

ON PRODUCTION AND MARKETING ASPECTS OF PULP IN THAILAND

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ABSTRACT

Objective of the study was to evaluate production and marketing of pulp industry in Thailand from 1996 through 2005. Data was collected by employing the designed questionnaire interviewed 7 entrepreneurs of pulp industries as well as the related government and private agencies. Results of the study indicated that eucalyptus, bagasse, kenaf, rice straw and bamboo were used as major raw materials for pulp production. The pulp production values were 593,500, 603,950, 765,050, 899,520, 947,650, 993,010, 997,230, 1,067,700, 1,095,790 and 1,143,340 tons from 1996 through 2005 sequentially, respectively. Problems that faced pulp producers were (1) lack of raw material (2) the obtained eucalyptus pulp included a rather large proportion of grain (3) high imported tax for machine, accessory, and using chemical substances (4) pulp bleached using chlorine and chlorine dioxide combined with alkali which produced absorbable organic halogen (AOX) and dioxine substance (5) high capital and production cost.

Results of the study on the marketing aspect indicated that pulp factories could be classified based on raw material used into 4 groups, namely factories that use eucalyptus, bagasse, bamboo

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and kenaf, and rice straw, they were factory A, B, C, D and E; D and G; B; and F, respectively. Price of eucalyptus, bamboo and bagasse pulp during 1996-2005 were 13,167-20,599, 13,412-19,978, and 11,917-15,846 baht/ton, respectively. Most of pulp was produced for domestic market, especially for the branched companies and other companies, the rest was exported to China, Australia, Republic of Korea, Indonesia, Germany and Japan. There were only 2 factories, namely A and B that emphasized on importance of market extension by providing ideal customer service. Major marketing problems were (1) the fluctuation of the world pulp price caused the uncertainty of domestic pulp price in each year (2) the raising of gasoline price resulted in increase in transportation cost. The findings from the study could be used as a guideline for formulating the pulp business management plan.

Key words : pulp, production, marketing

INTRODUCTION

Overall pulp production in Thailand did not meet the requirement for the domestic consumption, therefore imported pulp was necessary. The government had policy to provide privilege of investment and tax relevant to pulp industry (Yoosuk, 1999). Mai raw materials for pulp production include bagasse, kenaf, rice straw, bamboo and eucalyptus. The quantification of raw material varied from season to season which caused problems regarding raw material collection as well as its inventory. Moreover, such resources can also be used to produce other products besides pulp. It is fact that pulp industry has, high potential and continuous expansion in Thailand. However, pulp producers attempted to expand their production scale by increasing supply, which was still insufficient for the local demand, this caused the increasing in pulp importation. The general domestic short fiber pulp price determination was referred to the imported pulp price. In case, the imported short fiber pulp price decreased caused the domestic pulp producers had to decrease their pulp price too. On the other hand, in case, the imported short fiber price increase the domestic pulp producers couldn't increase their pulp price because the ceiling price of pulp was already set by the government.

Although, the cancellation of pulp price control was announced in 1994, the government requested asked the producers of fix the price at the level that was previously determined by official offices (Niroj, 1997). Thailand did have the pulp trade with some countries, namely Canada, U.S.A, Chile, South Africa, and Sweden (Royal Forest Department, 1998). However, short pulp export of the country increased yearly. (The Thai Pulp and Paper Industries Association, n.d.). Hence, the study on production and marketing of pulp business will also be very important, this will also provide the necessary findings especially problems took place in the marketing system of pulp industry. Moreover the results obtained from the study could be used as a guideline for development and extension of pulp industry as well as formulating the private integrated agro-forestry plan in the country.

Objectives of the study were to determine and evaluate the general condition of production and marketing aspects of pulp industry in Thailand.

METHODS

The study employed the designed questionnaire as tool for collecting the data from pulp industry from January, 1996 through December 2005. Seven pulp manufactures were interviewed using a designed questionnaire to collect the primary data. Also the relevant data was collected from various sources including previous reports, books, other publications related to pulp industry within public sector and private agencies. Finally both types of data were statistically analyzed to have a meaningful conclusion.

RESULTS AND DISCUSSION

Actual names of the companies interviewed in this work were not revealed due to confidential purpose and they were identified as A, B, C, D, E F and G rather than using their real names.

