

# The Effect of Application of Indonesia National Standard on Cocoa Industry and Strategy to Face the Asean Economic Community In 2015

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**Abstract.** ASEAN Economic Community (AEC) is a form of the Free Trade Area (FTA) and is located in Southeast Asia. Indonesia becomes the major cocoa producing country of the world. However, Indonesia's competitiveness against the ASEAN countries in the world market is only superior to cocoa beans. Several factors which result in weak competitiveness of the cocoa industry are namely low quality, poor performance quality testing agencies, and low infrastructure. This study aims to analyze the competitiveness of Indonesian cocoa powder between the ASEAN countries before and after the implementation of Mandatory SNI, and formulate strategies for Indonesian cocoa industry in the face of the Asean Economic Community (AEC) in 2015. This study used Revealed Comparative Advantage (RCA), internal-external analysis, SWOT analysis, and QSPM. Based on the RCA analysis, the application of Mandatory SNI did not significantly affect the competitiveness of Indonesia's cocoa powder products. The order of priority strategy in building the Indonesian cocoa industry is building product innovation as much as possible and developing culinary market in Indonesia, providing subsidies for superior agricultural products so that the cost of production becomes efficient, giving counseling and training to small industries so that the industries are able to compete in terms of their human resources and technology, building strategic partnerships, establishing cooperation with associations that are outside Indonesia and other research institutions, conducting researches to produce cocoa seeds which are superior and have a high productivity, making fermentation process compulsory to cocoa farmers, simplifying government policies that have similar functions regarding the security of domestic products, and replanting cocoa trees.

**Keywords:** Cocoa, Asean Economic Community, Standar Nasional Indonesia, RCA, SWOT-QSPM

**JEL Codes:** Q1, M20

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## Introduction

### 1.1 Background

ASEAN Economic Community (AEC) is a kind of Free Trade Area (FTA) located in Southeast Asia. The ASEAN Economic Community is established with the goal of making better economy in ASEAN countries to be able to compete with other countries whose economic condition is more advanced at this time. This community was initially going to be run as a whole in 2020, but it is then

implemented earlier in the year 2015 in accordance with the agreement of the leaders of the ASEAN member countries. It is also adapted to the development of globalization in international market which demands ASEAN to be more competitive (Triansyah 2007).

ASEAN countries, known as the largest commodity exporter that are natural resource based, also open for opportunities in the market production competition with transaction surplus in the balance sheet. Cocoa commodity is the third largest contributor of all exports to the national plantation after oil palm and coffee (Raginun 2012). Consumption of cocoa in the world is expected to continue to increase, and the average growth during 2007-2012 reached 2.7% per year. ICCO (International Cocoa Organization) (2013) estimates in the long term, there will be cocoa deficit in the world around 10-50 thousand tonnes per year due to increasing consumption.

Indonesia is one of the main cocoa producing countries in the world. However, the competitiveness of Indonesia against Malaysia in the ASEAN market is high only in terms of cocoa beans. Meanwhile, for processed cocoa products, Malaysia is superior (Lubis and Nuryanti 2011). Competitiveness has become a key for the companies, countries or regions to be able to participate in the world's free trade (Paidi and Ramanda 2013). The competitiveness of cocoa industry in Indonesia is built and improved through a series of production and trade policies of processed cocoa products issued by the government. Therefore, it can be said that Indonesia has the potential to enhance competitiveness by increasing the production of processed cocoa products. However, some of the cocoa processing companies in Indonesia are currently not capable of processing cocoa beans to become processed products, even lagging compared to other cocoa producing countries such as Malaysia, though they are not supported with adequate amount of raw materials.

The increasing competitiveness is necessary to improve penetration of Indonesia cocoa and cocoa products in export market, both focusing and expansion of the market. Increased competitiveness can be realized by performing a cost-efficiency in production and marketing as well as improving quality and consistency of quality standards. The problems in cocoa production are, such as low productivity and low quality of cocoa beans, so the price of Indonesian cocoa in the international market is discounted by USD 200/tonne or 10%-15% of the market price, and another obstacle is the high cocoa export tax burden up to 15%, and the rising price of subsidized fertilizers amounting to an average of 35% (Aji *et al.* 2011). Based on data from Ministry of Trade (2012) in general the competitiveness of export products of Indonesia is getting better. It can be seen from the decline in cases of rejection of Indonesia's exports. With a good quality standard, cocoa industry in Indonesia will experience a very rapid progress. Positive viewpoint that should be built is that standard as one of the quality determinants is the main instrument for increasing the competitiveness of a nation's products. By having a standard and quality required by export destination countries, it will open big opportunities for export because of the high interdependence between economic regions in the world. In fact, the number of Indonesian products which have been certified with Indonesia National Standard (SNI) and notified by the World Trade Organization (WTO) is still low compared to other countries. This causes Indonesia become very difficult to penetrate into the international market (*Badan Standardisasi Nasional* 2012).

