

MINUTES ON PROJECT WORKSHOP
CFC/ITTO 62 PD 40/00 Rev. 4 (I)
UTILIZATION OF SMALL-DIAMETER LOGS FROM SUSTAINABLE SOURCE FOR
BIO-COMPOSITE PRODUCTS
Date: December 9-10, 2010

Day 1: December 9, 2010

Venue: IPB International Convention Centre, Bogor, Indonesia

- Workshop was attended by a total of 124 participants. They come from industries representative related to the wood industries, government, students, and scientist/academician.
- Workshop was opened with remarks from the Director General of Forest Utilization, Ministry of Forestry (MoF), Indonesia, followed by remarks from the Vice Dean of Faculty of Forestry, ITTO representative, and CFC representative.

SESSION 1: 10.30 – 12.00

DISCUSSION WITH THE DIRECTOR GENERAL OF FOREST UTILIZATION, MOF, INDONESIA: Dr. Ir. R. Iman Santoso, MSc

Moderator: Prof. Dr. Yusuf Sudo Hadi

- There's concern with the prevailing condition of wood industry in Indonesia. Wood industry experience difficulties in obtaining fund from bank. Recommendations from related-stakeholders are needed to improve the furniture industry, including the use of raw materials.
- Community forests have high potential to supply wood industry. Ciamis regency has the potential of about 5 million m³ of timber from community forest. There should be a strong policy to ensure community development and welfare.
- There are many inputs from the aspects of supply and raw materials. Nowadays, products seem to be more diverse. East Java's wood industry seems to improve. A lot of products made from various kinds of materials, even products made from very minimum wood material, can be found in East Java.
- It seems that minimal regulation had encouraged optimum product diversification. On the contrary, the more regulation seems to complicate wood supply and increasing the production cost.
- However, high-cost economy mostly caused by non-forestry regulation which were beyond the autonomy of the Ministry of Forestry (MoF). There is a lot of homework to be done.
- Governance should be improved, both on the side of the government and the community.
- There has never been any regulation, which bans the use of oil palm stem/trunk. Perhaps the problem is lack of promotion. Promotion of the use of oil palm, bamboo, and other potential wood should be strengthened.
- Actors who involved in the industry should know the problems better than the government, since the government essentially only conduct problems identification.

- There seems to be improper promotion of products. For example, a certain wood products promoted as if the products can be use for all purpose, while in fact the products are ideal only for furniture. There should be a proper promotion of the use of different kinds of woods.
- Whenever possible, organize seminar to address specific problems. Such seminar would provide valuable inputs and recommendation for the government to improve the regulation.

PRESENTATION AND DISCUSSION I: RAW MATERIAL

Chairman/Moderator : Dr. Supriyanto

Title of presentation : Marketing of Indonesia Wood Industry Products

Presenter : Dr. Ir. Zulfikar Adil, MBM from Forestry Industry Revitalization Body

Notes of presentation :

- Wood products certification has been an emerging trend in the export trading of wood industry. There's increasing number of countries which require certified wood products.
- Timber Legality Assurance System (TLAS)/Sistem Verifikasi Legalitas Kayu (SVLK) was launched on 1st September 2009
- BRIK: established on 13 December 2002 based on joint decree of Ministry of Industry (MoI) and MoF
- Endorsement system: is one of BRIK operational activities on timber origin. Ensure export of timber from legal sources → ETPIK (registered exporter) certificate issued by Director General of Foreign Trade.
- There are 11 harmonized systems (HS) category of wood panel and woodworking export endorsed by BRIK. The HS category is divided into wood panel and wood working.
- Data of wood panel and wood working 2004 – 2010 show that export decrease significantly. There had been shortage of logs inputs/supply.
- Around 40% of wood working inputs come from community forest.
- Main export destination: Taiwan, China, Japan, Australia. Taiwan and China imported more wood working product in terms of volume. However, in terms of value, Japan and Australia imported more.
- TLAS is a new policy in Indonesia. Development of TLAS was based on 3 regulations, involving multi-stakeholders, such as government, NGO, private sectors, communities, and academician.
- TLAS as the Indonesian standard for the international consumer, build on governance, representativeness and credibility.
- National Commission on Accreditation (KAN) awarded certification to wood products certification bodies.
- BRIK had been certified as the Timber Legality Certification Body on Sept 1, 2009. KAN extended BRIK's certificate up to September 1, 2014 based on gap analysis and audit-witness.
- Up to 30 Nov 2010, BRIK had carried out TLAS for 10 companies: 3 had been awarded TLAS, 3 in decision-making process, 2 audits had been reported, 2 more were being prepared. TLAS was carried out by the Legality Division of BRIK.
- Saw Mill at Bintuni were going to be accredited by the legality division of BRIK.