Today, there was 6 pulp factories in the country, factory F was closed in 1999. Four companies, namely A, B, C and D, and three E, F and G are classified as public and private companies, respectively. Most of the investment sources came from the domestic investors, except company A, which has some overseas partnership. There were 3 companies A, B and

E received support from the government (BOI) companies C, D and F also received support from the government in the past.

Raw material

All of the pulp production was short fiber for mostly domestic market. Different types of material were used as raw material resource as summarized below.

1. Eucalyptus. Eucalyptus timber which is suitable as raw material for pulp production was at least 2.5 inches in diameter. Eucalyptus trees were harvested in Chacherng Sao, Sa-Kaew, Udon Thani, Kalasin, Kampang Pet and Uthai Thani. The quantity of eucalyptus consumption in 1996 was 1,747,630 tons and increased to 3,550,500 tons in 2005. The rate of eucalyptus utilization also increased with uprising rate of 8.99 percent per year.

2. Bamboo is a fast growing plant providing the good quality short fiber which is ideal raw material for writing and printing paper production. Factory B is the only company in the world that uses different species of bamboo as raw material for pulp production. The annual quantity of bamboo used for pulp production was about 350-430 thousand tons and with the increasing rate of 1.25 per annum.

3. Bagasse, quantity of bagasse used

as raw material for pulp production was waste obtained from sugar factories located in Kanchana Buri and Nakhon Sawan provinces. There were two pulp factories, namely D and G that used bagasse as raw material for pulp production. The quantity of bagasse used during 1996-2004 was 120 tons per annum and increased to 686.50 thousand tons in 2005 due to newly starting business in the industry.

4. Kenaf. Due to the central part of the country had plenty of rice straw, thus pulp producer F brought it from Phra Nakhon Sri Ayuthaya and Angthong to be used as the raw material for pulp production. The quantity of using rice straw for pulp production ranged from 0.1 to 0.15 thousand ton per annum. The producer F closed the business in 1999 this because the available rice straw wasn't sufficient for pulp production and along with the machinery problem.

Price of raw material

Based on the price of raw material for pulp production during 1996-2005 indicated that the tendency of eucalyptus, bamboo and rice straw price were increased annually such as in 1990 the eucalyptus price was 752 baht/ton and increased to 1,250 baht/ton in 2005. Bamboo price was 810 baht/ton

in 1996 and raised up to maximum price of 875 baht/ton in 2003, while bagasse price during 1996-1998 was 380 baht/ton in 1996 and during 1999-2002 increased to 400 baht/ton and having a little price adjustment to 430 baht/ton during 2003-2005. Kenaf price was continuously increased during 1998-2000, it was 5,190 baht/ton in 1998 and increased to 9,660 baht/ton in 2000. On the other hand, kenaf price was continuously decreased since 2001 up to 2005, the price was 6,500 baht/ton while price of rice straw increased from 3,450 baht/ton in 1996 to 3,900 baht/ton in 1998.

Pulp production

During 1996-1998, there were 6 pulp producers, namely A, B, C, D, E and F, producers A, C and E used eucalyptus, producer F used rice straw, producer G used bagasse,

B used eucalyptus, bamboo and bagasse, and D used eucalyptus and bagasse as the raw material for pulp production. Until 1999 producer F closed the business because of the raw material shortage and low standard of machines, however, there was no impact on the other producers because the production was rather low and sending the products to the factories that were being the network member. Until 2005 there was a new producer G started the business, thus the total pulp production of each producer was presented in Table 1, and found that in 1996 the total pulp production was 593.50 thousand tons and continuously increases yearly until 2005 the total pulp production was become 1, 143.34 thousand tons (Table 1) and with the average increasing rate of 7.85 percent per annum.

