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**Journal of Environmental Management and Tourism** is an interdisciplinary research journal, aimed to publish articles and original research papers that should contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences.

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## Partnership Schemes - A Solution to Sustain Raw Materials of Plywoods in Lombok Island

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### Abstract

The increasing number of community plantation forests in Indonesia, specializing in plywood, has improved the size of this market. Many companies succeed in this business, creating fierce competition for raw material supplies. Additionally, the Indonesian government has intensified the wood industry production in 2015 so that several fast growing and shortage timber species were introduced. However, this great opportunity is also faced with the challenge that timber exported overseas must be certified. The existence of middlemen in the business supply chain can potentially disrupt the business with unsustainable procedures and can harm the environment. In this study, we investigated the requirements of a partnership to establish a sustainable partnership with the local communities, to provide a sustainable environmental development in Lombok and to deliver profitable business prospects to the wood industries. This research focused on investigating Dharma Satya Nusantara Group (DSNG)'s challenge to obtain and to secure raw materials of wood to maintain and to sustain its future plywood manufacturing businesses. A qualitative method was employed by using snowball sampling of 17 individuals, including farmers, landowners, NGOs, middlemen, and logistic companies. Finally, a triangulation method was employed to analyze the data. Our findings proved that a mediator was needed to find mutual goals between private sectors in the local community. The mediator position should be neutral and prohibit from taking a side. DSNG as the buyer could utilize an expert practitioner that would act as a mediator to connect with the people, while the farmers would be supported by cooperation as their connector to DSNG. Finally, a collectivist culture, mutual trust, solidarity, teamwork, and education were essential factors for sustainable partnership.

**Keywords:** plywood; partnership; lombok; sustainability; cooperation.

**JEL Classification:** Q13; Q01.

### Introduction

The Indonesian plywood production reached its peak in the 90s, but gradually succumbed after the crisis in 1997. Annual production rates were below six million m<sup>3</sup> after 2003. Luckily, the Indonesian Government has intensified the wood industry production in 2015. Several fast growing and shortage timber species are introduced and among

the various types of newly introduced tropical wood, i.e. Sengon (*Paraserianthes falcataria*) which was widely used in the rich and fertile soils of Java Island. Many farmers were encouraged to grow sengon by the fact of its high yield, rapid growth and low cultivation cost. Moreover, the increasing number of community plantation forests in Java specializing in sengon wood has improved the size of this market. Many companies thrive in this business, creating fierce competition for raw materials supply.

Despite having factories and satellite saw mills in Java, DSNG is insecure of their current condition. The company had tried to produce Industrial Timber Plantations (HTI's) in 2004 and 2010 but have not made any remarkable results. At present, the company badly expects the need of alternative species that are similar or better than sengon to maintain their supply of wood products. One of the many ideas is to establish a partnership scheme with owners and farmers of nonindustrial private forests in Lombok Island. Timber quantity is said to be abundant for the company's operations, the locals will become more prosperous and eventually preserve the surrounding ecosystem. However, there is an issue with the wood circulation in Lombok with respect to the existing middlemen who dominates the wood business and could potentially disrupt the business with unsustainable procedures for many generations and could likely harm the environment. The expectation is to establish a sustainable partnership through enacting cooperate directly with the local wood farmers within the island. The company is prepared to pay the normal market price as long as it is certain and guaranteed by the availability of quality timber. In this study, we investigated both timber potential and supporting factors of private forests within the region, personal views of the community regarding the middlemen's influence, willingness, constraints, and the participation of the community and market chain members to join a cooperative and finally identified a partnership model that suits the timber potential and the supporting factors.

Previous research has been carried out on forest partnership schemes (Evans, de Jong and Cronkleton 2008; Sunderlin *et al.* 2008; Suwarno and Nawir 2009; Gilani, Yoshida and Innes 2017). The objectives of these partnerships are to preserve forests, reduce illegal logging and maintain sustainable practices (Suwarno and Nawir 2009). Most of the studies use quantitative methods yet in this study, we fill the gap by offering the use of qualitative methods to build a partnership with the local communities, to provide sustainable environment development within the region and to deliver profitable business prospects for the company. The paper is structured as follows. The next section will notice the most relevant literature in term of partnerships, creating shared value (CSV), cultural aspects, the role of leader opinions, and the role of middlemen. Next, section 3 will provide the methods employed. Afterwards, section 4 will provide results of analysis and discussions. Finally, section 5 will provide limitations and suggestions for future studies.

