

Sustainable Development Strategy and the Competitiveness of Indonesian Palm Oil Industry¹

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Abstract: *Crude palm Oil (CPO) and Soybean Oil (SBO) are amongst the highest market share on the world vegetable oil market with more than 60 million MT supplies of CPO (35%) and 46 MT for SBO (27%). The main objective of this research is to identify and explain the policies on palm oil industry development for Indonesian palm producers and synthesizing business policy as well as policy strategy to reach the sustainable competitive advantages of industry especially in sustainable development. This research involves panels of expert which come from various part of palm oil industry's stakeholders, including business players, researcher, academic, association and government institutions. The data was analysed through Analytic Network Process (ANP) based on in depth interviews with the experts both through guided pairwise questionnaire and structured interviews. The result shows that in general, the industry has put more of the focus to the economic goal rather than social and environmental concerns. However, the strategy recommended by this research shows that this industry should put the focus on low cost leadership and organizational process as a combination of eco-efficiency strategy in upstream industry and environmental cost leadership in the downstream industry.*

Keywords: *Sustainable Development, Competitive Advantage, low cost leadership, organizational process, eco – efficiency*

1. INTRODUCTION

Indonesia is a major CPO producing country with the world's highest volume of 28 million tons per year, followed by Malaysia and Thailand. Indonesian palm oil industry has a variety of advantages, primarily due to lower production costs and a very strategic position in the center of the world CPO industry in the South East Asia.

Oil palm development in Indonesia indicates that the industry has a positive prospect, particularly in relation to the added value and competitiveness. However, the development of oil palm industry is also facing various issues related to technological problem, economic, social, environmental, and governance which are getting more complex. Thus sustainable and equitable oil palm development can be accomplished in case not to distort the competitiveness of Indonesian oil palm products in the worldwide market (Bappenas 2010).

The implementation of sustainable development of palm oil industry is facing more obstacles and challenges, Thus the clear and unequivocal policies on the management of oil palm plantations

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need to be formulated, to ensure all stakeholders obtained benefits from the new strategy of sustainable development in palm oil industry.. Steps taken by the stakeholders in oil palm industry to harmonize community interests, maintain environmental sustainability and market demand which urges to produce palm oil in a sustainable manner is to form the Roundtable on Sustainable Palm Oil (RSPO). However, the formation of RSPO is also causing controversy from several major NGOs in the world. The formation of RSPO does not mean that oil palm industry has no more challenge (RSPO 2009).

In addition, Indonesian government policies related to the oil palm industry and plantations are still questionable. Particularly those related to the law enforcement, bureaucracy and even EIA (Environmental Impact Assessment) are still low, thus Indonesia is yet to be ready and losing competitiveness compared to Malaysia. To date, Malaysia has been selling a variety of derivative products with higher added value, while Indonesia is still dominated by crude palm oil (CPO) export. Whereas it does not mean that Indonesia is unable to produce various palm oil derivative products, but it is yet to be supported by a conducive policies.

This study examines the principles of sustainable development strategies in the development oil palm industry in Indonesia, and formulates business and policy strategies to achieve sustainable competitive advantage of oil palm industry.

2. SUSTAINABLE DEVELOPMENT OF OIL PALM INDUSTRY

Oil palm has an important role in the Indonesian economy and is one of the leading commodities in generating foreign exchange. In 2010-2014, Indonesia is projected to earn US\$80.9 billion foreign exchange from the export of CPO commodity. According to the data from the Plantation Directorate-Ministry of Agriculture in 2011, it is known that the total area of nationwide oil palm plantations by the end of 2010 was 7.16 million hectares, consisting of 3.3 million hectares of smallholder plantations and 3.8 million hectares of private and state-owned plantations. The estimation of total area of Indonesian oil palm area in 2013 was 9.15 million hectares (Ditjenbun 2013).

The prospect of oil palm development is expected to be excellent, in terms of demand. It is expected that the demand for oil palm products will remain high in the future. This is due to a relatively high preference for palm oil compared with its substitution products such as soybean oil, corn oil and sunflower oil. The high preference for palm oil is due to many advantages over its substitute products. These advantages include, palm oil is relatively more durable, resistant to high pressure and temperature, not easily turns into rancid., Palm oil has high nutritional content, as well as useful as a raw material for various types of industries.

Other advantages are in terms of productivity and production costs. Palm oil has a relatively higher productivity and has relatively lower production costs compared to other vegetable oils such as soybean oil and sunflower seed oil. Palm oil production can exceed 3.5 tons per hectare, while soybean oil is only 0.4 tons per hectare, while sunflower seed oil is merely 0.5 tonnes per hectare. In terms of production costs, the average production cost of soybean oil is US\$300 per ton, while the average production cost of palm oil is only US\$160 per ton. In addition, Indonesia also has a comparative advantage in terms of relatively lower labor costs at 55%-60% compared to Malaysia (TAMSI-DMSI 2010).

3. THEORY OF SUSTAINABLE DEVELOPMENT

According to the Brundtland Report published by the World Commission on Environment and Development (1987), the definition of sustainable development which is oftenly cited is: "Development that meets the present needs without compromising the ability of future generations to meet their own needs" (Robertson 2005; Strange and Bayley 2008; Anderson 2010). A more simple but emphatic definition about sustainable development is: "Saving the planet and (while) eliminating poverty from the world" (Kane, 2010). Based on the Triple Bottom Line concept (Elkington 1997), the development of a sustainable oil palm industry can be viewed from various aspects: economic, social, and environmental aspects. These three aspects of sustainable development is described as a Sustainability Triangle by Fritz and Schiefer (2008) as describes in Figure 1. This concept is later developed into the concept of 3P: Profit - People - Planet, which has been included into the United Nations Charter (Manggabarani 2011).