Table 1 Pulp production during 1996-2005

| Year | Pulp production by firm (1,000 tons) | | | | | | | Total |
|------|--------------------------------------|--------|--------|--------|-------|------|-------|----------|
| | A | B | C | D | E | F | G | |
| 1996 | 180.00 | 214.62 | 95.99 | 38.28 | 60.23 | 4.38 | - | 593.50 |
| 1997 | 187.22 | 194.55 | 106.58 | 49.17 | 62.05 | 4.38 | - | 603.95 |
| 1998 | 309.11 | 214.26 | 83.33 | 89.10 | 63.87 | 4.38 | - | 764.05 |
| 1999 | 400.00 | 206.59 | 124.83 | 103.95 | 64.15 | - | - | 899.52 |
| 2000 | 420.00 | 223.38 | 123.37 | 108.90 | 72.00 | - | - | 947.65 |
| 2001 | 450.00 | 229.59 | 118.26 | 111.21 | 83.95 | - | - | 993.01 |
| 2002 | 457.00 | 227.03 | 117.53 | 109.89 | 85.78 | - | - | 997.23 |
| 2003 | 472.33 | 236.89 | 162.79 | 106.26 | 89.43 | - | - | 1,067.70 |
| 2004 | 478.31 | 234.70 | 187.25 | 104.28 | 91.25 | - | - | 1,095.79 |
| 2005 | 477.50 | 234.40 | 182.12 | 105.62 | 87.70 | - | 56.00 | 1,143.34 |

Production problems

1. Raw material for pulp production wasn't sufficient such as the shortage of rice straw caused factory F closed the business in 1969. Moreover, the most of raw material for pulp production in addition to rice straw other products such as bamboo was also used for weaving. Bamboo shortage was faced since 2002. Furthermore, eucalyptus could be used for producing furniture, medium density fiberboard (MDF), firewood and general construction this also caused the raw material shortage for pulp production. The problem of eucalyptus shortage has been since 1998.

2. In 2004 producer D had the problem about eucalyptus pulp contained a lot of grain.

3. Imported tax of machine, accessory and chemical substance were rather high, and had to imported from outside of Asian countries. The import tax rate of machine and chemical substance were 15-25 and 15-40 percent, respectively.

4. Pulp bleaching process by using the combination of various chemicals such as chlorine and chlorine dioxide combined with alkali producing the absorbable organic halogen (AOX) and dioxine substance, which are not environmentally friendly causing pollution. In 1969, factory B had to closed the business

this because of pollution problem caused the negative impact on the communities located around the factory.

5. Capital and production cost. The pulp industry needed the modern technology and equipment, thus, the capital for the investment will be quite high. Furthermore, the production cost structure representing the cost for chemical substance, water, labour and others shared 50 percent of the total cost, this indicated that the pulp production cost was quite high. Moreover, in the case, increases in the raw material price also caused the increasing overall production cost. However, the producers couldn't increase the pulp price because of concern of the impact of the pulp price on their market share. Pulp was determined as the price control product by the office of Central Board Specify Product Price and Service, Domestic Trade Department, Ministry of Commerce.

PULP MARKETING

Product aspects

Pulp produced by manufacturer each was difference from each other mainly due to the type of raw material used and production process. This caused the producers to develop

the different process line to enhance overall product quality. Furthermore, each pulp producer had to use different raw material and production technology for producing the different products in order to visualize buyers. The most pulp was produced from eucalyptus. The companies that using eucalyptus as raw material for pulp production were A, B, C, D and E. The factories that produced pulp from bagasse were D and G, while factory that produced pulp from bamboo and kenaf was B and produced pulp from rice straw was F. Moreover, there were 4 factories B, C, D and E, that produced pulp based orders from customers, which included the product types white bleached eucalyptus pulp, non-white bleached eucalyptus pulp, white bleached bamboo pulp, and white bleached kenaf pulp.

Price aspects

Domestic short pulp price depended on world market pulp price and production cost because pulp could be freely imported and exported. In the case of world market pulp price was much higher than the domestic price, the producers increase much of their export. On the other hand, if world market pulp price was lower

than the domestic price, the producers who used pulp as a raw material for producing the finished products will imported pulp by themselves, this will cause the domestic pulp price always adjust. Pulp price during 1996-2005 represented that domestic eucalyptus pulp price, bamboo pulp price, and bagasse pulp price was increased yearly, they increased from 13,167, 13,412 and 11,917 baht/ton, respectively in 1996 and to be 20,599, 19,978 and 15,328 baht/ton, respectively in 2005 (Table 2), this because the world market pulp price in 1999 increased from 541.25 US\$/ton to be 655.00 US\$/ton in 2000, and with price increasing rate of 26.56 percent this caused the domestic pulp price increased too. In 1999 domestic price of eucalyptus pulp, bamboo pulp and bagasse pulp were 19,040, 19,429 and 14,262 baht/ton respectively and increased to be 26,141, 26,027 and 17,432 baht/ton in 2000, and with the price increasing rate of 37.30, 33.96 and 22.23 percent, respectively. Furthermore, in 2001 world market pulp price was decreased with the decreasing rate of 21.61, this caused the domestic pulp price declined with the decreasing rate of 3.81 30 47 and 14.05 percent, respectively.

