

Improving opportunities for smallholder timber planters in Vietnam to benefit from domestic wood processing

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SUMMARY

Since 1992, the Vietnamese Government has implemented far reaching policies and programs to increase the country's tree cover by promoting plantation forestry. In addition to providing environmental services, these efforts are intended to alleviate rural poverty through sustainable forestry. Towards this goal, more than 4 million ha have been assigned to households and rural cooperatives through forestland reallocation or management contracts. Although the extent of primary forest has continued to decrease, overall tree cover has increased by 47% since 1990, largely due to the spread of tree plantations. Meanwhile, in the last decade, with Vietnam's economic liberalisation policies, the timber processing industry has shifted from State-owned enterprises to private companies. By 2008, the processing sector had expanded into a \$3 billion industry, one of Vietnam's top five export sectors and a major source of demand for logs and sawnwood.

In 2010, an assessment in the industrial wood processing center of Binh Dinh province was conducted to gain insights on market opportunities for smallholder produced timber. The assessment revealed a number factors preventing local smallholders from fully capitalising on demand for wood from the processing industry. These included competition between the manufacturing sectors (e.g. furniture, woodchips and pulp industries), which creates an incentive for premature timber harvesting, and a lack of domestic supply of certified timber, resulting in Vietnam's furniture companies importing raw materials. To address the former, better segmentation of the wood production for the different sectors is recommended. The latter might be addressed through more aggressive efforts to certify household-scale timber plantations through simplified schemes such as the Forest Stewardship Council's Small and Low Intensity Managed Forests (SLIMF) certification, pending additional research to better understand the potential costs, benefits and risks of such a strategy.

Keywords: timber plantations, smallholders, wood processing, SLIMF certification, Vietnam

Augmenter les possibilités, pour les planteurs forestiers du Vietnam, de tirer parti de la transformation des bois domestiques

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Depuis 1992, le gouvernement vietnamien a mis en œuvre des politiques et des programmes d'envergure visant à accroître la couverture forestière du pays, en encourageant la plantation forestière. Outre la fourniture de services environnementaux, ces efforts sont destinés à réduire la pauvreté rurale, grâce aux forêts durables. À cette fin, plus de 4 millions d'hectares ont été alloués à des familles et des coopératives rurales via des contrats de réallocation ou de gestion de parcelles forestières. Malgré la réduction continue de la surface des forêts primaires, la couverture forestière totale a augmenté de 47 % depuis 1990, en grande partie grâce à l'augmentation des plantations d'arbres. Dans le même temps, ces dix dernières années, compte tenu des politiques de libéralisation économique au Vietnam, les entreprises privées ont remplacé les entreprises étatiques dans l'industrie de la transformation du bois. En 2008, le secteur de la transformation était devenu une industrie de 3 milliards de dollars, l'un des cinq premiers secteurs d'exportation du Vietnam, et une source majeure de demande en grumes et bois sciés.

En 2010, une évaluation a été réalisée au centre industriel de transformation du bois de la province de Binh Dinh, afin d'obtenir des informations sur les opportunités de marché pour le bois produit à petite échelle. Cette étude a révélé que plusieurs facteurs empêchaient les petits producteurs locaux de pleinement profiter de la demande en bois de la filière de la transformation. Il s'agit notamment de la concurrence entre les secteurs manufacturiers (par exemple les industries de l'ameublement, de l'aggloméré et de la pâte à papier), qui incite à récolter le bois de manière précoce, ainsi qu'un manque de demande intérieure en bois certifié, qui oblige les fabricants de meubles vietnamiens à importer les matières premières. Afin de répondre au premier problème, une meilleure segmentation de la production de bois pour les différents secteurs est recommandée. Le second problème pourrait être résolu grâce à des efforts plus soutenus pour certifier les plantations de bois familiales, en mettant en place des dispositifs simplifiés tels que la certification SLIMF (« small and low intensity managed forests », petites forêts et forêts gérées à faible intensité) du Forest Stewardship Council (FSC), en attendant que de nouvelles recherches permettent de mieux comprendre les potentiels coûts, bénéfiques et risques d'une telle stratégie.

Mejorando las oportunidades para que los pequeños productores de madera en Vietnam se beneficien del procesamiento de madera doméstica

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Desde 1992, el gobierno vietnamita ha implementado políticas y programas a largo alcance para aumentar la cobertura de árboles en el país mediante la promoción de plantaciones forestales. Además de proporcionar servicios ambientales, estos esfuerzos están dirigidos a aliviar la pobreza rural a través de la silvicultura sostenible. En este sentido, más de 4 millones de hectáreas han sido asignadas a hogares y cooperativas rurales mediante la reasignación de tierras forestales o de los contratos de gestión. Aunque la extensión del bosque primario ha seguido disminuyendo, la cubierta forestal total ha aumentado en un 47% desde 1990, debido principalmente a la expansión de plantaciones de árboles. Mientras tanto, en la última década, debido a las políticas de liberalización económica de Vietnam, la industria de la transformación de la madera se ha desplazado de las empresas estatales a empresas privadas. Hasta 2008, el sector de la transformación se había expandido en una industria de \$ 3 mil millones, una de las mejores de los cinco sectores de exportación en Vietnam y una fuente importante de demanda de trozas y madera aserrada.

