NST PROCEEDINGS
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Conference Paper

Competitiveness and Processing of Processed Cocoa Industry in Improving the Welfare of People's Cocoa Farmers in East Java

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Abstract

This study aims to explain and explore government policies and the competitiveness of processed cocoa to the welfare of cocoa farmers in East Java. The research method uses quantitative descriptive analysis with the Revealed Comparative Advantage (RCA) method, and the approach of the Minister of Agriculture of the Republic of Indonesia Number: 67 / Permentan / ot.140 / 5/2014 concerning the quality and marketing of cocoa beans. The population of this research is Smallholder Cocoa Farmers in 9 regions of East Java with 45 respondents through indicators: the performance of cocoa farming, cocoa farming income in meeting the needs of spending on the production of facilities and infrastructure for cocoa farming, basic expenditure, education, social, communication, recreation, transportation, home care, and health costs. The results showed that the comparative advantage of East Java cocoa based on the results of the calculation of competitiveness (RCA), for processed cocoa commodities valued> 1 in 2015 - 2017 which means that processed products of East Java have competitiveness, then in 2018 the results of the RCA showed a value < 1, which means that East Java processed cocoa products do not yet have competitiveness in the national market. Through the Government Policy approach (Permentan no: 67 / Permentan / ot.140 / 5/2014) shows that all cocoa farmers in Blitar, Mojokerto, Trenggalek, Ponorogo, Pacitan have implemented cocoa cultivation following the implementation of cocoa post-harvest handling guidelines. Whereas in Malang, Nganjuk, Madiun, Jombang regencies have not consistently applied guidelines for handling post-harvest cocoa. The level of welfare of cocoa farmers shows that Blitar, Mojokerto, Trenggalek, Ponorogo, Pacitan districts consistently have a high level of welfare compared to Malang, Nganjuk, Madiun, Jombang districts that have not consistently improved the welfare of Cocoa farmers.

Keywords: competitiveness, policy, welfare

Introduction

Trade liberalization has big consequences and it is feared that it will be able to destroy the Indonesian processed cocoa industry because the tariff of import duties on goods is zero percent. This will threaten the domestic industry because foreign products are known at low prices. Without a systematic and targeted policy, the agreement will only backfire for Indonesia, especially the performance of processed East Java cocoa exports. One of the policies considered to accelerate the promotion is to

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How to cite this article: Harya, G. I., Sudiyarto, Budiwitjaksono, G. S. and Patiung, M. (2019). Competitiveness and Processing of Processed Cocoa Industry in Improving the Welfare of People's Cocoa Farmers in East Java. *4th International Seminar of Research Month*. NST Proceedings. pages 302-310.doi: 10.11594/nstp.2019.0443.

impose a tax on the export of cocoa beans so that exporters are not interested in exporting in the form of beans (Arsyad, 2011).

Indonesia must make maximum efforts to advance the agricultural sector. Lots of commodities, especially cocoa commodities that have not been maximized from Sabang to Merauke. This is our common weapon in the fight against free trade not only as users but also as makers of processed, high-tech, efficient, and effective cocoa products. Indonesia currently has the opportunity to improve the competitiveness of its processed cocoa products by overcoming several obstacles that hinder the development of the Indonesian cocoa processing industry (Rahmanu, 2009). The world demand for food safety and quality has made standard aspects increasingly play a fundamental role in supply chain organizations (Liu, 2018; Kamble, *et al.*, 2020). Based on changes in the composition of Indonesia's processed cocoa product exports in 2009 and 2014 (Andini, 2014). Fatty acids in cocoa fat consist of palmitic acid 26.24%, stearic 42.23%, and oleic 26.53. The fat content in cocoa powder pressed using the machine is still very high. For this reason, press machines with pressures higher than 40 MPa are needed to release fat to meet existing standards (Widayat, 2013). Increased demand for global cocoa beans will provide the greatest benefits for Indonesia (Rifin, 2013). While increasing exports of cocoa beans also stimulate farmers to increase domestic production(Darkwah, 2014).Export volume, exchange rate, and cocoa output are determinants of cocoa exports (Nwachukwu *et al.*, 2010).