Standard and quality issues will be related to many factors, namely weak performance of quality testing agencies managing export goods, low capacity and poor institutional laboratories for testing export and import products (limited infrastructure and laboratory). In 2009, Department of Industry issued Ministerial Regulation which stipulates that the Indonesia National Standard (SNI) is compulsory for cocoa products or chocolate powder. In relation to the Mandatory SNI, companies producing or importing cocoa powder are obliged to apply SNI and have the SPPT-SNI of cacao and are required to put SNI sign of cocoa powder on each package. The Mandatory SNI regulation is one of the government's strategies in suppressing product imports and making it as a technical barrier in the face of the AEC by 2015. In carrying out the strategy, coordination between related parties is required. With increasing awareness of the importance of industrial quality standards as well as increasing consumer awareness of health, the authorities will have to improve and provide adequate facilities and infrastructure in applying the regulation in order both the trade and Indonesian government can achieve the goal.

### *1.2 Objectives*

This study aims to analyse the competitiveness of Indonesian cocoa powder against Malaysia's before and after implementing Mandatory SNI and to formulate strategies for cocoa industry in Indonesia in dealing with the Asean Economic Community (AEC) by 2015.

## **Literature Review**

### *2.1 Internasional Trade*

According to Sukirno (2004), the advantages of international trade are to (1) obtain the goods that could not be produced within the country since some items could not be produced due to limited or unavailability of natural resources as well as knowledge and technology; (2) gain benefits of specialization because the factors of production owned by each country can be used more efficiently and each country can enjoy more goods that can be produced domestically; (3) expand the industrial markets in the country, with market expansion, production capacity can continue to increase to cope with a broader market so that it could achieve efficiency from economic scale; (4) allow a country to learn better production techniques and management of other countries and import tools with more advanced technology from other countries for the sake of improving efficiency.

### *2.2 Indonesia in Asean Economic Community (AEC)*

According to Sholeh (2013), strategic methods of Indonesia in preparing AEC 2015 should comply with the pillars of the AEC Blueprint 2015 that require every ASEAN country to reform all the main elements in essential sectors and absolute terms in dealing with the implementation of the AEC by 2015. Those strategic steps include: (1) increasing economic competitiveness, (2) increasing the rate of exports, (3) regulation reforms, (4) infrastructure improvements, (5) investment climate reform, (6) and government institutional reforms, (7) empowerment of Small Medium Enterprises (8) development of website-based Small Medium Enterprises center (9) strengthening economic resilience, and (10) increasing participation of all elements of the country.

### *2.3 Standard*

Standard can be used to increase the ability of manufacturers in an effort to produce high quality products. General definition of technical regulation in the standardization is a regulation which stipulates the technical requirements either directly or by referring or inserting the contents of standard or technical specifications. Meanwhile, the standard is a written document that contains rules, guidelines, or characteristics of the goods and services, or the processes and methods that are commonly applied and used repeatedly. The standard is intended to achieve the optimum level of regularity in a particular context. The principles embraced in establishing a standard refer to international standard as possible to get international recognition (National Standardization Agency of Indonesia 2012)

### *2.4 Theory of Competitiveness*

Saragih (1998) stated that in an effort to improve the competitiveness of Indonesian agricultural commodities, there are three fundamental things to note as described below: (1) the ability to produce a commodity which has a comparative advantage by producing a commodity cheaper than competitor's, but it is also not sufficient to guarantee the high competitiveness in the market; (2) the ability to provide products in accordance with consumer preferences, agribusiness states such as Australia are capable in competing in the international market due the ability in selling what the consumer wants, not selling what is generated; (3) the ability to efficiently utilize the comparative advantages from the up-stream industry to down stream industry in producing products that comply with consumer preferences.