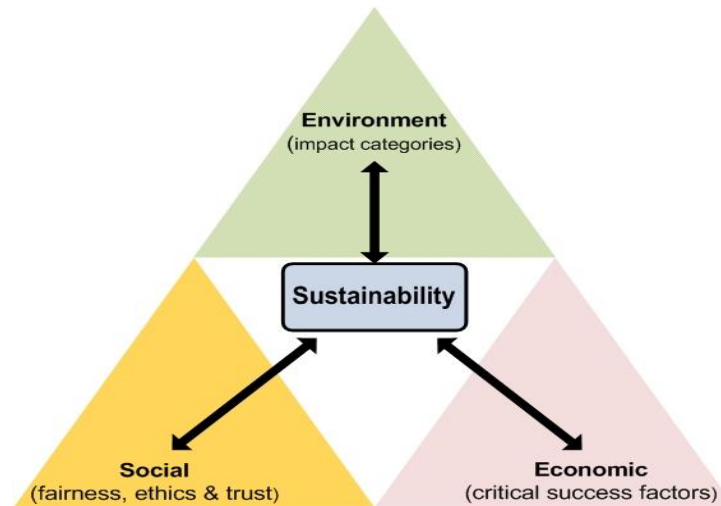


Fig1. Sustainability triangle (Fritz and Schiefer 2008)

4. THEORY OF COMPETITIVENESS

The theory of competitiveness that has been widely recognized was firstly proposed by Ansoff (1995) in which competitiveness is defined as: "a number of characteristics from various unique opportunities in the areas indicated by the scope of market-product and growth factors". It showed by the specific features of market-product that will provide a strong competitive position for the company".

According to a World Bank report (2002), Indonesian palm oil industry is the vegetable oil industry with the lowest production cost after Argentinian and Brazilian soybean oil. The low production cost of Indonesian palm oil is caused by low labor salary and due to the fertilizer subvention thus the fertilizer price becomes cheaper (Sato 1997). In fact, the low production cost of palm oil is mainly caused by the higher level of productivity that is above its competitors.

Orsato (2009) suggests two factors that affect competitiveness, namely positioning and capabilities. In the context of SD, Orsato argued that the company should have competitive environmental strategies (CES) from the current market and sustainable value innovation to a new or will be developed market.

Sustainability strategies based on Orsato (2009) is presented in Figure 2 as follows:

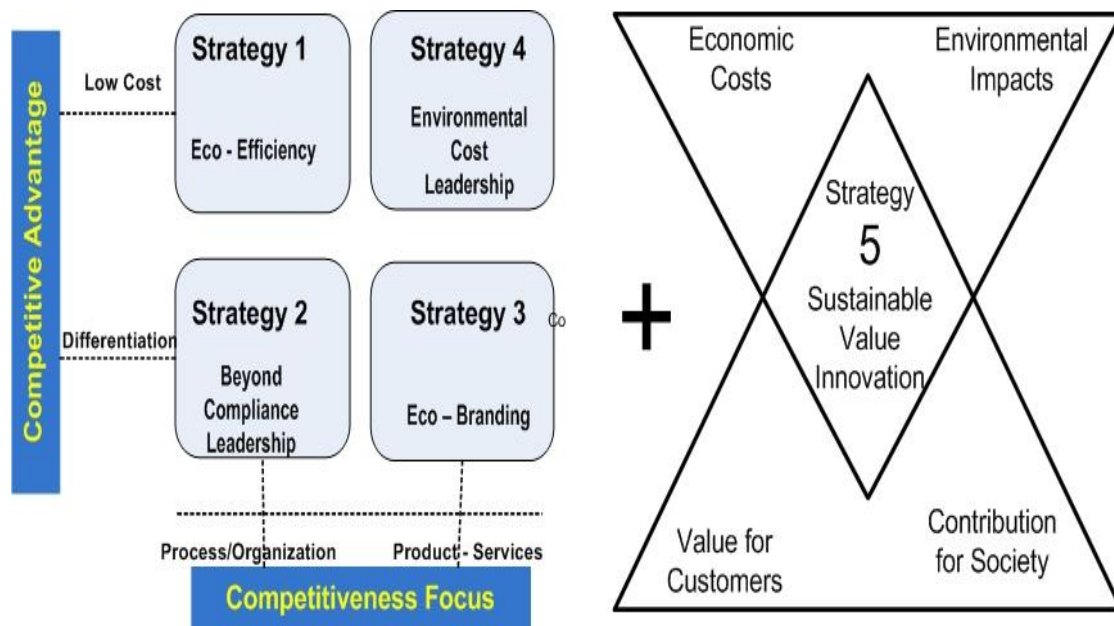


Fig2. Sustainability strategies (Orsato 2009)

Indriantoro (2010) reports that the application of environmentally friendly programs has complied to RSPO certification, where the alternative strategy priority is the laws and regulations aspects. The respondents argued that it would increase the quality and productivity which is expected to increase incomes for companies and oil palm farmers. Through the application of environmentally friendly programs embodied in the RSPO certification, the company is expected to provide training, guidance or the application of environmentally friendly programs for smallholder farmers. Several efforts to improve the quality and productivity of palm oil production through the application of environmentally friendly programs are: (a) comply with laws and national as well as international regulations which are relevant and have been ratified; (b) conduct the campaign on oil palm plantations role for their contribution of carbon sequestration and oxygen provider; (c) implement appropriate and consistently monitored operating procedures.