East Java is one of the provinces that is abundant in cocoa beans. In East Java, cocoa is a strategic commodity to increase community dignity by increasing the income of plantation farmers and the growth of regional economic centers. The cocoa commodity was developed at the People's Plantation (PR), the State Large Plantation (PTPN), and Private Large Plantation (PBS). The area of cocoa in East Java in 2012. Covers an area of 63,040 hectares, divided into 32,010 hectares of community plantations, 26,487 hectares of PTPN, and 5,143 hectares of PBS. The following is a graph of the development of East Java cocoa bean exports.

The above constraints can cause the East Java processed cocoa industry to not develop properly. Besides that, the low quality of cocoa beans due to post-harvest handling that has not been done well, the difficulty of access to capital resources for cocoa agronomists in East Java is evidenced by infrastructure limitations such as distribution channels for upstream and downstream. industry, which of course will affect the regional economic center and the export of processed cocoa products. The world cocoa market still has very high potential, which is shown by an increase in consumption so that Indonesia is expected to be able to seize available market opportunities (Hasibuan *et al.*, 2012). Therefore, developing the potential of the processed cocoa industry is expected to improve the national economy. Cocoa farmers with a low economic level will sell immediately after harvest, especially if the cocoa farmer cannot control his needs (Mota *et al.*, 2019). The contract system between farmers and traders or middlemen, both formally and informally, is one of the solutions or instruments to reduce transaction costs and prevent uncertainty in the supply of basic inputs made by supplier farmers (Beg *et al.*, 2017). Based on the description above, the problem in this study is that processed East Java cocoa exports which have not yet developed to the maximum, sometimes experiencing a high increase in export volume, and also a decrease in low export volume will certainly affect the national economy. the center mainly affects the welfare level of cocoa farming communities in East Java. Besides, that East Java not only exports but also imports processed cocoa from various countries. Therefore, by developing the potential of Indonesian cocoa plantations, it is hoped that processed East Java cocoa will be able to compete in national and international markets to increase the country's foreign exchange and improve the economy of all cocoa holders in East Java.

Research Method

This type of research is quantitative descriptive research. The determination of the cocoa research area was carried out deliberately in East Java, based on the consideration that East Java is one of the

cocoa-producing provinces in Indonesia. Cocoa is widely cultivated by small-scale cocoa farmers while in other provinces it has been managed by large plantations, which means that this needs to be examined in the difference between processed cocoa exports in East Java and processed cocoa exports in other provinces that affect the development of cocoa plants. the national processed cocoa industry with the hope of providing possible information for the research process concerning the competitiveness of processed cocoa and the influence of government policies in supporting the improvement of the performance of the East Java cocoa industry and the level of community welfare. Akako farmers in East Java are the basis of research. Analyzing the competitiveness of the processed cocoa industry is measured by the Revealed Comparative Advantage (RCA) index in the 2007-2018 period. number 67 / Permentan / OT.140 / 5/2014 regarding the quality and marketing of cocoa beans using a Likert scale of 1-5 (strongly disagree-strongly agree). Analyzing the level of welfare of cocoa farmers based on performance indicators of the ability of cocoa farmers to shop for the people of East Java.

Result and Discussion

RCA Calculation Results for Processed Cocoa in East Java

The results of the RCA calculation can be seen in Table 5.11, the competitiveness of East Java processed cacao in the national market from 2007 to 2018 has weak competitiveness with a value of competitiveness below this because East Java's cocoa processing industry is still not well developed and East Java's export value in the form of processed cocoa is still relatively small compared to the value of Indonesia's processed cocoa exports. Indicating that East Java cocoa beans have a high potential for the development of a cocoa processing industry. Processed cocoa products in East Java are not competitive in the national market. This is because of the low technology in cocoa processing. Furthermore, currently, many processed cocoa companies in the area are incapable of producing due to the difficult supply of raw materials (Harya *et al.*, 2019).

