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Identification of internal and external factors in replanting oil palm

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Abstract. Oil palm plantations have contributed great to national growth. It is noted that Indonesia has been the leading crude palm oil (CPO) producers since Year 2006 in the world. The sustainability of oil palm plantations is an important part of the sustainability of the national economy. The replanting oil palm program is one of the programs developed by the government this study was to identify internal and external factor in replanting oil palm. The method used is the Focus Group Discussion (FGD) was attended by relevant agencies, stakeholders, literatures and previous research studies. This study showed that in the replanting oil palm, farmers will be faced with internal and external factors which are divided into strengths, weaknesses, opportunities and threats.

1. Introduction

The agricultural sector still plays an important role in the movement of the Indonesian economy. Data shows that in 2018 the contribution to the Gross Domestic Product (GDP) is quite large around 12.81 percent. One of the agricultural subsectors that play role in the formation of the national economy is the plantation subsector, where one of the commodities that provides the largest foreign exchange contribution is from the oil palm commodity 12.81 percent. The area of replanting oil palm has been increasing year by year, started 2013, Indonesia's oil palm plantations reached 10.47 hectares and increased to 11.20 million hectares in 2016. This explains that oil palm is still mainstay commodity for Indonesia. The status of the plantation company is still controlled by private companies at 53.12%, followed by community plantation at 40.28% and state plantations at 6.61%. increasing the area of oil palm plantations is also followed by an increase in the area of non-productive plants, where the area of oil palm plantation that have not provided maximum productivity because the age of the plants that are above 25 years. Old palm oil plants will not provide high yields or income to farmers, but also will not provide a balance between the cost incurred with the results showed.

The replanting oil palm program (PSR) is an effort to develop plantation by replacing old or unproductive plants with new plants, both in whole or in stages. The program planned by government is to target 185 thousand hectares of independent smallholders to be replanting. To make the program a success, the government provides funding of 25 million per hectares to farmers through the Palm Oil Financial Management Agency (BPDPKS) and the ministry of agriculture with the consideration the age of the plant has exceeded the economic age of 24 years. [1] the data show that in 2018 only 11.554 ha or 6.24 percent of the targeted land area has been replanting. Oil palm replanting should have been carried out as a whole, but only a small of farmers who have done replanting. This can be caused by several problems faced by farmers, in general, oil palm farms do not want to replanting their oil palm



plants due to several factors, one of which is fundamental is the concern of losing the main course of income during the period of immature (TBM) besides limited capital and access to sources of capital. Several internal and external factors are suspected to influence farmers in replanting. This research was conducted to identify both internal or external factors related to the replanting oil palm independent smallholder.

2. Materials and methods

In this study, the method was carried out *Focus Group Discussion* (FGD), the results of research related to replanting oil palm and literature. FGD is carried out by presenting relevant stakeholders as experts in seeing and assessing factors in the replanting oil palm. The result of the FGD are presented in a descriptive qualitative by presenting factors that influence the replanting oil palm which are qualified into two parts internal and external. Internal environment is all the conditions that exist in the business. The internal environment has two strategic factors, it is strengths which are the advantages possessed by a farm and weaknesses are deficiencies that become obstacles to a farming business [2]. For the external environment are all conditions that are outside the farm's control but all changes that occur to it will affect the farm. The external environment consists of opportunities and threats.

Strength is an advantage in replanting oil palm qualified in several variables, namely the motivation of farmers, land ownership, farmers experience and farmers are members of farmer groups or KUD. The weaknesses that constitute limitations in doing business are qualified in the variables of capital, farmers' knowledge, and loss of income sources. While external factors where opportunities are all things that can be utilized by farmers in the replanting oil palm are qualified in the variable accessibility to oil palm mill, government support, availability of bank credit, the availability of seeds and fertilizer, and the use of biodiesel. For threats that are conditions that can be experienced by farmers in the replanting oil palm are price fluctuation, professionalism of KUD management and black and negative campaign.

