

1998 - 2018: Analysis of Indonesian and Malaysian People's Palm Oil Plantations

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ABSTRACT

This paper aims to analyze the oil palm plantations of the people of Indonesia and Malaysia in the last 1998-2018 years to be able to analyze the broadness, production and productivity trends and compare the performance of people's oil palm plantations in both countries. This research was conducted based on official documents issued by the statistics agencies of Indonesia and Malaysia by comparing the trend of the area, production and productivity of people's oil palm plantations in the period 1998-2018, then the data processing was done by mathematical methods so that the performance of people's oil palm plantations from both countries could be known. Discussion is carried out from the results of data analysis with descriptive analytical methods. The results of this study are known that; The area of planting and harvesting people's oil palm plantations in Indonesia is higher than Malaysia and still allows it to continue to grow beyond the dominance of private plantations in Indonesia; CPO production of mustard coconut plantations.

Keywords: area of planting, harvesting, official documents, productivity

INTRODUCTION

Palm oil can grow well in areas that have rainfall of 2000 - 3000 mm.th⁻¹ that is evenly distributed throughout the year without a real dry month (water deficit), an average temperature of 25 - 27 °C with a soil pH of 4.0 - 6.5 [1]. In oil palm plantations in commercial plantations both in Indonesia and in Malaysia oil palm is generally still manageable well on land with class I, class II and class III classifications [2]. The existence of climate, land, and human resources conditions that are suitable today Indonesia and Malaysia become the largest producers

of palm oil commodities in the world [3]. Even the governments of both countries consider the existence of people's oil palm plantations have brought farmers in the countryside into communities with middle-class economies and able to move the wheels of the country's economy.

In 2018, the existence of climate conditions, land, and human resources that are suitable today, Indonesia and Malaysia are the largest producers of palm oil commodities in the world. Even the governments of both countries consider the existence of community oil palm plantations that have brought

rural farmers into the middle class economy and can move the wheels of the country's economy. It reached 12.76 million ha, being the first largest in the world, of which 49.80% were private plantations, 45.54% of people's plantations and the rest of the country's plantations negara [4]. While in the same year the area of oil palm plantations in Malaysia covering an area of 5.86 million ha, 18.08% of people's plantations and the rest of the companies both private and state [5].

From the data above it is known that people's oil palm plantations in Indonesia in the near future are predicted to shift the dominance of private plantations, so that the role of people's oil palm plantations in Indonesia in the future will be very strategic. But the fact is that today is that the productivity of people's oil palm plantations in Indonesia is still lower when compared to oil palm plantations managed by farmers in Malaysia [6]. Therefore, a study is needed that can analyze the oil palm plantations of the people of Indonesia and Malaysia in the last 20 years to be able to analyze the trend of area, production and productivity and compare the performance of people's oil palm plantations in both countries. The scope of this research is only on the scope of people's plantations in both countries regardless of the policies of each country which will certainly be very complex and different.

MATERIALS AND METHODS

This research was conducted based on official data released by the statistics agencies of Indonesia and Malaysia by comparing the trend of area, production and productivity of people's oil palm plantations in the last 20 years (1998-2018), then data processing was done by mathematical methods so

that the performance of people's oil palm plantations from both countries could be known. Discussion is carried out from the results of data analysis with descriptive analytical methods.

RESULTS AND DISCUSSION

The data presented in this study comes from Indonesia, namely the Central Statistics Agency (BPS) which is a non-departmental government agency that provides data needs for the government and the public. This data is obtained from censuses or surveys conducted alone and also from other government departments or agencies as secondary data. And from Malaysia, the Department of Statistics Malaysia (DOSM) is the main government agency responsible for collecting, interpreting, and disseminating the latest statistical data in economic and social development efforts.

Based on secondary data in table 1 and table 2, can be done analysis of planting area trends, crop area trends, CPO production trends and CPO productivity trends. The results of the processing of oil palm plantation data of the people of Indonesia and Malaysia in the period 1998-2018 (last 20 years) are as follows: A comparison of the area of planting oil palm plantations in Indonesia and Malaysia can be seen in the picture below.

