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REGULAR RESEARCH ARTICLE

'Complexation' of Palm Oil in Indonesia: The Actors and Their Involvement in North Mamuju, West Sulawesi

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ABSTRACT

This research examines the complexity of many significant changes in Indonesia's palm oil (PO) industry in North Mamuju, West Sulawesi, focusing on the actors' involvement. The PO commerce in this country continues to grow due to the increasing demand for crude palm oil (CPO) and kernel palm oil (KPO), low labor costs, vast lands, tropical climate, soil conditions, as well as domestic and global demand. Furthermore, private firms and smallholders continue to dominate the OP sector with continuous growth from upstream to downstream. This suggested that the PO industry has substantially impacted and helped change the newly constituted district of West Sulawesi, North Mamuju, by applying ethnographical modes of inquiry. According to the actors, the complexity of PO industry in this region is simply driven by the dynamics of the frontier inside and beyond PO plantations zona. Secondly, they are committed to ensuring that the region continues to be a center of PO industry to stimulate economic development in Sulawesi. Empirically, investment requirements and community attractiveness to PO continue to persuade local governments that the sector is the only development path. Local actors envision North Mamuju as the future hub for PO farmers in the East Indonesian region.

KEYWORDS

Palm oil, Forest, North Mamuju, West Sulawesi, Complexity, Political economy

1. INTRODUCTION

Indonesia is one of the world's most significant palm oil (PO) (Elaeis guinneensis) producers (Gatto et al., 2017; 2015; GAPKI, 2016; Murphy, 2014). This essential export commodity is also consumed in various homes, which led to a remarkable increase in the plantation areas for PO industry (Directorate General of Estate Crops, 2020; 2019; 2016; 2015). This research explains the aspects behind the extraordinary growth of PO industry in the past 10 years. Secondly, this describes the development in Sulawesi, focusing on North Mamuju District. Specifically, this analyses the industry's impact on a frontier community discovered by the Bugis settlers and their engagement with PO sector in West Sulawesi Province. This contributes to the discussion about its complexity and influence on the dynamics of a particular community.

Nationally, from 2000 to 2010 and 2015, PO plantations increased from more than 4.1 million ha to 8 million ha, and 11.3 million ha, respectively. It is projected to reach 14.9 million ha in 2020, with a total of 49.1 million tons crude palm oil (CPO) and kernel palm oil (KPO), as shown in Table 1. These areas are mainly located in the outer islands of Indonesia, namely Sumatra, Kalimantan, Sulawesi, and Papua (McCarthy & Cramb, 2009; Directorate General of Estate Crops, 2019). Additionally, most plantations covered over forest, semi-forest, and former forest regions. The increase is partly because of the changing government policy, which perceives the frontier areas as 'unused' or 'idle' lands (Li, 2018; Gatto et al., 2017; Cramb & McCarthy, 2016; Obidzinski et al., 2014; Prabowo et al., 2017; Tsujino et al., 2016). A notorious shift follows this

phenomenon with the change in cultivation pattern and extensive agricultural land in PO regions (Geiger, 2008; McCarthy & Cramb, 2009; Gillespie, 2012; Cramb & Curry, 2012).

Table 1. Indonesia's KPO and CPO production relating to the farming category, from 1970 to 2017

Year	Area (ha)			Total area (ha)	Production of KPO & CPO (ton)			Total of KPO & CPO (ton)
	Smallholder	Government	Private		Smallholder	Government	Private	
1970	-	86.640	46.658	133.298	-	147.003	69.824	216.827
1979	3.125	176.408	81.406	260.939	760	438.756	201.724	641.240
1980	6.175	199.538	88.847	294.560	770	498.858	221.544	721.172
1990	291.338	327.246	463.093	1.126.677	376.950	1.247.156	788.506	2.412.612
2000	1.166.758	588.125	2.403.194	4.158.077	1.905.653	1.460.954	3.633.901	7.000.508
2010	3.387.257	631.520	4.366.617	8.385.394	8.458.709	1.890.503	11.608.907	21.958.120
2013	4.356.087	727.767	5.381.166	10.465.020	10.010.728	2.144.651	15.626.625	27.782.004
2014	4.422.365	729.022	5.605.414	10.754.801	10.205.395	2.229.336	16.843.459	29.278.189
2015	4.575.101	750.160	5.975.109	11.300.370	10.668.425	2.287.077	18.328.804	31.284.306
2016	4.656.648	747.948	6.509.903	11.914.499	10.865.685	2.436.471	19.927.225	33.229.381
2017	5.697.892	638.143	7.712.687	14.048.722	13.191.189	1.861.263	22.912.772	37.965.224
2018	5.818.888	614.756	7.892.706	14.326.350.	15.296.801	2.147.136	25.439.694	42.883.631
2019	6.035.742	627.042	8.061.636	14.724.420	16.223.527	2.306.751	27.330.884	45.861.121
2020*	6.090.883	643.488	8.261.639	14.996.010	17.375.397	2.470.529	29.271.334	49.117260