## 1. Literature Review

### 1.1 Partnership

Competition and rivalry are both inevitable as the economic environment has become more complex and difficult with the increasing number of firms. Thus, partnerships are being formed by different sectors as a solution to achieve reciprocal benefits aside their own business goals. The partnership definitions rely on the potential synergy of certain forms; the development and delivery of a strategy or sets of operations and that public sectors should not only focus on commercial goals (Osborne 2002, Gray and Stites 2013, Dentoni, Bitzer and Pascucci 2016). Partnership with respect to an economic development perspective is cooperation among actors agreeing to work on specific economic development and find the key distinction between policy communities in developing broad local vision within the local economy and necessary networks to support individual projects (Bennett and Krebs 1994). In the agricultural sector, partnership is determined to play an important role in assisting farmers to meet export and product certification requirements, assist farmers in implementing good agricultural practices, safeguarding and improving quality, improving product efficiency, helping market access and helping farmers adopt new technologies (Narrod *et al.* 2009; Jaffee, Henson and Diaz Rios 2011; Kersting and Wollni 2012; Bitzer 2012; Royer, Ménard, and Gouin 2016).

The foundation of a social partnership should be presented in every cooperative (McQuaid 2002). The concepts of social partnership can be analyzed through factors of initiating the origins, purposes and work focus (Billett, Clemans and Seddon 2005). They classified the types of social partnerships, as: (1) enacted partnerships, proposed by external agencies in achieving shared goals with the community; (2) community partnerships, formed by local communities to address domestic issues by cooperating with external agencies to achieve support and sufficient resources; (3) and negotiated partnerships, initiated among partners with mutual goals in securing support or service, requiring effective negotiation of interest and agenda. This study will only focus on the enacted partnership that is proposed by DSNG.



## 1.2 Creating shared value (CSV)

CSV is a concept defined as policies and operating practices that enhance the competitiveness of a company while simultaneously advancing to the economic and social conditions in communities in which it operates (Porter and Kramer 2011). It aims to expand recognition of societal needs in addition to mainstream economic needs. Many companies have already utilized this approach, yet some authors' claims that this principle is still early in its adoption cycle. Companies can create shared value in three ways: (1) re-conceiving products and markets; (2) redefining productivity in the value chain; and/or (3) enabling local cluster development. As a management strategy that indicates social problems, it can develop future markets and approaches to social and environmental issues for a company to prosper in the long-term. The study will focus on re-conceiving products and markets to address social needs and opening new markets and to serve unmet needs of communities requiring a unique distribution method.

## 1.3. Cultural aspects

In pre-colonial era, the local people of Lombok known as "Sasak" used forests as religious rituals and ceremonies as well as cultural practices by nobility and leaders, especially those of forests surrounding by Mount Rinjani was known to be sacred by the local Sasak and Balinese communities (Van der Kraan 1980). The practice of community-based management is a sustainable method combining consumption of forest resources for economic needs and protecting it through cultural and religious practices (Yudilastiantoro 2008). Although there is an increase of modernization, Lombok's natural landscape has still remained unchanged for centuries. Small-medium enterprises (SME) are still run by local families in which many sell merchandise, food, utilities as well as toys in simple small kiosk (Susanto *et al.* 2013). One notable important culture of Sasak people are their ways of life symbols as ngaro, ngarat, and ngaji. These underline that the way of life of Sasak people will be always from planting, tending cattle, and learning the Holy Koran. A way of life that nurtures the land, plant, and animal and spiritual to achieve a balance in life.

## 1.4. Role of opinion leader

Leaders act as gatekeepers for interventions, contribute to social norms and behavior changes (Valente and Pumpuang 2007). They can provide entrance and legitimation to external change, socialize agency programs and pioneering behavior change within the community, socializing health messages and to continue beneficial program goals after an agency withdrawn from the community. They are also opinion 'brokers' that carry influence among groups and responsible for contagion between two distinctive networks (Burt 1999). Although new influences have impacted in changing social and cultural values, yet local culture remains important within district regulations and social structure. Opinion leaders such as the traditional cultural leaders (*pemangku*) are important in North Lombok society, whereas religious leaders (*tuan guru*) are influential in other regions (Ismail 2009).

## 1.5. Role of middlemen

There were three different roles of a middlemen (intermediary) as: (1) a trader, exhibiting entrepreneur functions to bridge the gap between the customers and suppliers to reach one another, (2) a distributor, maintains the characteristics of a trader yet takes the view of intermediaries within a manufacturer's perspective, sharing entrepreneurial risks and efficiently improve transactions and costs and as (3) a provider, aiming to provide users in terms of customized resources and supply differentiation (Gadde and Snehota 2001). In Indonesia, middlemen are known as "*tengkulak*". The term refers to a trader who purchases crops and harvested goods from farmers or first owners. It has been a traditional practice developed within the Indonesian culture by purchasing from farmers with the role of gatherers, buyers, brokers, marketers and sometimes as creditors. They utilize various systems in buying the commodity whether pre-harvesting (*ijon*) or after harvesting. Their role is to link transactions between producers and outside purchasers in order to fulfill various needs of the villagers (Pageh 2015).