En 2010, se llevó a cabo una evaluación en el centro de procesamiento de madera industrial de la provincia de Binh Dinh para obtener información sobre oportunidades de mercado para los pequeños productores de madera. La evaluación reveló una serie de factores que impiden a los pequeños productores locales aprovechar plenamente la demanda de madera de la industria de la transformación. Estos incluyen la competencia entre los sectores de manufacturación (por ejemplo, las industrias de muebles, astillas de madera y pulpa), lo cual crea un incentivo para la tala prematura de los árboles, y la falta de oferta local de madera certificada, dando lugar a que fabricantes de muebles de Vietnam tengan que importar las materias primas. Para hacer frente a lo anterior, se recomienda una mejor segmentación de la producción de madera para los diferentes sectores. Esto último podría lograrse a través de esfuerzos más agresivos para certificar las plantaciones de árboles de pequeños propietarios, a través de esquemas simplificados, tales como la certificación SLIMF (Small and Low Intensity Managed Forests) del FSC (Forest Stewardship Council), quedando pendiente investigaciones adicionales para entender mejor los posibles costos, beneficios y riesgos de dicha estrategia.

BACKGROUND

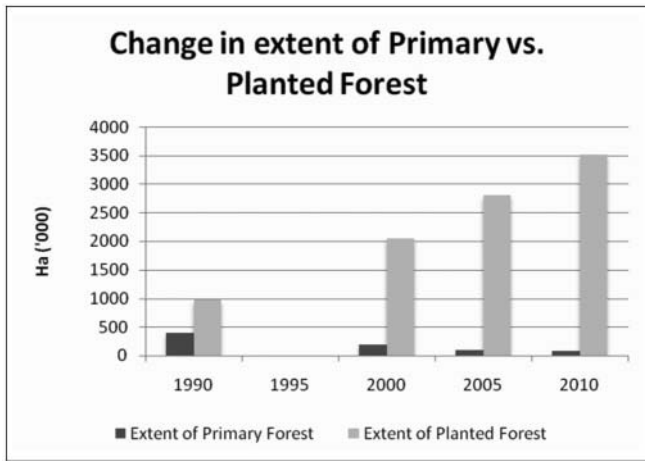
New government policies have caused a transition in Vietnamese forestry on several fronts, with the extent of land covered by trees increasing by 2% per year (Mather 2007, Vu and Pham 2001), timber production shifting from natural to plantation forestry, forest management devolving from state to local and household level, and an industrial transformation from State-owned to private industry. The Vietnamese Government has carried out a number of initiatives to increase the area of land covered by trees and at the same time provide more opportunities for smallholders to benefit from forest resources. One notable program is the 'Five Million Hectare Reforestation Program' (5MHRP), initiated in 1998, which aimed to increase the nation's forest cover to 43% by 2010 (Vietnam Government 1998).

In terms of increasing the area of the country covered by trees, and especially tree plantations, these policies have largely succeeded: Vietnam's overall extent of forest (as defined by FAO) reportedly has increased 47% between 1990 and 2010, to around 14 million ha (FAO 2010). On the other hand, while planted forests increased 260% over the same period, forests classified as "primary" decreased by 79% (Figure 1). Conversely, the area classified by the Vietnamese government as "natural forest" increased by 11% between 1993 and 2004 (Ngai *et al.* 2009), though classifications are not necessarily a reflection of the actual forest conditions. Good management and protection of both primary and natural forest requires continued attention, as does the role effective timber production from plantations might play in reducing Vietnam's dependence on imports of illegal timber from neighboring countries. For years, the booming processing

industry has placed pressures on Vietnam's natural forests (Sikor and To 2008). Meanwhile, the expansion of Vietnam's own tree cover has been accompanied by a displacement of deforestation beyond the country's borders to Cambodia, Laos, and beyond. It has been estimated that nearly 40% of the increase in Vietnam's forested land has been counterweighed by deforestation abroad, and a high dependence on imports of illegal timber (Meyfroidt and Lambin 2009).

The country's recent policy has focused efforts on increasing the supply of domestic timber to supply the wood processing sector with raw material. Where formerly Vietnam's wood processing sector was under central planning and heavily subsidised by cooperatives and the State, it is now multisectoral, market oriented, and accessible to a wide of range of economic actors, including large and small private companies, local smallholders and numerous intermediaries (Clement *et al.* 2007). Natural forests once provided most timber resources; in contrast, by the 2000s, plantations provided the majority of raw material to wood dependent industries, and domestic timber production has increased by around 10% annually since 2000 (GSO 2009). Government policy encourages and often mandates smallholder plantation forestry by allocating land to local households and providing seedlings to communities, along with other extension services (Clement and Amezaga 2009, Sunderlin and Ba 2005). Shifting government political and financial support from large scale state forest plantations to the community level has potential advantages, such as better protection of forests, improved livelihoods arising for more equitable benefit-sharing at the local level, and also potentially management systems that adapt local traditional technologies (Lamb 2011). Meanwhile, ownership of wood processing industries, once

FIGURE 1 From 1990 to 2010, while planted forests increased by 260%, forest classified as “primary” decreased by 80%. Source: FAO 2010



dominated by inefficient State owned companies, has shifted to private and joint venture ownership, in line with national economic liberalisation (Hieu 2004, Sikor and O'Rourke 1996).