## **Methodology**

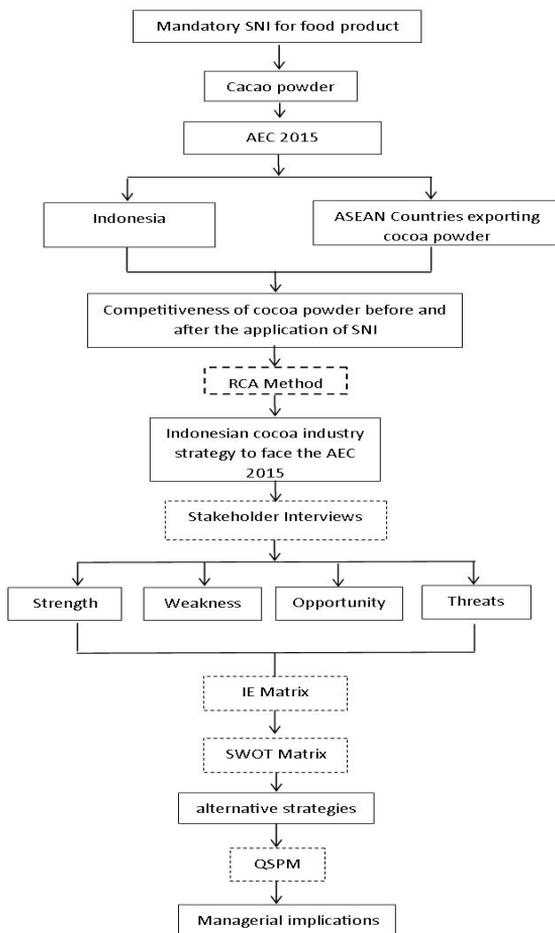
### *3.1 Analytical Method*

Types of data used in the study were primary and secondary data. Primary data included quantitative and qualitative data. Qualitative data were information about the standard testing process and quality of goods as well as general overview of cocoa industry obtained from interviews with The Indonesian Standardization Body, Indonesian Cocoa Industry Association (AIKI), Indonesian Cocoa Industry and Chocolate Association, Standardization Centre of Ministry of Industry, manufacturers in processed cocoa, direct consumers both from industry and households and Food and Drug Supervisory Agency (BPOM), and Indonesian Coffee and Cocoa Research Institute selected by purposive sampling, which is judgement and quota sampling.

Data gathering was done through questionnaires spread to parties related with the research topic as seen in Table 2. In addition, secondary data were obtained through various publications from The Indonesian Standardization Body, Ministry of Trade, Ministry of Industry, Food and Drug Supervisory Agency (BPOM), Central Bureau of Statistics, as well as ICCO and Trademap

## 1.2 Analytical Framework

**Figure 1** Analytical Framework



**Table 2** Types and Sources of Data in the Questionnaire

No.	Type of Data	Data Source
I	Primary Data	
	Questionnaire on:	
	1.1 Strengths, weaknesses, opportunities, and threats factors from the cocoa industry in Indonesia to facing AEC 2015	Internal and external respondents Internal and external respondents
	1.2 Determination of priority strategies	
II	Secondary Data :	
	2.1 Export and Import data (Before implementation = 2004-2009) (After implementation = 2010-2013)	Internal and external respondents
	2.2 supporting literature	Ministry of Industry, Ministry of Trade, Statistic Indonesia various literature

3.3 Revealed Comparative Advantage (RCA) Analysis

Analysis of RCA in this research was used to measure the export performance of Indonesian cocoa powder before and after implementing Mandatory SNI to some ASEAN countries as Indonesia's competitors in the export of cocoa powder. Along with the implementation of Mandatory SNI, it is expected that competitiveness of cocoa powder in Indonesia increases compared to other ASEAN member countries. To measure the performance of Indonesia's exports of cocoa powder, the formula of RCA analysis is given below:

$$RCA = \left(\frac{X_{ij}}{X_{it}}\right) / \left(\frac{W_j}{W_t}\right)$$

where *X* represents export value, *i* represents exported commodity, which is Cocoa powder, *j* represents the exporting countries, so *X<sub>ij</sub>* is commodity export value of cocoa from Indonesia, *X<sub>it</sub>* is the total value of Indonesia's exports, *W<sub>j</sub>* is commodity export value of cocoa for the whole world, and *W<sub>t</sub>* is the total value of world's export.