- There will be 40 companies accredited based on TLAS by the end of this year. Far lower than the 700 companies targeted in the first stage of TLAS implementation.
- Constraint is limited number of auditor to do the TLAS. There is opportunity for fresh graduates to join TLAS training.
- Surviving wood products exporter companies are those which relying their products on engineered wood products. Companies which relying their products on solid wood are experiencing difficulties in obtaining supply.
- The use of SDL had become significantly increasing. The SDL had been seen as a potential replacement for wood products inputs. Sengon and rubber wood has high potential contribution for wood materials. The price of sengon wood had never decreased that the companies using them had very small margins.
- Margins of SDL, including rubber wood, is also small. Industry who uses SDL should be cost-focused, which means increasing their production number to lower the average fixed cost per m³.
- Increasing number of species had been used for timber products.

Notes of Discussion :

- Exploring SDL from natural forest would not be economics. Should consider sources from the community forest.
- There should be also harmonization of the regulation.
- TLAS is very important to ensure sustainability of sources.
- TLAS and Export Destination Countries:
 - The EU and many other countries will ban export which is not accompanied with certification. Indonesian government is in the process of negotiation with the EU regarding TLAS acceptance in EU. Hopefully that EU will accept TLAS as the Indonesian standard used internationally. EU had sent two expert missions to verify the compatibility of TLAS with the system in EU.
 - MoF had sent team to US to promote TLAS and discuss the acceptability of TLAS in US. US will accept TLAS since it was stipulated by the decree of formal regulation.
 - Japan had also accepted TLAS.
- TLAS and wood Industry:
 - Based on the regulation, Pulp and Paper, and Furniture industry are excluded from TLAS. It does not necessarily mean that those industries would not be benefited by the TLAS. Furniture products were mostly exported to the European countries, which require certification for wood products. Products which are not certified would have to undergo customs inspection which take time and would also be costly.
 - However, the first stage of TLAS implementation would be limited to wood working and panel industry, which means about 700 companies. The process of certification for a company takes time, about 1,5-2 months. Certification for 700 companied will take 1 or even 2 years time. There is need of more auditors. Certification bodies should be developed.
 - Furniture industries had not formally included in the first phase of certification. However, considering that furniture industries might face market problems, particularly in exporting products to European countries, the industries are welcome to enroll their companies to get certification. In the mean time, furniture industries should register

their companies to the MoI. The furniture and pulp and paper industry are the domain of MoI.

- Bio-composite products:
 - Wood pellets had big market in Europe and Korea. Wood pellets are used as wood energy.
 - Wood pellets are bio-composite products, based on the definition of bio-composite: any kind of composites consist of cellulose.
 - There's an increasing trend of wood pellets use. Basically, density of the composites is increased several times greater. Wood pellets' density can be higher than coal's density. Wood pellets had been registered to the Ministry of Research and Technology (RISTEK).
- Three main issues in the world: Human rights, democracy, and environment. Environment leads to certification. Certification leads to competition.
- Difference of TLAS and the current system:
 - When voluntary certification is introduced in Indonesia in 90s, the progress is very slow, because it's not established based on the country's specification. While TLAS was developed based on Indonesia specific conditions and regulations.
 - Cannot tell whether TLAS would cost less than other certification or not. However, TLAS would benefit the companies in terms of: increasing export demand, particularly from the countries which required certified wood products, and raise the price of the products. There are countries which would even raise the price of certified products, such as Australia.
 - Since TLAS is mandatory certification, it's not a replacement for other certification systems.
 - TLAS ensure all mandatory regulations, such as UKL/UPL, industry license, etc., are met by the companies.
 - TLAS as a harmonization of the prevailing regulation. Specific for Indonesia, but developed to meet international standard.
- Math analyses of Indonesian wood products market:
 - The situation is different nowadays. Building an association with great power such those exist in the new order (Orde Baru) is not possible. Indonesia is no longer the top player of international wood trading. Malaysia had overtaken Indonesia position. Indonesian industries are facing various problems: lack of labor force, raw material inputs, etc.
 - Japan is still the main export destination. Total volume exported to Middle East countries, including the Arab Emirates Union almost equate the volume exported to Japan. However, the price is lower than Japan.
 - Most of plywood industries is still relying their timber supply on natural forest, which makes them uncompetitive in the international trade. Only several industries in Java had shifted their products to engineered wood. Those who uses engineered wood, such as from sengon wood, are the competitive industry in the international trade.
 - EU countries are self-sufficient countries, which survive even without imported products. Japan, on the contrary, relies on imported products. It would take different approach for EU and Japan. EU is strict with their requirements of certified products, while Japan is not so strict with its certification regulation.