Table 2 Price of eucalyptus pulp, bamboo pulp, bagasse pulp in Thailand and exported price of long fiber pulp

| Year | Price of eucalyptus pulp (baht/ton) | Price of bamboo pulp (baht/ton) | Price of bagasse pulp (baht/ton) | Exported price of long fiber pulp (baht/ton) |
|------|-------------------------------------|---------------------------------|----------------------------------|--|
| 1996 | 13,167 | 13,412 | 11,917 | 586.00 (26.74) |
| 1997 | 14,292 | 14,315 | 12,146 | 598.33 (31.04) |
| 1998 | 15,917 | 16,084 | 12,277 | 543.75 (43.01) |
| 1999 | 19,040 | 19,429 | 14,262 | 541.25 (37.65) |
| 2000 | 26,141 | 26,027 | 17,432 | 685.00 (40.20) |
| 2001 | 18,088 | 18,096 | 14,983 | 537.00 (44.57) |
| 2002 | 18,563 | 18,604 | 14,751 | 485.50 (43.12) |
| 2003 | 18,752 | 18,690 | 15,429 | 551.50 (41.67) |
| 2004 | 18,792 | 18,679 | 15,846 | 655.00 (40.36) |
| 2005 | 20,599 | 19,978 | 15,328 | 649.33 (40.11) |

Remark : Values in the parenthesis are the currency exchange rate baht/\$.U.S

Pulp distribution aspects

Major part of pulp production was for the domestic market, and mostly distributed to branches of the local companies, for writing and printing paper, craft paper, waved paper production. There were only three factories A, B and G exported material. The pulp was exported to China, Australia, Republic of Korea, Indonesia, Germany and Japan, and the imported pulp was used as the raw material for writing and printing paper, tissue paper, coffee cup and food box production. Pulp manufacturers that distributed their products to the various companies as well as direct sale.

The details of pulp distribution with in 1996-2005 is presented as follows.

In 1996, the produced pulp was sold in the domestic paper factories, branched factories, and exportation with the percentage of 39.31, 36.13 and 24.56, respectively, the targeted countries were India, Indonesia, China, Republic of Korea, and Italy.

In 1997 the produced pulp was sold in the domestic factories, branched factories and exportation with the percentage of 41.07, 39.92 and 19.01, respectively, the imported countries were Taiwan, France, China, India and Indonesia.

In 1998, the produced pulp was sold in the branched factories, domestic paper factories, and exportation with the percentage of 38.50, 30.50 and 31.00, respectively, the imported countries were China, Taiwan, Italy, Netherland and U.S.A.

In 1999, the produced pulp was sold in the branched factories, domestic paper factories and exportation with the percentage of 41.75, 30.58 and 27.67, respectively, the imported countries were China, Italy, Australia, Netherland, and Taiwan.

In 2000, the produced pulp was sold in the branched factories, domestic paper factories, domestic paper factories, and exportation with the percentage of 40.91, 30.03 and 29.06, respectively, the imported countries were China, Republic of Korea, Italy, Australia and Indonesia.

In 2001, the produced pulp was sold in the branched factories, domestic paper factories and exportation with the percentage of 45.16, 19.90 and 34.94, respectively, the imported countries were China, Republic of Korea, Australia, Indonesia.

In 2002, the produced pulp was sold in the branched factories, domestic paper factories, and exportation with the percentage of 45.16, 35.70 and 19.14, respectively, the imported countries were China, Republic of

Korea, Australia, Indonesia and Taiwan.

In 2003, the produced pulp was sold in the branched factories, domestic paper factories and exportation with the percentage of 73.60, 1.11 and 25.29, respectively, the imported countries were China, Australia, Indonesia, Republic of Korea and Malaysia.