Middlemen can reach the most remote regions of production and conduct inter-island commercial trades. They have the ability to persuade and influence farmers, availability of own logistics and transportation and modern communication utilities. They have great entrepreneurial skills supported by knowledge of markets and risk speculations. Middlemen are important in the smallholder timber market. They tend to achieve greater profit shares rather than farmer (Stewart and Rohadi 2014). Based on the explanation above, the hypotheses to be tested are as follows:

**H1:** Local communities do not have sufficient knowledge of partnership and remains satisfactory with current condition.

**H2:** Local communities have sufficient knowledge of partnership and remains satisfactory with current condition.

**H3:** Local communities have knowledge of partnership, but has no intention to cooperate due to previous attempts and negative experiences.

**H4:** Local communities is not aware of partnership knowledge, but is willing to support changes if an opportunity arise.

**H5:** Local communities have knowledge of partnership and is willing to contribute for a cooperative opportunity.

### 3. Methodology

#### 3.1 Data collection

A qualitative research was held to figure out the opportunity of conducting a partnership scheme between different farmer groups in Lombok with DSNG as well as to gain insights for availability of several species of wood including sengon. A preliminary research was executed to understand the condition of local communities within the private forest areas or plantations and the market chain key players in Lombok's timber business. The respondents were no more than 20 samples in order to provide a general overview or helicopter view of the issue (Baarda 2010). Individual/ Group leader farmers, middlemen, cooperative members and logistic companies were the primary subjects for interview. Sawmill owners, academic practitioners, NGO's and opinion leaders such as the religion scholars, customary head and village head contributed and gave additional aspects of the timber business. It should be noted that one individual may qualify in two or more positions. The total respondents were 18 individuals, including two focus groups, each with a taken sample of three persons. To reach saturation the research used homogenous group in the mid-age (ranged 35 to 55) sample of actors or heterogeneous group by asking both the main key actors inside and the related key actors outside of the market chain. The research was conducted for 18 weeks and applied the Gantt chart for project activity planning.

As the collected data are qualitative, it cannot be easily used to make an assumption over a larger population. The availability and time of respondents such as opinion leaders, academics and logistic drivers due to their activities is sometimes difficult to interview with more respondents. Some of the selected sample units will either forfeit or unwilling to contribute as expected in the study. In this case the researcher must search for other samples. The reliability of the research was done by cross-checking interviews between respondents as people tend to forget certain details in the answering process. Comparison with desk research can also support its validity and minimize subjectivity of interpreting the data.

#### 3.2 Data analysis

Semi-structured questions were designed at first to third phases, while unstructured interviews on the fourth phase to discover differences of the communities' reaction, intention and motive of whether or not they want to support on a partnership scheme. In terms of analyzing the qualitative data, the research will consist of combining multiply methods known as triangulation (Baarda 2010). Triangulation is a method that uses a variety of indicators to capture constructs (Schwartz, Steffensmeier and Feldmeyer 2009). Triangulation can then be classified into four: data, investigator, theory, and methodology. Each division divided into three subdivisions: time, space, and person (Campbell and Stanley 1963; Denzin 1978). The advantage of this method is that the researcher does not need to understand the overall variations in the data collection method (Schwartz *et al.* 2009). Data were collected via DSNG's documents, digital articles, presentations and videos from the internet. The interviews were all directly face-to-face. Utilization of the grounded theory, which builds a theory through data collecting to help in organizing and summarizing the collected sources and dispose unnecessary information, was used to collect data.

### 4. Findings

#### 4.1 Respondents' characteristics

We interviewed 18 individuals in which six people were chosen as sample units from focus groups, five farmers, two middlemen, one logistics, two experts/academics, and two opinion leaders (Table 1).

According to the samples' knowledge in terms of partnerships and factors affecting their decisions to conduct a cooperation, we evaluate each of the research hypotheses to be tested in this study. The essential information was collected from the transcript records of each individual. It is assured that hypothesis number 4 and 5 are accepted within the communities of Lombok Island. The results are described below:

**H1:** (Local communities do not have sufficient knowledge of partnership and remains satisfactory with current condition). It is still accepted, although it was provided by a very limited portion (lack of proper communication skills).