- There are various problems which cause high-cost economy. For example, license which should be obtained from 2 institutions, instead of just 1 integrated ones. The more abundance the regulation, the more restriction for the industries.
- Rubber wood plantation were mostly (87%) owned by small stakeholders (farmers), while the remaining 13% were owned by private sectors and PTPN (state owned enterprise).
- There is also study on market trends and market analyses on wood industries. There is also projection for the next 10 years.
- The price of bio-composite products is better with TLAS, particularly in Australia and Italy.
- Still more companies to be certified.
- TLAS and harmonized system category:
 - Veneer is covered in harmonized system (HS) 4408. Trade of veneer is regulated based on MoI regulation. Veneer included in panel category: 4408 veneer, 4411 ply wood, 4412 particle board.
 - Harmonization is needed to develop similar perception.
 - Category of HS is based on national customs system.
 - TLAS enables stronger bargaining position in the international trade.
 - Harmonization should be done, particularly between regulations in one country and other country.
- TLAS and products of community forest:
 - TLAS will cover not only the industry, but also the raw material. Raw material should be the first to get certification from TLAS. Uncertified raw material would lead to problems in destination countries. However, since there is time limitation, TLAS is implemented concurrently for the products and the raw material.
 - SFM and legal wood should be singled out. SFM requires cutting cycle. Legal wood from community forest does not require cutting cycle. Regarding community forest, the regulation is related to ownership. When there is legal ownership, 1 requirement is met. Other requirements are related to license for cutting the tree and certificate of origin.
 - Certification for community forest is applied to groups which own the land, not to individual owner/farmer.
- Companies which own voluntary certification had bigger opportunity to market their products. However there is no difference between the price of certified and uncertified products. That is the reason why voluntary certification developed slowly. Problem is wood export to countries which have originality regulation, such as EU, requires certification for the exported products.
- TLAS ensure the fulfillment of the prevailing regulation by the companies being certified. Study on TLAS show compatibility with the destination countries regulation/requirements.
- Certification is the requirement of export destination countries.
- There is a lot of industry in need of assistance regarding certification. There is opportunity for Faculty of Forestry IPB to assist the farmer/small holder to face the certification.
- Certification is important; it also plays the role of regulation harmonization.
- Support is needed to accelerate the process of socialization and implementation of TLAS.

SESSION 2: 13.00 – 16.00

PRESENTATION AND DISCUSSION II: TECHNICAL ASPECT

There will be 3 presentations, each 30 minutes. Any questions/interruptions are welcome during the presentation.

Chairman/Moderator : Prof. Dr. Muh. Yusram Massijaya

Title of presentation 1 : Utilization of Small-Diameter Logs for Producing Bio-Composite Products.

Presenter : Prof. Dr. Yusuf Sudo Hadi (Bogor Agricultural University, Indonesia)

Notes of presentation :

- Logs supply: Indonesian log supply before 2000s were dominated by natural forest, and after 2000s the supplies were dominated by plantation forest. There has been a change of source of wood supply.
- Big diameter logs had been increasingly difficult to find. The SDL had been view as the substitute.
- SDL is trees or logs with less than 10” diameter at breast high.
- Study on SDL showed that there are only slight difference of the average basic properties of SDL from plantation forest and the natural forest is not
- SDL research on plywood showed that the properties were in the accepted range standard.
- SDL research on LVL: better medium density
- SDL research on MDF: species used in the study is suitable for MDF.
- SDL research on Particleboard: species used in the study is suitable for particleboard.
- Changes of logs supply: from big → small diameter logs, dipterocarps → other species
- There should be a new line production
- The weakness of using SDL for veneer: more knots, more short veneer, more space to stack the logs, requires specific debarking, cutting, drying, repairing, composting, and gluing → more time consuming → higher cost → lower productivity
- However, wood mills can meet the required standard of export.
- Particleboard and MDF products: too low SG is not suitable, and light color is preferable.
- Non Technical aspects barriers were, related to logs availability, government regulation, trade barrier (CoC, logs certification), bank support and skill training.