The wide development of planting areas and harvesting people's oil palm plantations in Indonesia has a much sharper trend compared to the trend of widespread development of planting areas and harvesting people's oil palm plantations in Malaysia. In Table 3 it can be known that the average growth of planting area per year between Indonesia and Malaysia is very far adrift, which is 3.08ha / th compared to 0.59ha / th thus it is likely that Malaysia will no longer be able to surpass Indonesia in terms

of the area of planting people's oil palm plantations. This is certainly related to the high potential of people's land areas in Indonesia that can still be opened or converted as oil palm plantations. In addition to the government regulations of the two countries that limit the maximum permit of the area of people's plantations can be attempted as stated by [7]. When viewed in terms of the development of

planting areas, Indonesia experienced a slowdown in 2007 and in 2014, which only grew by 1.17% and 1.36% while Malaysia actually experienced a decrease in land area in 2004 by 5.14% and in 2012 by 1.45% from the previous year. This means that the widespread development of people's oil palm plantations in Indonesia is much more stable compared to Malaysia.

Table 1. Planting Area & Acreage Harvest of oil palm plantations of the people of Indonesia and Malaysia period 1998-2018 (BPS, 2019; DOSM, 2019)

Year	Planted Area (Million Ha)		Harvest Area (Million Ha)	
	Indonesia	Malaysia	Indonesia	Malaysia
1998	0.71	0.29	0.49	0.24
1999	0.95	0.3	0.66	0.25
2000	1.19	0.32	0.82	0.28
2001	1.57	0.34	1.08	0.29
2002	1.81	0.36	1.25	0.31
2003	1.85	0.39	1.28	0.34
2004	2.22	0.37	1.54	0.33
2005	2.36	0.42	1.68	0.38
2006	2.54	0.45	1.99	0.4
2007	2.57	0.47	2.11	0.41
2008	2.88	0.54	2.08	0.47
2009	3.06	0.61	2.27	0.53
2010	3.39	0.65	2.42	0.56
2011	3.75	0.7	2.67	0.6
2012	4.14	0.69	2.84	0.59
2013	4.36	0.75	3.13	0.64
2014	4.42	0.81	3.24	0.69
2015	4.58	0.87	3.32	0.75
2016	4.74	0.96	3.67	0.82
2017	5.69	1.01	3.84	0.87
2018	5.81	1.06	4.01	0.91

The results of the above data analysis, namely Figure 3 and Table 5, showed that CPO production of people's oil palm plantations in Indonesia exceeded Malaysia since 1998 and experienced an even greater gap in 2018 of 13.99 million tons compared to 2.05 million tons. This is certainly in line with the gap that occurs in the area of harvest between Indonesia and Malaysia and it is in

accordance with what is conveyed [8] [9]. In terms of its development, CPO production of people's oil palm plantations in Indonesia experienced a very thin increase in 2014 which was only 1.96%. And in Malaysia the same thing happened in 2001 with an increase of only 0.92%. Meanwhile, the average CPO production of oil palm plantations of indonesians and Malaysians per year is quite far adrift, which is

12.87% compared to 7.71%.

Table 2. CPO Production & Productivity of CPO oil palm plantations of The People of Indonesia and Malaysia period 1998-2018 (BPS, 2019; DOSM, 2019)

