THE OPTIMIZATION OF JUTE FIBRE (BOEHMERIA NIVEA) *AS TEXTILE RAW MATERIAL ALTERNATIVE THROUGH COMMUNITY EMPOWERMENT TO INCREASE INDONESIA COMPETITIVENESS*

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Abstract

Textile and textile products (TTP) industry is one of the domestic industries that affected by ASEAN-China Free Trade Agreement (ACFTA). Lack of cotton supply also causes the weakening of this industry competitiveness. By looking at the demand level of cotton supply for textile industry, the availability of cotton or alternative raw materials like jute fibre (*Boehmeria nivea*) need to be optimized and prioritized in domestic market. The author has some purposes to analyze the significance of TTP industry's contribution for Indonesian economy and the optimization of community empowerment in the jute plant intensification efforts in terms of maintaining the sustainability of textile industry in Indonesia. The study was conducted through a qualitative approach (descriptive analysis) through literature study.

The result of this paper is that the contribution of jute as an alternative raw material for textile industry to improve Indonesia competitiveness is important because : i) textile industry is one of the leading industrial sectors of Indonesia, ii) jute agribusiness development might also improve competitiveness of Indonesia in terms of business sophistication indicators (local supplier quantity, value chain breadth and production process sophistication) and iii) jute plant agribusiness becomes an agro-based sector that contributes in the national economy because agriculture is a comparative advantage possessed by most regions. In addition, *agro-based cluster* model should be conducted by empowering the community in certain areas which are supported by the government, the industry or investors, academics, and the society.

Keyword: Textile Industry, Jute Fibre (Boehmeria nivea), Community Empowerment, Agro-based cluster system

I. Introduction

The trade relationship between Indonesia and China has been conducted since a long time, even before Indonesia independence's day. China is the third main export countries destination for Indonesia after Japan and US for non-oil sector. On the first term in 2010, the Indonesia non-oil sector export proportion for China is 10.19 percent, while Japan is 12.8 percent and US is 10.52 percent. In addition, China become the biggest origin country for Indonesia non-oil sector import (US$ 8.994 million or 18.07 percent from the total import) (BPS, 2010). From 2004 until 2008, Indonesia China trade relationship indicated the 30.11 percent increase per year for 85 percent non-oil commodity. In that period, Indonesia trade balance with China was surplus for oil commodity and it was deficit for non-oil commodity since 2005 (Mutakin and Salam, 2009). Indonesia Balance of Payment Report shows that in the quarter IV 2010, non-oil export to China is US$ 4,9 billion while the non-oil import from China is US$5,8 billion (BI, 2011).

The increase of non-oil sector trade volume occurs especially after the implementation of ASEAN-China Free Trade Agreement (ACFTA). The ACFTA implementation began when the ASEAN and China signed the *Framework Agreement on Comprehensive Economic Co-operation between the Association of Southeast Asian Nations and the People's Republic of China* in Cambodia on 2004. The purposes of this agreement are:

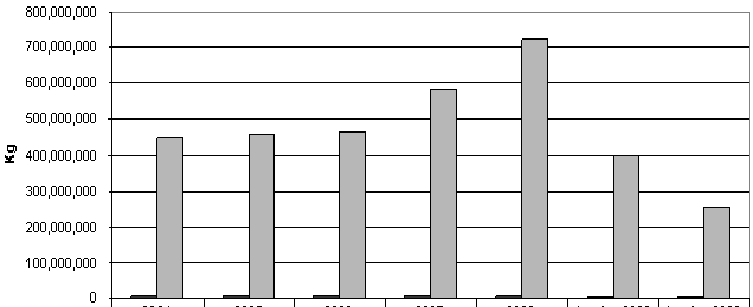
To strengthen and to improve cooperation in economic, trade and investment, trade liberalization in terms of goods, services and investment, to look for new market and to develop economic cooperation that mutually beneficial, to facilitate more effective economic integration with new member of ASEAN and to reduce the gap between two parties (Mutakin and Salam, 2009).

