

A Study of the challenge of sustainability

Wong Tai Ming and Shahryar Sorooshian

Faculty of Technology, Universiti Malaysia Pahang, Malaysia

ABSTRACT: This paper is to identify the challenge of sustainability of timber industry and rank the challenge of sustainability of the timber industry. With the result of the research, the timber industry owner can know which challenge is most critical and they can take some action on that challenge.

Keywords: timber industry, challenge of timber industry, sustainability issues of timber industry

1 INTRODUCTION

In Malaysia, timber industry is an important part of manufacturing sector. Although timber industry classified as low-tech technology industry, but it is one of the main drivers of Malaysia's economic. The total export of timer product in 2011 is RM20.2 billion [1]. Since, the timber industry has contributed a lot to Malaysia country, timber industry have to sustain so that country can receive profit from export timber. But, to sustain the timber industry is not easy. There are some challenges that will affect the sustainability and supply chain performance of industry. The challenges can be resources shortage, waste, worker, transportation and others. In this paper, we will discuss the Malaysia timber industry overview, the important of sustainability in industry and challenges of sustainability.

2 TIMBER INDUSTRY OVERVIEW

Trades of tropical timber have boosted the economic growth of many south-east Asian countries in the past three decades. Malaysia is one of the large-scale harvesting timber resource countries during 1960s [2]. In 2008, the timber industry was the fifth largest export earner for the country and maintains its position as strong driving force within the industry [3]. The mainly export country are Thailand, Japan, republic of china, Singapore, Europe and Korea.

Timber industry is a main supplier of furniture and other downstream manufacturing. The product make by timber industry is half finish product which is board, wood, sawn timber veer. Then, the furniture industry and other downstream manufacturing will use half finish product to make the final product such as furniture, plywood, cupboard, and door, and window, table and so on. In 2011, furniture and plywood was contributed 56% of the total export of timber and timber product [4]. Due to timber industry has a lot of contribution, timber industry have to maintain so that downstream manufacturing can continue produce the product and help country to get more income.

3 THE IMPORTANT OF SUSTAINABILITY IN INDUSTRY

Sustainability is an issue that will affect an organization's performance such as financial performance and supply chain performance. Sustainability in the supply chain is increasingly seen among high-level executives because it will bring long-term profitability and has replaced monetary cost and value [5].

There are some factors that focus on sustainability and it can divide into three categories which is reducing risk and improving the financial performance of the supply chain, attracting customer who has value sustainability and making the world more sustainable. The most concrete action is reducing risk for the supply chain and improves the financial performance [5]. For example, Samsung Electronics has a target to reduce 3% of the water use per production unit by 2015 compared to 2011. Then, Samsung Electronic are operating on-site non-industrial waste water treatment and recycling facilities to reduce water use and sewage discharge. Treated water is used for gardening and fire safety system [6]. In this case, they can save the water cost by using the water treatment.

From the example, we can see that the sustainability can affect the financial performance and the supply chain performance. If timber industry can take Samsung Electronics Company as an example, performance of timber industry sure will increase especially in financial performance.

4 CHALLENGE OF SUSTAINABILITY IN TIMBER INDUSRTY

Malaysia is at the crossroads as far as the speed and direction that it should take is concerned. This is particularly significant in the case of traditional industry, such as timber industry. The afore said industry is now confronting with numerous issues and challenges to sustain their competitive advantage in the current new economy that is extensively driven by innovation and technological capabilities.

The quest to sustain the timber industry is not so easy because it has some challenges that will obstruct the performances of timber industry from becoming more competitive. Normally, the timber industry will face natural resources problems because a lot of forests are under protected and thus causing the natural resources to reduce in quantity. There also exist other challenges, such as shortage of wood material, financial problems, shortage worker, timber industry country's competitor, waste management, transportation cost and price of timber.

