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New round of pulp and paper expansion in Indonesia: What do we know and what do we need to know?

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Introduction

Since the late 1980s, Indonesia's pulp and paper industries have expanded rapidly to push the country into the ranks of the world's top 10 producers. Indonesia's pulp production capacity grew from 606,000 to 7.9 million metric tons per year between 1988 and 2010, while the paper industry's processing capacity rose from 1.2 million to 12.2 million tons per year. In the same period, pulp production has increased from 368,000 to 7 million tons, and paper production increased from 930,000 tons to 10.5 million tons (APKI 1997, Ministry of Industry 2011). In 2010, pulp and paper products generated US\$5.7 billion in export earnings. The industry accounts for approximately 1 percent of Indonesia's GDP. In 2010, the industry provided approximately 250,000 jobs excluding those in the timber plantation subsector (Ministry of Industry 2011).

Despite the economic potential, literature sources indicate some long standing structural problems in the pulp and paper sector. Since its establishment in the late 1980s, the pulp and paper industry has been heavily reliant on the natural forest for timber (Barr 2001). The high growth that has occurred in the pulp and paper industry has proceeded far more rapidly than efforts to secure a sustainable supply of raw materials through the development of pulpwood plantations (Cossalter 1998). To date, Indonesia's pulp mills have relied heavily on unsustainable and much of which is obtained through the clear-cutting of natural forests. As of 2010, key pulp and paper producers in Riau, Sumatra, sourced more than half of their raw material from the conversion of natural forest (IWGFF 2011). Although extensive timber plantation development programs have been implemented over the years, the supply of timber available from these plantations remains to be insufficient. As a result, the pulp and paper industry has been associated with negative environmental impacts. The development of timber plantation has often been carried out by displacing forest communities, resulting in conflict (Human Rights Watch 2003).

The growth of Indonesia's pulp and paper industries has involved an aggregate capital investment of at least US\$16 billion by 2010 (Ministry Industry 2011). The fact that Indonesian companies have made investments on this scale without first securing a legal and sustainable raw material supply, however, suggests that many of these projects carry a substantial degree of financial risk. To a significant degree, Indonesian pulp and paper companies have been motivated to invest such large sums in high-risk projects because their owners have been able to avoid much of the financial risk involved. The Indonesian government has provided substantial capital subsidies to pulp and paper producers, including the provision of pulpwood fiber at costs well below its stumpage value. The government's weak regulation of the nation's financial system has enabled pulp and paper companies to employ a variety of illegal practices to obtain discounted finance. Also, international financial institutions have helped Indonesian producers to borrow billions of dollars from offshore investors without rigorously assessing either the long-term viability of those firms' fiber supplies or the legality of their financial practices (Barr 2001).

Long term vision of Indonesia's forestry sector and the role of pulp and timber plantations

Despite these shortcomings, the pulp and paper and timber plantation sectors are seen as the corner stone of the future of Indonesia's forestry sector. Indonesia's National Long Term Forestry Plan envisages that by 2025 timber plantations will cover 14.5 million hectares and will annually produce

over 300 million m³ of timber (Ministry of Forestry 2006). A large part of this volume is expected to support the growth in the pulp and paper sector. As a result, timber plantation and pulp mill investments continue to receive priority consideration by the government. In April 2011, the Ministry of Forestry (MoF) announced several large investments in the pulp and timber plantation sector (*Bisnis Indonesia* 2011). The new investment plan envisages the construction of 7 new pulp mills with the capacity of nearly 5 million tons and nearly 2 million hectares of new timber plantations (HTI) with the overall cost of USD 14 billion. The plan is to be implemented by 2017.

The new investment in timber plantations and pulp mills is presented by MoF as a policy step that will help to bring about the transformation of Indonesia's wood-working sector from one that is currently in decline and suffers from shortages of timber to one that is a major contributor to the Indonesian economy and is based entirely on timber plantations. The expansion program is a key element in MoF's long-term plan to revitalize forest industries, but it also is expected to reduce rural poverty, create jobs, and stimulate economic development.