Table 1. Interview list and occupation

Sampels	Profesions
Respondent 1	Farmer, Opinion Leader, Entrepreneur, Supplier
Respondent 2	Ex-timber company worker, supplier, middlemen
Respondent 3	Businessman, sawmill owner, middlemen
Focus group	13 board members (teachers, activist, opinion leader, etc.) -Three sample units-
Respondent 4	Ex-Academic and expertise in agroforestry, consultant and senior lecturer
Respondent 5	Public sector employee and his co-worker
Respondent 6	Farmer and opinion leader
Respondent 7	Farmer and neighborhood leader
Respondent 8	Farmer, self-business and entrepreneur
Focus group	Opinion leaders, farmers, public leader -Three sample units-
Respondent 9	Ulama, entrepreneur, activist, moderator, opinion leader
Respondent 10	Truck driver and company coordinator

**H2:** (Local communities have sufficient knowledge of partnership and remains satisfactory with current condition). It is rejected as those whom are educated are still anticipating a proper scheme.

**H3:** (Local communities have knowledge of partnership, but have no intention to cooperate due to previous attempts and negative experiences). It is rejected, as most stated that they are still anticipating cooperation with private/public sectors.

**H4:** (Local communities is not aware of partnership knowledge, but is willing to support changes if an opportunity arises). It is accepted as most of the interviewees were farmers with lack of proper education and is in line with those who supported hypothesis 1.

**H5:** (Local communities have knowledge of partnership and is willing to contribute to a cooperative opportunity). It is accepted as the majority of individuals highly support this option.

#### 4.2. DSNG current business practices

The majority of forests is located in West Lombok and parts of East Lombok. West Lombok has an abundant number of rivers that causes the land to flourish and suitable for food crops and plantations and harvest could be done throughout the year. Northern Part of East Lombok, particularly those parts of the hilly forest landscapes and the slopes of Mount Rinjani are blessed with high rate of rainfall. As for Central Lombok, the climate is mostly rainfed, the water is scarce and depends very much on rainfall water. Only small parts of northern region enjoy a higher rainfall rate. Most of those foreign species assimilated for hundreds of years and very adaptive to Lombok soil and landscape that even the locals do not recognize them as non-native trees. Details of potential timber for commercial purpose in Lombok are denoted in Table 2.

Table 2. Timber cultivated in Lombok Island

Species	Grade	Harvest age	Origin status	Usage
Sengon	IV-V	4-5 years	Introduced-2000	Woodwork and plywood
Beech wood	III-IV	4-6 years	Introduced-2005	Woodwork and plywood
Teak	I	15-20 years	Assimilated	Woodwork, plywood, furniture
Mahogany	II-III	10-20 years	Assimilated	Woodwork, furniture
Rosewood	I-II	10-20 years	Introduced	Woodwork
Chinaberry	II-III	6-7 years	Native	Woodwork and furniture
Kelicung	I	+20 years	Native	Woodwork and furniture
Duabanga	III-IV	7-8 years	Native	Woodwork, maybe plywood
Meranti	II-IV	-	Introduced	Woodwork, plywood, furniture

#### 4.3. Timber market and competition

The wood trade business in Lombok consists of the local market and inter-island market. All wood species are sold freely within the islands of Lombok, while sengon is the only tree species shipped towards Java. Sengon is cheap and highly demanded for furniture and other woodworking activities in Lombok. When demands for sengon decrease, clients from Java are monopolizing prices and purchase old timber stocks with a new cheaper price. Inter-island market clients are timber companies from Temanggung and Magelang in Central Java and Lumajang

and Surabaya in East Java. As stated by most farmers/respondents, middlemen are monopolizing the purchasing process of timber in Lombok. They have their own sawmill or timber depot.

#### 4.4 Timber price, production, and logistics

As the most developed villages in terms of timber businesses, Jembatan Gantung has switched their main reliance from teak wood towards beech wood and puts aside the middlemen. Farmers of Jembatan Gantung now enjoy better price as they are now more independent of middlemen. New prices range from Rp.300.000, - for self-transport from plantation to Rp.400.000, - for transport of wood to the nearest main road. Wood farmers of Jembatan Gantung sell wood since it is in the form of a tree. The farmers are confident that they will profit from wood business, even when they start selling trees in cubic meter (Table 3).

Table 3. Comparison of price system in Jembatan Gantung, Lombok

Pricing to middlemen	Weighting (kg)	Weighting deficit (kg/m <sup>3</sup> )	Price per tree
Old	58	5-10 kg/m <sup>3</sup>	Rp 200.000
New	58	2-3 kg/m <sup>3</sup>	Rp 350.000-400.000

The middlemen respondent for the inter-island transaction of sengon explained that his timber production capacity was about 25 m<sup>3</sup> per month. He sells the wood to client in Java for about Rp.1.300.000, - per cubic meter. Bintang Muda cooperative of East Lombok explains that sengon price in Wanasaba previously was Rp.350.000,-/m<sup>3</sup>. The price increases to Rp.400.000-Rp.500.000, - per cubic meter after a price leak information from Central Lombok (amounting to Rp.450.000, - per m<sup>3</sup> including logistics). Other former members of the cooperative had different experiences in wood pricing. One farmer points out that he sold his one hectare 4-5 years old beech wood for a price of 35 million rupiahs.