4.1 Shortage Wood material

Shortage of wood material is a challenge to timber industry [7]. In Malaysia, timber is felling from natural forest. The harvesting of wood material from forest wood species which include merbau, meranti, nyatoh, keruing, jelutong, mersawa and so on. This entire forest wood species is a main raw material to the timber industry. Due to development of land and reduce state land forest, the logging activities would decline greatly. Besides, the sustainability environmental issue also will affect the logging activities. The table 1 is show the production of log (million cubic metres) in Malaysia [8]:

Table 1: production of log

	2000			2005			2009		
	PRF	SL	Others	PRF	SL	Others	PRF	SL	Others
Peninsular Malaysia	2.95	1.71	0.41	2.77	1.64	0.35	2.40	1.05	0.24
Sabah	2.46	0.42	0.67	5.38	0.43	0.15	3.98	0.02	0.26
Sarawak	8.60	5.60	-	8.21	3.83	-	7.90	2.40	-
Malaysia	14.01	7.73	1.08	16.36	5.90	0.50	14.31	3.46	0.50

Based on this table, we can see that the production of log is declining from 2000 to 2009 year. This is will strongly affect the timber industry operation. Without wood material, the timber industry can't produce the product and the downstream industry will be affected. To solve the raw material problem, the Ministry of Plantation Industries and Commodities was implemented the forest plantation programs.

4.2 Financial problem

The timber industry is a high risk industry in facing of several issues facing in industry especially financial problem. Therefore, the timber industry is view as cannot sustainable in long term. During the economic depression in 2008/2009, some industry is serious lack of financial support and withdrawal of financial facilities. In the Malaysia Timber Council (MTC)'s Survey conducted in Dec 2008 to Jan 2009, 82% and 60% of the sawn miller and furniture manufacturers encountered difficulties in getting financial support from local banks.

Even the financial policies are adequate to support the timber industry, but the existing manufacture and new manufacture still facing the financial problem. For example: the small and medium companies in timber industry are unable to obtain loan from local bank because they can't provide acceptable collateral to provide security for these loan. [9,10]. Second problem is the requirement to get the loan from local bank is too strict for the small and medium companies in timber industry. Besides, the maintenance cost also very high in timber industry. The maintenance costs include electricity and water bills, machine maintenance cost, transportation cost, repair road cost and so on. All of this maintenance cost will reduce the profit of timber industry.

4.3 Shortage Worker

The timber industry is a labour intensive industry and the work environment is considered as dirty, dangerous and dusty. This is the factor that cannot attract the local worker. To fill up the empty worker place, the industry has to find the foreign worker. Currently, the timber industry has more than 50% of foreign worker in total worker. In 2012, Mustaba said there are estimated 1.8 registered foreign workers in Malaysia [11]. Due to the high influx of foreign workers into the countries and creates social problems such as rape case and robbery case, the Government has adopted the policy of tightening and highly selective in the recruitment of foreign workers. The Government has a target to reduce the number of foreign workers in the country from 1.8 million to around 1 million in 2015 [12]. After launch this policy, many industry are facing worker shortage for its operation. The uncertainty of getting number of worker may force industry to cease the operation and downsizing operation.

4.4 Competitor of timber industry country

China is a top world exporter of wood product country. The increasing demand for low cost wood product is bring greater access to china country because the low labour cost and mass production factor in china. Due to this factor, the export of wood product from Malaysia will hard to sell. When the export of wood product is decline, the furniture industry will be adjusting their operation to limit the wood product. This will directly affect the production of timber industry. This is because when the furniture industries limit the wood product, productions of timber industry have to limited and timber industry will hard to survive. [13]

4.5 Waste management

In timber industry, there are many waste generated such as wood dust, solid wood, tree bark and core [14]. Wood waste is a big problem to timber industry because it needs the place to store the waste. But it is not an efficient way if we keep the wood waste. Normally the timber industries manage the waste by burning but it will pollute the environment such as air pollution. Due to environment sustainability by government and complaint from citizen, timber industry force to stop open air burning. After period of time, the waste will become more and lack of place to store the waste. Therefore, the timber industry companies have to find or rent the place to store the wood waste and it is consuming cost. If timber industries want to solve the waste problem, they have to find low cost solution such as sell the solid wood or recycle.

4.6 Transportation cost

Transportation cost is one of the challenges of sustainability in timber industry. Lorry is a main transport for timber industry. Every timber industry at least have 4 or 5 lorry, 4 caterpillar, 3 forklift to travel the raw material and delivery product to customer. This entire transport is easy broken because the wood is heavy and mountain road affect the body of lorry. The cost to maintenance this entire transport is very high because the spare part of the heavy transport is expensive. Diesel cost also will impact the financial report. Some companies' financial report show that almost RM20000 only for diesel cost. If diesel costs combine with other maintenance cost in transportation, there is a big amount of money and it is a big challenge to timber industry.