*Estimation number

[Source: Directorate General of Estate Crop, 2015; 2017; 2019]

According to Casson (1999), 3 factors led to the expansion of PO plantations in the country. First, CPO's efficient production was mainly triggered by its non-stop yield every year, influenced by cheap labor costs, massive lands, tropical climate, and soil conditions (Li, 2018; Prabowo et al. 2017; Santoso, 2008; Murphy, 2014). Second, oil demands both domestically and internationally significantly contributed to the growth of PO plantations, which lured incredible domestic and global investments to this sector. Finally, the national government policy on agricultural development was implemented through investment incentives from indigenous and foreign investors.

These contributing factors were perceived as catalysts before the financial crisis hit Indonesia from 1997 to 1999. Local experiences showed a different consequence of the critical situation. Empirically, the crises did not, or at least not directly, affect the economy of PO holders in North Mamuju. During the 1996 and 1997 catastrophes, the first transmigrants-farmers recovered their lands, locally called "*konversi*" (conversion). However, this crisis caused the majority remarkably enjoyed the excellent price of the cocoa boom, and its plantations were filled with *lahan pekarangan* (1/2 ha of the land plot). The first settler reported that "every single one was enormously cultivated at that time."

According to analysts, PO trade has become the world's most profitable sector. For example, its share, including KPO in the world supply, was 37.6% in August 2012. Interestingly, vegetable oil manufactured from PO continues to attract business expansion (Budidarsono et al., 2013; SPI, 2011; Santoso, 2008). Indonesia and Malaysia account for approximately 90% of world exports of CPO (Hamilton-Hart, 2014; Cramb & McCarthy, 2016; Tsujino et al. 2016; Obidzinski et al., 2014; Jiwan, 2013; Murphy, 2014). Demands from the new emerging markets, such as China and India, are likely to stimulate its expansion in the following years. Therefore, the growth of this industry catalyzes agricultural development, and, as a result, massive land is required to implement this project.

Concerning plantation systems, Indonesia has implemented various production models and schemes, unlike its neighboring PO producers, such as Malaysia and Papua New Guinea in the Asia Pacific region (Cramb & Curry, 2012). The country comprises of 'Estate' (private or state-owned companies), Nucleus estate-smallholders-NES schemes, that are private or state-owned which act as a nucleus where settlers on state land act as smallholder 'plasma' or 'out growers' by dealing directly with the plantation company (Table 2). This model, known as PIR (Perkebunan Inti Rakyat), is a 'Joint-

venture schemes' system whereby a company develops and manages lands for farmers who pay rent based on area. The 'independent smallholders' initiative in the NES model, where PO cultivation is self-managed and self-funded, was also developed (Cramb & Curry, 2012; McCarthy & Cramb, 2009; Cramb & McCarthy, 2016). In addition, these systems tend to be elaborated in the next section. The recent data proves that PO sector has been a significant agricultural development in most provinces (Table 2).

Table 2 highlights 3 crucial points, first, private enterprises are the primary producers of PO industry (5.975.109 ha), followed by smallholders (4.575.101 ha) and state-owned plantations (750.160 ha). The data indicates that the state is not the dominant stakeholder in decision-making. However, it has the constitutional right to manage the sector through some institutions, such as the Directorate General of Enterprises within the Ministry of Agricultural Affairs. This is partly because state-owned enterprises, such as PTPN (Perusahaan Terbatas Perkebunan Nusantara), were unable to fulfill the whole PO needs. Second, the trend of non-state significant players led to the privatization of this industry in Indonesia. The relevant point is that PO does not exist in Bali and Nusa Tenggara Islands. In terms of plantations scale, it is 'less significant' (only 58 thousand ha of land) in Java Island. However, it is undeniable that Javanese, Balinese, and indigenes of West and East Nusa Tenggara are the primary and dominant players in this sector. Fortunately, it is mainly because most PO plantations, either state or privately owned, are in line with the transmigration program (Mukrimin, 2019; Mukrimin, forthcoming).

This research argues that PO has positively and negatively impacted North Mamuju. Positively, it contributes to the actors' economic development, and negatively, it directly affects the environment. In this context, the industry is categorized as a “frontier economy," which is defined by Timmer (2010, 2011) as "a region where previously intractable mangrove has been converted into privately owned land." However, the frontier is described "as open access, or common property that is self-reliant." The Bugis settlers in North Mamuju play a vital role in shaping the tropical forest hinterlands into PO industry.