Land allocation to smallholders for timber production, combined with a quickly growing wood product export industry, was expected to represent a great economic opportunity for rural residents. However, obstacles such as unfavourable prices, low yields (in part due to degraded soils and lack of inputs), and insufficient processing capacity had led to disappointing results by the mid 2000s (Hieu 2004, Thuan 2005). One recommended strategy to increase domestic demand for local timber was to increase the competitiveness of wood processing enterprises (Hieu 2004). Judging by the increase in furniture companies and the strong growth of furniture exports to premium markets, this has been accomplished (Figure 2). However, to what degree does increased demand

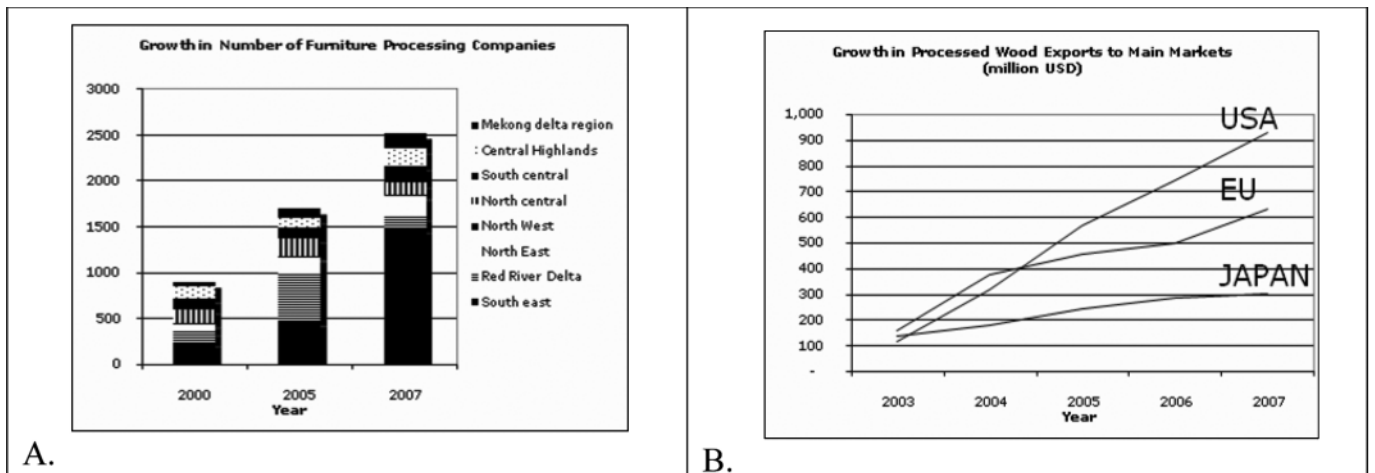
for raw material from the domestic processing industry – for furniture and other products such as woodchips – benefit smallholder producers?

For Vietnam’s wood processing sector to benefit local timber producers, it needs to use locally produced wood. However, with an international market increasingly demanding eco certified products, the cost of certification might represent a barrier to developing country timber producers in general, not to mention Vietnamese smallholders. It has already been noted elsewhere that processors can be forced to rely on imported certified timber (see Bartley 2010). Streamlined certification standards that accommodate smaller and less wealthy producers, such as the certification standard developed by the Forest Stewardship Council (FSC) for management of Small and Low-Intensity Managed Forests (SLIMF) (FSC 2004), is potentially one way to reduce the barriers faced by smallholders in developing countries, provide a number of social benefits and achieve better forest management (Udo de Haes *et al.* 2008; Box 1).

On the other hand, the expanding plantation area in Vietnam is a mixture of exotic species, formerly dominated mainly by *Eucalyptus camaldulensis* (Tran 1996) and rapidly giving way to *Acacia auriculiformis*, *A. mangium* and hybrid acacias (Van Bueren 2004). Especially in the case of *A. mangium*, in addition to the low biodiversity expected in monocultural plantations, there are concerns about potential invasiveness, and this requires some discussion about the conditions under which Vietnam plantations are FSC certifiable (Box 2), which could prove important to ensuring the competitiveness of the domestic vs. imported wood supply in Vietnam’s wood processing industry. This question is important to the potential for smallholders to benefit fully from the programs created to bring them economic opportunity and engage them to manage forests.

For the purpose of gaining insights on market demand for smallholder produced timber and sectoral structural issues affected local producers’ opportunities to market their output,

FIGURE 2 A. Between 2000 and 2007, the number of furniture companies in Vietnam increased by 180%. B. From 2003 to 2007 annual exports to major markets increased from \$400 million to nearly \$2 billion. Source: Ton 2009



Box 1. The promise of FSC Small Low Intensity Managed Forest Certification (SLIMF)

FSC promotes SLIMF certification to smallholders, promising lower certification costs and streamlined procedures. In the case of SLIMF certifications for groups of landholders, the further benefits include lower cost per member, the potential to share information that facilitates maintenance of the certificate, and better economies of scale when negotiating prices and marketing the product. However, although the certification procedures are simplified, the basic principles and criteria of FSC certification are maintained, with some interpretation to take into account differences in scale and ownership of smallholdings.