However, the trade liberalization between countries might harm domestic industry. Due to the lack of government protection role, local industry should attempt harder to be able to compete with competitor industry in other countries. If the local industry less competitive than competitor, the output level will decrease and it may increase the unemployment rate and reduce the government income. Indonesia seems to experience this incident, at the end of 2010, Indonesia China trade balance was deficit for Indonesia (Kompas, 11 April 2011). Chinese products sell well in Indonesia, hence the import value increase 45.9 percent. The highest increase occurs in six product such as toys (72 percent), furniture (54 percent), electronic (90 percent), textile and textile product (33 percent), machinery (22.22 percent) and metal (18 percent). This condition still happens until 3 month in early 2011 (Kompas, 11 April 2011).

One of the domestic industries affected by ACFTA implementation is textile and textile product industry.[1] There are many cheap Chinese textile products in Indonesian market that reduce domestic industries' sales *share*. Moreover, Erwin Aksa (2011), chairman of HIPMI stated that the problems of domestic industry competitiveness are the raw material supply, credit interest rate and infrastructure. In addition, the availability of raw material is the component that influences capital access (Karina, 2011).

The raw material supply difficulty is one of the main problems that cause decreases in textile and textile product competitiveness. Indonesian textile companies are not able to minimize the production cost, consequently, the textile products price are high enough. Cotton as the raw material for textile industry is difficult to find and the price is often increase significantly (Kompas, 12 April 2011).[2] In addition, cotton price is a sensitive production cost component because the domestic industry still imports 95 percent of the cotton.[3]

Figure1. Cotton Export and Import Volume (2004-2009)



	2004	2005	2006	2007	2008	Jan-Jun 2008	Jan-Jun 2009
Ekspor	6,820,523	6,782,917	9,025,913	7,054,692	6,373,888	3,560,260	2,670,072
Impor	450,091,687	455,983,886	463,538,220	583,497,908	723,300,384	397,085,197	255,430,952

Source: BPS (2009)

[1] Ministry of Industry, MS Hidayat stated that there are six sector that severely affected by ACFTA such as textile and textile product, foods and drinks, electronic, footwear, cosmetics and "*jamu*" (tonic made of medicinal herbs) industry (Susanti, 2011).

[2] Indonesia balance of payment shows the 3,4 percent increase of TTP export in quarter IV 2010 from the previous quarter is supported by the price increase, while the volume of export decrease. The textile product price increase is caused by the cotton price increase (BI, 2011).

[3] On the contrary, from the beginning, China has fulfill 80 percent of domestic cotton needs while the import of cotton is just 20 percent (Kompas, 12 April 2011*)*

By looking at the demand level of cotton supply for textile industry, the availability of cotton or alternative raw materials need to be optimized and prioritized in domestic market. One of the alternative raw materials for textile industry is jute fibre (*Boehmeria nivea*) that has cotton characteristic and has other advantages compare with other fibres. Some research said that jute fibre quality in Indonesia is equal with other jute fibres from China, Brazil, Filipina, Taiwan, Korea, Cambodia, Thailand and Vietnam (Sudiro, 2004). Based on the background, author has some purposes to analyze the significance of TTP industry's contribution for Indonesian economy and to analyze the optimization of community empowerment in the jute plant intensification efforts in terms of maintaining the sustainability of textile industry in Indonesia.

II. Methodology

Based on the purposes of the study, it was conducted through a qualitative approach. To analyze the significance of TTP industry's contribution for Indonesian economy and the optimization of community empowerment in the jute plant intensification efforts, the study must be conducted qualitatively to get elaborate explanation. Qualitative research has purposes to investigate and realize the occurrence: what, why and how it happens to make the fact understandable (Chariri, 2009). Creswell (1994) in Hadiningrum (2009) stated that qualitative research does not have to confirm the reality such as in hypothesis testing, otherwise to describe the hidden reality. There are some research methods used in qualitative approaches such as observation, interview, literature study, etc. In this study, the qualitative research method conducted is literature study.

The literature study conducted to get theoretical framework when determine the research questions, information about Indonesian textile industry condition and references about community empowerment in terms of intensification efforts. Data are collected from the books, reports and website. Afriani (2009) stated that large amount of facts and data are saved in the form of documentation. In this study, author uses content analysis as the analysis method with some procedures: (i) Determine the analysis purposes, (ii) Collect data (c) Identify contextual evidence (d) Reduce data (e) Data coding (f) Analyze and interpret data.