The Bugis and new settlers are the only key players in this economic frontier (Mukrimin, 2019; Mukrimin, forthcoming). In accordance with Timmer's analysis, it was argued that these settlers, particularly in Baras of North Mamuju, comprise mixed frontiers of settlement, agriculture, economy, and recently politics (Mukrimin, 2019; Mukrimin, forthcoming). The transformation is solely generated and driven by one factor, PO industry and its complexity.

Table 2. Area of PO production by province and farming category in 2020

No	Province	Smallholder		Government		Private		Total	
		Area (ha)	Production (ton)	Area (ha)	Production (on)	Area (ha)	Production (ton)	Area (ha)	Production (ton)
1	Aceh	37.582	89.514	209.579	602.230	238.238	440.103	485.399	1.131.847
2	North Sumatera	305.372	1.339.381	628.587	2.766.395	723.798	2.539.764	1.657.757	6.645.540
3	West Sumatera	8403	37.657	151.598	647.807	221.670	567.930	381.671	1.253.394
4	Riau	79.244	335.175	928.418	4.388.842	1.815.010	5.145.213	2.822.672	9.869.230
5	Riau archipelago	1.242	1221	-	-	18.952	47.864	20.194	49.085
6	Jambi	20.430	82.660	362.662	1.332.127	682.175	1.578.869	1.065.267	2.993.656
7	South Sumatera	38.918	85.761	514.807	1.663.306	667.483	2.507.039	1.221.208	4.256.106
8	Bangka Belitung	-	-	154.490	668.337	71.410	143.854	225.900	812.191
9	Bengkulu	829	1768	100.665	282.066	208.626	738.377	310.120	1.022.211
10	Lampung	10.225	27.862	73.170	182.998	109.356	189.840	192.751	400.700
11	Jakarta	-	-	-	-	-	-	-	-
12	West Java	10.174	25.628	3238	6175	319	385	13.731	32.188
13	Banten	9997	25.542	2377	2397	7589	3893	19.963	31.832
14	Central Java	-	-	-	-	-	-	-	-
15	Yogyakarta	-	-	-	-	-	-	-	-
16	East Java	-	-	-	-	-	-	-	-
17	Bali	-	-	-	-	-	-	-	-
18	NTB	-	-	-	-	-	-	-	-
19	NTT	-	-	-	-	-	-	-	-
20	West Kalimantan	28.997	42.800	1.424.141	4.219.057	441.831	782.221	1.894.949	5.044.078
21	Central Kalimantan	-	-	1.541.996	7.162.659	170.248	279.220	1.712.244	7.441.879
22	South Kalimantan	5453	9693	359.400	1.411.620	105.593	246.252	470.446	1.667.565
23	East Kalimantan	19.716	23.634	978.589	3.458.880	288.193	508.685	1.286.498	3.991.199
24	North Kalimantan	-	-	118.060	229.204	37.358	85.394	155.418	314.598
25	North Sulawesi	-	-	-	-	-	-	-	-
26	Gorontalo	-	-	8.096	14.282	5.190	1.375	13.286	15.657
27	Central Sulawesi	-	-	83.455	259.880	54.013	130.362	137.468	390.242
28	South Sulawesi	20.264	6.109	3.080	2.386	32.232	98.119	55.576	106.614
29	West Sulawesi	-	-	51.304	158.768	113.675	200.000	164.979	358.768

30	Southeast Sulawesi	6.500	1.183	48.490	53.674	6.891	3.184	61.881	58.041
31	Maluku	-	-	9.149	17.481	893	92	10.042	17.573
32	North Maluku	-	-	5.541	-	-	-	5.541	-
33	Papua	-	-	31.303	78.549	17.765	22.949	49.068	101.498
34	West Papua	11.739	38.424	2888	7554	37.774	32.631	52.401	78.609
	INDONESIA	**617.501**	**2.134.367**	**7.942.336**	**30.060.003**	**6.035.742**	**16.223.527**	**14.595.579**	**48.417.897**

[Source: Directorate General of Estate Crops, 2020; 2019: 21; 2016; 2015]

2. METHODS

Ethnographic inquiry tools were applied to determine the fundamental research question of those involved in PO plantations and their strategies to pursue their interests in this industry. Consequently, this led to the adoption of 3 approaches, first, review secondary literature, including scholarly and government articles, industry reports, and the print media. Second, ethnographic research was employed by investigating PO farmers, estate representatives, government officials, smallholders, traders, and communities. Surveys and interviews were carried out on a wide array of relatively 100 indigenes and officials. These informants[1] are mainly the actors directly involved in the PO sector. In addition, the data was collected through participatory research, and in the entire process, the informants' behaviors were observed and analyzed. An example is farmers' attitudes in managing these companies and the regulatory policies enacted by the local governments. Third, site visits were carried out at all sub-districts (kecamatan) in North Mamuju. The research area was selected because it is recognized as the center of PO plantations (Figure 1). The data presented in this research was collected in 2014 for 9 months with intermittent visits conducted until 2020 due to the dynamics of PO in the region. Ethnographically, analyzing the prices of fresh brunch fruits (TBS) undermined fluctuation for several reasons, such as climate change and demand.