Certification does not come without costs, and smallholders either need to raise such costs themselves, e.g. through contributions from group members, or may receive external support from governmental or non-governmental sources and from FSC-sponsored programs. The costs will vary greatly from site to site, but generally include:

The *direct costs* of the evaluation by the auditors including:

- meetings and preparation before the official audit
- document preparation and field visits
- office visits by auditors
- related work after the audit

Indirect costs might include:

- Expenses to recruit and train staff, and keep records
- Time and funds needed for changes in management practices
- Other costs, depending on the recommendations arising from the audits

(Adapted from FSC 2009)

BOX 2. The debate on *Acaciamangium*

Acacia mangium is a pioneer tree species which may become invasive. It quickly colonises degraded and open areas such as roadsides and abandoned lands, and is increasingly common in Southeast Asia. It has occasionally been described as an invasive species that could endanger native biota in some ecosystems, especially when it is deliberately introduced and cultivated. For example, a study in Borneo found that *A. mangium* outcompetes native *Melastoma* species under high light conditions (Osunkoya et al. 2005).

On the other hand, new plantations of *A. mangium* may be an effective pioneer species in bare and degraded land and improve the site for colonisation by other species. While it is subject to heart rot and other pathogens, it is nonetheless economically useful in some cases, and may not always be an invasive threat (Lee 2004).

According to Forest Stewardship Council principles, “No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems” (FSC 1996). However, as clarified by the FSC, the restriction might not apply if “invasive impacts can be controlled and effective mitigation measures are in place” (FSC 2012).

On balance, in smallholder-managed landscapes areas where *A. mangium* is planted on degraded lands, there is no reason to assume that *A. mangium* will become invasive. The risk is especially limited in areas where communities maintain robust management systems which benefit local livelihoods (see, e.g. Lamb 2011).

a rapid assessment was conducted of the industrial timber processing sector in Vietnam’s Binh Dinh province, a major furniture production centre. The exercise was conducted in the context of a larger multi year project aimed at informing government policies promoting smallholder tree planting in Vietnam and Indonesia. While not extensive enough to produce the type of statistical data to relativize costs and benefits, the assessment sought to produce a general understanding as to how smallholders might increase their benefits as timber suppliers to the domestic industries.

SCOPE OF ENQUIRY

In January 2010, a rapid assessment was conducted of smallholder timber use by the processing industry in Binh Dinh province (Figure 3). Binh Dinh is a mountainous province covering around 602 500 ha on Vietnam’s south central coast, with a population of around 1.5 million. The capital, Quy Nhon City, is the provincial centre for wood processing and an important international seaport from which timber products are exported.

FIGURE 3 Map of Binh Dinh province



Representatives of 21 private companies were interviewed (Table 1), and meetings were held with officials of the provincial Sub-Department of Forestry (SDF) and district forest protection departments as well as a State Forestry Company (SFC) and the Department of Industry and Trade Development (DITD). Companies were asked about their use of domestic vs. imported timbers, their use of smallholder vs. industrially produced timber, their intentions to increase use of domestic smallholder timber, and the practicability of using domestic smallholder vs. imported timbers.

The scope of this study is necessarily limited because the enquiry was restricted to interviews from the demand side, in

TABLE 1 Breakdown of interviewed companies by type of business

Type of operation	Number
Forestry companies	2
Sawmills	6
Woodchip mills	2
Furniture manufacturers	10
Timber traders (middlemen)	1
	21

order to better understand the status of market demand for smallholder-produced timber, what obvious limitations exist in the market, and how some of those limitations might be alleviated. Further research conducted by colleagues on the actual conditions and economic benefits experienced by household timber planters will improve our understanding of the livelihood effects of Vietnam’s forestry policies in the longer term. Differences in smallholder management systems and how these relate to quality and price of timbers produced are beyond the scope of the study.

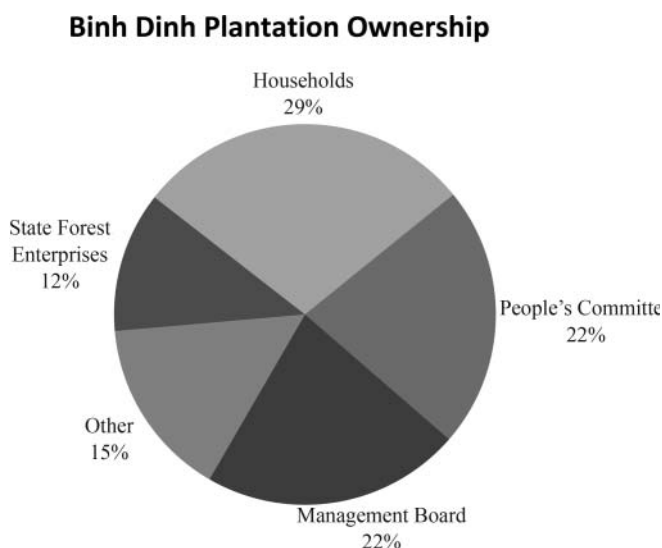
RESULTS

Wood processing and allocation of land for timber production in Binh Dinh province