3.4 Internal-External Matrix (IE Matrix) Analysis

Based on the idea proposed by David (2007), cells in the IE matrix are divided into three sections as depicted in Figure 2. First, a company or business unit in Cell I, II or IV may be called as Growth and Build, and the strategies that properly denote the business unit or corporate strategy are intensive and integrative strategies. Second, business units or companies in Cell III, V or VI can be managed with hold and maintain, and a good strategy for these cells is market and product penetration. Third, business unit or companies included in Cell VI, VII or IX are better to use harvest or divest strategy.

Figure 2 Illustration of IE Matrix

**IFE Matrix**

	<b>IFE = 2.67</b> <b>EFE = 3.36</b>	<b>STRONG</b> <b>(3.00-4.00)</b>	<b>AVERAGE</b> <b>(2.00-2.99)</b>	<b>WEAK</b> <b>(1.00-1.99)</b>
<b>HIGH</b> <b>(3.00-4.00)</b>	<b>I</b> Grow	<b>II</b> and	<b>III</b> Maintain	
<b>MEDIUM</b> <b>(2.00-2.99)</b>	<b>IV</b> Build	<b>V</b> and	<b>VI</b> Harvest	
<b>LOW</b> <b>(1.00-1.99)</b>	<b>VII</b> Hold	<b>VIII</b> or	<b>IX</b> Digest	

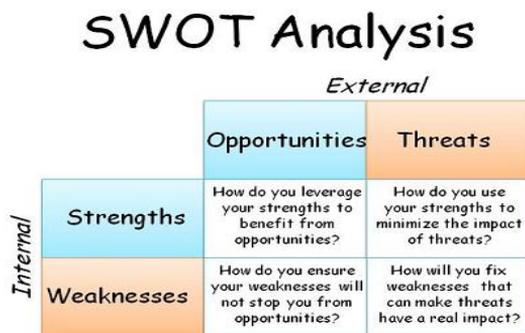
**EFE Matrix**

Source : steveslightbulbmoments.com

### 3.5 SWOT (Strength, Weakness, Opportunity, Threat) Matrix Analysis

SWOT matrix consists of nine cells. There are four strategic cells named SO, WO, ST, and WT developed after completing four cells which become key factors, namely S (Strength), W (industry), O (Opportunity), and T (Threat). The illustration of the SWOT matrix is shown in Figure 3.

**Figure 3** Illustration of SWOT Matrix



Source: rupaknepali.com

### 3.6 Quantitative Strategic Planning Matrix (QSPM)

The last stage in preparing formulation strategy was defining a priority strategy through QSPM. In QSPM input, the left side of the table displays the result of the analysis of Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE), while the top right of the table shows the result of strategies derived from the SWOT matrix. Through QSPM, the best strategy was determined among various alternative strategies which were recommended through SWOT matrix. The example of calculation table in QSPM is given in Table 3.

**Table 3** Example of Calculation Table in QSPM

Critical Success Factors	Score	Alternative Strategy			
		Strategy 1		Strategy 2	
		AS	TAS	AS	TAS

Source : David 2007

Notes :

AS = Attractiveness

TAS = Total Attractiveness Score

## Result and Discussion

### 4.1 Competitive Position of Indonesian Cocoa Powder in ASEAN

Competitive position of Indonesian Cocoa powder was measured with the revealed comparative advantage (RCA). The measured variable was the performance of commodity export of cocoa powder to the Indonesian total export which was compared to the share value of the product in world trade. RCA measures a country's share of export with other exporters in the same industry group, so it is widely used for measuring comparative advantages (Cilvan and Serin 2008)

In this analysis, the Indonesian cocoa powder was compared to other manufacturers' products in ASEAN before the application of SNI, namely during 2004-2009, and after the implementation of SNI in 2010-2013. Higher RCA value indicates the country has a higher comparative advantage. Whereas, if the value is smaller than 1 RCA, the country has no comparative advantage. The RCA value to know the comparative advantage of cocoa products in ASEAN countries is presented in Table 4.

#### *4.1.1 Comparative Advantage Value prior to the Implementation of Mandatory Indonesia National Standard (SNI)*

Indonesia national standard (SNI) is required for cocoa powder produced in 2009 but its application is in 2010. Before implementing mandatory SNI regulations, cocoa powder reached the highest comparative advantage value in 2004 with a value of 4, while in 2005 the RCA value declined to 3.7. However, during 2006 to 2009, RCA value of cocoa powder increased slightly. Before implementing mandatory SNI, there were abundant false or fake cocoa powder products distributed in Indonesia market. Fake cocoa powder is made from cocoa bean epidermis. Cocoa pod husk is regarded as industrial waste that has been contaminated with dirt, bacteria, and residue of fumigation.