Title of presentation 2 : Utilization of Small-Diameter Lesser Used Species for Producing Bio-Composite Products

Presenter : Prof. Dr. Mohd. Hamami Sahri (University Putra Malaysia)

Notes of presentation :

- Total forested land in Malaysia (55,3%): peninsular 44,7%, sabah 57,5%, Sarawak 65,5%. The area of plantation forest were lower that the natural forest.
- There had been conversion of forest into oil palm plantation.

- Log production in peninsular were decreasing by half from 1995 – 2005, while in the other two area (sabah and Sarawak) there had been fluctuation of log production.
- There's an increasing of both supply and demand of sawn rubber wood from 1998 – 2003, and the supply still cannot fulfill the demand.
- Focus of research: milling issues and appropriate properties of products manufactured from SDL. Potential SDL species had been reported previously.
- Methods: trials at the mills, visit and discussion with mill operator and managers, questionnaire, direct lab test, use of secondary data.
- Species used: rubberwood species, acacia species, sentang, sesenduk, mahang and oil palm.
- Oil palm had been seen as the complementing wood for jungle woods.
- Peeling trials:
 - all acacia logs can be peeled without interruption with consistent thickness, except for the core logs which have knots.
- Board properties from SDL species: potential for bio-composite products
- There had been financial problems in conducting this research, which had cause delays on several activities.

Title of presentation 3 : Performance of Cement Board Made of Small-Diameter Logs

Presenter : Dr. Dwight Eusebio (Forest Products Research and Development Institute, Phillippines)

Notes of presentation :

- Species used: *Polysias nodosa*, *Alstonia macrophylla* G. Don, and *Eucalyptus urophylla*.
- Design: experimental on board size, pressing time, board thickness (8, 12, and 19 mm), board density (650, 750, and 850),
- Total 2025 specimens of wood wool cement board (WWCB).
- Procedure: mixing, mat forming, pressing, curing and conditioning.
- Results: MoR → *P. nodosa* and *E. urophylla* treated with calcium chloride showed increasing MoR, while the *A. macrophylla* treatment decrease the MoR.
- MoE: specimen treated with calcium chloride had higher MoE
- Nail head pull: treatment with CC increase the value compare with control.
- TS: treatment can decrease the TS properties of specimen compare to control.
- Water Absorption: Aluminum sulfate trigger water absorption, increase the WA properties
- Initial findings: MoR WWCB of *P nodosa* > other 2 species

Notes of Discussion :

- The use of SDL as raw materials for wood products requires new investments, particularly new machinery for production. The positive impact is more labor force employed in the industries.
- There is problem related to supply, from source of supply to products. There is also problem related to marketing aspects. Most consumers did not like white-colored wood, such as randu.
- License has also become problems. In Lampung, obtaining license to cut trees from plantation forest requires the same procedures as obtaining license to log natural forest. There should be differentiation between the two sources of timber.