III. Results

Jute fibre as cotton alternative

Jute plant is planted in Indonesia since the World War II. This plant is yearly clump plant that easy to be grew and planted in tropical area, resistant from plant disease and pest, and support nature conservation. Jute plant produces natural fibre from the ribbons on its hard and shiny bark.

Figure2. Jute leaves (left), Jute fibre (right)

Source : Furqan (2010)

Jute fibre has *cotton* characteristic that is could be spun or mixed with other fibre as textile raw material. In some point, jute fibre has more advantages compare with other fibres such as the stronger pull power, capability of water absorption, humidity, resistance from humidity, high

temperature and bacteria, lighter than synthetic fibre and eco-friendly. Jute plant is suitable in tropical area with ideal height 400 metre up to 1500 metre above sea-surface with 90 mm/month rain that must be spread evenly and productive age 6 until 8 year that could be harvested 5 until 6 times in a year (Sudiro, 2004).

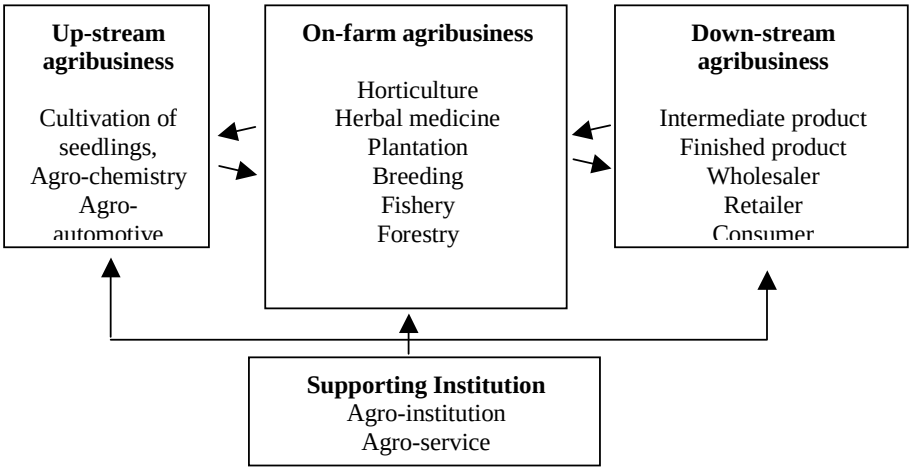
These are the steps on jute processing through machinery and chemical process:

- *"Dekortisasi"* process: separation process of the fibre from the plant stem, the product is rough fibre called "*China Grass*"
- *"Degumisasi"* process : The fibre cleaning process from *pectin sap*, *lignin wales*, etc, the product is called "Degummed Fibre"
- Softening process: discharging and softening process through chemical or mechanical process in order to make the fibre ready to process like the cotton.
- Cutting and Opening process : mechanical process to cut and open the fibre to make individual fibre (long fibre is called *"Top Rami"* and short fibre is called "Staple Fibre")

Agro-business system and Agro-based Cluster

Agro-business is a way to look agriculture as a business system that consists of subsystems connected between one another such as upstream agro-business subsystem, downstream agro-business subsystem include marketing and supporting service subsystem. Agro-business development is an integrated development that integrates agriculture development with industry and service connected development in an industrial cluster that consists of four subsystem (see figure 3).

Figure3. Agro-business system Prototype



Source: Siregar (2010)

One of the industrial development model based on agro-business that has competitiveness is agro-based cluster model that pay attention to the connection between upstream industry, agriculture, downstream industry and service sector that focused on one or a certain group product. Cote (2002) in Siregar (2010) defined industrial *cluster* as group of industries that compete and cooperate in a network area. It has vertical and horizontal relationship that involving a similarity in buyer-supplier connection and relies on funding from special institutions (Siregar, 2010).