3. Results and discussions

3.1. Strength in replanting oil palm

3.1.1. *Motivations.* Movers or strong impulse that trigger the emergence of enthusiasm and are able to change the behaviour of humans or individual to achieve the desired goals is motivation. Farmers who depend their lives on the results of oil palm plantations will have very high motivation in cultivating plantations. High motivation will be the strength of farmer in replanting. However, on average farmers want their oil palm plantations that are not classified as productive age can be replanting. Beside the existence of financial aid (grants) launched by the government is an additional motivation for farmers to replanting. Farmers who have land on different overlay will have a higher motivation than farmers who only have land on one land. This due to the concern that farmers will lose their source of income during time the plants are not yet producing so this is a consideration for farmers in making the decision to replanting. At the age of productive farmers, the adoption process of innovation will be more quickly absorbed compared to the age of unproductive again due to a decline in physical conditions, slow in the decision-making process and full consideration [3].

3.1.2. *Land ownership.* The status of land that has become the farmer's own land and is an area of oil palm plantations is one of the strengths in replanting. one of the conditions that must be fulfilled by farmers in the get obtaining BPDPKS fund assistance is ownership of land that is their own or on behalf of the farmers concerned [4].

3.1.3. *Farmer's experience.* Farming experience owned by farmers indirectly will affect the mindset of farmers. The long experience of farmers in doing the farming will support the success in the farming. With longer experience providing knowledge for farmers in making decisions and acting for the management of their oil palm plantations. In the research stated that the experience of farming will help

farmers in making farming decisions. The longer experience owned by farmers; farmers will tend to have a high-level skill. The experience of farmers also supports the success in trying to plant oil palm, with high experience, it is expected that farmers can solve all problems and decisions in farming independently.

3.1.4. Farmer is a group member/ village unit cooperate. The village unit cooperate is one of the platforms in helping distribute production input for replanting activities such as the distribution of fertilizers, seeds and even in selling the harvests of oil palm farmers. The existence of KUD with good management has become a strength in the replanting oil palm activities. The activities replanting by the KUD starting from the land clearing, until the planting yields, as well as the replanting costs made in detail by the management known by the head of the KUD and farmers who will participate in the replanting oil palm activities. In the process of applying for replanting cost to BPDPKS, the existence of KUD also an important role because BPDPKS will only disburse the cost replanting to farmers who are members KUD. The cost replanting to be disbursed by BPDPKS are done by attaching the replanting activities with the costs required by the replanting management to be further disbursed by farmers through the banking sector so that cost replanting is managed entirely by the replanting manager, the farmer can not disburse funds without understanding of the replanting manager.

3.2. Weaknesses in replanting oil palm

3.2.1. Capital. Capital is an important factor in a farming. In replanting oil palm capital is not easy for farmers. On average, farmers don't have the ability to replanting oil palm with their own capital. The assistance received from the BPDPKS of 25 million rupiah per hectare has not been able to meet the overall costs until the plant produce. Besides that, the living costs of farmers during the immature plantation can't be fulfilled. This condition makes oil palm farmers maintain their oil palm plants even though they are no longer in productive age. Research results [5] as for the reasons farmers don't the replanting is the cost of replanting, economic problems dependents of children and the existence of dependents debt can meet the overall costs until the plants produce. This is also explained in the research [6] that the capital factor is a factor not easy for farmer when replanting will be carried out. The replanting budget plan based on the PT. Perkebunan Nusantara V. Replanting Plantation Plane Implementation Guide for 874 ha in Sei Tapung requiring funds of 16,696,169.789 million rupiah or the cost of per hectare is 19,103,169 million rupiah. The results of the Focus Group Discussion (FGD) concluded that to replanting oil palm requires funds 42,432,328 million rupiah until the third year of treatment. This mean that the grant funds obtained from BPDPKS cannot meet the cost replanting until the third years so farmers must have a fund of 17,432,338 million rupiah to arrive at the maintenance of the third year.

