

## **Teak trade networks in Semarang district, Indonesia and the challenge of implementing timber legality verification system**

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### **DRAFT (PLEASE DO NOT QUOTE WITHOUT AUTHOR’S PERMISSION)**

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#### **Abstract**

The paper analyzes the challenge of regulating small-scale timber sector in Indonesia, as part of the Voluntary Partnership Agreement between the European Union and the Government of Indonesia. We examine this challenge by analyzing the teak trade networks in Semarang district in Central Java, Indonesia. The central question we explore is to what extent is the Timber Legality Verification System (SVLK) capable of effectively regulating a vast number of timber transactions and shipments taking place daily across the district. We shed light on this question by first analyzing timber transport permit data for teak for the period of 2007-2010 in Semarang. We find that during this time period, 700 seller and 1,290 buyers undertook over 12,000 teak sale, purchase, and transport transactions, or approximately 3,000 transactions per year. An examination of documents in several sites indicates that origin of timber traded is uncertain because raw timber sellers, purportedly representing the bottom of the trade chain, are in fact businessmen collecting timber supplies from multiples growers in undocumented fashion and presenting them as stock from their own area. This is done to reduce transaction costs associated with timber transport permits. The presence of SVLK and the existing timber trade administration system creates ‘dual’ timber legality system, which has created confusions about which one to follow. While most of the timber from Semarang is traded within Central Java, large volumes are also transported domestically. Large volume of trade transactions, informal trade practices, and trade chain complexity present challenges to effective monitoring and timber legality verification. The timber legality verification regulation should consider incentives and a step-wise approach to enable compliance among small farmers and traders.

*Keyword: Trade, Networks, Indonesia, Timber Legality Verification System, Voluntary Partnership Agreement*

## Introduction

In September 2013, the Indonesian government has signed Voluntary Partnership Agreement (VPA) with the European Union (EU). Indonesian timber legality verification system (SVLK) will come into effect for 26 Harmonised System (HS) items, including wood-working, wood panels, and pulp and paper to meet the requirements of the VPA (Ministry of Trade 2012).

One of the main driving forces behind VPA is to reduce timber supply from illegal sources. Illegal logging and associated trade have been associated with a range of negative impacts on Indonesia's environment, economy and society (Goncalves et al. 2012). Both are major contributors to deforestation and forest degradation (Lawson and MacFaul 2010). Declining stocks of high quality natural timber led to a downturn in Indonesia's production and export of tropical plywood and sawn timber (Obidzinski and Dermawan 2010). Illegal logging also resulted in significant tax revenue losses (Human Rights Watch 2009).

Since 2001, the Indonesian government became an integral part of the Forest Law Enforcement and Governance (FLEG) process (Luttrell et al 2011). The Indonesian government also conducted numerous joint operations among relevant agencies in illegal logging hotspots. As a result of these actions, a significant progress has been made in reducing illegal logging and illegal timber trade in Indonesia (Lawson and MacFaul 2010). One of the measures to reduce illegal timber supply in Indonesia is the enactment of timber legality verification system, called *Sistem Verifikasi Legalitas Kayu* (SVLK). SVLK is a multistakeholder process to ensure that timber traded both for domestic and export markets have met legality standard.

Despite the success, one issue that still has relatively minor attention with regard to reducing supply from illegally sourced timber is the dynamics of domestic timber trade, particularly those carried out by small actors. Java is the main source of timber produced by smallholders, and, particularly in Central Java, also the main center of furniture production. Furniture export in 2011 was over USD 1.2 billion, the third largest export source in the timber sector after pulp and paper and plywood (Hidayat 2012). However, timber produced by smallholders is largely undocumented, partly due to the characteristics of smallholder tree planting activities in the region (Darusman and Hardjanto 2006; Jariyah and Wahyuningrum 2008).

This paper aims at documenting the network of teak trade in Semarang district in Central Java. After a presentation of timber trade actors and networks, we describe the complexity of existing timber trade network and trade practices. We then discuss the implication of this for the preparedness of smallholder tree planting and trade actors to face the SVLK era in Indonesia. Finally, we develop recommendations about the adjustments needed in the existing timber legality verification policy to enable greater compliance among smallholders and traders.