According to the SDF, in Binh Dinh province 13% (77 000 ha) of the total land area is designated as plantation forest, and 70% of that area has been planted. Individual households hold and manage about 29% (22 000 ha) of plantation land (Figure 4). The development of smallholder plantation forestry in Binh Dinh province has been supported by national and international projects, including the People’s Plantation Project, a Vietnamese Government sponsored campaign to promote smallscale forestry in the province, as well as projects by the KfW German Development Bank and the World Bank. Together, these three projects facilitated the planting of about 21 000 ha of smallholder plantations in the 4 years from 2006 to 2009, which represents around 10% of all forestland in the province.

The Binh Dinh province timber processing sector is divided into two main categories: woodchips and furniture. Woodchip companies source all their timber from neighboring plantations (private, state, and smallholder-managed)

FIGURE 4 Breakdown of ownership of timber plantations in Binh Dinh province, as per provincial decree. Source: MARD 2010



and export to East Asia (China, Japan, and Korea). The large furniture companies export to Europe, North America, and Australia and rely on high levels of imported timbers (75%–100%). Though when they do buy domestic timber, as will be further explained, they are usually competing with woodchip companies for access to the larger diameter acacia logs. Most furniture factories produce outdoor furniture, although one factory was devoted to indoor furniture and many outdoor furniture companies are interested in diversifying their production to include indoor furniture. Furniture companies, however, had little awareness about the availability of government assistance to facilitate that transition.

In 2008, the SDF counted 110 wood manufacturing companies (including producers of furniture and woodchips) in Binh Dinh with an estimated combined output of 230 000 m³ of finished or semi finished wood products. By 2010, the DITD was aware of 127 companies operating and an additional 26 companies under construction, with a total processing capacity of 345 000 m³ of sawnwood or 700 000 m³ of roundwood. Annual production translates to around 6 million units of furniture and 300 000 BDMT¹ of woodchips.

According to the DITD, the sector's total revenue was \$2 billion in 2009, or 37% of the province's industrial revenues. This represented a decline of 14.5% over 2008. Export revenues in 2009 totaled \$138 million, representing 50% of the province's total export revenues, or 130 000 m³ of processed wood. However, the majority of sawlogs and sawnwood is imported. For example, in 2007, 460 000 m³ of wood was used, of which only about 90 000 m³ (20%) originated in Vietnam. Of that, only 40 000 m³ was reported to be from plantations in Binh Dinh, but the origin of the remaining 50,000 m³, including some natural forest timbers, is not known.

In response to reduced demand from export markets associated with the global financial crisis, the DITD mentioned a couple of possible options to bolster the domestic processing industry as well as support the plantation sector. First, the DITD is promoting the use of a higher percentage of locally produced timber (115 000 m³ in 2010 was mentioned as a target), using a propaganda program to induce companies to cooperate with local smallholder producers. There is evidence that the majority of forestry companies do form contracts to work with smallholder partners, in part due to scarcity of land for large scale tree planting. However, in reality, smallholder planters are the weaker party and the majority of economic benefit tends to accrue higher up the value chain, to market intermediaries and processors (Moeliono et al. 2010).

Second, the DITD is running a campaign to promote indoor furniture production, because the majority of furniture producers are producing only outdoor furniture. Mechanisms to promote this change include loan programs, discounted credit and reduced land taxes. However, the majority of companies subsequently interviewed were not aware of these programs. In fact, only one company manager interviewed was aware of these incentives, but was sceptical about the

capacity of local furniture makers to regear their factories in order to produce high-quality indoor furniture.

Timber flows: company arrangements with smallholders and the role of middlemen

Domestic timber entering the Binh Dinh furniture and woodchip processing industries is produced by State and private forestry companies and by smallholder planters. It can be delivered directly to the factory gate, which is especially common among the larger actors and less common among smallholders. Most companies reported purchasing timber from middlemen, who obtain wood from all types and sizes of plantation, both private and public. In general, transactions are conducted without a supply contract. While most processing informants did not specify the price differential paid to different types of suppliers, at least one did recognise that the factory gate price paid to smallholders tended to be lower than that paid to the larger suppliers. It was also mentioned that smallholders requirement of receiving cash in hand upon delivery was a factor that resulted in lower prices. Quality of timber is of course a factor in determining price, and this depends largely on the diameter and age of the stem. In addition, smallholders tend to harvest timber when they need cash, and therefore, because of the market for timbers for wood chips, furniture companies who would like to purchase smallholder timbers face difficulties in processing smaller lower-quality logs and pay less for them.