3.2.2. Knowledge farmer. Modal Les of knowledge of farmers on the economic age of oil palm, is also one of the inhibiting factors in the replanting activities of oil palm plantations, this is because farmers do not know about replanting and assume that oil palm plantation are still producing even though production continues to decline every year. The statement makes it difficult for farmers to replanting. Replanting itself is carried out aimed at increasing the production and productivity of oil palm plantations.

3.2.3. Loss of sourcing income. Revenue is the most desired and expected outcome of doing a business. High or low income depends on whether or not the volume obtained from these business activities. Benchmarks for the success of a business can be seen from the income earned. If linked to replanting oil palm activities, farmers will experience a loss of income over the next four years because their place and livelihood being repenting, the farmers will lose income. Research [7] explains that level of income of farmers sourced from oil palm is 1.911.993 million rupiah per month and non-oil palm is 252,310 hundred rupiah per month. So that the total income of plasma farmers per month 2,117,302 million

rupiah or 25,407,624 million per year. If replanting farmer will lose income of 2,117,302 million per month or 25,407,624 per year.

3.3. Opportunities in the replanting oil palm

3.3.1. *Accessibility of palm oil factory.* The processing of palm oil production in the form of fresh fruit bunches (TBS) will be processed at the palm oil mill to produce crude palm oil (CPO), palm kernel oil (kernel), fibre and palm shell. As a recipient of fresh fruit bunches, farmers access to sell to palm oil mill is spread across several regions in Jambi Province. There are 45 palm oil mills which process fresh fruit bunches into several derivative products including: PT. Perkebunan Nusantara VI, PT. Sari Aditya Loka, and PT. Inti Indosawit Subur. Accessibility to oil palm mills is important to be known by farmers, this is in line with the result of research [8] which states that market access (market information) is a weapon that must be mastered by farmers to deal with economic globalization. Market aspect is one of the important aspects because if farmers do not know the market, the harvest (fruit fresh bunches) will be in vain.

3.3.2. *Government support.* The role of the government in replanted is very important. Where the government provides price information for companies engaged in oil palm plantations. The replanting oil palm program is not only important for farmers but also important for the national oil industry. To support the replanting program, the government took steps to raise Crude Palm Oil export levies managed by the Palm Oil Plantation Fund Management Agency. In addition, government support is also carried out through banks by providing access to credit to farmers. In the community oil palm replanting program, the government, in this case the palm Oil Plantation Fund management Agency, provides funds of 25 million per hectare to farmers who are going to replanting. These funds will be obtained by farmers with several conditions that must be met by farmers.

3.3.3. *Availability of seeds and fertilizers.* Input is one of the most important aspect in the cultivation of oil palm plantations. In the replanting activities, to increase productivity cannot be separated from supporting factors, namely the quality of seeds and availability of fertilizer. The quality of oil palm seedlings greatly influences the results of production in term of quality because the use of good seeds will affect the development of oil palm cultivation. Likewise, with fertilizer which is an ingredient that contains one more plant element and can increase plant growth and yield. The availability of seeds and fertilizers is very important in conducting oil palm cultivation. The use of quality seeds accompanied by regular use of fertilizers in terms of type, dosage and method of administration will produce and increase production yields.

3.3.4. *Use of biodiesel.* Indonesia is one of the top five biodiesel producing countries after the United States, Brazil, Germany, and Argentina. The selection of biodiesel as an alternative raw material based on the availability of raw materials. Rapeseed oil is a raw material for biodiesel in Germany and soybeans in America. While the raw material used in Indonesia is crude palm oil (CPO). In addition, there is still great potential shown by *Jatropha curcas* oil (*Jathropa curcas*) and more than 40 other alternative raw material in Indonesia [9].