Table 1. Procesed Competitiveness of East Java Cocoa 2006-2018

Year	East Java Processed Cocoa Exports (FOB US$)	Total Exports of East Java Agriculture (FOB US$)	Indonesian Processed Cocoa Exports (FOB US $)	Total Exports of Indonesian Agriculture (FOB US$)	RCA	RCA Index
2007	7,748,548	865,568,460	305,999	3.657,789	0,010	0,13
2008	8,915,902	927,125,514	418,913	4.484,600	0,010	0,97
2009	9,684,711	501,916,739	328,177	4.352,799	0,025	2,42
2010	11,598,120	210,328,870	457,267	5.001,898	0,060	2,4
2011	13,794,055	42,820,110	604,425	5.165,700	0,027	0,45
2012	12,019,805	21,929,679	628,392	5.569,299	0,048	1,78
2013	13,998,420	32,174,894	752,476	5.613,001	0,324	0,675
2014	18,017,992	37,497,502	1,042,132	5.670,600	0,035	0,108
2015	30,566,659	34,836,198	1,192,492	3.437,700	0,047	1,342
2016	40,828,480	1,467,315	1.467.315	3.077,300	0,069	1,468
2017	39,348,608	1,607,262	1.607.262	3.671,000	0,082	1,188
2018	44,386,598	1,643,474	1.643.474	3.436,200	0,078	0,95

(Source: East Java Disperindag, Processed)

a. RCA is the level of competitiveness of processed cocoa in East Java t year

b. The RCA index is the competitiveness of the processed exports of East Java cocoa t-1year period

By looking at Table 4.25, the RCA calculation results, for processed cocoa commodities value <1 in 2007 - 2014 which means it has weak competitiveness. The development of processed East Java cocoa in 2009 greatly increased compared to other years, this was influenced by the total East Java agricultural exports in 2008 which was very high at 1,027,125,514 US $ which then dropped dramatically in 2009 amounting to 101,916,739 US $. Value of Processed Cocoa Commodities, in this case, needs attention to be imported or can bring processed cocoa from abroad. This is because it has no power in free trade. The development of agricultural competitiveness with processed cocoa commodities, is highly dependent on the export value of these commodities, compared to the minimum export value of these commodities. This is closely related to the production and quality of processed cocoa commodities, both in East Java and in Indonesia. But in 2015 - 2017 the results of the RCA calculation show that the processed cacao of East Java has competitiveness, this is supported by the increased production of East Java cacao. But in 2018 the results of the RCA calculation show that the processed cocoa commodity value <1 which means it has weak competitiveness.

Based on Table 4.25 it can be seen that the export performance of processed East Java cocoa shows an increasing trend from 2006 to 2008. This is due to the demand for processed cocoa which continues to increase every year. However, throughout 2009 the export performance of processed cocoa declined, then increased again in 2010 to 2015 which increased and decreased the performance of processed cocoa exports by 18,017,992 US $. This is because in that year there was competition in the national market which caused the export value of processed East Java cocoa to decline.

Government Policies towards the Welfare of Cocoa Farmers in East Java People's Plantation

Peasant Farming Business Performance in East Java, An increase in the number of cocoa beans production in Pacitan, Ponorogo, Trenggalek, Mojokerto and Blitar regencies is produced annually with a percentage of 55.56%, whereas in Nganjuk, Malang, Jombang, Madiun districts there is an increase in the number of cocoa beans production as indicated by the percentage of 44.44%. This was accompanied by a decrease in the area of Cocoa in East Java, especially in Malang, Madiun, Jombang and Nganjuk districts. Income obtained from cocoa farming can meet daily basic needs but not for other needs, just enough for daily basic needs. This is also shown in Puspita's research, namely Indonesia's high total cocoa production when compared to the low level of domestic cocoa demand, so most of the cocoa production is intended for export.

Production costs (fertilizer, medicines, etc.) in Cocoa Farming Farms in East Java in the last three years have not increased. Cocoa farmers are not so dependent on inorganic fertilizers, most of the cocoa farmers in East Java use manure which is obtained from their farms.

The area of cocoa plantations in East Java has decreased especially in Nganjuk Regency, Malang, Jombang. Other cocoa center areas tend to remain stable. But if you see from the results of the analysis of the broad trend of cocoa plantations in East Java has decreased dramatically.

The selling price of cocoa beans in Malang, Nganjuk, Trenggalek, Ponorogo, Pacitan, Madiun, Jombang districts did not increase by 77.77%, and 23.23% increased in Mojokerto and Blitar Regencies. Cocoa beans for sale are unfermented cocoa beans. Because the difference in the price of the original and fermented cocoa beans is very small (Rp 1,000 / kg). Yantu (2005) also reports the same number (Yantu *et al.*, 2010).