While the timber plantation and pulp industry are broadly seen as an important part of the future of Indonesia's forestry sector, the current expansion plans raise a number of concerns. The new expansion comes at the time when the wood industry in Indonesia still faces serious shortages of raw material.

According to CIFOR estimates, in 2008, Indonesia's wood processing sector had a deficit of at least 5 million m³ of timber. This level of deficit already is a significant improvement in comparison to earlier years. More effective government measures to curb illegal logging have contributed to this success. Another main cause was a dramatic increase in the production of plantation timber in 2007 and 2008, as reported by the Ministry of Forestry. The significant increase in the production of plantation timber is a remarkable achievement. However, there are concerns about the accuracy of the sudden increase of timber production in these years because of a decline in the plantation establishment rate 7-8 years prior (2000, 2001) when plantation timber coming online in 2007 and 2008 would have been planted. It may be that plantation timber volume in these two years increased dramatically due to the cumulative effect of planting over a longer period of time. However, it is not clear how these estimates have been arrived at. It is therefore likely that natural forest clear cuts continue to be an important source of timber for the pulp industry. Indeed, MoF statistics show that timber production from wood utilization permits (IPK), or clear cuts, has quadrupled from 1.6 million m³ in 2004 to 6.6 million m³ in 2009. Similarly, a recent report by the Indonesian Working Group on Forest Finance (IWGFF) shows that in 2010 more than half of the pulp and paper sector's timber supplies in Riau came from natural forests.

The *Bisnis Indonesia* article also shows the new expansion plans for timber plantations and pulp mills largely targets Kalimantan and Papua. This is a cause for concern as well. There are ample areas of degraded land that could be used for timber plantations in Kalimantan (East Kalimantan alone has 9.6 million ha of degraded land). But the fact that large plantation areas are aimed for Papua is worrisome because degraded land there is scarce. This implies that some natural forest may be cleared for timber plantations. As a result, because the capacity expansion of new pulp industries would prolong the timber supply-demand gap, and because there is uncertainty about whether or not new plantations can be developed soon enough, it would be prudent to close the existing supply-demand gap first before adding additional industrial capacity.

Problems with sustainable supplies of timber from plantations

One of the most fundamental problems facing the pulp sector, and other wood-processing industries, in Indonesia today is the uncertainty over the extent of available wood fiber from industrial and smallholder plantations. According to Ministry of Forestry (MoF) statistics, the sourcing of timber from plantations has increased dramatically since 2007:

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	HTI Planted Area (ha)	Cumulative Area (ha)	HTI Log production (m3)
2000	82,317	2,618,872	3,783,604
2001	67,472	2,686,344	5,567,282
2002	118,508	2,804,852	4,242,532
2003	124,691	2,929,543	5,325,772
2004	131,914	3,061,457	7,329,028
2005	163,125	3,224,582	12,818,199
2006	237,099	3,461,681	11,451,249
2007	412,921	3,874,602	20,614,209
2008	305,465	4,180,067	22,321,885
2009	279,959	4,460,026	18,953,930
2010	457,239	4,917,265	18,566,254
2011*	107,319	5,024,584	5,429,290

Source: Ministry of Forestry (2011a,b) Note: *: figures by second quarter of 2011

While impressive, this growth is problematic. If indeed the area of productive timber plantations reached 4.9 million hectares in 2010 with a conservative Mean Annual Increment of 15 m³ per hectare per year, this means that Indonesia should have mature, ready to harvest, standing stock of about 73.5 million m³ of timber that year. The reported production is significantly lower and calls into question the veracity of forestry statistics.

Perhaps recognizing the above mis-match early, in 2006 the MoF announced an ambitious plan to accelerate the development of timber plantations with their long-term strategic plan for 2006–2025. The main focus of this plan is the revitalization of Indonesia's forest industries (Ministry of Forestry 2006). Under this new policy, the government planned to establish 9 million hectares of new timber plantations by 2016 (*Sinar Harapan* 2006). Of this total, approximately 5.4 million hectares will be smallholder community ventures called HTR (*Hutan Tanaman Rakyat*, community plantation forest). The remaining 3.6 million hectares will be developed. The main component of this new policy, HTR, was planned for 102 districts in eight provinces in Kalimantan and Sumatra islands (Ministry of Forestry 2007), but it was soon thereafter extended to all of Indonesia (Sugiharto 2007). By 2010, it was targeted that 5.4 million hectares of land would have been allocated, and 1.97 million hectares would have been actually planted. Once productive, these new plantations are expected to produce enough raw materials to spur growth in the timber industry sector (*Kompas*, 2006).