#### *4.1.2 Comparative Advantage Value after the Application of Mandatory Indonesia National Standard (SNI)*

After implementing mandatory SNI, the export of Indonesia has experienced growth; however, the amount of processed products of cocoa is far left behind Malaysia. There is a slight improvement in RCA value after applying SNI mandatory in Indonesia, but this situation is also experienced by almost all ASEAN countries. Even in 2011 to 2013, Malaysia experienced a significant increase in the RCA value and compared to Indonesia.

Malaysia is cited as Indonesia's competitor in producing cocoa. The largest export market destination of Indonesia if seen from the highest average is China and Philippines, while Malaysia's largest export market is the United States and China. When observed from the export country destination and the amount of total export, Indonesia is still below Malaysia. Malaysia exports its cocoa powder to 142 countries, whereas Indonesia only exports cocoa powder to 110 countries in total (Trademap 2014).

The application of Mandatory SNI does not affect Indonesia's position in the international market, but it is influential at the national level. One of the goals in establishing Mandatory SNI is to realize healthy and transparent competition within the country. It is known that some domestic manufacturers use cocoa pod husk as material to mix in the cocoa powder. In fact, the cocoa pod husk can endanger consumers' health. In addition, the reputation of Indonesia especially in processed cocoa products in the world turns to be bad because the manufacturers often add cocoa pod husk into cocoa powder.

SNI must be applied to build trust in international trade that cocoa powder produced by Indonesia is safe for consumption. Malaysia also has already got considerable trust from the international market in terms of processed cocoa products. On the contrary, Indonesia only exports non fermented cocoa beans instead of processed products. According to Raditia (2012), the majority of Indonesia's cocoa production is in the form of beans which have not been

fermented and then the beans are exported, whereas most export destination countries particularly European countries demand cocoa beans that have been fermented to be produced into processed chocolate products. Alternatively, cocoa beans from Indonesia are exported first to Malaysia and Singapore and then are processed into fermented cocoa beans and sold in much higher price. It is expected that the regulation of mandatory SNI could regain international confidence, so Indonesia is able to compete with other producing countries especially Malaysia.

**Tabel 4** Calculation of RCA value of Indonesia and ASEAN countries

Country	RCA value (year)									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Indonesia	4	3.700	3.813	3.621	3.482	3.285	3.615	4.102	4.857	3.991
Malaysia	5.640	6.380	6.665	9.340	11.656	8.684	9.467	11.063	11.141	10.775
Thailand	0.825	1.170	0.852	0.721	0.621	0.634	0.588	0.702	0.900	0.601
Philippines	0.086	0.096	0.073	0.060	0.026	0.049	0.189	0.084	0.001	0.007
Viet Nam	0.012	0.193	0.201	0	0	0.010	1.908	2.933	1.686	-
Singapore	1.470	1580	1.910	1.919	2.030	2.148	1.742	1.896	2.032	1.966
China	0.047	0.122	0.072	0.065	0.086	0.155	0.142	0.153	0.104	0.067

### 1.3 Internal-External Matrix (IE Matrix) Analysis

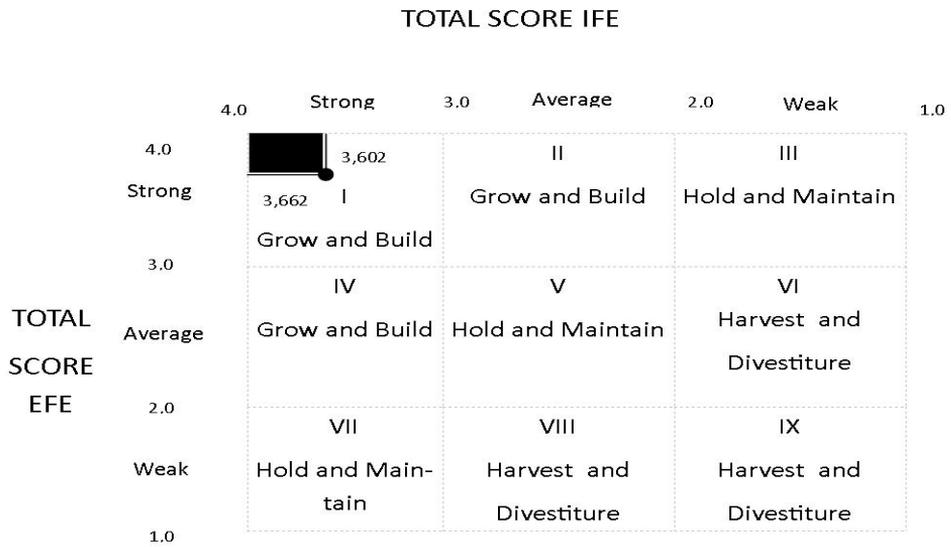
The strategic factor which becomes the main strength of cocoa industry in Indonesia is abundant raw material with the score of 0.624324, while the strategic factor that causes the main weakness of cocoa industry in Indonesia is uneducated labors, with the score of 0.745946.