Indonesian oil palm company's position on its competition in the market is against other oil palm producing countries and also has to compete with non-palm oil/other vegetable oils producers. Therefore, it is necessary to analyze the position of Indonesia in the form of a competitive map which considers factors that influence it.

Rifin (2010) affirms that Indonesia and Malaysia should work together to promote the use of palm oil to buyers, because any increase in world demand will benefit both countries. Indonesia and Malaysia can cooperate in the development of the market, either in the form of new markets or uses of palm oil for new things such as biodiesel. In the long term, Indonesia should be able to differentiate its palm oil products from Malaysia to gain a larger market share. With the availability of the Indonesian palm oil competitive map, the priority factors to deal with competitors either fellow oil palm producers or other vegetable oil producers can be obtained.

Saragih (2010) emphasizes that Indonesian advantage from the supply aspect does not guarantee the success in the international business. With the liberalization of international trade, a very tight competition will take place on the international agribusiness products market. In the fierce competition, competitive advantage will be the determining factor in winning the competition. Therefore, building and improving competitive advantage of national agribusiness is very crucial from now on into the future. Furthermore, Saragih stressed that the actors must have a comprehensive knowledge of the changes in current and future consumer preferences.

5. RESEARCH METHODS

This study uses a focus group discussion (FGD) of 15 experts who were determined purposively. Additional information is collected through in-depth interviews. Experts involved were the oil palm industry practitioners, researchers and policy makers both from public and private sectors. The data were analyzed using analytic network process (ANP). Analytic Network Process (ANP) is one of the methods that is able to represent various parties interest with considering the interrelations among existing criterion and sub-criterion. ANP method is the development of Analytic Hierarchy Process (AHP) and has more complexity than AHP. ANP method is able to improve the weaknesses of AHP in the form of the ability to accommodate the interconnection between criteria or alternatives (Saaty 1999 and 2003). There are two types of interconnection in the ANP method, i.e. interconnection in a set of elements (inner dependence) and interconnection between different elements (outer dependence). Stages of study using ANP consisted of three steps, i.e. first, model construction, which began with the theoretical literature review related to the problems of the research conducted, making the model construction, and conducting validation/confirmation of the model designed. The second step was model quantification, which was conducting the questionnaire preparation, questionnaire test, and surveying a group of experts. Finally, the third step was the analysis of results, which was conducting data analysis, results validation and results interpretation.

6. RESULT AND DISCUSSION

BOCR criteria consist of four elements of Benefits, Cost, Opportunity, and Risk. Figure 3 shows the ANP BOCR output result on BOCR criteria which indicates that the main priority using *normalized* value is the cost criterion with a composite weight value of 0.4097, followed by benefits (0.239). The lowest criteria priority was on risks element with a value of 0.1195 (Figure 3). This means that in the development of oil palm industry in Indonesia, experts argued that the most important and considerable thing was cost aspect, followed by benefits and opportunity, respectively, while the risk aspect was on the last priority. This is because in the future development of oil palm industry which is associated with competitiveness, experts and entrepreneurs still see a need for a very large cost, especially land acquisition cost, investment cost, social cost and environmental maintenance.

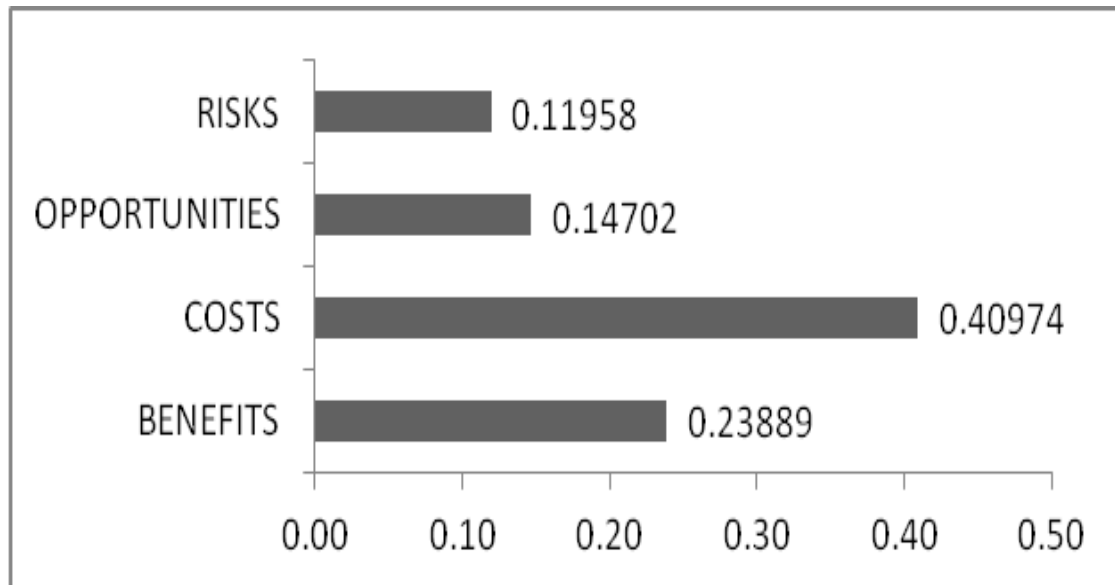


Fig3. Results of ANP BOCR for Development Strategy of Competitive and Sustainable Oil Palm Industry

The control criterion of the benefits consisted of five elements, i.e. Social, Environmental, Technology, Political, and Economic. Figure 4 shows the *normalized* value by cluster from benefits which is based on the ANP result. In control criterion, benefits indicated that the main priority is the "economic" criterion with a weight value of 0.371, followed by social criterion. The lowest rank with the value of 0.0855 owned by the "political" element. It means that on benefits, the main criterion seen by the experts is the benefits from the economic aspect, then the benefits from the social aspect and the next priority is the benefit from the environmental aspect. According to these results, viewed by the concept and principles of sustainable development, the development of today's oil palm industry in Indonesia has been considering three main pillars of sustainable development, which are environmental, economic and social aspects, but it is still focusing on the benefits from the economic aspect. This is reasonable, since the oil palm industry is fully business oriented.