Significance of TTP industry's contribution to increase Indonesian economy competitiveness

Generally, textile is clothes material or fabrics. Moreover, textile not only used for clothes but also for other household and industry needs such as tablecloth, mattress cloth, bag, suitcase, parachute, seat of car, pipe for oil and fire department, etc. Large scale and modern TTP industry in Indonesia starts to develop since 1970. It contributed 15.8 percent opportunities for employment in manufacturing industries and delivered largest non-oil remittance with export surplus exceeded USD 5 million until 2007. Indonesia TTP industry has integrated industrial structure from upstream to downstream that divided into four subsectors (see table I). It is an export oriented industry especially for garment and thread (SPN, GARTEKS SBSI, AKATIGA, FES and TWARO, 2009).

Table 1. Indonesia TTP Industry Profile

Subsectors	Type of products	Technology	Product market	Investment
Fibre	Natural and synthetic fibre	High	Domestic	Foreign investment : Japan, India, Austria
Yawning	Thread	High	Domestic and export	Domestic investment & Foreign investment; Japan, India
Spinning	Fabrics	Low	Domestic and export	Domestic investment
Garments	Clothes	Low	Export	Domestic investment & Foreign investment; Hongkong, South Korea

Source: Industrial Department 2007

In 2006, there are 2700 companies in TTP industry in Indonesia that spread in 7 areas such as *Jabodetabek* area (Jakarta, Bogor, Depok, Tangerang, and Bekasi), West Java Province (Bandung area) and Central Java Province. There are many obstacles in TTP industry development not only internal problems but also external problems. Externally, there was quota elimination policy in US and Europe market since 2005. Hence, there is no certain market for Indonesian textile product. Moreover, there are many textile products from India and China in domestic market (SPN, GARTEKS SBSI, AKATIGA, FES and TWARO, 2009). Internally, many problems such as the lack of infrastructure, high credit interest rate, strict fiscal policy, and availability of raw material (cotton is one of the 10 main import goods (BPS, 2010)) become the more significance obstacles for domestic companies.

As stated in introduction section, Indonesia TTP industry is experiencing the lack of competitiveness not only the textile export share but also domestic market share decreases. Data shows that China export more than 20 percent to US and Europe compare with Indonesia and other exporter countries that are not exceed 6 percent. On 2006, Indonesia supplied 5.3 percent product to US market, 1.2 percent to Europe market and 6 percent to Japan market. In addition, the Industrial Ministry survey conclude that ACFTA implementation also shrink domestic market because the share of TTP industry product as percentage of Gross Domestic Product was continuously decreasing (Arsip Berita Indonesia, 2011).

Though the TTP industry competitiveness condition is currently decreasing, this industry competitiveness must be improved by the government optimally because of some reasons:

a. After financial crisis in 2008, US, Japan and Europe market will open a bigger export opportunity because hopefully the demand for various manufacturing industries include textile industry will increase (Indonesian Commercial Newsletter, 2009)

b. There is a big potential domestic textile industry growth because of potential domestic and international market. From the marketing side, textile industry will continuously have demand from 238 million Indonesian populations and 7 billion world populations.

c. Textile industry is one of the reliable industries in Indonesia. Data BPS (2011) shows that textile industry is the third biggest share as percentage of GDP after drinks, foods, and tobacco industry and equipment industry since 2004-2009. Based on international trade theory, since a long

time ago, Indonesia has significant *comparative advantage* in TTP industry compare with other countries. Indonesia contribute 2 percent for world total textile product. Indonesia is one of the biggest 15 US textile supplier countries and one of the biggest 12 Europe textile supplier countries (SPN, GARTEKS SBSI, AKATIGA, FES and TWARO, Agustus 2009). Hence, the optimization of TTP industry competitiveness improvement through jute fibre agro-business will affect Indonesian economy competitiveness significantly.

Jute agro-business will be able to increase Indonesia economy competitiveness (44th rank based on World Economic Forum Report 2010) from business sophistication indicator (one of some indicators used in Global Competitiveness Indicators) such as local supplier quantity, value chain breadth, control of international distribution and production process sophistication (Bambang, 2010). As the jute agro-business is developed, the quantity of local supplier for textile industry will increase. In addition, the value chain of jute product also increase, not only exports in the forms of raw material. Moreover, the production process sophistication in textile industry will decrease because of the guarantee for raw material supply availability.