The EFE result is used to find out the influence of external factors faced by cocoa industry in Indonesia; the factors are opportunities and threats faced by the industry. The result of the EFE matrix analysis shows that the main opportunity faced by Indonesia's cocoa industry with the introduction of Mandatory SNI is that the image of Indonesian cocoa quality in international trade improves with the score of 1.013946, while the strategic factor that becomes the main threat to Indonesia's cocoa industry is the penetration of similar products into the country whose price is below the price of local products with the score of 0.730689. IE Matrix is the combination of the IFE matrix score and EFE matrix score that have been mapped, so that the position of cocoa industry in Indonesia can be observed. Based on the result of internal factor analysis using IFE matrix, the total score was 3.602703 and the result of external factor analysis using EFE matrix shows the total score was obtained at 3.662056. From Figure 4, it is obtained grow and build strategy for cocoa industry in Indonesia. This strategy consists of several strategy i.e., backward integration, upward integration, horizontal integration, market penetration, market development, and product development.

Ragimun (2012), markets in China, ASEAN countries, the United States and in the European countries are still widely open. High growth and development in China require a large amount of cocoa commodities that make it a great opportunity for Indonesia. Considering this situation, coupled with the increasing prospect of export of cocoa beans and processed cocoa products in Indonesia, the chance to seize the market will be even greater. The government is supposed to

help the producers of cocoa beans in order to improve the quality and quantity of cocoa bean production to enhance the competitiveness of Indonesian cocoa.

**Figure 4** Internal external matrix



#### 4.3 SWOT (Strength, Weakness, Opportunity, Threat) Matrix Analysis

The strategy resulted from SWOT matrix is S-O strategy which is using the power of the existing cocoa industry to take advantage of the opportunities that exist; W-O strategy that takes advantage of opportunities to minimize the weaknesses of cocoa Industry in Indonesia; S-T strategy that uses strengths to overcome the threat; and W-T strategy that minimizes weaknesses and avoids threats. The SWOT matrix is presented in Figure 5 as follows.

##### 4.3.1 SO Strategy

The formulation of SO (Strengths-Opportunities) strategy is based on the management of powerful role owned by Indonesia's cocoa industry to take advantage of the opportunities that exist in dealing with Asean Economic Community. The formulation of SO (Strengths-Opportunities) strategy results in several strategies, such as increasing the area of cocoa tree plant and doing plant rejuvenation every five years, doing research in order to produce superior cocoa seeds which have high productivity, and building partnership with associations outside Indonesia and other research institutions.

##### 4.3.2 WO Strategy

Formulation of WO (Weaknesses-Opportunities) strategy basically is to address the weaknesses owned by cocoa industry in Indonesia to take advantage of opportunities in Asean Economic Community. The formulation of WO (Weakness-Opportunities) strategy generates some strategies namely making fermentation process compulsory (at least) to cocoa farmers, and simplifying regulations or government policies which function similarly on security products in the country.