On the "economic" criterion which is reflected by the stakeholders cluster, it showed that the benefits from the aspect of management interests became the top priority (0.285), then followed by the economic benefits for the shareholders interests. The benefits of social criterion viewed from the CSR aspect was environmental sustainability, while from the image aspect the most important thing was the resulting product. Physically, on the environmental criterion, the main priority was the use of land, while on the business environment the main priority was the customer. The next control criterion that could not be ignored was technology, specifically technology that could encourage and increase profit margins. After considering the benefits aspect and its sub-criteria, then the alternative strategy for competitiveness focus was process organization, while for competitive advantage was the low cost advantage.

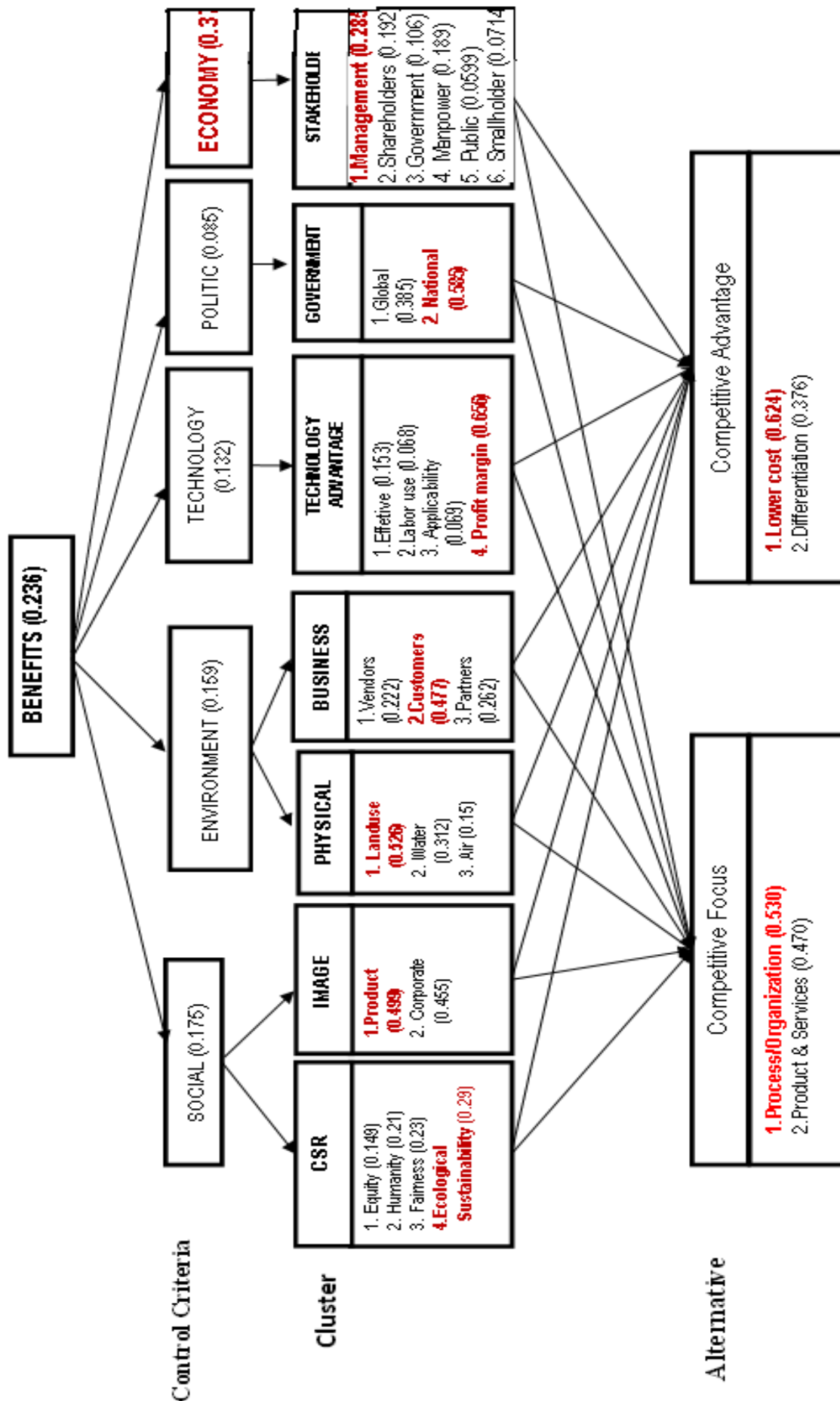


Fig4. Subnet Benefits on ANP BOCR framework

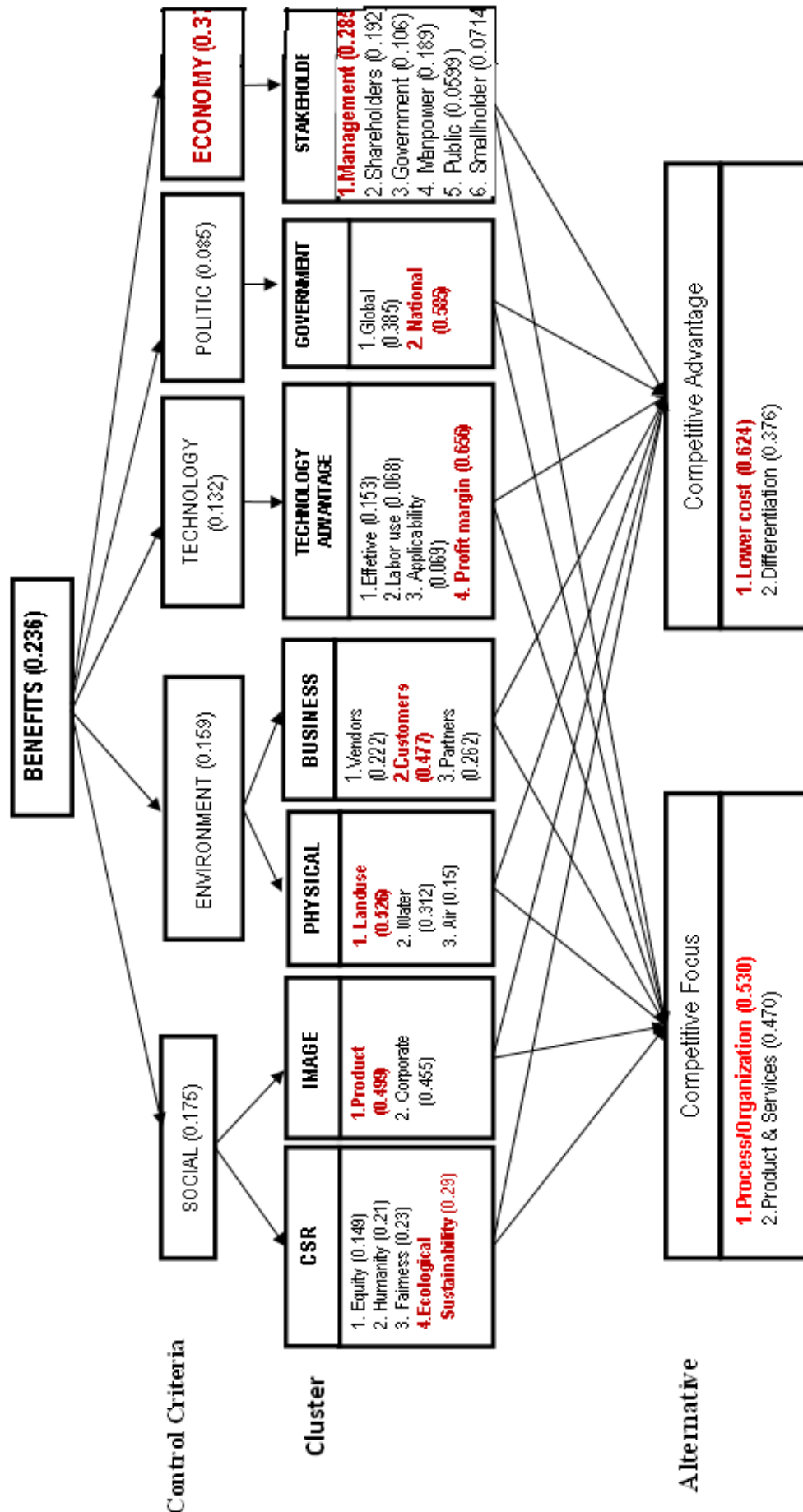


Fig5. Subnet Opportunities on ANP BOCR framework

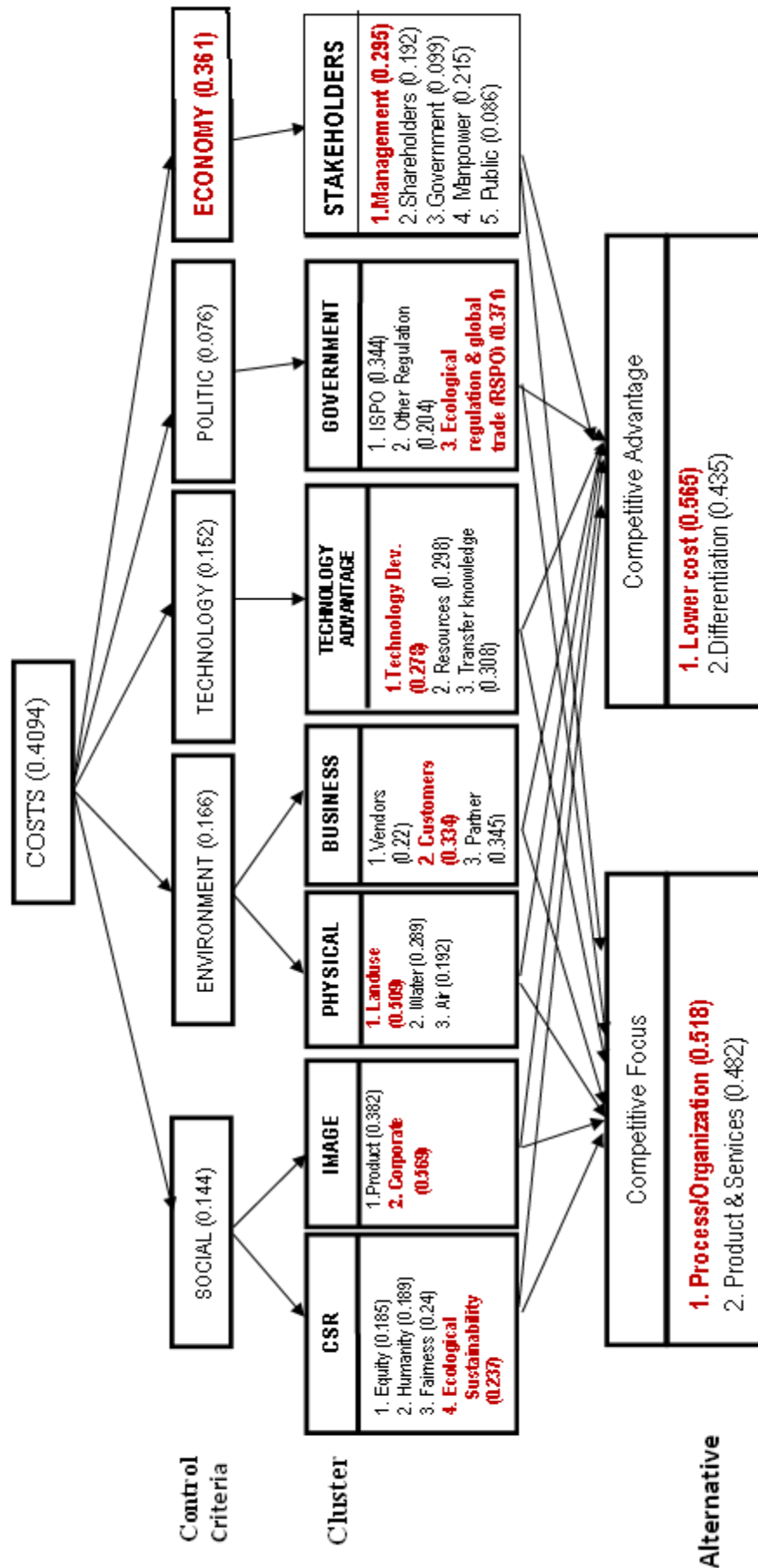


Fig6. Subnet Costs on ANP BOCR framework

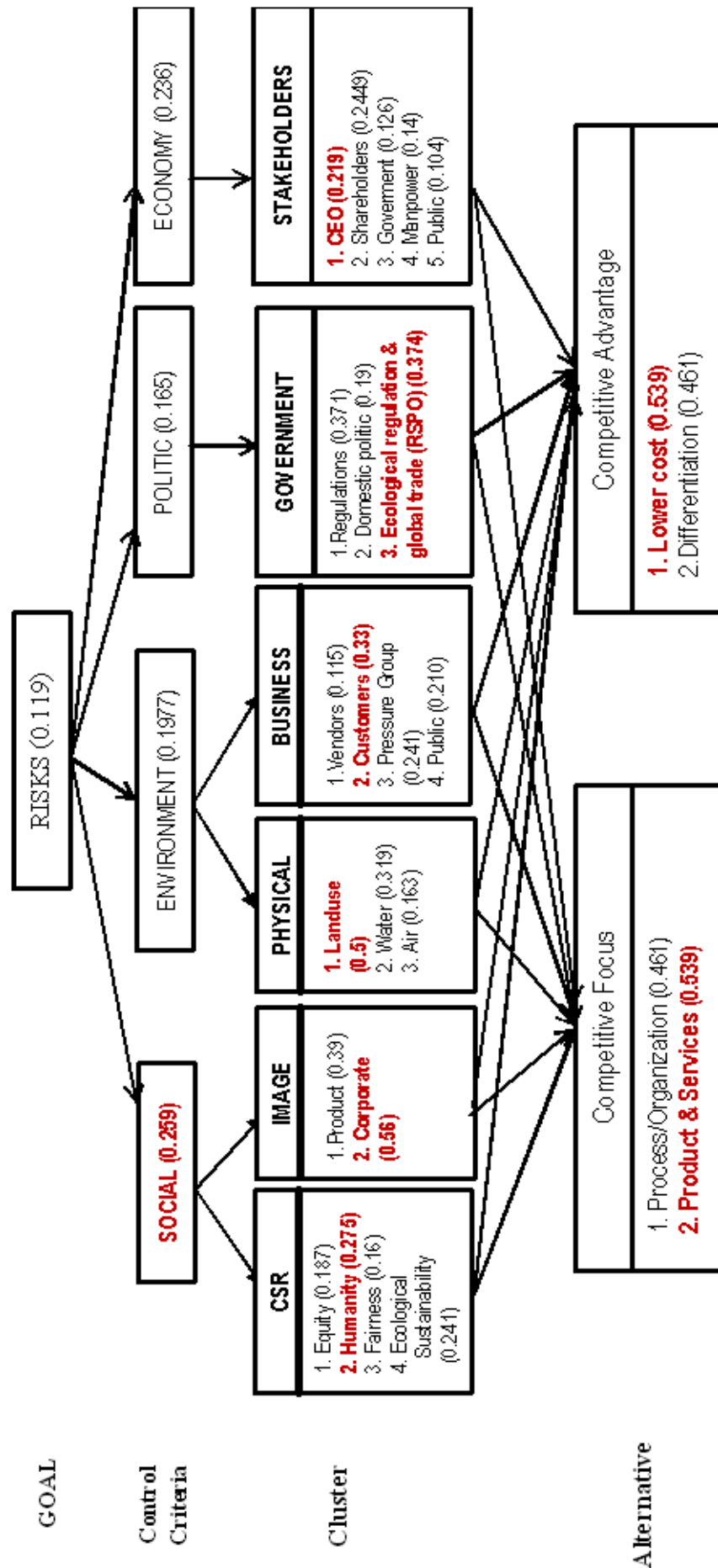


Fig7. Subnet Risks on ANP BOCR framework

Opportunities criterion (Figure 5) was composed of four elements, namely social, technology, political, and economic. According to the ANP BOCR output result on opportunities criterion, it indicated that the top priority was the economic with a weight of 0.353, followed by technology and social. The lowest priority was political criterion. Hence, it can be concluded that when it is viewed from the business opportunity, economic consideration is highly weighed. This is reasonable because currently the growth