Jute agro-business is an agro-based sector that has role in national economy through GDP formation, availability of raw material industry, opportunity of employment formation and increase society income level. It has significant multiplier effect through forward linkage and backward linkage in input-output *outcome* matrix between industries, consumption and investment in national and regional economy because most of Indonesia region has comparative advantage in the agriculture sector. Agro-based industry is one of main industries that prioritized developed by Industry Department (2006).

The optimization of community empowerment in the jute agro-business

In order to increase the quality of country competitiveness, the role of society is a necessary condition. In this study, author try to analyze how to optimize community empowerment in jute agro-business as an industry development model through agro-based cluster model to increase Indonesia competitiveness especially textile industry competitiveness. Agro-based cluster model is an approach used through centralization agro-business activity in a certain location. This effort conducted to increase efficiency and effectiveness in jute plant production through cost minimization from upstream to downstream (Siregar, 2010). With this *agro-based cluster* model, strong agricultural manufacturing industry with supports from other agro-business subsystems is expected. The product value added and export commodity competitiveness can be increased, hence transformation from *agricultural-based economy* to *agro-industry-based economy* can be conducted progressively.

Jute plant is very suitable with climate condition in Indonesia, otherwise, the jute production areas still not large enough. Hence, it is still not able to fulfil the demand for textile industry raw material as cotton alternative. However, jute plant could be planted in most areas in Indonesia. Some areas that become a jute fibre production location based on Sudiro (2004) are Wonosobo (100 ha), OKU (105 ha), Lahat, Pagar Alam, Muara Enim, Musi Rawas, Rejang Lebong, Way Kanan, Lampung Utara, Lampung, Tanggamus, Toba Samosir (20 ha for each) and West Java province that include Garut, Sukabumi, and Subang (50 ha). There are also Bogor and Brebes due to other reference.

The implementation of community development activity is begun with the development of suitable concept according to program purpose and target based on community needs analysis result through participatory observation method. This method prioritizes participation from the community who will be developed in a program with knowing the characteristic and capital owned by the society through observation.

Government especially local government should cooperate with non-government organization, academician, or private sector to conduct a potential or capital analysis to find out area that meets the requirement as jute agribusiness production centre. As other comodities, jute

plant has certain habitat that ideal for its growth. In addition, there are six community capitals or assets that assumed related to community empowerment effort such as *physical capital, financial capital, environmental capital, technological capital, human capital, and social capital*. These capitals are asset that might become strength or weakness for society. From these capitals, these following capitals need to be heed:

a. *Physical Capital*

Availability of land and proper infrastructure are needed to develop jute agro-industry. The proper infrastructure will make the producer easier to carry the jute product into processing factory, spinning factory and consumers. Community in a strategic location in terms of land and access own better physical capital, consequently it will be easier to be developed and to be empowered.

b. *Financial Capital*

The indicator of financial capital from community is the amount of people that live below poverty line. Financial capital need to identified before launch the jute agro-industry program because the capital that has already owned by community and the capital that potential to be obtained will become a key when the program is running. For example, the society needs capital to buy seed and fertilizer for jute plant.