Year	CPO Production (Million Tons)		CPO Productivity Ton/Ha/Yr	
	Indonesia	Malaysia	Indonesia	Malaysia
1998	0.73	0.7	1.49	2.92
1999	1.37	0.85	2.08	3.40
2000	1.98	1.08	2.41	3.86
2001	2.8	1.09	2.59	3.76
2002	3.43	1.22	2.74	3.94
2003	3.52	1.32	2.75	3.88
2004	3.85	1.39	2.50	4.21
2005	4.5	1.55	2.68	4.08
2006	5.61	1.58	2.82	3.95
2007	5.81	1.84	2.75	4.49
2008	6.92	2	3.33	4.26
2009	7.52	2.23	3.31	4.21
2010	8.46	2.35	3.50	4.20
2011	8.8	2.47	3.30	4.12
2012	9.2	2.54	3.24	4.31
2013	10.01	2.77	3.20	4.33
2014	10.21	2.84	3.15	4.12
2015	10.67	3	3.21	4.00
2016	11.57	3.27	3.15	3.99
2017	13.19	3.44	3.43	3.95
2018	13.99	3.6	3.49	3.96

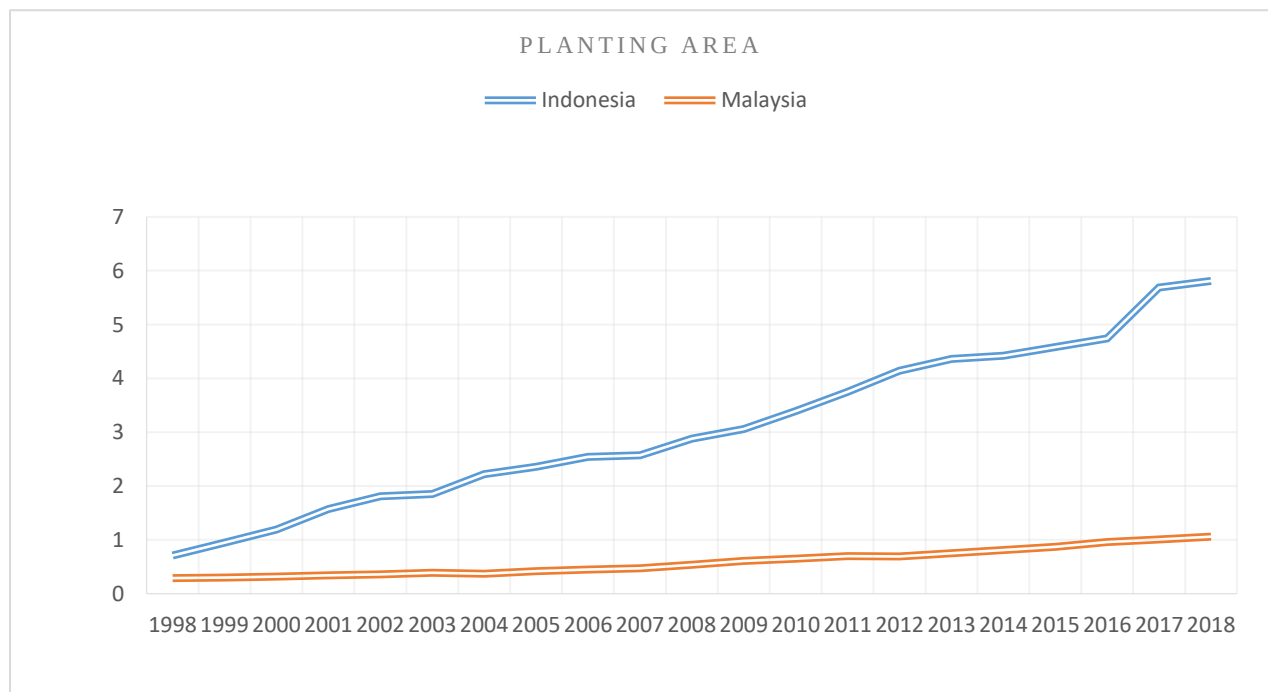


Figure 1. Development of oil palm plantation plantations of The People of Indonesia and Malaysia in the period 1998-2018

