp Projects*. Amsterdam: urgewald.
- WAKKER, E. 2006. The Kalimantan Border Oil Palm Mega-Project. Amsterdam: AIDEnvironment.
- WIBOWO, B. 2007. Industri Pulp dan Kertas Tetap Prospektif di Tengah Krisis. *AgroIndonesia*, 26 December - 2 January.
- WORLD BANK. 2006. *Sustaining economic growth, rural livelihoods, and economic benefits: strategic options for forest assistance in Indonesia*. Jakarta: World Bank Office.