However, after nearly four years of implementation, only a handful of HTR applications have been approved by the Ministry. By mid 2011, the Ministry has allocated 650,000 ha of land for HTR concessions in 26 provinces, while approved HTR permits covered only 127,000 ha (Ministry of Forestry 2011). These figures fall far short of the official target of 5.4 million hectares of land that should have been allocated, and nearly 1.97 million hectares that should have been planted according to the original plan. This slow pace of development is puzzling because the industry and community timber cooperatives initially responded enthusiastically to the policy.

Although timber plantations are undoubtedly crucial for the long-term sustainability of Indonesia's forestry industries, there are several challenges that hinder the development of HTR. First, the financial feasibility of HTR – especially those growing fiber for pulp and paper mills – is less attractive (Schneck 2009). It is not clear if the government guarantee on the marketing of timber will be

implemented, and how it will work. HTR is also less attractive compared to other options, such as oil palm and rubber (Rohadi *et al.* 2010). Second, the amount of degraded production forest unencumbered by any proprietary claims seems available on paper only. For example, the land designated for HTR in Riau Province is slightly over 350 000 ha for the period of 2007–2016. However, according to the Provincial Forestry Office, only about 4 000 ha are considered clean and clear while the rest of the land is claimed by local communities or encroached upon by migrants. A related problem is that any land that can be found for HTR plantations is likely to be fragmented and scattered. If the land is dispersed, transportation cost will increase, lowering the profit from HTR for the smallholders. Third, HTR has not provided business certainty. Once community group receive the permit, it cannot be traded, transferred or inherited, thus seriously limiting household management options. Fourth, although HTR is backed by huge financial support, the application for funding under HTR program has to be submitted in Jakarta. This means that local applicants will need to team up with companies and individuals with a knowledge and access to appropriate channels at the Ministry of Forestry. Finally, While one of the officially stated objectives of HTR policy is to rehabilitate degraded natural forest, it is not clear what “degraded natural forest” means and what criteria are to be used to locate it on the ground. In practice, it may lead to significant removal of residual natural forest cover before planting is implemented. This is because the term degraded production forest is often equated with logged over forests (Obidzinski and Dermawan 2010).

Implications and ways forward

Industrial timber plantations in Indonesia play an important economic and environmental role and their significance will grow in the future. They feed the pulp and other wood-working industries. They also help regenerate deforested areas. Likewise, the capital intensive and technologically advanced pulp and paper sector plays a major role in the future of Indonesia’s timber sector.

However, the fact remains that currently nearly half of the wood fiber demand in the pulp sector continues to be met with timber sources from natural forest clear-cuts. Therefore the size of the recently proposed expansion, the plan for rapid implementation, not entirely clear contribution to policy objectives of reducing poverty, creating jobs, and stimulating economic growth, and potentially negative impacts on forest, call for additional time and care to be taken to study these aspects of the proposed investment program.

Care must be taken to ensure that new timber plantation investments are developed on degraded, non-forested land to ensure that the recently announced moratorium on the conversion of primary forests and peatlands is not undermined by the demand for industrial fiber. The Indonesian public needs to know more about plantation and mill investment plans as many people in rural areas will be affected by them.

Greater disclosure of information is also needed given the large size of this expansion and vast financial resources to be invested (USD 14 billion). The financing agencies that are expected to support this expansion program need to have a clear understanding not only of the potential economic returns but also of the costs, impacts, and trade-offs.

They need to know where and how the land will be acquired and what kind of arrangements will be made with local land users. Finally, more policy options are needed to create incentives for rural communities to make tree planting an economically feasible pursuit. This information is urgently needed to inform the current pulp and timber expansion plans so they do not aggravate the problems but contribute to a better future for Indonesian forestry.

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