Table 3. Development of Planting Area Per Year

Year	Indonesia		Malaysia	
	Planted Area (Million Ha)	% Development/yr	Planted Area (Million Ha)	% Development/yr
1998	0.71		0.29	
1999	0.95	25.26	0.3	3.33
2000	1.19	20.17	0.32	6.25
2001	1.57	24.20	0.34	5.88
2002	1.81	13.26	0.36	5.56
2003	1.85	2.16	0.39	7.69
2004	2.22	16.67	0.37	-5.41 a
2005	2.36	5.93	0.42	11.90
2006	2.54	7.09	0.45	6.67
2007	2.57	1.17 a	0.47	4.26
2008	2.88	10.76	0.54	12.96 b
2009	3.06	5.88	0.61	11.48
2010	3.39	9.73	0.65	6.15
2011	3.75	9.60	0.7	7.14
2012	4.14	9.42	0.69	-1.45 c
2013	4.36	5.05	0.75	8.00
2014	4.42	1.36 c	0.81	7.41
2015	4.58	3.49	0.87	6.90
2016	4.74	3.38	0.96	9.38
2017	5.69	16.70	1.01	4.95
2018	5.81	2.07	1.06	4.72
Average	3.08	9.67	0.59	6.19

A comparison of the area of harvesting people's oil palm plantations in Indonesia and Malaysia can be seen in the picture below.

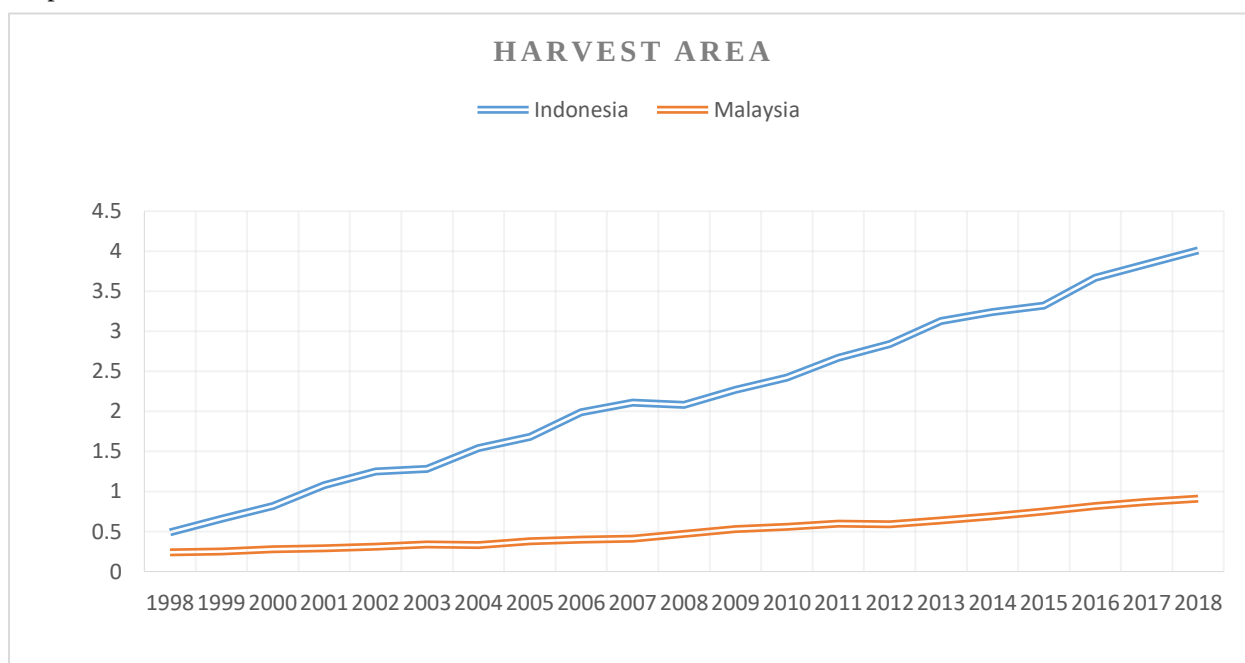


Figure 2. Development of oil palm plantation harvest area of Indonesian and Malaysian people in the period 1998-2018