## Methods

The analysis is based on the extensive dataset on timber sales recorded at the Forestry Bureau of Semarang district in Central Java Province, Indonesia. Semarang district consists of 19 sub-districts and 235 villages. In 2011, the number of population in the district is over

900,000 people. The total area of the district is 95,000 ha. Most of the land area in this area is agricultural land which is divided into wetland agriculture (23,983 ha) and dry land cultivation (36,457 ha). Semarang district has 12,483 ha of forest area or 13.1 percent of the district's total area, of which state forests covered 8,692 ha and private forests, owned by smallholders, 3,791 ha. In 2010, smallholder growers produced 33,260 m<sup>3</sup> of timber, mostly teak (*Tectona grandis*), mahogany (*Swietenia macrophylla*), and albizzia (*Faracerianthes falcataria*) (Badan Pusat Statistik Kabupaten Semarang 2011).

The dataset consists of timber transport permits called *Surat Keterangan Sahnya Kayu Bulat* (SKSKB) which is issued by the Forestry Bureau at the district level. These permits are needed to ensure the legality of timber intended for shipping. SKSKB applies both to timber species grown by farmers as well as timber produced by Perhutani, a State-owned Company that manages production forests on Java island. Teak and mahogany are the main species which require SKSKB for transport. There is another transport permit letter that applies to species other than teak and mahogany, called *Surat Keterangan Asal Usul* (SKAU, or letter of origin). The letter is issued by the village head for timber species other than teak and mahogany. By July 2012, all timber from private forests only need to have SKAU. Since village heads rarely report the issuance of SKAU to the District Forestry Office, the office does not have full information and is thus unable to effectively monitor the timber transport under SKAU.

The dataset spans four years -- i.e. January 1, 2007 until December 31, 2010. The data records the name and origin of the seller, date of SKSKB issuance, type of timber (log or processed timber), amount (number of logs or cubic meter equivalent), timber species, and the name and origins of the buyer. In total, approximately 12,000 transactions took place during this time period involving 720 sellers and 1,290 buyers. We apply a data mining approach to discern timber trade patterns in the district. We define 'sellers' as those actors who apply for SKSKB to the District Forestry Office, while 'buyers' are individuals or companies to whom the timber is sent. As will be elaborated in the discussion, log sellers are not necessarily the same as the farm households, which are principle log producers. We assume the transaction day is the day when the SKSKB is issued. We examine the connections between the sellers and buyers in terms of the frequency of sales per month, amount of timber sold, and other relevant information. Based on the examination of the patterns, we develop implications for the timber legality system which is being implemented in Indonesia.

## Results and discussions

### *Sellers and buyers: where are they from?*

Studies show that farm households usually plant timber as a saving account (Rohadi et al 2010; Rohadi 2012; Nugroho 2011; Dharmawan 2012). They treat timber as a reserve fund and sell timber usually in case of emergency only. Timber sales of this kind are usually in small amounts and the timber is usually sold to the middlemen, a phenomenon famously known as '*tebang butuh*' or cutting based on cash needs. Usually time when most people need cash arises during fasting month and the beginning of school year in July. In addition, cash needs also arise when there are wedding parties or medical emergencies, but these are difficult to predict (Dharmawan et al 2012; Putri 2012; Nugroho 2011).

The advantage of selling to the middlemen is that smallholders can receive cash immediately. In addition, they do not have to bear harvesting and transporting costs. Smallholders

generally do not want to be burdened by the need to obtain SKSKB certificates for their teak because the amount of timber they sell is usually small. In addition, while obtaining SKSKB is in theory free, the process involves visits to District Forestry Office and the paperwork does involve informal costs (Putri 2012).

On the other hand, the middlemen usually buy timber from many smallholders. For them, applying for SKSKB for each of the purchase they make from smallholders is a cumbersome process. Therefore, middlemen usually combine a number of purchases from smallholders and apply for a SKSKB to cover a pool of timber. They apply for SKSKB presenting themselves as the sellers and therefore the point of origin for this timber (Semarang Forestry Office, pers.comm, October 2012). This practice is widespread and has been taking place since the establishment of timber administration systems.

Similarly, the buyers are the people seemingly at the other end of the timber value chain, but they are not necessarily the final terminal. Since the timber sold is in the form of logs, it will go into further processing stages before it becomes the final product. Teak can be processed into various products, most notably furniture and construction materials (Putri 2012; Simangunsong 2012 Purnomo et al 2010). However, these further timber flows are not reflected by SKSKB. Statistical data show that most of the buyers are from within the Central Java province. More than half (55.2%) of the buyers are from Jepara District, followed by other districts in Central Java (31%), Semarang District (11.2%) and destinations outside of Central Java (2.6%). The data does not provide information whether or not the buyers have domestic or international orientation of their products. However, since SVLK applies to the entire timber sector, for domestic and international consumption, this raise a question that if Indonesian SVLK is aimed at responding to the buyer countries' requirement on timber legality, full compliance by the entire actors will take a very long time. In one district alone, there are 700 sellers of teak, not to mention other timber species.