3.4. Threats in replanting oil palm

3.4.1. *Price fluctuation fresh fruit bunches.* Pricing in the marketing oil palm commodities is determined by market demand rather than by the seller. Price fluctuation in marketing fresh fruit bunches often occur. One of the external factors that caused this was the influence of the increase in domestic production of cooking oil in Crude Palm Oil Indonesia importing countries. India is one of the largest importers of crude palm oil (CPO) from Indonesia, which reduces Indonesia's CPO imports due to an increase in domestic production of cooking oil in India. This is the main cause of falling prices for Fresh

Fruit Bunches. In addition, reduced demand from Europe and China will also contribute to making the fundamental balance in the market lame. A part forms the lack of demand from importing countries, the declining quality of palm oil production in Indonesia which continues to have an impact on the weak palm oil exports which causes the price of palm oil to decline. One of the reasons for the decline in the quality of oil palm plantation I the delay in replanting oil palm. In the face of fluctuation in the price of fresh fruit bunches that will affect the income of farmers, there must be a price control for TBS [9] said in his research that there are two grand strategies in controlling Fresh Fruit Bunches prices namely the government must establish a policy on the price of FFB for all oil palm farmers and when there is a decline in the price of FFB, oil palm farmers need to take care of oil palm land so that the number of FFB can increase and do other farming.

3.4.2. Professionalism of management village unit cooperatives. The village Unit Cooperative is an institution which has an important role in the implementation of replanting. Grants from the palm oil plantation fund management board to replanted will be distributed will be distributed to farmers who are in a group or are in cooperatives. The process of replanting and management of replanting funds that are fully carried out by the cooperative causes the cooperative to work professionally in carrying out their duties. Management of cooperatives consisting of various different characters is a challenge in the management. Professional management where the duties, responsibilities and transparency applied by cooperatives have a good impact on cooperatives because people will trust the performance of cooperatives. Conversely, the less professional performance of a cooperative that manages replanting funds will have a negative impact on the future sustainability of the cooperative. The results of research [9] delayed replanting activities lead to lower productivity, lower farmer income. This will affect the business activities of cooperatives and result in the weakening of farmers' trust in cooperativities. So that the integrity of membership and member participation decreases which makes the condition of farmers and cooperatives even worse.

3.4.3. Black and negative campaign. The negative campaign (Black and Negative Campaign) of oil palm I described as a campaign that sees the flaws in the excessive application of oil palm development in Indonesia. In recent years, the issue of the sustainability of oil palm development of the area and production of oil palm in Indonesia continues to increase. Environmental issues or problems focus on the conversion of forests and peatlands to oil palm plantations which are considered to have a major contribution to the deforestation of tropical forests, loss of wildlife habitat, the main sources of forest fires, and ultimately to contribute significantly to greenhouse gas emission. While the issue of justice is related to social issues, namely the occurrence of social conflicts between plantation companies and local communities regarding the status and rights of land use. The negative campaign needs to be responded to with a positive campaign by presenting facts and efforts in the future in developing sustainable palm oil in Indonesia. Because, if the black and negative campaign continues, the price of Crude Palm Oil will go down so that many farmers lose their income and seek other income by opening new land and damaging the environment because CPO income is considered not promising.

4. Conclusions

Based on research conducted, it can be concluded that in conducting replanting oil palm is influenced by factors consisting of internal and external factors. Internal factors that influence replanted are qualified into strengths which consist of motivation, land ownership, experience of farmers and farmers as members of farmer groups/ Village Unit Cooperatives. Weaknesses consists of capital, farmers knowledge and loss of farmers sources of income. On external factors there are opportunities and threats to replanting oil palm. Accessibility to oil pal mills, government support, the availability of seeds and fertilizers as well the use of biodiesel are factoring that quality for opportunities to replanting oil palm. Meanwhile there is a threat in the replanting oil palm which consists of price fluctuations, professionalism of village unit cooperatives management and black negative campaigns.

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