**Figure 5** SWOT Matrix of Cocoa Industry in Indonesia

	Strength	Weakness
<div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-bottom: 10px;">S-W</div> <div style="border: 1px solid black; padding: 5px; display: inline-block;">O-T</div> </div>	<ul style="list-style-type: none"> <li>Abundant raw material</li> <li>Available human resources in Indonesia is very much</li> <li>Associations engaged in cocoa product there is more than one association that works to improve and develop the cocoa industry in the country</li> <li>There are centers of excellence research institutes to build cocoa (PUSLITKOKA JEMBER).</li> </ul>	<ul style="list-style-type: none"> <li>Lack of value added in processed cocoa products.</li> <li>Workers in Indonesia are mostly non-educated workforce</li> <li>There are industries that are not consistent with the standards applied</li> <li>Lack of coordination among government agencies</li> </ul>
<p>Opportunity</p> <ul style="list-style-type: none"> <li>With the enactment of Mandatory SNI image quality of cocoa powder in Indonesia increased in international trade</li> <li>Technological developments that occur improve industrial efficiency</li> <li>domestic cocoa industry is growing rapidly both in an increasing number of producers and dairy industry.</li> </ul>	<p>S-O Strategy</p> <ul style="list-style-type: none"> <li>Increasing the area of cocoa tree plant and doing plant rejuvenation</li> <li>Doing research in order to produce superior cocoa seeds which have high productivity</li> <li>Building partnership with associations outside Indonesia and other research institutions</li> </ul>	<p>W-O Strategy</p> <ul style="list-style-type: none"> <li>making fermentation process compulsory (at least) to cocoa farmers</li> <li>Simplifying regulations or government policies which function similarly on security products in the country</li> </ul>
<p>Threats</p> <ul style="list-style-type: none"> <li>entry of similar products to the domestic premises at prices below the price of local products</li> <li>Small industries to compete</li> </ul>	<p>S-T Strategy</p> <ul style="list-style-type: none"> <li>provide subsidies for agricultural products of superior Indonesia, so that the cost of production can be efficiently and provide counseling</li> <li>training to small industries that small industries can compete in terms of its human resources and technology</li> </ul>	<p>W-T Strategy</p> <ul style="list-style-type: none"> <li>Making product innovation as much as possible, developing culinary market in Indonesia particularly in big cities</li> <li>Building strategic partnerships</li> </ul>

**4.3.3 Strategy ST**

ST (Strengths-Threats) strategy is formed based on the strength of the refineries Indonesian cocoa industry to anticipate the threat during the application of Asean Economic Community. The formulation of ST (Strengths-Threats) strategy is provide subsidies for agricultural products of superior Indonesia, so that the cost of production can be efficiently and provide counseling and training to small industries that small industries can compete in terms of its human resources and technology.

#### *4.3.4 WT Strategy*

WT (Weaknesses-Threats) strategy is formed based on addressing the weaknesses of cocoa industry in Indonesia to anticipate threats during the application of Asean Economic Community. The formulation of WT (Weaknesses-Threats) strategy has determined several strategies including making product innovation as much as possible, developing culinary market in Indonesia particularly in big cities and building strategic partnerships.

#### *4.4 Priority Strategy Assignment Using QSPM*

Determination of priority strategy was carried out through questionnaires spread to 10 respondents (internal and external) and then the result was processed using QSPM matrix. Priority strategy itself means the most important and urgently needed strategy which comes first than the other strategies in order to run more effectively. Among the nine alternative strategies which have been set out, the priority was determined based on the level of interest (attractiveness score or AS) of each external and internal factor. The level of interest in each factor would be associated with the score of each factor to get the total attractiveness score (TAS). The first priority strategy is a strategy that has the highest number of TAS.

**Table 5** Results of Assessment Score TAS in QSPM

Alternative strategies	Description Strategy	TAS Score	Prioroty strategies
I	Increasing the area of cocoa tree plant and doing plant rejuvenation	4.236709	9
II	Doing research in order to produce superior cocoa seeds which have high productivity	5.034186	6
III	Building partnership with associations outside Indonesia and other research institutions	5.34201	5
IV	Making fermentation process compulsory (at least) to cocoa farmers	4.733774	7
V	Simplifying regulation or government policies which function similiary on security products in the country	4.719162	8
VI	Provide subsidies for agricultural product of superior Indonesia, so that the cost of production can be efficiently and provide counseling	5.69381	2
VII	Training to small industries that small industries can compete in terms of its human resources and technology	5.686372	3
VIII	Making product innovation as much as possible, developing culinary market in Indonesia prticularly in big cities	5.993938	1
IX	Building strategic partnerships	5.490262	4

Based on the assessment result from the respondents, the order of priority obtained to develop cocoa industry in Indonesia is namely making product innovation as much as possible and developing culinary market in Indonesia, granting subsidies for superior agricultural products of Indonesia so that production costs can be more efficient, providing guidance and training to small industries to compete in terms of human resource and technology, building strategic partnerships with associations outside Indonesia and other research institutions, doing research to produce superior cocoa seeds having high productivity, making fermentation process compulsory to (at least) cocoa farmers, simplifying regulations or government policies having a similar function on security products in the country, and doing rejuvenation of cocoa trees.