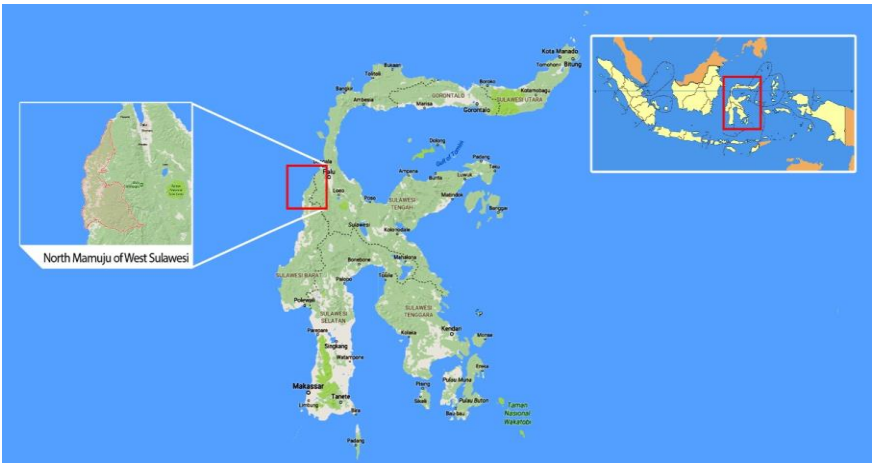

Figure 1. Map of North Mamuju, West Sulawesi.

The scheme of actors proposed by McCarthy & Cramb (2016) and Gillespie (2012; 2016) helps analyze the complexity of PO industry in North Mamuju. Quoting McCharthy & Cramb (2016) define the term "complexation" depicts "a complex PO process" which "is formed and reformed." McCarthy & Cramb (2016) further referred to it as a means of pursuing various goals in accordance with specific skills acquired due to the limitations imposed by the larger political economy. Besides, different actors engage in agonistic kind of interactions, which in turn create identifiable patterns with distinct outcomes.

McCarthy & Cramb (2016) reported that Indonesia's PO industry is influenced by 4 principal actors, namely national and local governments, agribusiness firms and agents, rural households and communities, and local and transnational civil society. Similarly, Gillespie (2012; 2016) stated that this sector is influenced by plantation

[1] All informants' names are pseudonyms.

companies, government, community, and smallholder cooperatives.

3. RESULTS

3.1. Palm Oil Context in North Mamuju

The welcoming feature at the center of Pasangkayu, the capital district of North Mamuju, is a statue of PO. It is a symbol of the leading sector that boosts economic development (Regional Regulation of North Mamuju, 2014; 2016) in this region (Figure 2).

Figure 2. 'Smart' of PO statue in the center of Pasangkayu

The local government (Pemkab) of North Mamuju claimed that the developed new district was remarkably concerned as the youngest Kabupaten in West Sulawesi. The primary catalyst of the progress was PO sector, which subsidizes 40.58% of economic growth, increasing from 7% to 14.47% from 2009 to 2014 (BPS of North Mamuju, 2016; 2014). Interestingly, within the same period, it was reported that this industry has contributed to reducing the poverty level at the district, from 17% to 5% (BeritaDaerah.co.id, 2014). Based on the statistical data, the growth of PO sector and the district's economy seems to fluctuate over the past 3 years, 5.28%, 4.46%, and 2.68% in 2018, 2019, and 2020, respectively (BPS of North Mamuju, 2021).

The establishment of large plantation companies, namely PT Unggul Widya Lestari Technology (UWTL) in the early 90s and PT Astra Agro Lestari (AAL) with its sub-branches, caused the indigenes of North Mamuju to abandon their farmlands and estates. Rice paddy fields and orchards were transformed into PO plantations, which has been the dream of several farmers and planters in this area. The boom in North Mamuju, initially in Baras and eventually across the district, significantly altered the farming practices from traditional sub-systems such as paddy rice and vegetable agriculture to monoculture PO.

According to preliminary research (Author, forthcoming 1), PO industry in North Mamuju, West Sulawesi, had been in conjunction with the state-sponsored migration, i.e., transmigration program, and this is found in several sites across the country (Colchester et al. 2006; Rob & McCharty, 2016; Obidzienski et al. 2014; McCarthy & Rob, 2009; Prabowo et al., 2017; Jiwan, 2013; Jelsma et al., 2017; Gatto et al., 2015; 2017; Gillespie, 2012; 2016; Zen et al., 2016). However, PO is extremely important because it was first introduced in West Sulawesi (Figure 3). Although nationally, this industry is

insignificant in terms of land width and production, it has massively contributed to shifting tropical forests in the area (Author, forthcoming 1). The introduction of PO industry and transmigration occurred simultaneously in West Sulawesi.