There has been an increase in production costs (fertilizer, medicines, etc.) in cocoa farming in the last three years (3) by 88%, this is because most cocoa farmers spend very often on their own production needs without waiting for fertilizer and medicine assistance from local government because the assistance is not routinely given. The dominant types of fertilizers used by farmers in the study site were urea, KCL, SP-36, and manure which are usually obtained from livestock waste by local cocoa farmers. At the time of the study, it was found that there was 60.00 percent of farmers in Blitar, Ponorogo, Mojokerto, Pacitan, Trenggalek regencies that did not require a lot of costs for fertilizing. Besides that as much as 40.00

percent of farmers in the districts of Malang, Jombang, Nganjuk, Madiun need a lot of costs in carrying out fertilization. Under these conditions, the use of fertilizer in Nganjuk, Madiun, Malang, Jombang is relatively more compared to manure. While in the regencies of Ponorogo, Pacitan, Mojokerto, Blitar, Trenggalek, all farmers fertilize using these two types of fertilizers so that production costs are not too expensive.

This difference indicates that the awareness of cocoa farmers about the importance of fertilizing in Ponorogo, Pacitan, Mojokerto, Blitar, Trenggalek districts is better than in Nganjuk, Madiun, Malang, Jombang regencies. The level of awareness of farmers to fertilize is one of the factors that encourage cocoa farming in Ponorogo, Pacitan, Mojokerto, Blitar, Trenggalek, relatively more intensive than in Nganjuk, Madiun, Malang, Jombang and by using inorganic fertilizers with small doses while maintaining soil fertility. so that cocoa plantation land is not easily damaged. The number of workers in cocoa farming in Blitar, Mojokerto, Trenggalek, Ponorogo, Pacitan districts did not increase with a percentage of 61.05 percent. While in Malang Regency, Nganjuk, Madiun Jombang has increased with a percentage of 38.95 percent.

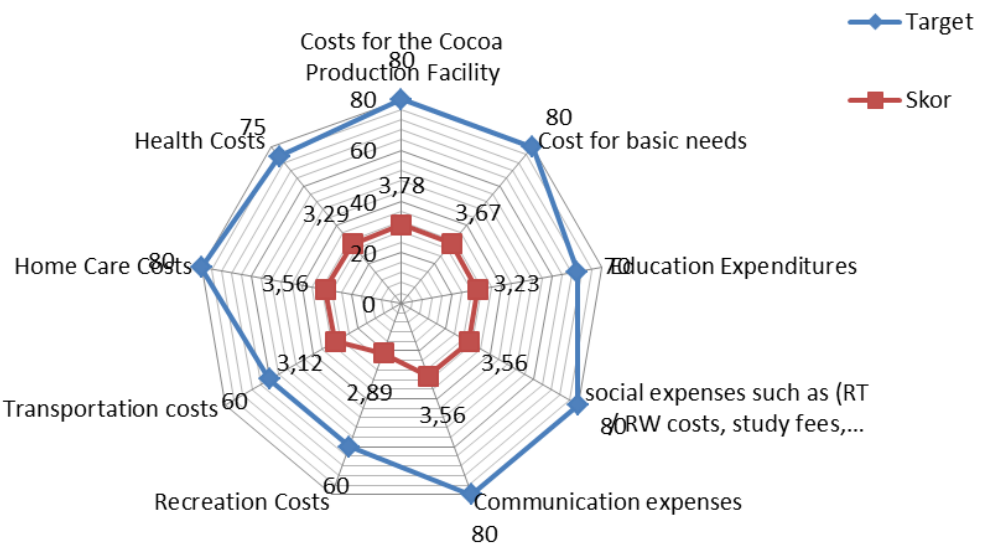

Figure 1. Percentage of Welfare of East Java Cacao Farmers seen from Shopping Ability.

The average income from cocoa farming already supports spending on cocoa crop production facilities in the next planting period with a percentage of 44.45 percent, and the remaining 22.22 percent has not been able to support spending on cocoa crop production facilities. Income from cocoa farming has supported the expenditure of basic needs by 77.77 percent and the remaining 22.23 percent has not met basic needs. The income of cocoa farmers in Trenggalek, Ponorogo, Pacitan, Blitar, Mojokerto, from cocoa farming, already supports education spending by 55.56 percent, and most of Malang, Jombang, Nganjuk, Madiun districts cannot support education spending as indicated by the percentage of 44.44 percent. Revenues from cocoa farming in Trenggalek, Ponorogo, Pacitan, Blitar, Mojokerto regencies have supported social spending such as (RT / RW contributions, study, social contributions in the neighborhood of 66.66 percent while 33.33 percent cannot yet support social spending especially in Trenggalek Regency Ponorogo, Pacitan, Blitar, Mojokerto. Revenue from cocoa farming has largely supported communication spending in all research location districts. Revenues from cocoa farming have supported Recreational spending by 55.55 percent in Trenggalek, Ponorogo, Pacitan, Blitar, Mojokerto,