#### 4.5 *Managerial Implication*

The highest priority strategy based on QSPM matrix is a strategy to make product innovation as much as possible and develop culinary market in Indonesia with a value amounting to 5,993. This strategy is urgently needed by Indonesia's cocoa industry because the industry must be able to follow the development and changes on the market, where the demand for products can be fickle. Therefore, existing products should be more diverse and innovative.

The second priority strategy with the value of 5.69381 is granting subsidies to main agricultural products of Indonesia, so that production costs can be minimized. Arsyad (2011) in his research about the impact of policies on export

taxes and subsidies on fertilizer prices toward the production and export of cocoa in Indonesia argued that the granting of subsidies on fertilizer prices positively increases production and export of cocoa Indonesia. The subsidy of fertilizer prices is expected to be one of the key strategies to spur the production and export of Indonesian cocoa.

The third priority strategy with the value of 5.686372 is providing guidance and training to small industries to be able to compete in terms of human resource and technology. Giving guidance and training to small industries can improve the quality of human resources (HR).

The fourth priority strategy with the value of 5.490262 is building a strategic partnership. Partnership which can be performed by the industry is establishing a partner with government or banking institutions to obtain capital through low interest loan such as The Credit for the Poor (*Kredit Usaha Rakyat*) (Wicaksono 2010).

The fifth priority strategy with the value of 5.34201 is building cooperation with organization outside Indonesia and other research institutions. According to Daryanto (2007), the cooperation conducted both regionally and internationally is expected to facilitate Indonesia in promoting its products, improving export performance, and opening access to new markets in order to expand the market potential and the export volume of Indonesian cocoa.

The sixth priority strategy with the value of 5.034186 is doing research to produce superior cocoa seeds which are high in productivity. Seeds and seedlings are important factors in an agribusiness system, because the basic attribute of agribusiness products is determined since the seedling process.

The seventh priority strategy with the value of 4.733774 is making fermented process compulsory (at least) to cocoa farmers. The fermentation process is one way to provide added value to cocoa beans produced by Indonesia. Cocoa beans that undergo fermentation process have a higher value compared to the cocoa beans which do not experience fermentation process.

The eighth priority strategy with the value of 4.733774 is simplifying the regulations or government policies having the same function on security products in the country. Simplification of government policies can lower the costs incurred by industry, especially small industries in Indonesia, so those industries can reduce production cost for efficiency.

The ninth or last priority strategy with the value of 4.236708 is by doing rejuvenation of cocoa trees. Rejuvenation of cocoa plants is able to increase the productivity of Indonesia's cocoa plantations that is still low.

## **Conclusion**

Based on the Revealed Comparative Advantage (RCA) analysis, the implementation of Mandatory SNI does not affect Indonesia's competitiveness of cocoa powder products in international market. After applying mandatory SNI against cocoa powder products, the competitiveness of Malaysia's products also increases, even more significantly than Indonesia's. It is probably due to weak supervision in the application of Mandatory SNI in Indonesia.

The first priority strategy based on QSPM matrix is a strategy to make product innovation as much as possible and develop culinary market in Indonesia with the value amounting to 5.993. The second priority strategy with the value of 5,69381 is granting subsidies to superior agricultural products of Indonesia, so that the production costs can be lower. The third priority strategy with the value of

5,686372 is a strategy to provide guidance and training to small industries to be able to compete in terms of human resource and technology. In addition, the fourth priority strategy with the value of 5.490262 is a strategy to build a strategic partnership. The fifth priority strategy with the value of 5.34201 is establishing partnership with the association outside Indonesia and other research institutions. Furthermore, the sixth priority strategy with the value of 5,034186 is carrying out researches to produce superior cocoa seeds which have high productivity. Then, the seventh priority strategy with the value of 4,733774 is stipulating that fermented process is compulsory (at least) to cocoa farmers. The eighth priority strategy with the value of 4.733774 is simplifying the government regulations or policies having similar function on security products in the country. Lastly, the ninth priority strategy with the value of 4.236708 is by conducting rejuvenation of cocoa trees.

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