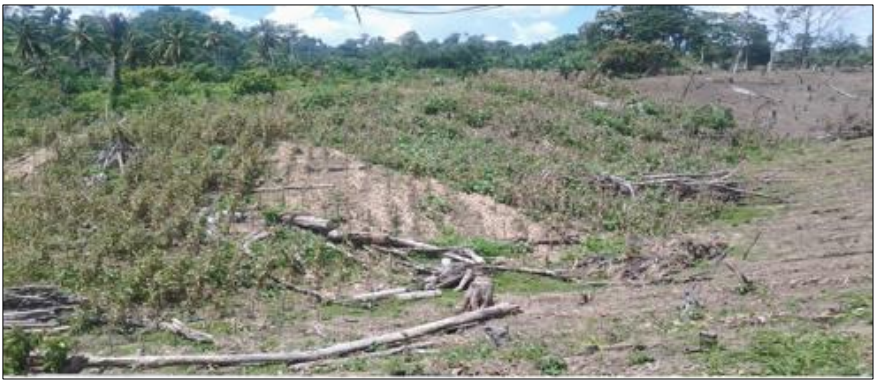

Figure 3. A landscape of a new plantation in Baras, North Mamuju

Recently, under the supervision of Indonesia's Ministry of Transmigration, this area was divided into several settlement units known as KTM (Kawasan Terpadu Mandiri, Integrated Self-Sustain Settlement Unit). For example, two KTMs, namely Baras and Sarudu, comprising a total of 92,491 ha in aggregate, have continued to expand. Currently, Baras itself, or the so-called 'blossoming' (pemekaran), was administratively divided into 1 rural (kelurahan) and 10 new (former transmigration settlement units) villages (Mukrimin, 2019; Mukrimin, forthcoming).

Furthermore, this former KTM, initially populated by 325 families or 1241 people in 1988 and 1989, has emerged as a crowded pre-urban town within the colossal PO plantations. With a population growth of approximately 5% annually in the past 10 years, there was an increase from 17.254 to relatively 18.4330 Indigenes from 2013 to 2015, respectively. When this research was carried out, the total population of North Mamuju in 2015 was 156.464 people (BPS of North Mamuju, 2016; 2014). Territorially, the transmigration settlement units were also merged into new sub-districts, while only 2 former ones, namely Balanti and Motu, were included in Baras. Eventually, local political voices and new settlers accumulated in this region, transforming it into a new Indonesia district in 2004 (Mukrimin, 2019).

The stories of the first settlers in the field were related to the establishment of OP industries, which was initially referred to as a finery mill operated at Motu Village and a new one, i.e., Agribaras under the PT Unggul Widya Teknologi Lestari (UWTL). Based on the Kempen RI/NO/351/KPTS/KB510/6/1987, enacted on June 15, 1987, it was given a concession of relatively 17.000 ha while 10.000 ha of lands were used for OP plantations. However, under the so-called Penanaman Modal Dalam Negeri – PMDN (In-Country Investment Capitals), the PT UWTL gained financial investment support from the National government. It was officially launched on November 27, 1988, by the governor of South Sulawesi and under the jurisdiction of West Sulawesi, as shown in Figure 3. Additionally, a particular harbor for CPO and KPO was built in Bone Manjing, situated at Sarudu, in June 1990. Then from August 1994, this region became an entre-port for PO industry. The PT UWTL itself is under the Widya Corporation, a national enterprise that affiliates with PT Manakara Unggul Lestari, PT Dharma Pratama and PT Mulia Inti Perkasa. It also has several PO mill construction branches, such as PT Sarana Mukti Dirgasentosa, and an educational institute, known as Poleteknik Sawit Citra Widya Edukasi (Nainggolan, 2015; Fajar, 2010; Antara, 2012; Village Head of Balanti, pers. comm., 2014). Along with the construction of the PT UWTL, the transmigrants

engaged in the planting of PO seeds and other menial jobs such as clearing the forests, preparing lands, fertilizing, and harvesting.


Figure 4. KPO and CPO storage tanks in the mills in North Mamuju

The arrival of transmigrants and the establishment of PT UWTL in Baras in 1988 attracted more prominent PO companies, such as PT Astra Agro Lestari (AAL), in North Mamuju. This industry is one of the largest producers of KPO and CPO in Indonesia, with relatively 92% or 177.976 ha of land section cultivated with PO. In contrast, the remaining 14.782 ha were used for rubber, cocoa, and tea plantations. This area was only intended for the domestic market and export, by 1999, CPO production increased to 307.374 tons. Currently, PT AAL is a major shareholder in 42 branches operating in this sector. Towards the end of 1999, the company managed to supervise approximately 192.758 ha and 55 PO plantations, with 93.932 ha, 55.577 ha, 38.695 ha, and 5.554 ha, located in Sumatra, Kalimantan, Sulawesi, and Java, respectively. As a part of PT Astra International Group, PT. AAL is one of the leading actors in PO sector. In 1997, this public company was listed on the Indonesia Stock Exchange (BEI), and interestingly, by 2016, it managed approximately 297.862 ha at upstream sectors across the country (PT AAL Annual Report, 2015).