while in Malang, Jombang, Nganjuk, Madiun districts have not been able to meet the family's recreational needs. Revenue from cocoa farming has supported transportation spending by 55.56 percent. Income from cocoa farming in Trenggalek regency Ponorogo, Pacitan, Blitar, Mojokerto already supports Home Care spending and vice versa by 44.44 percent cannot support Home Care spending. Revenue from cocoa farming in Trenggalek, Ponorogo, Pacitan, Blitar, Mojokerto districts has supported the cost of health as indicated by the percentage of 55.56. 44.44 percent have not been able to support health costs. This shows that the less income earned from cocoa farming will result in an insufficient variety of supporting needs and only basic needs can be met.

The following is the development of the performance of cocoa plantations in the cocoa center area of East Java.

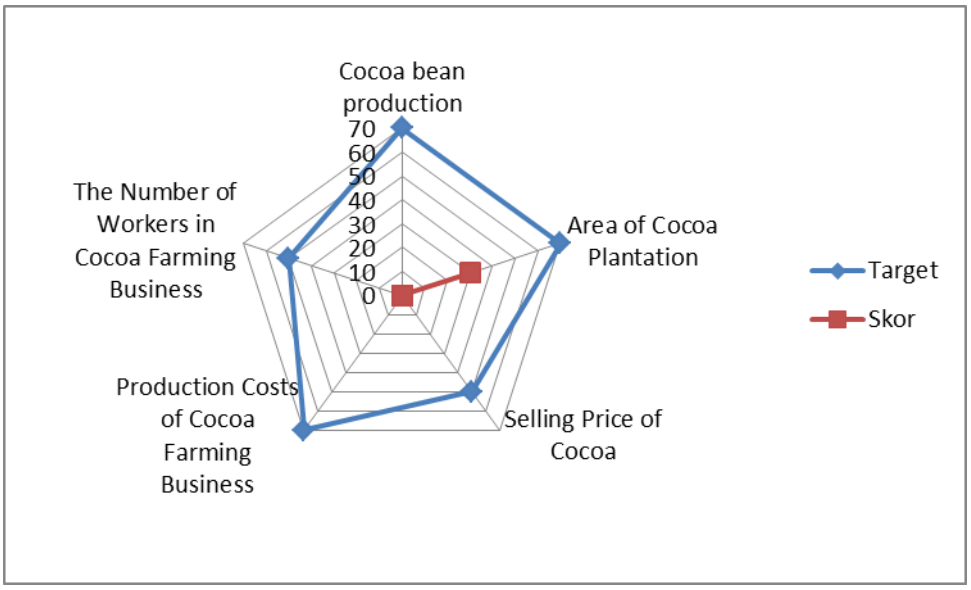

Figure 2. Development of Cocoa Plantation Farmers' Business Performance in the Central Java Cocoa Region (Source: 2019 Survey Data, Processed)

The Development of Cocoa Plantation Farmers' Performance in the Central Java Cocoa Region has a very high score in the production of East Java cocoa beans at 30.44, then the second score is the production cost of cocoa farming with a score of 3.11, the third is the total area of cocoa plantations with a score of 3.00. The fourth is the number of workers with a score of 2.78 and the fifth is the selling price has a final score of 2.56.

Government Policy on the Competitiveness of Processed Cocoa in East Java

The level of welfare of cocoa farmers shows that Blitar, Mojokerto, Trenggalek, Ponorogo, Pacitan districts consistently have a high level of welfare compared to Malang, Nganjuk, Madiun, Jombang districts that have not consistently improved the welfare of Cocoa farmers. Government efforts to support domestic cocoa production are quite high. Based on the results of an analysis of the impact of government policies on output, it is known that the government provides domestic cocoa bean protection through export duty regulations. However, this policy has caused domestic cocoa prices to be relatively low compared to cocoa prices at the international market level. Meanwhile, government policies on inputs are still disincentives to farmers. The assessment of expert preferences is applied in the AHP method. This