4.7 Price of timber

Price of timber also is a challenge to timber industry. Due to decline of forest state land and the demand of timber increase, the price of timber is increase a lot from 2006 to 2011. The table 2 is show the list of price of timber [15]:

Table 2: Price of timber

Species	2006	2007	2008	2009	2010	2011
Balau	RM1,625	RM1,850	RM1,850	RM1,858	RM1,997	RM2,443
Merbau	RM1,175	RM1,200	RM1,228	RM1,246	RM1,338	RM1,822
Cengal	RM2,142	RM2,221	RM2,288	RM2,318	RM2,560	RM3,114
Mengkulang	RM790	RM790	RM800	RM794	RM827	RM1,093
Meranti Merah tua	RM797	RM831	RM858	RM860	RM912	RM1,190
Meranti Kuning	RM629	RM780	RM800	RM794	RM827	RM1,031
Mersawa	RM746	RM750	RM760	RM758	RM803	RM1,050

From the table above, we can see that every species of timber is increase price from 2006 to 2011 year. From 2006 to 2011 year, the price of balau increased 33.48%; Merbau increased 35.51%; Cengal increased 31.21%; Mengkulang increased 27.72%; Meranti dark red already increase 33.02%; Meranti Kuning increased 38.99%; Mersawa increased 28.95%. When the timber price industry, the production cost of timber industry will also increase and it will affect the sale of timber industry.

5 CONCLUSION

In conclusion, the timber industry has a lot of contribution to the Malaysia country. The sustainability is very important to timber industry because it can bring the benefit to the industry especially in financial performance. If timber industry can increase the financial performance, the timber industry will become more competitive than other timber industry. But, there have some challenges to timber industry if they want to increase the performance or become more competitive. Shortage of raw material and price of timber are the most challenges to the timber industry because these two challenges will affect the cost of the product. When the production cost high, the profit of the timber industry will decrease. Therefore, to sustain the timber industry or increase the competitive performance, it is not so easy.

6. ACKNOWLEDGEMENT

This study was a tutorial practice for undergraduate student, the first author. Responsibility of presented information is with the student. Research consultation and method teaching was with the second author. This study is supported by University Malaysia Pahang research grant (RUD130375).

6 REFERENCE LIST

- [16] Leong, D. E. (2012). MALAYSIAN TIMBER INDUSTRY.
- [17] Boon-Kwee Ng, T. K. (2011). The dynamics of innovation in Malaysia's wooden furniture industry: Innovation. *ELSEVIER*, 8.
- [18] Mr. Thomas Brandt, M. C. (2012). *Market Watch 2012*.
- [19] Husin, H. (2012). *FURNITURE INDUSTRY IN MALAYSIA -STATUS & MARKET*. Kota kinabalu: Malaysian Timber Industry Board.
- [20] Sunil Chopra, P. M. (2013). *Supply chain management*. Pearson Education Limited.
- [21] Electronic, S. (2012). *Sustainability Report*.
- [22] *Journaler0203*. (2011, March 1). Retrieved October 26, 2013, from <http://journaler0203.blogspot.com/2011/03/timber-industry-critical-challenges.html>

- [23] Unknown, (2009). *MALAYSIA: FORESTRY & ENVIRONMENT (FACTS & FIGURES)*. MALAYSIA: MALAYSIAN TIMBER COUNCIL.
- [24] *National Timber Industry Policy*. (2009). Ministry of Plantation Industries and Commodities.
- [25] Kwang Sing Ngui, A. A. (2011). Challenges Impeding Competitiveness of the Wooden Furniture Manufacturing. *Australian Journal of Basic and Applied Sciences*, 2-5.
- [26] *The Nation*. (2007). Retrieved October 27, 2013, from <http://www.nationmultimedia.com/aec/Malaysia-aims-to-reduce-low-skilled-foreign-worker-30182122.html>
- [27] (2011). NATIONAL INNOVATION STUDY ON WOOD BASED INDUSTRY.
- [28] ZAKARIA, N. A. (2011). *Trade Barriers in Forest Industry between Malaysia and Europe*. AgroParisTech, Forest Research Institute, Malaysia (FRIM).
- [29] Ma, H. O. (2007). Manager International Conference on Wood-based Bioenergy.
- [30] *Jabatan Perhutanan Selangor*. (2012). Retrieved October 26, 2013, from http://www.forestry.gov.my/selangor/index.php?option=com_content&view=article&id=56&Itemid=31