In North Mamuju, the AAL is locally managed, and corporate organizations made investments through its established sub-branches, namely PT Letawa, PT Surya Raya Lestari, PT Pasangkayu, and PT Mamuang. Presently, these companies have become prominent actors in PO industry, and they have some land concession rights (*Hak Guna Usaha* - HGU), as shown in Table 3.

Table 3. Plantation Company in North Mamuju

Plantation Private Company	*HGU* Land (ha)	Year of Operation	Current Permit (IUP-B/IUP-P/IUP NO/TGL)
PT Unggul Widya Teknologi Lestari	12.070	1987	529.2/55/1/2014 15-1-2014
PT Letawa	10.713	1995	526/02/IX/IUP/ 2014/KPTSP&PMD. 03-10-2014
PT Pasangkayu	9.319	1997	366/2014, 03-3-2014
PT Surya Raya Lesatari	2.826	1997	796/VII-KU/2000, 20-12-2000
PT Mamuang	8.000	1997	794/VII-KU/2000, 20-12-2000
PT Diyatama Inti Pusaka	14.235	n. d.	Permit in progress
PT. Toscano Indah Pratama (PKS)	13	2006	Permit in progress
Total	**57.176**		

[Source: Adapted from Governor of West Sulawesi's Report, 2015; Sembodo, pers. comm., 2014; Mahkamah Agung, 2012]

Besides the companies above, farmers, either former transmigrants or local residents, also engage in PO plantation. This empirical field research depicts that this sector accelerates the economies in North Mamuju and West Sulawesi. The following table shows the plantation area and PO production in 2020, 2019, and 2018.

Table 4. The number of PO plantations and production in North Mamuju

Sub-district	2020		2019		2018		2017	
	Planted area (ha)	Production (ton)	Planted area (ha)	Production (ton)	Planted area (ha)	Production (ton)	Planted area (ha)	Production (ton)
Sarudu	5.404	11.983	9.453	11.983	9.453	32.660	9452	56.871
Dapurang	5.452	12.773	8.463	12.773	8.463	32.061	8462	58.862
Duripoku	8.130	20.345	11.906	20.345	11.906	31.474	11.905	98.971
Baras	6.685	17.546	11.452	17.546	11.452	35.276	11.451	72.995
Bulu Taba	7.759	22.011	11.570	22.011	11.570	35.391	11.569	92.624
Lariang	4.784	10.009	8.904	10.009	8.904	33.271	8.903	48.210
Pasangkayu	4.279	8.981	6.861	8.981	6.861	30.537	6.860	42.671
Tikke Raya	5.121	12.289	9.488	12.289	9.488	31.795	9.487	57.071
Pedongga	5.225	10.788	7.792	10.788	7.792	30.993	7.791	51.871
Bambalamotu	2.748	6.599	5.353	6.599	5.353	30.145	5.352	31.381
Bambaira	2.055	4.766	4.460	4.766	4.460	30.968	4.459	22.790
Sarjo	2.291	4.230	4.387	4.230	4.387	30.234	4.386	20.148
Total	59.933	142.320	100.089	142.320	100.089	325.500	100.084	654.466

[Source: BPS of North Mamuju, 2021; 2020; 2019; 2018: 261-263; 2017]

Table 4 illustrates 2 critical facts, first, all the 12 sub-districts are overwhelmingly occupied by PO trees or plantations concerning each width. This trend expands to the newly split - neighboring district in Central Mamuju (Mamuju Tengah). Second, from 2017 to 2020, there was a significant decrease in the production process. Since this research was carried out in 2014, several old plantations, and non-productive trees, specifically in the sub-districts of Baras, Pedongga, and Lariang, need to be re-planted. On the contrary, there was an increase in the neighboring regions, specifically Duripoku, and even new PO farms, such as Bambalamotu.

The aforementioned statistical data failed to differentiate the 'farmers' category. Meanwhile, the ethnographic depicts 2 kinds of PO farmers in North Mamuju, namely those who are certified landholders and work on their farmlands (pemilik Kebun) and those who do not have lands (such as tukang panen and labor), and irrespective of this, they directly engage in PO production.

From October 2015 to February 2016, PO industry temporarily ceased to function. According to the information obtained from the field, it is because the mills stopped their production process because the storages were full (Figure 5).