While buyers can be from inside and outside of Semarang district, an interesting observation is that out of the 720 sellers, approximately 57 (7.9%) are from districts outside of Semarang district. In terms of timber trade per se, this still makes sense because a 'seller' is actually a buyer who obtains timber from smallholders anywhere in the district. However, in terms of timber legality verification, this type of trade presents problems in terms of tracability of timber because the origin of the timber cannot be traced as the harvesting sites of the timber are unknown. As SVLK has become mandatory, ensuring that timber trade transactions are transparent, the real origin of timber is evident, and all actors have appropriate permits for their operations is a considerable challenge.

#### *Networks: how are the connections?*

This section aims to show that the network of actors involved in timber trade is large and complex. As shown earlier, the data explains the connections and interactions between the sellers and the buyers. Figure 1 shows the sellers engage with a relatively stable number of buyers per month. On average, each seller sells the timber to 2-3 buyers per months. While this number seems small, it is important to remember the timber is still in the forms of logs (roundwood). At the subsequent stage, the timber may be sold to another buyer further down the timber value chain, or sold to timber industries, or to secondary timber processing businesses. Figure 1 also shows that on average each seller sells timber between 3 to 5 times per month, or approximately weekly. Each month, each seller sells between 30-40 m<sup>3</sup>, or about 7.5 -10 m<sup>3</sup> per week. Assuming the price of teak is Rp 1 million per m<sup>3</sup> (USD 100),

the value of the timber trade is Rp 28.5 million (approximately 2,850 USD) per seller during the 4-year period. In an agricultural district like Semarang, teak trade thus constitutes a lucrative market.