In 2004, the produced pulp was sold in the branched factories, domestic paper factories, and exportation with the percentage of 83.60, 1.63 and 15.33, respectively, the imported countries were China, Australia, Republic of Korea, Indonesia and Malaysia respectively.

In 2005, the produced paper was sold in the branched factories, domestic paper factories, and exportation with the percentage of 75.76, 6.55 and 17.69, respectively, the imported countries were China, Australia, Republic of Korea, Indonesia and India.

Marketing extension aspects

Most of the pulp was sent to the branched factories for writing and printing paper, craft paper, waved paper manufacture. This leads pulp producers to emphasized on marketing extension. There were only 2 factories A and B that recognized the significance of market extension, and producing pulp supported the domestic factories and exportation for producing writing and printing paper,

sanitary paper, cigarette roll. Those 2 factories emphasized on service with concord with the requirement of each customer, this will create the long confidence and the relationship between customer and company. The 2 factories conducted the public relation for creating the good relationship between factory and community especially the farmers residing around the factory such as performed the activities by the cooperation of community, establish the foundation for child aid, produced printed matters, and public relation about the standard of factory environment management system such as ISO 9001, ISO 14001 and TIS 18001 which the factories received, in order to create the reliability of the factory. Factories that received the such 3 types of the standard of environment management system were factory A, B, D and E. In addition, the seminar relevant to the technology of pulp and paper production was continuously organized for both of domestic and rest of the world customers for creating the relationship between producer and customer.

Marketing problems

1. Pulp prices in the world market fluctuate due to changing supply and demand which can not be controlled by manufacturers. This may cause certain problems to the producers in terms of unpredict table pulp prices.

2. Increase in gasoline prices also influ-

enced pulp prices reflected as its transportation.

CONCLUSION

Objectives of the study were to determine the general condition of production and marketing of pulp industry in Thailand. The designed questionnaire was used as a tool for data collection by interviewing 7 sampled pulp producers. It could be concluded that all of the domestic pulp factories produced only short fiber pulp. The kinds of raw material using for pulp production were eucalyptus, bagasse, kenaf, rice straw, and bamboo. The quantity of pulp production in Thailand since 1996 up to 2005 were 593.50, 603.95, 764.05, 899.52, 947.65, 993.01, 997.23, 1,067.70, 1,095.79 and 1,143.34 thousand tons, respectively. Problems relevant to pulp production were (1) lack of raw material for pulp production (2) the produced pulp in 2004 had a lot of grain (3) imported tax of machine, accessory and chemicals using for pulp production were rather high (4) pulp bleaching by using chemical substances which including chlorine and chlorine dioxide combined with alkali will produce the compound substance named Absorbable Organic Halogen (AOX) and dioxine substance (5) high capital and cost of production.

The results of pulp marketing study

indicated that factories that produced pulp from eucalyptus were A, B, C, D and E, produced pulp from bagasse were factory D and G, produced pulp from bamboo and kenaf was factory B and produced pulp from rice straw was factory F. The average eucalyptus pulp price during 1996 to 2005 were 13,167, 14,292, 15,917, 19,040, 26,141, 18,088, 18,563, 18,752, 18,792 and 20,599 baht/ton, respectively. While the average bamboo pulp price during the same period were 13,412, 14,315, 16,084, 19,429, 26,027, 18,096, 18,604, 18,690, 18,679 and 19,978 baht/ton, respectively. In additon, the average bagasse pulp price during the same period were 11,917, 12,146, 12,277, 14,262, 17,432, 14,983, 14,751, 15,429, 15,846 and 15,328 baht/ton, respectively. The distribution of the produced pulp, the obtained results revealed that pulp was mainly produced for the domestic demand and as well as export for China, Australia, Replublic of Korea, Indonesia, Germany, and Japan. Only 2 factories namely A and B the recognized the significance of market extension by emphasized by the services offering to customers. The faced marketing problems were (1) the world market pulp price was rather fluctuated causing the domestic producers to face the problem about the uncertainty of pulp price in each year (2) the raising of gasoline price caused the

increasing in transportation cost pulp (transporting pulp from source to the destination), but the pulp producers couldnít freely raise the price because it was the price controlled products. The information obtained from the study will be a very useful thing for entrepreneurs of pulp factory to employ as a guideline in formulating the management plan for pulp business.

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