Figure 5. KPO and CPO storage tanks in the mills in North Mamuju

4. DISCUSSION

4.1 Palm oil complexity in North Mamuju actors and their involvement

The key-actors schema proposed by McCarthy & Cramb (2016) is used to examine the complexity of PO in North Mamuju. They further reported that it is primarily influenced by 'independent smallholders in PO zone,' 'rural households in managed smallholder or NES schemes,' 'rural households in joint-venture or partnership schemes,' 'rural households on the periphery of PO zone,' 'rural households outside PO zone,' and 'local government.' This classification was simplified by Gillespie (2012; 2016) into 4 categories, namely plantation, community, government, and smallholder PO. McCarthy & Cramb (2016) stated that Indonesia's PO industry is characterized by 4 prominent actors, namely national and local governments, agribusiness firms and agents, rural households and communities, as well as local and transnational civil society. According to Gillespie (2012; 2016), plantation companies, government, communities, and PO small stakeholder cooperatives primarily influence PO sector. McCarthy & Cramb (2016) described these actors in greater detail, as shown in the following table.

Table 5. Actors and their roles in PO industry

Actors	Roles
National government	- The continued need to reduce rural poverty and encourage exports of agricultural products, - Under pressure for all environmental records, mainly deforestation, forest fires, and transboundary haze, - Politically aligned to economically powerful business conglomerates, - With limited monetary resources and a slower growth after the 1998 financial crisis, a shift to private sector-led development, - Accommodating Malaysian investment in Indonesian plantations,
Local governments	- Actively attract investments, facilitate investor-friendly arrangements to maximize revenue, rents, and patronage, - Allow companies to directly negotiate with communities concerning access to customary land, - Variable commitment to smallholders' interests, providing large areas for plantations, and pursuing a friendly program,
Rural development agencies	- Shifted from supporting or managing smallholders (resettled or in situ) in partnership with private or state plantation companies to establish joint ventures with landholders, - The limited capacity of Ministries of Agriculture, Transmigration and decentralized agencies to provide support for smallholders,
Plantation companies	- Convergence between state- and privately-owned plantations in a mode of operation ("plantation complex"), - In need of capital and technologies from Malaysia and Singapore, - Push for more flexible plantation labor rather than plasma smallholders, - Work with state actors at district agencies to acquire land and enforce control, - Acquiring rights to timers, lands, banking, and incentive, - Some large corporations investing in corporate sustainability,
Independent smallholders in PO	- Some NES or plasma farmers have evolved into progressive or prosperous independent smallholders,

Actors	Roles
zone	- Some successful smallholders have emerged independently around these plantations,
Rural households managed by smallholders or NES or KKPA	- Following the end of state support for the nucleus estate model, landowners are often compelled to cede management of estate plots, depending on the benefit-sharing arrangement, they are hired as labor and receive a share of profits in return,
Rural households in joint-venture or partnership schemes	- Inclusion terms leave participants with insufficient productive lands, mounting pressure, thereby forcing them to work as plantation laborers, diversify livelihoods, and migrate,
Rural households on the fringe of PO zone	- Without technical and financial support, they are often locked into low productivity of PO and other insecure livelihood options, - Susceptible to loss of land through indebtedness and livelihood shocks,
Rural households outside PO zone	- The primary source of migrant labor to plantation zones in Indonesia and Malaysia, - Migrant jobs are considered preferable to poverty, particularly in marginal areas of Eastern Indonesia,
Urban-based small- to medium-scale investors	- Professionals or business incomes are used to develop small to medium holdings, - Networks are used to buy or rent land and employ labor, with intermittent supervision,
Advocates or civil society groups	- Many active groups in the post-Suharto era, - Framing of disputes in terms of indignity, peasant resistance, land rights, and environment, - Constrained by lack of resources, capacity, and collective problems, - Little attention to smallholders' production problems.

[Source: McCarthy & Cramb, 2016: 448-451]

McCarthy & Cramb (2016) described PO complexation as a situation in which different actors, each pursuing their interests based on a diverse set of capabilities within the constraints imposed by the broader political economy, develop accommodative or agonistic relationships forms, thereby creating recognizable patterns and achieving adequate results. Based on empirical research, it was argued that firstly, this complexity is merely triggered by the dynamics of frontier and its processes within and outside the plantation region in North Mamuju and West Sulawesi (author, forthcoming). Secondly, all actors' vision tends toward the center of economic growth, which by design is realized through the principal agricultural source, namely PO. There is a need to analyze how they pursue their interests in this industry.

4.2 Actors from rural households in managed-smallholders

As part of the transmigration program, which the government completely sponsored, the first settlers were all farmers of this frontier who did not need capital but demanded 'Tenaga' only. In 1988 and 1989, two families engaged in PO by taking a loan of 8 and 11 million rupiahs, respectively (Village Head of Balanti; Daeng Tacella; and Daeng Magoga, pers. comm., 2014). These were used for transportation, to acquire 2 and a half ha of lands, 1 year of food subsidy, and a house for each family. Additionally, the settlers paid 70% of the credit, while the remaining 30% were paid by the plantation company (PT Unggul Widya Teknologi Lestari, UWTL).