- The use of SDL had cost investment on new machinery. There had been decrease in production capacity, increase in production cost, which led to decrease in company revenue.
- The price of SDL should be far lower than the big-diameter log, to encourage the use of community forest's timber.
- Regarding Malaysia experience in cutting the cost of production: merging small cooperation into a bigger one, developing mobile saw mill to produce sawn timber. Sawn timber using mobile saw mill increase. Mobile sawn mill uses almost all of the usable part of woods. To promote the utilization of rubber wood use for saw mill, the government designs incentives systems: provide land for farmer and decreasing tax for the cut timber.
- There are visual requirements of plywood which hard to be fulfilled using the SDL, for example SDL has many knots.
- However, the SDL is suitable for MDF. Problems in MDF related to licenses. The cost of timber extraction is high. There should be differentiation between timber from HPH and community forest. Transportation has become problems too. Source of timber is getting farther. Simplifying the legal aspects would encourage people to plant trees, because the biggest problems are caused by legal aspects.
- There is different requirement of wood materials for ships productions. Teak and camphor wood are common species used as ships materials. Ships need durable timber products. SDL had lower durability compare to teak or camphor wood. More research is needed to ensure the suitability of SDL for ships production. However, there is ongoing research on the performance of SDL compare to the original wood.
- Indonesia and Malaysia face the same issue on technical point of view. Production process issue: there are differences in log core products between Malaysia and Indonesia.
- The cost of utilization of SDL for BC is higher by 1.5 times. But the yield decrease by 15%.
- Mr. Bintang Simangunsong had the competence regarding financial analysis. The financial analyses of SDL usage should be discussed with him.
- The uses of Oil Palm fibers:
 - a. Oil palm is one of species available for analyses in Dr. Eusebio's study.
 - b. Oil palm trunk had been used to produce core veneer. Problems with oil palm for veneer: moist, some machine cannot process the stem. In Indonesia there is the use of the outer part of the stem for veneer.
 - c. In the future, oil palm wood can be use for wood material. →high quality wood from oil palm trunk .
- There should be new path in using the SDL instead of the conventional one. The low result of SDL maybe because we used the conventional way to produce the products. Issue on the suitable technology is important.
- There's an emerging issues of green infrastructure, using reduce, reuse, recycled materials as building materials. Building bungalow using 100% wood would received more than concrete. There is potential to produce high-quality wood from SDL. The LVL had the potential to be used for structural wood. However potential, the use of SDL for BC products had not been able to ensure high-quality/high-strength products for structural uses.
- Chances/opportunity is opened to apply proposal to ITTO to conduct such research. The next deadline for the ITTO application would be January 2011. Proposal should follow the ITTO guidelines available on its website. Maximum of US\$10000 fun could be awarded.

There is also possibility to apply proposal to CFC. Information is available on both organization websites.

- There is technology using plasma energy to increase wood strength.
- Grading should be taken care of in research. Too high variability of samples being tested might lead to low result.

CONCLUSIONS

- There are total 124 participants attend the workshop. They come from industries representative related to the wood industries, government, students, and scientist/academician.
- The sessions of presentation and discussion on raw material aspects had led us to several conclusions. Minimal regulation seems to improve the diversification of wood products. However, there should be governance improvement both from the government, and the community. Such seminar would provide valuable inputs and recommendation for the government to improve the regulation.
- Nowadays, there is urgent need to have certification of the exported wood products in the international market, particularly in the EU and USA. Timber Legality Assurance System (TLAS) was developed as the Indonesian standard for the international consumer, which build on governance, representativeness and credibility. TLAS is mandatory, and would benefit companies in terms of acceptance of their products in countries which requires certification, and price rising.
- From the view of technical aspect, SDL has been seen as potentially dominant wood for raw material for bio- composite industries.
- New line to process SDL is absolutely important (veneer based processing), which need Bank support, Skill training, Review of taxes and administration in utilizing SDL.
- The effect of wood/cement ratio and density on cement board properties vary depending on the wood species.

Day 2: December 10, 2010

Venue: Cianjur Forest Management Unit, Perum Perhutani Unit III, Cianjur, Indonesia

The Workshop field trip was attended by a total of 57 participants come from wood industries, governments and scientists/academicians. The field trip participants visited Cianjur Forest Management Unit, Perum Perhutani Unit III, Cianjur, Indonesia, community forest, small scale furniture industry using small diameter logs, flower garden and enjoy lunch and dinner in the beautiful tea plantation area in Puncak, Cianjur regency. Several important information as follows :

- a. Cianjur Forest Management Unit (FMU) is the biggest plantation company in Java island. It has been well managed and success to develop mutual benefit collaboration with community around the forest area to build forest plantation.
- b. Cianjur FMU is offering collaboration research to ITTO/CFC and other stakeholders.
- c. Cianjur FMU is developing nursery for high quality teak seedling. The nursery is design to fulfill the teak seedling requirement in West Java Province.

- d. Cianjur FMU forest area is a good example for forest plantation in Indonesia. The dominant wood species is teak, mahogany, and pine.
- e. The dominant wood species planted in community forest is sengon and planted with agro-forestry system.
- f. The price of small diameter logs (SDL) is much lower compared to the large diameter logs, especially SDL from community forest.
- g. Small scale furniture industry using SDL in combination with bio-composite products (LVL, plywood and MDF) to produce low – medium quality of furniture. The produced furniture were sold in the West Java Province area.