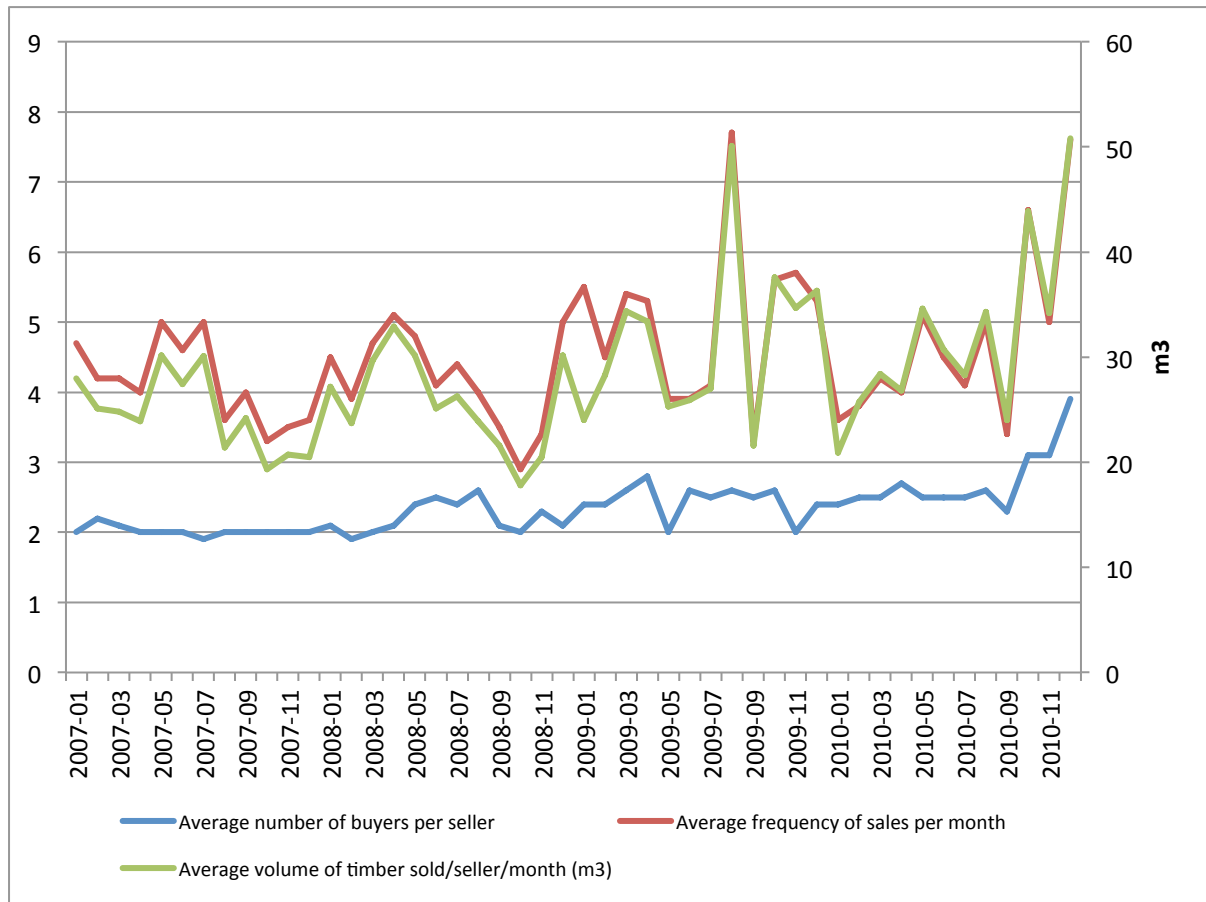


Figure 1. Connection between seller and buyer, frequency of sales, and timber volume per sales

### Timber sales

Monthly timber sale is presented in Figure 2. It shows that monthly average timber sales decreased from 1,543 m<sup>3</sup> in 2007 to 1,240 m<sup>3</sup> in 2008, but increased again to 1,561 m<sup>3</sup> in 2009 and 1,655 m<sup>3</sup> in 2010. Timber trade in 2010 was higher than in the other years. An interesting finding is that, contrary to the popular belief that timber sales increases in fasting months and at the beginning of school year, Figure 2 shows that timber sales in these months are below the monthly average for each particular year. The exception are the month July in 2007 and August 2009. However, sales during March to May in each year are above yearly average sales.

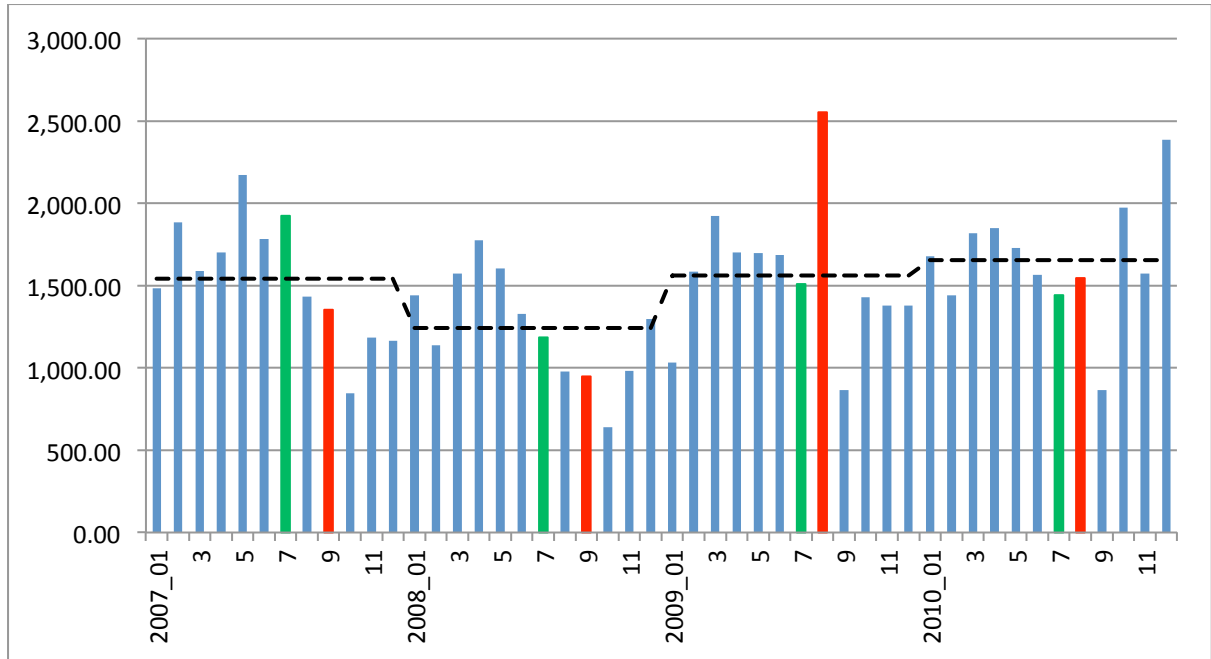


Figure 1. Monthly timber sales: 2007-2010

Notes: Red bars refer to the fasting month in Islamic calendar, which in Indonesia is always associated with higher monthly inflation rate and cash needs; Green bars refer to the school year; Dotted line is the yearly average of timber sales