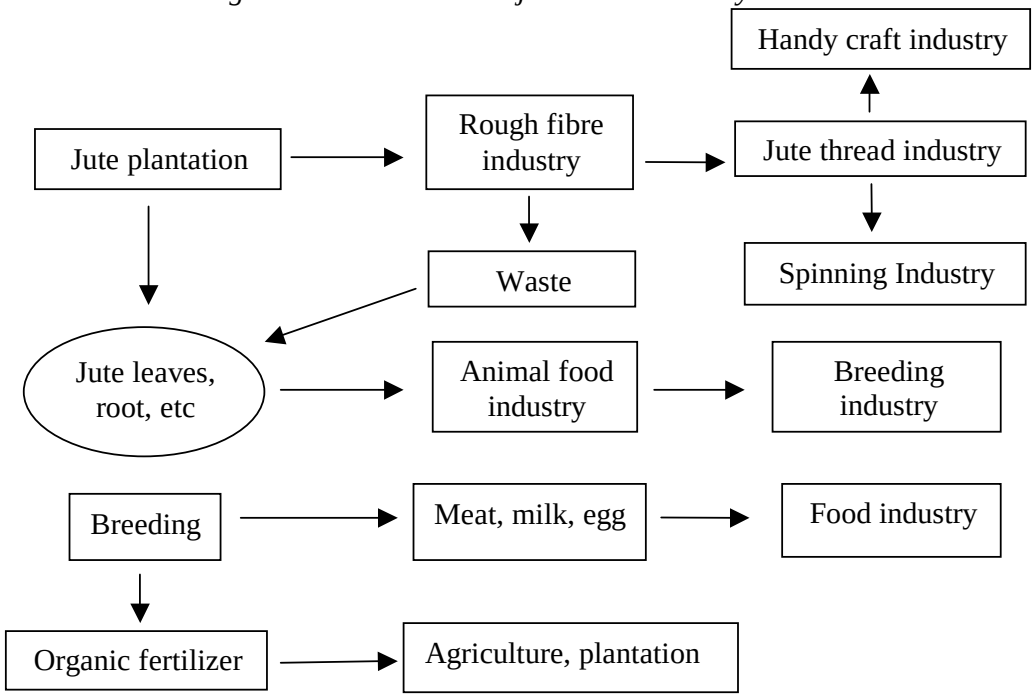
c. *Technological Capital*

A sophisticated and modern technology in society is not a must. Otherwise, it might be an applicative and simple technology. But, as the development of society, advance technology should be mastered. Jute agro-industry technology is not a simple technology, hence, the society adaptation level for advance technology should be considered.

d. *Human Capital*

Human resources play an important role in development process. Without capable human component, machine or technology becomes useless. Society empowerment in jute agro-business is not limited to jute plantation but it will be integrated from the jute plantation, jute processing industry that consists of three steps; *decorticated jute industry*, jute thread industry, and spinning industry. In addition, it can also be integrated with handy craft industry with jute raw material, animal food industry from the jute leaves, and organic fertilizer industry like in Garut.

Figure4. Business unit or jute-based industry connection



Source: edited from Saeffudin (2008)

e. *Social Capital*

Understanding social capital will make the society empowerment process implementation easier. Linking capital between the poor-and-weak people and the rich-and-powerful people in society must be considered in order to implement the jute *agro-based cluster* model in Indonesian area. Trust and link between citizens are needed especially to build a solid and integrated *cluster* between unit businesses from upstream to downstream.

The next step after need assessment is programs socialization. It is conducted in order to build the society sense of belonging and also to make them responsible with the successful of program implementation. In this step, deliberation as Indonesian cultural approach plays an important role as communication medium. Jute introduction step should not be conducted as main program. Otherwise, it could be conducted as companion or associate plant for the farmer. Let them plant and grow the jute plant until they get the seed, after that, it might be a development program. This is a preventive strategy in case if there is a massive development in the beginning, there is a possibility that the program is not accurately implemented and there is a failure probability because of the lack of knowledge and still an amateur with this new type of jute plant.

On the implementation step, there are some important things like government and investor support in order to develop jute agro-based cluster. Each business units should clearly understand with the structure and network in this jute agro-business system until reach the spinning industry. At the end, hopefully the raw material supply for textile industry could be well maintained. Well coordination between each business unit is needed in order to keep the *cluster* system sustainably run well in the long term. An agro-based cluster system is implemented in a district region where the citizen in some areas focus only on upstream industry and another citizen focus only on downstream industry but still in a cluster to make the accessibility and transfer knowledge easier, to reduce *transportation cost* and many other cluster benefits.

Conclusions

Based on the results of the study, these are following conclusion points:

1. The contribution of jute as to improve Indonesia competitiveness is important because :
   i) Jute fibre is an alternative raw material for textile industry that is one of the leading industrial sectors of Indonesia and still prospective,
   ii) Jute agribusiness development might also improve competitiveness of Indonesia in terms of business sophistication indicators (local supplier quantity, value chain breadth and production process sophistication)
   iii) Jute plant agribusiness becomes an agro-based sector that contributes in the national economy because agriculture is a comparative advantage possessed by most regions in Indonesia.
2. Community empowerment optimization in jute agro-industry through agro-based cluster model is conducted through involving the community in certain areas in Indonesia in order to make them participate in business units from upstream to downstream industry such as jute thread industry. Community empowerment should be conducted through need assessment process, socialization and implementation which are supported by the government, the industry or investors, academics, and the society.

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