Another member sold only for 15 million rupiahs, and another farmer urgently selling five or six trees for 2.0 million rupiah. A couple sold out their entire mixed plantation, consisting of young-aged beech wood for Rp.50.000 per tree. Private forests in Aiq Berik usually consist of about 1000 trees per hectare with an average price of IDR 150.000-200.000 per tree (10-20 cm in diameter). The lowest price is Rp.100.000 (10-15 cm) and normally is IDR 300.000-450.000 for 20-30 cm diameter tree. A five year-old sengon tree can reach 30-40 cm in diameter with a price from IDR 500.000-1.000.000, sold to sawmills in Lombok. One farmer experienced selling 37 trees for as low as of 2.7 million rupiah. Logistic plays an important role in timber businesses. Table 4 denoted the logistic prices from inner and inter-island wood transportation to and from Lombok. The inter-island middlemen states the expense for one journey of taking wood from Central Lombok to Lembar West Lombok costs him 225.000 rupiahs. The logistic from Lombok to Java depends on truck size. Bintang Muda cooperative notices that the transfer of a cubic meter of timber from a farmer's plantation to the waiting location of pickup truck is 250.000 per cubic meter; the price includes the cost of cutting trees. A logistic company carries timber to Java can reach as many as four times a month. One truck could bring about 18 m<sup>3</sup> of log timber.

Table 4. Logistic prices for inner and inter-island transportation

Market chain actor	Inter-island	Inner-island
Middlemen	Truck to East Java: Rp 100,000 To Central Java: Rp 150,000-175,000 Ferry to Lembar - Pd. Bai: Rp 1,500,000 Gilimanuk - Banyuwangi: Rp 700,000	From Lembar: Rp 360,000 From Central Lombok: Rp 225,000
Farmers	-	Pickup: Rp 450,000/5m <sup>3</sup>
Cooperative	-	Harvesting: Rp 500,000,-/day (10m <sup>3</sup> ) Pickup to truck: Rp 100,000,-/day
Logistic driver	To Surabaya: Rp 3,000,000/18m <sup>3</sup>	Truck to plantation: gasoline/4-5 km

In addition, the estimation of profit gained by middlemen is denoted in Table 5 below.

Table 5. Profits of middlemen

Pricing	Normal Price/m³	Reduced price/m³	Info
Price to customers (timber company)	Rp 1,350,000		Normal weight reduction is 5 % Reduced by 8.5 %
Truck logistic cost to Central Java	Rp 166,667		
Selling price without reduction	Rp 1,183,333		
Weight reduction	Rp 59,166.65	Rp 100,166.65	
Selling price	Rp 1,124,166.35	Rp 1,083,166.35	
Purchase from farmer (per tree)	Rp 400,000	Rp 400,000	
Gross profit	Rp 724,166.35	Rp 683,166.35	

## 4.5 Challenges within the business sector

This section lists the condition, connection and contribution of each key actors within Lombok's timber market chain.

### 4.5.1. Cultural barriers

The Jembatan Gantung Village has become more concerned and aware of the agroforestry industry and the environment. Wood farmers of the village are able to shift from monoculture towards a poly culture system. Respondents explained that Lombok's middlemen tend to deceive farmers and take advantage out of their urgent needs. Public and opinion leaders illustrate that they indirectly influence farmers to believe that they would not be able to gain money by selling off timber in a long period. Farmers harvest their timber earlier, which is cheap, unprofitable, and unsustainable. Monopolizing middlemen buy timber per plantation or tree through prepaid or paid after harvest with a low purchase price. It is common practice that wood companies utilize these middlemen to gain an even better price margin. The unprofitable wood farmers often shift to short or medium term crops instead of continuing planting wood trees.

### 4.5.2. Legal aspects

Lombok's timber business is mainly for internal market within the Nusa Tenggara Barat Province (Lombok and Sumbawa Island). Only sengan is legally allowed for transaction outside the island with licenses that are renewed every six months via logistic truck companies such as Surya Indah and Lombok Express, the latter being the oldest logistic company in Lombok. Some high quality wood like Meranti is imported from Kalimantan, Celebes, or Moluccas islands for domestic use in Lombok sold as 'Kayu Kalimantan' brand. Sources of sengan in Lombok are mostly from HR or private forest or community plantation in Lombok and Sumbawa islands. A limited number of local communities are given access to cultivate/ manage the designated forestry land or public land for community forest (HKM) and community forest plantation (HTR) by the government. Community forest is designed for protecting forestry land while HTR for productive public land. Community forests spread over many parts of Lombok Island in all four regencies in Lombok, meanwhile community forest plantation is mostly located in the southern parts of Central Lombok regency. Natural forest (HA) is managed fully by community in the North and East Lombok regencies and industrial forest (HTI) is a forest land concession given to industries.