assessment is the core of the AHP method because it will affect the priority of each element (Saaty, 2008). There is a different perspective to see business processes that occur in a supply chain, namely, cycle view and push or pull view (Chopra and Meindl, 2013). Cocoa farmers must pay more expensive inputs than they should because the level of government protection against cocoa farming inputs is weak. But together, the cocoa farming input and output policies that apply in Indonesia still support domestic cocoa production. Government policies to increase cocoa productivity, increase cocoa selling prices, and simultaneously reduce production costs can improve cocoa competitiveness at the study site. Efforts to improve the competitiveness of the cocoa industry by increasing the quality and quality of processed cocoa, increasing export volumes, maintaining export prices, developing processed cocoa industry clusters, facilitating access to capital, deregulating policies, and developing infrastructure (Harya, 2018). Kamble et al. (2020); Mota et al. (2019), but it has not been found that links it with efforts to maintain the quality of agricultural products, especially cocoa from community plantations.

Conclusion

The results of the study can be concluded that:

1. The comparative advantage of East Java cocoa based on the results of the calculation of competitiveness (RCA), for processed cocoa commodities valued> 1 in 2015 - 2017 which means processed products of East Java have competitiveness, then in 2018 the results of the RCA showed a value of <1, which means that East Java processed cocoa products do not yet have competitiveness in the national market. The districts of Nganjuk, Madiun, Malang, Jombang, and the Districts of Ponorogo, Pacitan, Mojokerto, Blitar, Trenggalek show that cocoa farming at the research location has competitiveness but in 2018 East Java processed cocoa products do not have competitiveness in the national market. This is due to the still weak East Java cocoa processing technology, and currently, many East Java processed cocoa companies do not produce due to the difficulty of supplying raw materials.
2. Through the Government Policy approach (Permentan no: 67 / Permentan / ot.140 / 5/2014) shows that all cocoa farmers in Blitar, Mojokerto, Trenggalek, Ponorogo, Pacitan have implemented cocoa cultivation following the implementation of cocoa post-harvest handling guidelines. Whereas in Malang, Nganjuk, Madiun, Jombang regencies have not consistently applied guidelines for handling post-harvest cocoa.
3. The welfare level of cocoa farmers shows that Blitar, Mojokerto, Trenggalek, Ponorogo, Pacitan districts consistently have a high level of welfare compared to Malang, Nganjuk, Madiun, Jombang districts that have not consistently improved the welfare of cocoa farmers. Government efforts to support domestic cocoa production are quite high. Based on the results of an analysis of the impact of government policies on output, it is known that the government provides domestic cocoa bean protection through export duty regulations. Overall, it shows that the trend of cocoa competitiveness in 2018 is declining. This decline in cocoa competitiveness is inseparable from the existence of government policies based on Permentan no: 67 / Permentan / ot.140 / 5/2014, which have not been consistent in implementing guidelines for post-harvest cacao handling in some regions and cannot be separated from the commitment and involvement of local governments. In the end, it can determine the level of welfare of cocoa farmers who vary in several regions in East Java

Suggestion

Periodic assistance should be done for smallholder cocoa farmers in East Java in handling post-harvest cocoa plants, especially in the correct fermentation stage, and assistance is needed to assist farmers to start processing cocoa into processed products. This is inseparable from the commitment and

involvement of the local government in dealing with middlemen in the environment of cocoa farmers, so it is hoped that this can regulate the price of cocoa, which in turn can determine the varying levels of the welfare of cocoa farmers in several regions in East Java.

Cocoa farming should be continued by farmers because it is feasible to be cultivated and provide benefits for farmers in the long run. And the Government can provide information to farmers about the price and use of inputs so that they can process their farms, so they can find out how much they have to pay and profits.

As a whole, cocoa plants in East Java need attention or need to be anticipated against the decline in production, especially on smallholder plantations which result in decreased productivity. So it is necessary to hold SLPHT (Field School for the Eradication of Plant Pests), renewal of cultivation techniques, both from seeding, maintenance of the main problem PBK (Cocoa Fruit Borer) in Jombang and Madiun District which is still difficult to handle because PBK disease can reduce the economic value of cocoa fruit.

The readiness and alertness of farmers and farmer groups, as well as the government (field counselors) both at the village level, as well as district and district levels so that early handling can be made possible so as not to multiply more broadly.

Acknowledgment

The authors gratefully thank the University of Pembangunan Nasional "Veteran" East Java to supporting our work

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