Forestry/processing companies and middlemen interact with smallholder producers and local residents through several business models. The following were mentioned:

1. Management of company held plantations. In this business model, local residents are hired to plant and manage plantations. The going rate in 2009 was around US\$3–5 per ha per year, according to one informant.
2. Investment in inputs to smallholder plantations. In this model, the company pays for inputs (seedlings, etc.) and smallholders maintain a share of the output. One company reported investing VND10–15 million (~US\$500–700) per ha per rotation cycle (6 to 7 years), and sharing 20% of the output in terms of volume of standing trees or the pre-harvest cash equivalent with the recipient smallholders.
3. Loans to smallholders payable upon harvest.
4. Middlemen purchasing standing trees from smallholders, and managing harvest and marketing.

The lack of contracts means that prices are set upon sale of the standing timber or upon delivery to a particular buyer. However, loan repayment schedules and the terms of direct investment may force smallholders to sell at times when the prices are not optimal, or to harvest timbers earlier to be sold to woodchip manufacturers rather than waiting longer and

¹ Bone-dry metric tonnes

selling larger diameter and higher value logs to furniture makers.

Increased domestic timber use and the “Acacia-isation” of the Binh Dinh timber processing sector

While Binh Dinh woodchip companies use only domestically produced logs, interviews with Binh Dinh furniture producers revealed that the use of domestic timber for outdoor furniture production has increased substantially. The outdoor furniture companies who provided figures on the use of imported vs. domestic wood reported using an average 29% of domestic wood in 2009, compared to the 20% reportedly used in 2007. While these figures are rough estimates, most respondents indicated an intention to increase their use of locally produced timber. For reasons we will explain below, however, the ability of local smallholder suppliers to compete with imported wood in the furniture market is limited.

Over the past few years, domestic stocks of *Acacia* spp. (*A. auriculiformis*, *A. mangium*, and hybrid *A. mangium x auriculiformis*), in all types of tree plantations have increased (van Bueren 2004), which is reflected in the output of both the furniture and woodchip sectors. The use of locally grown *Eucalyptus camaldulensis* has been decreasing because of reduced supply and the higher quality of imported *Eucalyptus* species. With increased demand, prices of *Acacia* have been rising. Based on responses from 10 informants, prices of domestic *Acacia* increased about 6% per year between 2007 and 2009, to around US\$40 per tonne. Prices vary based on a number of factors, including the diameter of the logs, with logs over 20cm diameter fetching about 10% more than those of 13 cm diameter.

Binh Dinh province has eight woodchip companies which, according to one informant, had a combined total of 17 chipper machines. The estimated capacity of one chipping machine is 100,000 tons of debarked logs per year, which translates to 45,500 BDMT (conversion factor: 1 BDMT = 2.2 tons debarked roundwood). Assuming that the output of chippers is relatively uniform, the total processing capacity of the province is about 1.7 million tons of raw logs or 773,000 BDMT per year. Woodchips are produced using domestic plantation produced timber purchased from forestry companies, middlemen and occasionally from households delivering loads of logs to the factory gate. Both *Acacia* and *Eucalyptus* spp. are used, with the relative proportions of *Acacia* increasing. For example, one company reported using 40% *Acacia* in 2007, 60% in 2008, and 70% in 2009. Use of *Acacia* in 2009 ranged between 66% and 80% in a small sample of three companies. Reasons for the change include the growth in supplies of *Acacia*, and the fact this wood is more desirable because it contains a higher percentage of cellulose and a higher quality of fibre; however, it requires a retooling of pulp processing equipment.

Binh Dinh's furniture processing sector is dominated by factories that mass produce outdoor furniture for the international market, which includes Germany, France, the UK, the Netherlands, the US, Italy, Spain and Russia (Table 2). Seven companies provided detailed information regarding their

wood use, which also shows a trend towards increased domestic *Acacia* spp. in their production lines. On average, according to the figures given, domestic *Acacia* use among these companies increased 158% in 2009 over 2008, while overall timber use increased only 1% in the same period. As a result, in proportion to their total timber use, domestic *Acacia* use among reporting companies increased from 5.8% to 15%. These figures suggest that demand for domestic *Acacia* as an input in the furniture industry is increasing (although several furniture manufacturers – notably an indoor furniture maker, three factories serving the local market, and one export oriented outdoor furniture maker – continue to also use substantial volumes of natural forest trees and garden trees such as mango, yellow cassia and jackfruit). Companies making indoor furniture who referred to using “domestic hardwood” or “natural forest timber” either reported using virtually no imported timber (except in one case for 1% of oak wood imported from France) or would not give any information on quantities of imported timber. This reticence could suggest a continued use of imported or domestic illegal timber.

Increased demand for FSC-certified timber

Although the interviewees indicated a growing demand for domestic *Acacia* from outdoor furniture manufacturers, maximising that demand faced several obstacles. One frequently mentioned constraint was the lack of larger diameter logs, which in part can be attributed to the market for woodchips. With increased demand from China in recent years, the woodchip sector competes for supply with the furniture sector. This results in younger, smaller diameter logs being harvested to enable earlier profit taking by producers and shorter growing cycles. A second constraint is the lower quality of locally produced vs. imported *Acacia* logs: local logs, with their smaller diameters, tend to split before they are sawn, resulting in higher wastage. A third constraint is the extreme scarcity of certified local plantations.