of the world's CPO market share is the highest compared to other vegetable oils, as well as its derivatives which are very diverse and constantly evolving. This is supported by the rapid technological developments in both the upstream and downstream industries. In the analysis of opportunities, the alternative strategy of competitiveness focus was the organizational process, whereas the alternative strategy of competitive advantage was the low cost advantage.

Costs criterion (Figure 6) consists of five elements, namely Social, Environmental, Technology, Political, and Economic. According to the ANP BOCR output result on costs criterion, it showed that the main priority was "economic" criterion with the resulting weight of 0.3609, followed by the environmental criterion at 0.166. Meanwhile, the lowest weight was hold by "political" criterion at 0.0766. Based on these results, it demonstrates a high awareness that in order to develop the sustainable oil palm industry, not only should give priority to the excessive economic aspect, but also to the environmental costs or externalities effects which should be highly weighted. But that does not mean that the costs for technology and social aspects are not important. The most important economic criterion was on aspects of management and labor. That is, the thing to take into account in the development of competitive and sustainable oil palm industry was the high cost of company management and high labor cost. Moreover, from the physical environmental aspect was the high cost for the use of plantation land, while environment in terms of business was still facing high cost problem for achieving customer satisfaction. Another important thing was the high cost of technology development. Alternative strategy of competitiveness focus after considering the cost aspect was the organizational process, while the competitive advantage that must be achieved was the low cost advantage.