Table 4. Development of Harvest Area Per Year

Year	Indonesia		Malaysia	
	Harvest Area (Million Ha)	% Development/yr	Harvest Area (Million Ha)	% Development/yr
1998	0.49		0.24	
1999	0.66	25.76	0.25	4.00
2000	0.82	19.51	0.28	10.71
2001	1.08	24.07	0.29	3.45
2002	1.25	13.60	0.31	6.45
2003	1.28	2.34 a	0.34	8.82
2004	1.54	16.88	0.33	-3.03 b
2005	1.68	8.33	0.38	13.16 c
2006	1.99	15.58	0.4	5.00
2007	2.11	5.69	0.41	2.44
2008	2.08	-1.44 b	0.47	12.77
2009	2.27	8.37	0.53	11.32
2010	2.42	6.20	0.56	5.36
2011	2.67	9.36	0.6	6.67
2012	2.84	5.99	0.59	-1.69 a
2013	3.13	9.27	0.64	7.81
2014	3.24	3.40	0.69	7.25
2015	3.32	2.41	0.75	8.00
2016	3.67	9.54	0.82	8.54
2017	3.84	4.43	0.87	5.75
2018	4.01	4.24	0.91	4.40
Average	2.21	9.68	0.51	6.36

A Comparison of CPO production of people's oil palm plantations in Indonesia and Malaysia can be seen in the picture below.

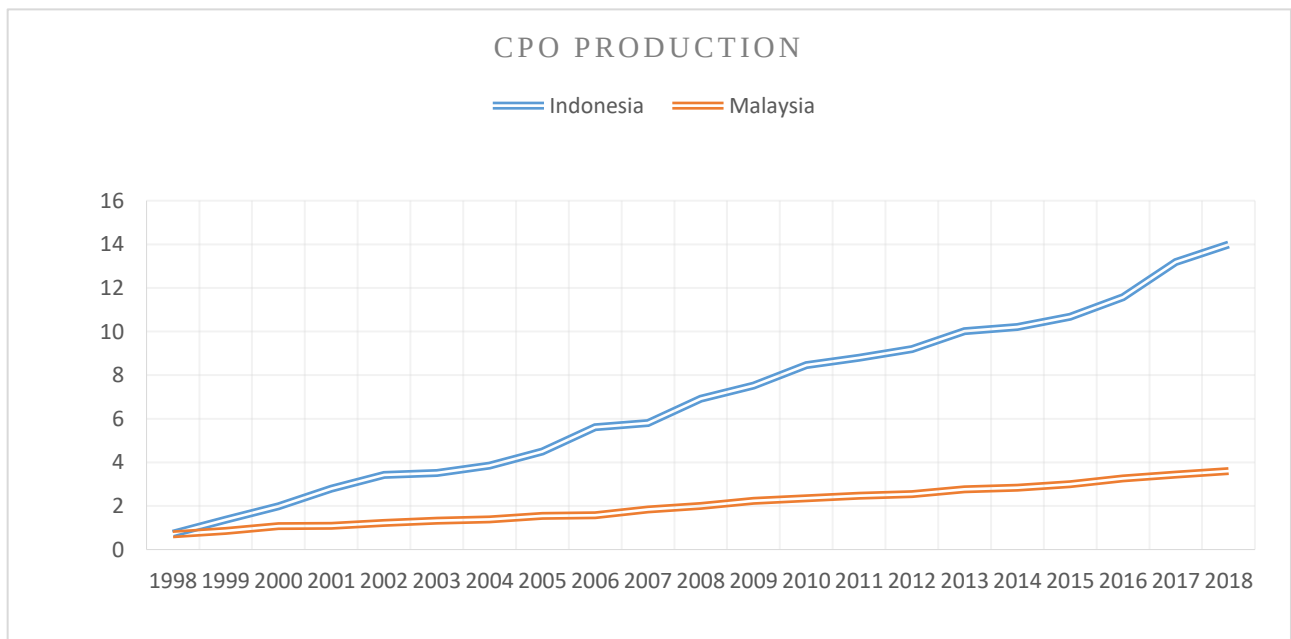


Figure 3. Development of CPO production of oil palm plantations of the people of Indonesia and Malaysia in the period 1998-2018