Increasingly, the big box stores primarily located in Europe and the US which purchase high volumes of Vietnamese-produced outdoor furniture require FSC certification. Seven of the 10 furniture factories visited import or purchase through intermediary traders a large proportion of imported FSC timber, especially *Eucalyptus* (several higher-quality species) from Uruguay and Brazil, *Acacia mangium* and *auriculiformis* as well as hybrid from Malaysia, and teak (*Tectona grandis*) from Brazil and Costa Rica. These timbers are generally higher quality and larger diameter logs than those produced locally.

With strong demand for FSC-certified *Acacia* and *Eucalyptus* coming from furniture processors, the shortage of local certified plantations is clearly a lost economic opportunity. At the time of the interviews, Vietnam had only one FSC-certified plantation, a 10,000 ha enterprise owned by a Japanese company (the Quy Nhon Plantation Forest Company, QPFC), which also owns a woodchip factory that exports 100% of its product to Japan. Interestingly, in 2010

TABLE 2 Use of domestic vs. imported timber by processors of furniture for the international market interviewed in Binh Dinh province. All figures are estimates for 2009 wood use in round-wood equivalent (RWE) and annual turnover; based on first-hand accounts and rough conversion factors to estimate RWE. The majority of eucalyptus used in the furniture industry is imported from South America. Malaysia was most frequently mentioned as the source for imported acacia. Where indoor furniture is used, more natural forest tropical hardwoods are used, and we consider the reported sources of these timbers to be less reliable than for plantation species.

Company Product lines	Source of timber		Total use (m ³ RWE)	Turnover (millionUS\$)	Origin of imported timber	Main overseas market
	Imported	Domestic			(companies mentioning)	(companies mentioning)
1. Outdoor furniture (90%) Indoor furniture (9%) Flooring (<1%)	90%	10%	10500	3.3	Uruguay (7), Brazil (4),	Germany (8), France (6),
2. Outdoor furniture (90%) Indoor furniture (10%)	98%	2%	45000	22	Costa Rica(4),	Italy (6),
3. Outdoor furniture	75%	25%	19800	9	Malaysia 4),	Netherlands (4),
4. Outdoor furniture	73%	27%	15000	5.5	Africa (3),	UK (3),
5. Outdoor furniture	62%	38%	6500	2	Laos (2),	North America (3),
6. Outdoor furniture	85%	15%	3000	1.2	Solomon Islands (2),	Australia (3), Argentina(1),
7. Outdoor furniture Sawnwood	70%	30%	20000		Cambodia (1),	Colombia(1), Denmark (1),
8. Outdoor Furniture	100%	0%	3000		Papua New Guinea (1),	Finland (1), Spain (1)
9. Outdoor furniture (80%) Indoor furniture (20%)			9000	2.1	France (1)	Sweden (1)
10. Indoor furniture	1%	99%	33000	4.5		

this plantation, originally intended to produce only stems for woodchips, had become a source of FSC-certified timbers (from the same stems) for local furniture producers. One outdoor furniture manufacturer attested to having purchased 1 000 m³ of FSC *Acacia* from this plantation in 2009, and was hoping to order an additional 5 000 m³ in 2010.

In 2010, four new FSC forest management certificates were issued in Vietnam, three of which were located in the north². The fourth is located in Quang Tri province, close to Binh Dinh. It is an interesting case, with a certificate being issued under the simplified SLIMF criteria to a group called the Quang Tri Smallholder Forest Certification Group (FCG). The FCG, initially managed by WWF, represents 118 households holding 316 ha in five villages. The inventoried species in the FCG smallholder plantations are mainly *A. auriculiformis*, *A. hybrid*, and *A. mangium*. According to a recent audit report (GFA 2010), the plantations are located on previously

degraded or bare land which was bombed during the American War. With an estimated yield of 6–8 m³/ha per year, the FCG could eventually produce up to 2 500m³ of certified *Acacia* per year, albeit representing a very small contribution to the country's demand.

DISCUSSION

Although the increased availability of domestic plantation timber in Vietnam represents a new source of economic benefit to producers and an incentive to continue programs to expand plantation areas, including those allocated to smallholders, the initial findings in Binh Dinh province suggest a less than optimal set of outcomes in reality. While the survey of Binh Dinh timber processing companies indicated a growing demand for domestic timber as well as rising

² These data are available from the FSC's certificate database, www.fsc-info.org.

prices, a number of specific obstacles were identified against maximising the potential for local growers, and especially smallholders, to benefit from the market. Thus, while the proportion of domestically produced timber (esp. *Acacia* spp.) has been increasing quickly, it still represents a small portion of the wood used in Binh Dinh's furniture processing sector, despite the government's best efforts to promote smallholder-company partnerships.