### 4.5.3. Key actors involvement

The farmer is one most important key factor in Lombok wood business. In general, wood farmers have limited knowledge, unorganized, lack of characters, poor innovation and live in the old paradigm. They rely upon middlemen as their main providers of quick cash. However, wood farmers of Jembatan Gantung are quite progressive. They gather in to form a group. Each group collaborates with other groups to establish a Gapoktani. The collaboration is initiated by influencing individuals. Then, the majority of individual farmer has voluntarily joining themselves into farmer groups. They believe that what they do is meant to improve their welfare.

## 4.6. The ideal partnership desired

As part of the first ranking-rating-sorting game, each respondent picks five of the eleven cards available that show different ideas or options with the intention to represent each stakeholder's personal goals in entering the timber business. Table 6 compiles the business card game results.

Table 6. Business priority card game results

Improved production: 8	Modern life: 2	Non-wood products: 3	Enjoy nature life: 8
Multi-culture: 7	Family: 5	Improve welfare: 9	Educate your gen: 8
Recreation/secondary income: 5		Funding: 3	Solidarity: 10

The table indicates that the majority of respondents view solidarity as one of the fundamental intention of doing business within the timber industry, adding that their well-being cannot be separated from the prosperity of others including the future of younger generations and the local environment. With vast varieties of woods spread in the island, multi culture products are essential to improve production. Two most influential opinion leaders are ready to support and take Lombok as part in the global market, and bringing together with it as a pilot project for eco-tourism.

## Conclusions

### Timber potential and business prospects

Private forests have been part of the Sasak culture for centuries. It has been recently recognized as profitable timber sources when sengon was first introduced in Lombok as a fast growing species in early 2000. Many other foreign and local wood species have been grown and used in Lombok for internal consumption (due to their limited amounts). Sengon grows best in flat wetlands while beech wood is adaptive in both dry and wetlands either in flatland, hillsides and/or highlands. Sengon is licensed for inter-island trades due to its abundances of stock. Beech wood was introduced in 2005 and is becoming very popular for wood farmers in Lombok due to its better wood quality than sengon.

Soil fertility is one of the main factors determining the most suitable kinds of wood species to grow. In Lombok, soil fertility is classified based upon the availability of water resources with more fertile areas are given to the landscapes with abundant water and less fertile soil in drier areas. With this classification, West Lombok is being the most fertile soils, followed by East Lombok and Central Lombok. Many parts of these areas are potential landscapes of growing trees. The farmer is the key actors in the timber business. Lombok farmers are very skilled in crop and tree planting as well as tending the cattle. Both are very valuable skills and knowledge in developing agroforestry and polyculture for the purpose of developing timber plantation industry.

A cooperative is one of the strategy to group the farmers for better bargaining position to mutually conduct fair and profitable timber business among key business actors. They could help farmers to collect, sell and loan money for better earnings. A cooperative can also become one potential partner for company to nurture fair and profitable business timber to support its raw timber material needs. The opinion leaders and academics are both skilled and knowledgeable and gain respectful honor of the community. There are some thrust worthy opinion leaders and academics in Lombok Island. They have a high potential capacity and capability to bridge fair trade through introducing a solution that could share fairly the benefit among the timber business actors; a fair timber business trade that would give a considerable profit to the company and at the same time guarantees welfare and prosperity to the community and the environment.

### Challenges and cultural barriers

Wood farmer is the most vulnerable actor in Lombok timber business practice, being exploited by powerful and sophisticated middlemen and companies who buy their timber with very low price. Middlemen in Lombok have always been the resort for many Lombok people for centuries to borrow or earn money as they always bring cash when meeting farmers. They are supported by strong financial and many supporting wood industry necessities and have good entrepreneurial skills and knowledge of timber market chain in Lombok. They seize the opportunity to gain the highest profit sharing as they are very superior to farmers. Middlemen easily adapt to price changes and are risk takers.

Previous experiences show that it is hard for a company to influence the local community as they do not put society's needs as a priority. Bad management and the lack of trust lead to social discrepancy. The cooperative could be one valuable organization and venue to help farmers to deal with middlemen and companies. Unfortunately, at present wood business practice in Lombok both farmer and cooperative are still in its vulnerable position both in terms of financial and organization and hope for professional help to address the challenge. The opinion leaders and academics are both an asset for human resources, although their roles are still remote in terms of the wood business in Lombok.