A more detailed presentation of the timber sales is presented annually. Figures 2-5 show the timber sales in 2007-2010 per month and day of SKSKB issuance. In Figure 1, we want to see if there are differences in timber between fasting and school months, given that most farmers will face the need for cash during this period. However, in Figure 2-5, we want to see if timber sales in particular days of the week are higher than on other days. By doing so, we want to see if there are particular days when timber sales are higher. We compare monthly daily sales with daily average for each year.

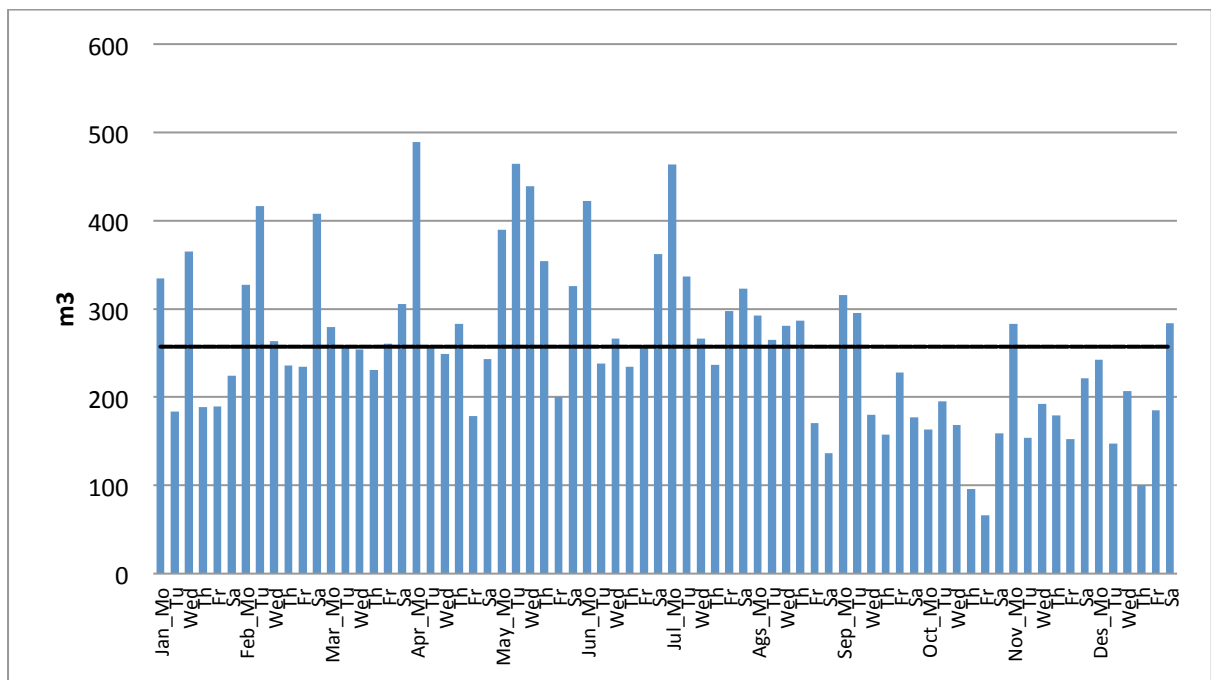


Figure 2. Teak sales in 2007

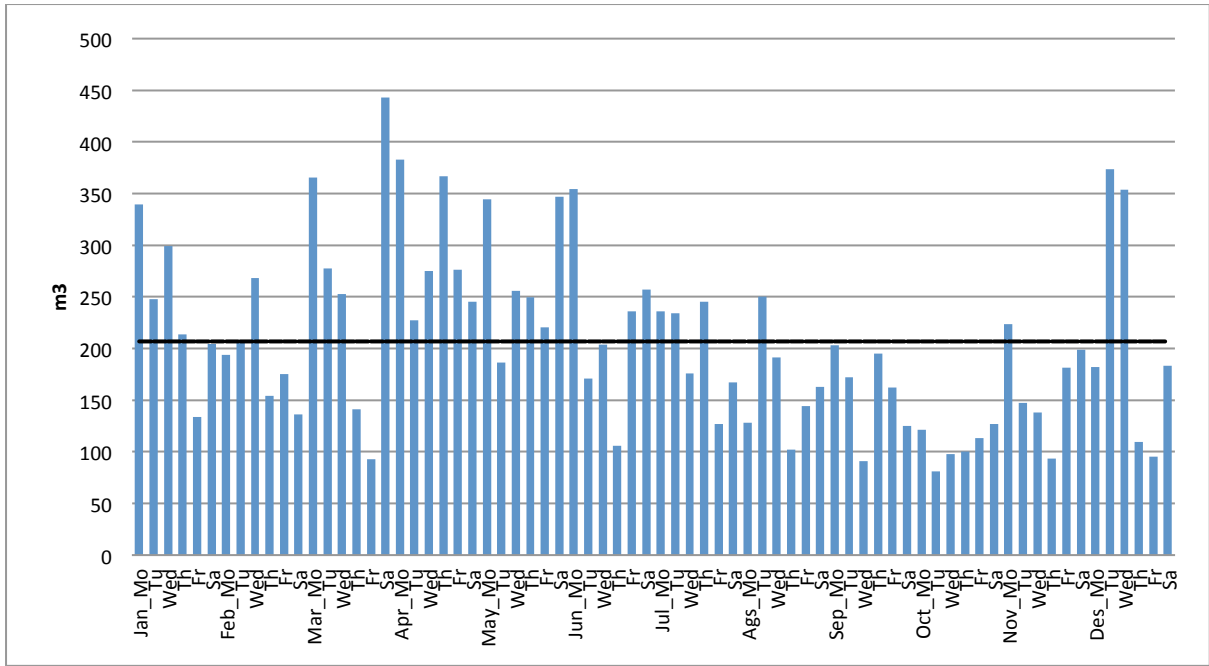


Figure 3. Teak sales in 2008

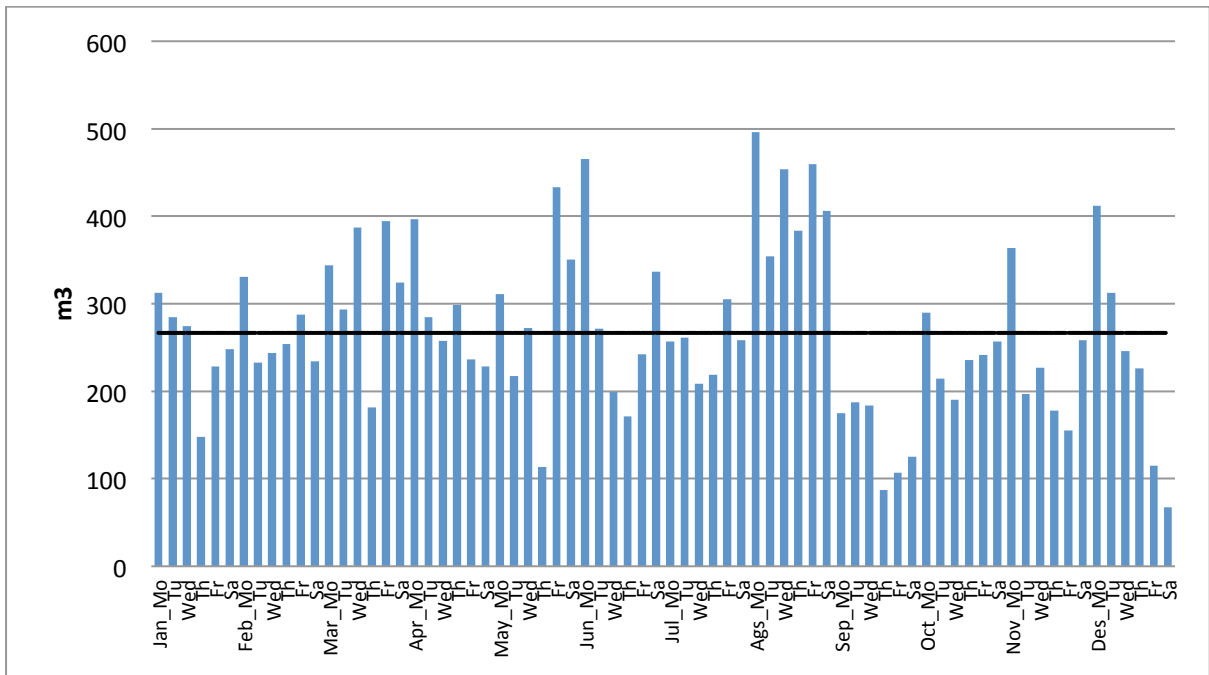


Figure 4. Timber sales in 2009

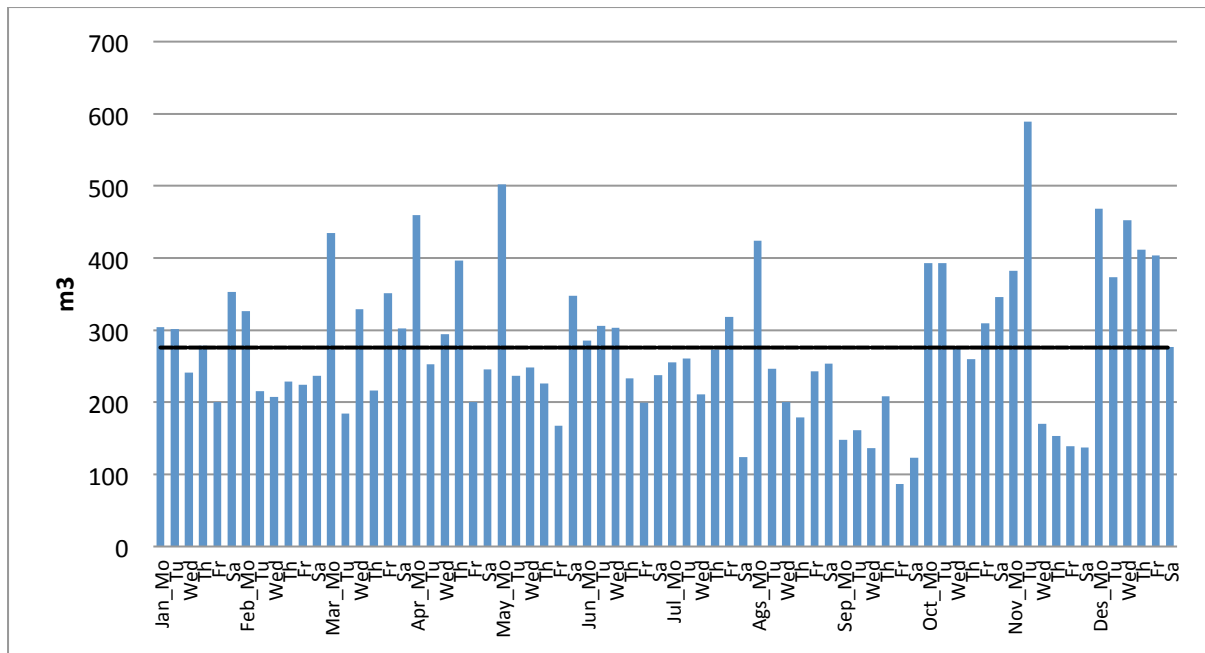


Figure 5. Timber sales in 2010

From the information in Figures 2-5, early observation shows there are certain days with higher sales than daily average. Mondays and weekends seem to be generally above average, and lower sales generally take place in the middle of the week. It is possible that timber growers cash needs are higher on weekends. This may also be the case at the beginning of each week. However, statistical tests are still necessary to confirm if sales in these days are significantly higher than the others.

#### *What does the data tell us?*

As explained in the methods section, the data presented has been extracted from the District Forestry Office records which constitute a compilation of SKSKB reports. There emerge at least two issues with implications for the new timber legality verification system, SVLK, which is being implemented. First, for the district authorities, the complete data set of timber production and trade is necessary basis for effective monitoring and control of timber resources among the smallholders and traders. Failure to possess a comprehensive and up to date database could lead to an increased risk of timber supplies from illegal sources. The government authorities have a fairly good grasp of trade based on SKSKB timber transport permit. However, they information they possess about the other permit used transport timber, SKAU which is issued by village heads, is fragmented. SKAU is generally used to accompany timber transport for timber species other than teak and mahogany. With the issuance of the Ministerial Regulation No. 30/Menhut-II/2012 timber sellers now can also use SKAU to transport teak from smallholders.