Table 5. CPO Production Development Per Year

Year	Indonesia		Malaysia	
	CPO Production (Million Ha)	% Development/yr	CPO Production (Million Ha)	% Development/yr
1998	0.73		0.7	
1999	1.37	46.72	0.85	17.65
2000	1.98	30.81	1.08	21.30
2001	2.8	29.29	1.09	0.92 b
2002	3.43	18.37	1.22	10.66
2003	3.52	2.56 a	1.32	7.58
2004	3.85	8.57	1.39	5.04
2005	4.5	14.44	1.55	10.32
2006	5.61	19.79	1.58	1.90 a
2007	5.81	3.44	1.84	14.13
2008	6.92	16.04	2	8.00
2009	7.52	7.98	2.23	10.31
2010	8.46	11.11	2.35	5.11
2011	8.8	3.86	2.47	4.86
2012	9.2	4.35	2.54	2.76
2013	10.01	8.09	2.77	8.30
2014	10.21	1.96 b	2.84	2.46
2015	10.67	4.31	3	5.33
2016	11.57	7.78	3.27	8.26
2017	13.19	12.28	3.44	4.94
2018	13.99	5.72	3.6	4.44
Average	6.86	12.87	2.05	7.71

A Comparison of CPO productivity of people's oil palm plantations in Indonesia and Malaysia can be seen in the picture below.

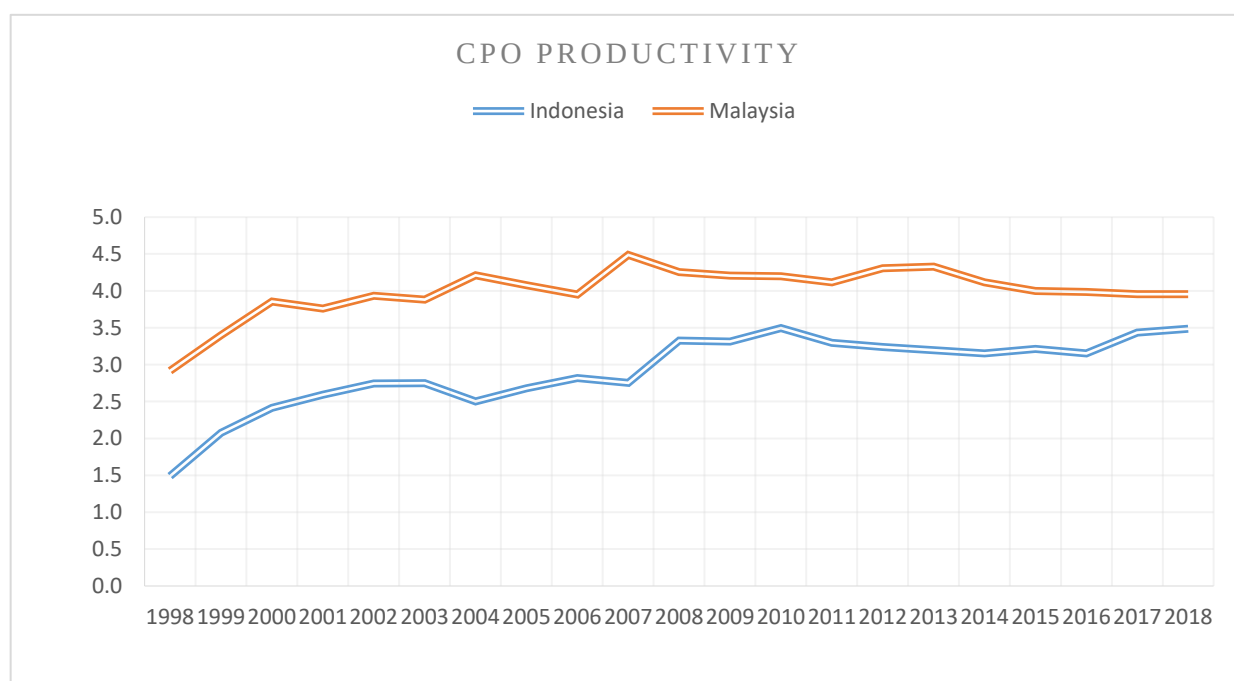


Fig 4. Development of CPO productivity of oil palm plantations of Indonesia and Malaysia in the period 1998-2018