On the criterion of risks (Figure 7), there were four elements, namely Social, Environmental, Political, and Economic. According to ANP BOCR output results on risks criterion, it was showed that the main priority was "social" element with a weight of 0.259, followed by "economic" element with a weight of 0.236 and then "environmental" (0.198) and the lowest weight was "political" element with a weight of 0.165. Hence, the greatest risk in the development of competitive and sustainable oil palm industry was social risks, particularly those associated with CSR program. Based on the risks involved, the alternative strategy of competitiveness focus was the organizational process, whereas the strategy of competitiveness advantage was low cost advantage.

7. OVERALL OUTCOME OF ALTERNATIVE STRATEGY

BOCR result of each alternative strategy element was measured to obtain its overall outcome. Overall, the selected alternative result of this strategy is presented in Table 3. According to Table 3, it shows that the selected strategy after considering BOCR with its criteria and elements in a standard condition is "Organizational Process (Competitiveness Focus)", while in an optimistic condition is "Organizational Process (Competitiveness Focus)". Meanwhile, in a realistic condition, the best alternative strategy to use is "Organizational Process (Competitiveness Focus)". As for a pessimistic condition, alternative strategy that can be applied is "Organizational Process (Competitiveness Focus)". As a result, it can be concluded that for the strategy of competitiveness focus, the best strategy is to focus on organizational process.