First, the quality of wood currently available in the vicinity of Binh Dinh is poor, forcing many furniture processors, as we found out during our field interviews, to rely on imported wood or continue to use natural forest species. The poor quality of local wood is attributable to several factors, including use of small diameter timbers intended for woodchips for furniture-making and possibly to inappropriate silvicultural techniques. One cause of smallholders' tendency to harvest early is the high demand for timber to produce woodchips. Because both furniture companies and woodchip companies use *Acacia* spp. the two sectors compete for supply. Although one company reported that chips from larger diameter trees are of higher quality and price, the overall lower diameter required for woodchips does not encourage smallholders to leave trees standing longer to reach the larger diameter required for furniture production. The overlap in species used for furniture is likely not optimal in preventing competition between the woodchip and furniture sectors.

Second, because the market increasingly demands FSC certified timber, and because until 2010 there was only one 10,000 ha certified plantation, furniture producers must rely on imported certified timber. The addition of a SLIMF certified plantation in nearby Quang Tri that allows a group of smallholders to access the market for certified timber is a development worthy of future study, but unless production is scaled up, it represents only a minimal increase in certified supply.

Other challenges facing smallholder plantation forestry were mentioned, including the variability of demand from overseas importers and natural disasters, such as a 2009 typhoon that damaged thousands of hectares of natural forest. Due to the 2008 market downturn, households also face difficulty in repaying loans to companies that lent money to plant trees. Another challenge which was not mentioned but which requires additional attention is the degree of survivorship of seedlings planted in household forests, particularly in degraded and more remote lands, where maintenance is more difficult and new plantings may be more susceptible to fire and grazing (see, e.g. Pasicolan 1997).

CONCLUSION AND RECOMMENDATIONS

As part of a concerted and long term effort to increase the area covered by trees through programs such as the five million hectare reforestation program (5MHRP), the Peoples Plantation program, etc., the Vietnamese Government has involved a million families in small scale plantation forestry. The goals include ecological restoration of degraded lands, provision of raw material to an increasingly important industrial sector

generating significant foreign exchange and improved livelihoods for economically vulnerable rural populations. Such initiatives also have the potential to relieve pressure on natural forests, both in Vietnam and in neighboring countries from which high quantities of timber, including illegally sourced and traded timber, has been imported, provided the increase in planted forests does not occur at the expense of natural forests.

A rapid survey was conducted of the industrial sector in one province where furniture and woodchip production represent major economic activities, in order to assess the potential of the local industry to provide a market for local smallholders. The survey found a clear trend for increased demand for smallholder timber, particularly *Acacia* species. Because both furniture and woodchip manufacturers demand the same species, that demand is both reinforced and at the same time subject to early profit-taking that leads to premature harvesting and therefore poorer quality timber for furniture making. Meanwhile, demand from the more lucrative industrial segment is greatly limited by the local growers' inability to produce high quality timber, and by the international market's growing demand for certified products.

Based on these observations, the national government and international institutions need to pay greater attention to the needs of smallholder growers in Vietnam. First of all, efforts should be made to promote the segmentation of the supply chains for woodchips and timbers for furniture at the plantation level. Indeed, the development of at least two entirely separate plantation schemes—one to supply woodchip companies and the other furniture factories—might be most effective. This would certainly result in different choices of species and silvicultural techniques, including planting and thinning to achieve the proper stand density and harvest age, depending on the qualities desired for the different processing industries.

Second, investment in collective forms of management which could benefit from SLIMF certification, as is now being done in a WWF led initiative in Quang Tri province, seems to make very good sense. By encouraging collective management, smallholders may be able to achieve better access to the inputs they need to improve the quality of their timber. Meanwhile, certification would ensure continued access to an increasingly exigent global market, and would be expected to bring higher revenues per volume. Based on the Quang Tri experience and on SLIMF certifications elsewhere, a study on the costs and benefits of SLIMF certification to household and community level forest managers should be conducted before promoting it further. In the case mentioned here, WWF organized the community and subsidized some of the certification costs, so it would be important to assess the promotion of SLIMF certification under scenarios of community self sufficiency and with various types of external support.

In Vietnam, those developing such programs might need to consider the potential invasiveness of *Acacia mangium*. However, if this species replaces former *Eucalyptus* plantations or is planted on seriously degraded lands and managed intensively by hundreds of households, then presumably the

risk to surrounding biodiversity would be limited. Nonetheless, further studies on the invasive risk of *A. mangium* would be advisable.

If the recommendation to develop more smallholder SLIMF certified plantations is taken up, a study of certification's effects on the economy of the local timber trade will be necessary. Without the capacity to obtain chain of custody certification, certification of the resource might adversely affect local intermediaries who are currently the link between smallholders, and the processing industry might be adversely affected. Development of a simplified chain of custody certification accessible to small intermediaries, covering for example only certain species of specific diameters from SLIMF certified smallholder plantations, may be eventually be necessary in order to avoid excluding these actors from the market.

Finally, while the suggestions presented here relate to increasing opportunities for smallholder growers to benefit from markets provided by industrial wood processors, we should not lose sight of the fact that there are other potentially beneficial models through which small producers might also benefit, and might benefit more in the long term. Thuan (2005) recommended promotion of small scale community-level processing of wood and non-timber forest products and improving local market connections. Such initiatives should be seen as complementary and potentially longer-sighted than those presented here, which focus on optimizing the connections between smallholder producers and large scale processors, who are in turn connected to often unpredictable global markets with shifting requirements.

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