### Criterion for a sustainable partnership

A healthy relationship means everyone reaches a common ground to gain proper earnings without a single side suffering from the sharing activities. It should be practiced based upon trust, tolerance, commitment and consequent. It must be done by prioritizing general needs above personal and provide activities and knowledge that can encourage environmental preserving and improving the community's overall capacity. The majority of key actors in Lombok's timber industry has the desire to perform a partnership to build upon mutual trust and benefits. This is an opportunity for DSNG to enact a social partnership which is based on reliance on each other.

In a multi sector partnership, a mediator is needed to find mutual goals between private sectors in the local community. The mediator position should be neutral and prohibits from taking a side. DSNG as the buyer could utilize an expert practitioner that will act as a mediator to connect with the people, while the farmers will be supported by cooperative as their connector to DSNG. A collectivist culture, mutual trust, solidarity and teamwork are essential factors within a social partnership based on CSV. Culture and education should be taken into account as it refers

how to communicate with common people and address certain individuals with title names and level of education/experience to extract essential knowledge. DSNG should put in priority the needs of the community upon its own need in order to materialize the potential sustainable timber business partnership with the community. Middlemen can be part of this partnership business scheme as long as they respect the mutual goal of bringing welfare and prosperity to the community and the environment.

### Recommendations

This section provides answers and outcome from various literature reviews, data collecting and interview analysis to answer previous formulated questions. They are provided to give a clear glance of partnership opportunities within Lombok. In order to answer the main question, below are the following criteria:

- **Speed up the development of HR and plantations to improve and to sustain the environment**

HR and private-owned plantations are becoming a dominant source of wood for Indonesia's timber trade. The absence of actual information of the total coverage in Lombok creates an opportunity for DSNG to take part in its development to improve HR existence that can combat illegal logging caused by poverty. HR and plantations are basically agroforestry lands containing multi-cultural products, so the practice can revitalize unproductive areas. The current REDD+ program in Lombok can heavily rely on HR that are currently not optimized. As the amount of carbon decreases, the urge for a partnership will contribute to the preservation of the ecosystem.

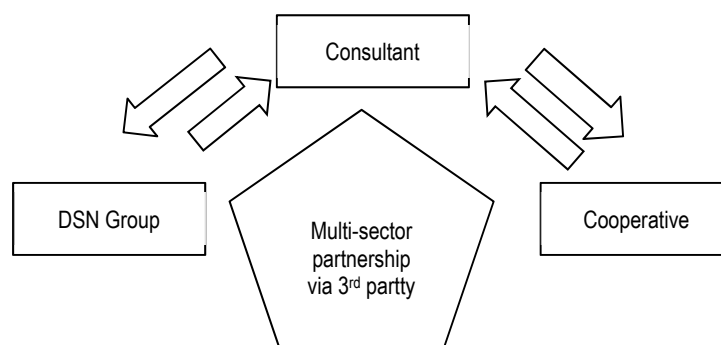
- **Secure beech wood as a potential alternative besides sengon for raw materials of plywood**

The chief technology officer of DSNG stated about the quality of sengon wood for plywood manufacturing as deficient. It would be best to offer beech wood as a substitute for sengon as suggested by the field-expertise interviewees. It is becoming a popular commodity in Lombok and the company can be the first to pioneer license for inter-island trade of beech wood.

- **DSNG should enact a neo-social multi sector partnership between cooperative and farmer groups through a mediator based on CSV**

The mediator is formed into a consultant that will convey DSNG's requests and help community fulfil their needs and aspirations until it reaches an understanding. This new model will consist of a group of individuals that are academic professionals and social-environmental practitioners experienced in fields related to Lombok's timber industry. These professional performs similar as those of NGOs with the objectives of providing necessary training to cooperative members, develop people empowerment and help the processing of rejected or low qualified timber. Under the contract of DSNG, they will take a small fraction of the profits paid by the company as support funds. Additionally, the cooperative members may give a small portion of their 'new price<sup>13</sup>' profits as retribution for future development programs. In theory, it is a cross sector cooperation between business (DSNG) and community (cooperative members). However, the consultant's unique position adds a diverse composition as a multi-sector partnership. Both sectors do not engage directly, but actively convey their needs and desires through the 'intermediary' (Figure 1). This would improve trade efficiency as each sector can focus on more important priorities.

Figure 1. Neo-social partnership concept



- **The company must find practitioners from local experts and/or opinion leaders as potential consultants**

They are influential persons that are knowledgeable about Lombok's timber market chain, understand the field of agroforestry or related studies, familiar with local culture and have wide access of links to important individuals and local public agents.