Table 1 show that teak sales (and production) are only approximately half of the reported production of all timber species. Mahogany is the other major species. In terms of the other species, those with SKAU transport permits, District Forestry Office only reports the data of timber from the copy of SKAU data which the District receives from villages. Since villages rarely send the copy of SKAU to the District Forestry Office, there the issuer of the SKAU may be able to charge some informal fees before issuing SKAU permit. Second, there are



practices where teak is mixed with other timber species and is not declared on SKAU permits. In such cases, teak is ‘laundered’ as if it has gone through the legal process.

Table 1. Timber production in Semarang district, 2007-2010

Month	2007 (m3)	2008 (m3)	2009 (m3)	2010 (m3)
January	3,314	4,013	3,578	3,191
February	3,702	2,570	3,709	3,256
March	3,539	3,444	3,746	3,701
April	3,604	4,378	3,538	3,259
May	4,861	3,954	3,580	3,116
June	4,376	4,202	3,725	2,759
July	3,860	3,468	3,710	2,525
August	4,226	2,825	2,825	2,677
September	3,527	2,711	2,711	1,226
October	1,664	2,317	2,317	3,124
November	2,594	2,302	2,302	970
December	2,765	2,506	2,506	3,456
Total	3,314	4,013	3,578	3,191

Source: Semarang Forestry Office (2011)

Second, SVLK is seen as ‘a repetition of the systems already in place’ in terms of the administration of timber trade. While SVLK has been the main agenda of the stakeholders, existing timber transport permits, such as SKAU, remain in effective. For smallholders and timber traders, this ‘duality’ of timber legality systems has created confusion. They do not understand which legality systems they have to follow and the implications of these for their daily operations.

The data also shows that with 720 sellers and 1,290 buyers for a small timber producing district like Semarang district, extensive efforts and large resources would be needed to effectively implement and operationalize the SVLK legality verification system. This does not yet take into account the number of timber growing smallholders. Assuming each household has 0.5 ha of forest, there are 7,600 households that have private forest in the district, which will also be required to obtain SVLK certification. The challenge is more daunting elsewhere in Java, where many more tree farmers, middlemen, and small industries are engaged in timber trade. There are 29 districts in Central Java itself, not to mention other districts in West and East Java which are also the major source of teak from smallholders. With the examples presented in this study, timber verification process for small industries, traders, and tree farmers will be a huge undertaking.

## Conclusions

SVLK regulation has been made mandatory starting the 1<sup>st</sup> of January 2014 and it covers the entire timber sector in Indonesia. With the current pace of SVLK certification, there are challenges in ensuring that SVLK is able to deliver what it is intended to, which is to reduce supply from illegal logging.

The major issue is the limited ability of the existing control systems (subsumed under SVLK) to exercise comprehensive control over timber trade and ascertain the origin of timber. One

of the characteristics of tree planting by smallholders is that they sell timber frequently and in small amounts. In as much as possible, they also want to avoid paperwork and pass this task onto the middlemen. The middlemen purchase timber from many smallholders and apply for a SKSKB certificates as if they grew this timber by themselves, while in fact the timber originates from many places. Ironically, even middlemen from quite a distance away (who other districts) can apply and obtain SKSKB certificates in Semarang. These practices make it impossible to accurately identify the the origin of timber, thus creating a risk of timber coming from illegal sources. The risk is even higher now that SKSKB is no longer used and the sole controlling instrument, SKAU, is issued by village heads.

The data shows that teak production and trade in a small region like Semarang district involves a large number of actors, comprising hundreds of middlemen and thousands of smallholders. The ‘duality’ in timber legality system could complicate the timber production and trade systems, particularly it could create confusion among tree farmers and traders about which system to follow and what it implies for their operations.

As a result, it is important to ensure that there is clarity about which legality system and which timber trade certificates are required by law. Currently, SVLK is the legality control system which is being uniformly applied in Indonesia. However, despite the mandate to implement SVLK, it is important to consider the characteristics of smallholder, and the practices of timber trade networks in order to understand how best to incorporate them into the changing legality environment. To do this, particular attention should be paid to understanding the smallholders’ reasons for planting particular tree species, their forest management practices, their decision-making regarding timber harvest, particularly tree practice known as *tebang butuh*. It is important that the establishment of timber legality system will force smallholders away from planting trees and replace their livelihoods with consolidated landholdings which may be better capable of meeting the legality requirements but provide poorer livelihood options. With the huge number of tree farmers and timber traders in Indonesia, the government may need to reassess the time necessary to create conditions which will enable both farmers and traders to comply with SVLK certification.

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