Table 6. CPO Productivity Development Per Year

Year	Indonesia		Malaysia	
	CPO Productivity (Million Ha)	% Development/yr	CPO Productivity (Million Ha)	% Development/yr
1998	1.5		2.92	
1999	2.1	28.23	3.40	14.22
2000	2.4	14.03	3.86	11.85
2001	2.6	6.86	3.76	-2.62
2002	2.7	5.52	3.94	4.49
2003	2.8	0.22	3.88	-1.37
2004	2.5	-10.00 a	4.21	7.83
2005	2.7	6.67	4.08	-3.26 b
2006	2.8	4.98	3.95	-3.26 b
2007	2.8	-2.38	4.49	11.98
2008	3.3	17.23	4.26	-5.46 a
2009	3.3	-0.43	4.21	-1.14
2010	3.5	5.24	4.20	-0.26
2011	3.3	-6.07 b	4.12	-1.94
2012	3.2	-1.74	4.31	4.38
2013	3.2	-1.29	4.33	0.53
2014	3.2	-1.49	4.12	-5.16
2015	3.2	1.95	4.00	-2.90
2016	3.2	-1.94	3.99	-0.31
2017	3.4	8.22	3.95	-0.85
2018	3.5	1.54	3.96	0.05
Average	2.91	3.77	4.00	1.34

From Figure 4 and Table 6 it can be known that the trend of productivity of Malaysian oil palm plantations is superior when compared to the productivity of people's oil palm plantations in Indonesia. Even Malaysia has been unguled in terms of productivity since 1998 to 2018, but nevertheless Indonesia experienced an improvement in CPO productivity from 2010 to 2018 where the graph shows fluctuations that are not too sharp and leads to a rise in productivity approaching Malaysia in 2017-2018, it is in line with the statement [10] that the productivity of Indonesian oil palm plantations is lower than Malaysia but has improved from year to year.

Judging from the average productivity of people's oil palm plantations per year between

Indonesia and Malaysia is quite high, which is 2.91 tons / ha / th with 4.00 tons / ha / th. However, the average development of CPO productivity of people's oil palm plantations in Indonesia is still higher than in Malaysia, which is 3.77% versus 1.34%. Based on the data and discussions outlined above, is still the potential to increase the productivity of CPO of people's oil palm plantations in Indonesia by 1.09 tons / ha / th when compared to the productivity obtained by farmers in Malaysia. If the average CPO yield of people's oil palm plantations in Indonesia ranges from 20-25% then the Productivity of TBS of Indonesian farmers has only reached 11.64 - 14.55 tons / ha / th and Malaysian farmers have reached 16-20 tons / ha / th, in other words the productivity of TBS people's oil palm

plantations in Indonesia still has the potential to rise by 4.36 - 5.54 tons / ha / th [11].

CONCLUSION

From the results of analysis and discussion it can be concluded that the area of planting and harvesting people's oil palm plantations in Indonesia is higher than Malaysia and still allows it to continue to grow beyond the dominance of private plantations in Indonesia. CPO production of people's oil palm plantations in Indonesia is higher than Malaysia. The CPO productivity of people's oil palm plantations in Indonesia is lower than that of Malaysia. Indonesia still has the potential to increase the productivity of its people's oil palm plantations by 4.36 - 5.54 tons / ha / th. The average percentage of annual development of Indonesian oil palm plantations is higher and more stable than Malaysia, both in terms of planting area, crop area, CPO production and CPO productivity.

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