▪ **Future contribution of the middlemen**

The middlemen with all their capacity and capability can take part in this partnership scheme through developing mutual profitable businesses with cooperatives. They may involve in the woodworking business that are crucial for utilizing the rejected timber and in maintaining the supply of timber products to local market.

▪ **A representative of the company should carry out several visits to pilot villages within the region**

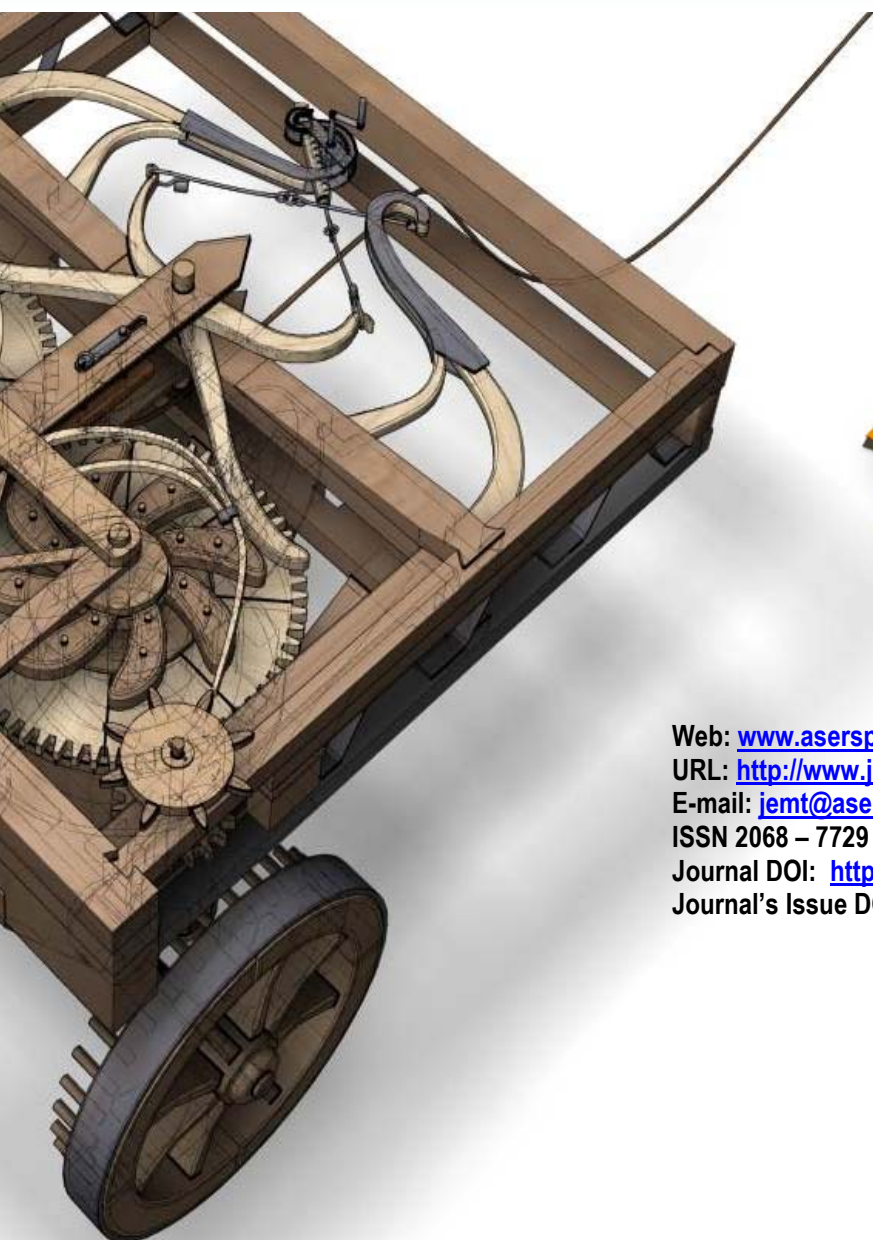
Besides the appointed consultant, it is advisable that an employee of the company itself takes a visit for a certain period to improve the relationship. The initiative of sending an upper-middle management personnel will manifest an impression of mutual trust and reliance. It shows the sense of commitment to engage in a serious cooperation. Further research by an expert researcher is required in order to find the exact details of private forest and plantation capacity in Lombok, double-check and organize a deeper research that supports the relevancy and authenticity of the findings. To unleash the best practice of the chosen partnership model, cultural traits and level of education should be taken into account as it refers how to communicate with individuals with title names (opinion leader or nobility) and extract the desired information. There is a need to explore more about Lombok's current species and potential local breeds.

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