Table3. Overall Outcome of Strategy of Competitiveness Focus

Alternative Strategy	BOCR Weight				Outcome			
	Benefit	Opportunities	Costs	Risks	Stand ar d	Optimis tic	Realistic	Pessimi stic
	0.2359	0.1537	0.4094	0.1008	B/C	BO/CR	bB+oO-cC-rR	B/(CxR)
A1	0.5300	0.5001	0.518	0.461	1.060	1.111	-0.057	2.222
A2	0.4700	0.4999	0.482	0.539	0.940	0.903	-0.064	1.807

Note. A1 = Organizational process A2 = Product and service

BOCR result of each alternative strategy element was measured to obtain its overall outcome. According to that Table, it shows that the selected strategy after considering BOCR with its criteria and elements in a standard condition is "Low Cost" while in an optimistic condition is "Low Cost ". As for a realistic condition, the best alternative strategy to use is "Low Cost ". Then for a pessimistic condition, alternative strategy that can be applied is "Low Cost ". Overall conclusion result is shown in Table 4.

Table4. Overall Outcome of Strategy of Competitiveness Focus Advantage

Alternative Strategy	BOCR Weight				Outcome			
	Benefit	Opportunities	Costs	Risks	Standard	Optimistic	Realistic	Pessimistic
	0.2359	0.1537	0.4094	0.1008	B/C	BO/CR	bB+oO-cC-rR	B/(CxR)
B1	0.6243	0.6022	0.5653	0.5392	1.0368	1.2333	-0.0460	2.0480
B2	0.3757	0.3978	0.4347	0.4608	0.9443	0.7462	-0.0747	1.8757

Note. B1=Low cost advantage B2= Differentiation

According to Table 3 and 4, then the best strategy is the Strategy No. 1: Eco- efficiency. The conclusion is reflected in Figure 5. In general, firms that focus on Eco-efficiency strategies will benefit from lower operational costs and extra revenues via synergies, such as the transformation of by-products and waste into new business, as well as the generation of carbon – credits (Orsato, 2009).

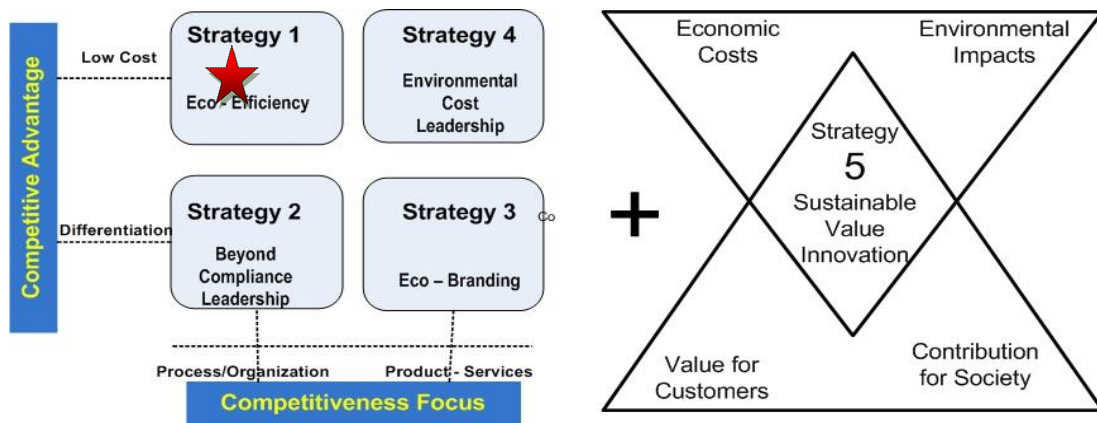


Fig8. Strategies for Indonesian Palm Oil Industry

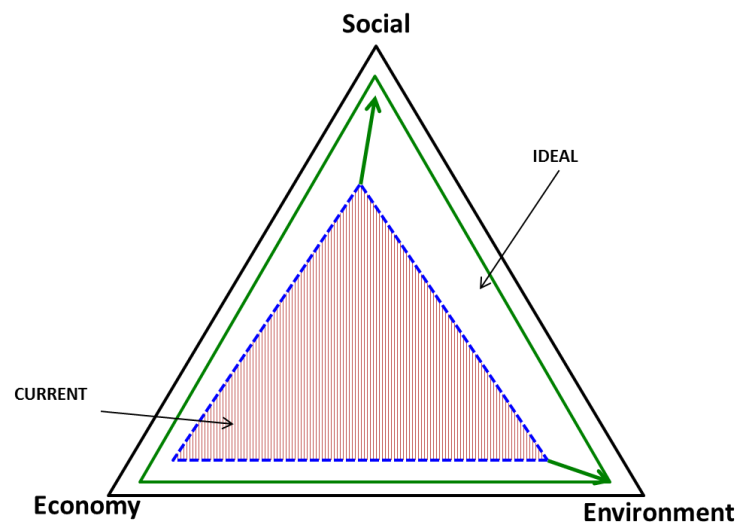


Fig9. The position of Indoneisan oil palm industry in terms of sustainable development aspect

As a result, industry is currently more focused on improving plantation productivity rather than opening a new plantation. Similar matter is also regulated by the ISPO regarding to the requirements of oil palm industry management which refers to the sustainable development principles.

According ANP results, it can be concluded that the oil palm industry was more economically oriented, which is reflected in Figure 6, compared to the social and environmental pillars, but that does not mean that the social and environmental aspects are neglected.

Therefore, policies and full awareness of the company are necessary and fully supported by the government in order to minimize the impact of social risk through CSR improvement. This will be very beneficial, not only can reduce social conflicts, but it can ensure business continuity and business certainty. Besides gaining economic benefits, more things must be utilized and allocated for environmental and social needs. Hence, there is a balance and no gap as being defined in the three pillars of sustainable development concept. It is also in accordance with the government policy, namely the Minister of Agriculture Regulation No. 26/2007 on Guidelines for Plantation Licensing, article 11 subsection 1 mentioned that "Plantation companies having IUP (Plantation Business License) or IUP-B (Plantation Business License for Cultivation) shall build plantations for local community in surrounding area at least 20% of the total plantations area under smallholder's scheme managed by the companies". This regulation is issued as a basic support for the social aspect and as a form of government policies that govern the application of the social pillar in the plantation industry in general.

8. MANAGERIAL IMPLICATION

According to this research, an overview of policies related to the development of oil palm industry and its implementation at several companies in Indonesia is still more likely to incline on economic aspect consideration than social and environmental aspects. Therefore, it takes policy and full awareness of the company and full support by the government in order to minimize the impact of social risk and environmental risk through an improvement of the role of sustainable development strategies. This will be very beneficial, not only can reduce social conflicts, but it can ensure business continuity and business certainty. Therefore, the obtained economic benefits must be utilized and allocated for environmental and social needs in a better proportion. Hence, the balance will be achieved as defined in the three pillars of sustainable development. The formation of the RSPO and ISPO whose members always increases of various elements of the oil palm industry stakeholders, has reshaped the industry to a better sustainable development form.

9. CONCLUSION AND RECOMMENDATIONS

- This study has shown that economic consideration likely to be more dominant than social and environmental consideration in the implementation of sustainable development
- However, social risks and environmental risks have obtained more attention recently, especially after the industry experiencing considerable cases of social and environmental issues
- Alternative strategies based on the results of this study are eco – efficiency in which to retain on the low cost advantage, effectiveness of organizational process..

We recommend to do further study for the palm oil industry in other main palm oil producing countries i.e. Malaysia and Thailand

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