The first settlers enjoyed the so-called 'konversi' (conversion) in 1995, and this simply means that the credit loan had been paid. Immediately, it was converted, they

obtained their land certificate from the state authority. In the meantime, the majority of the settlers, mainly Javanese and Sundanese, sold their property (particularly lands) to their fellow transmigrants or newcomers (spontaneous migrants). First settlers in Balanti reported that these were sold (two and a half ha of land plus a transmigrant house) between 100.000 to 150.000 rupiahs (Daeng Macau; Daeng Magaotong; Daeng Tasugi; Daeng Macommo, pers. comm., 2014), in addition, a similar situation occurred in Motu (Hj. Ininnawa; Village Head of Motu, Daeng Tasugi, pers. comm., 2014).

However, in 2000, there was a significant increase in land prices due to the booming PO sector. These were even multiplied as a result of the subsequent planting year. Current information obtained from the field in June 2016 confirms that the price of lands with productive-PO trees in Balanti, Baras, is relatively 300,000,000 (three hundred million) rupiahs per kavling (2 ha of lands) or 150,000,000 (one hundred and fifty million) rupiahs for a *lahan pekarangan* (half ha of slot). These prices continue to increase, and in 1995 the first year of this PO harvested in Baras was worth 30 rupiahs/kg. Interestingly, by the middle of August 2016 and July 2017, its price was relatively 1300/kg, and 1265/kg, respectively (Village Head of Balanti, 2014; Daeng Macommo, 2016; Daeng Magoga, pers. comm., 2017; Jelsma et al. 2017). This shows that many of these rural householders were mainly pursuing the interests of PO industry through land sales.

4.3 Actors from Nucleus Estate Scheme (NES)

The NES is categorized into a group of farmers (kelompok Tani), consisting of relatively 19 to 24 members, and each has 2 ha of lands (locally called 'kavling'). Therefore, assuming a particular group has 19 members, an area of 38 ha is expected to be covered. Each tends to earn approximately 40 million rupiahs to 160 million rupiahs monthly, depending on fresh bunches' weight. The prices also fluctuate occasionally, for example, in 2014, it was worth 1475 rupiahs/kg. It also varied based on the planting year, for instance, those planted in 2005 were valued at approximately 1700 to 1800 rupiah/kg. The total amount of money received was divided based on each member's weight of their fresh bunches per kavling. Road maintenance and monitoring are the sole responsibility of the group committee. They are expected to execute their duties monthly, and the chairperson is elected by the group members (H. Daeng Malolo, pers. comm., 2014).

4.4 Actors from rural households in the joint venture or partnership schemes

This is similar to the earlier mentioned NES scheme, with more roles played by the plantation companies than farmers. Some informants stated that most farmers reluctantly attended the monthly-decision price meeting because PO companies or the provincial government rejected their price drafts. Their voices were mainly focused on the TBS prices based on international standards, irrespective of being frequently not heard. For example, its prices in joint venture PO groups have remained at the same level since the past 2 years of production. However, farmers from this scheme enjoyed the increase in the prices of TBS, compared to its initial value when they settled in the area in the 90s (Table 6) (Daeng Macommo, 2016; Daeng Magoga, 2017; H. Daeng Malolo, Pak Syarif, Daeng Magotong, pers. comm.2014).

Table 6. TBS price for 'kemitraan' (joint venture) in August 2015 and March 2017 across West Sulawesi

2015			2017		
Year-Age	Plant-Year	TBS*Price (IDR/Kg)	Year-Age	Plant-Year	TBS*Price (IDR/Kg)
3	2012	1013.52	3	2013	1087.24
4	2011	1090.78	4	2012	1167.77

2015			2017		
Year-Age	Plant-Year	TBS*Price (IDR/Kg)	Year-Age	Plant-Year	TBS*Price (IDR/Kg)
5	2010	1158.13	5	2011	1238.28
6	2009	1211.98	6	2010	1293.54
7	2008	1227.34	7	2009	1313.38
8	2007	1273.92	8	2008	1363.84
9	2006	1312.12	9	2007	1406.61
10/20	1995/2005	1339.41	10/20	1996/2006	1434.38
21	1994	1314.49	21	1995	1409.97
22	1993	1279.24	22	1994	1374.32
23	1992	1258	23	1993	1353.15
24	1991	1234.07	24	1992	1328.64
25	1990	1208.18	25	1991	1302.45

*TBS: *Tanda Buah Segar* (Fresh Brunch Fruit)
[Source: Agricultural Service of West Sulawesi, August 2015 and March 2017]

4.5 Actors from rural households on the fringe of palm oil zone (non-NES scheme)

The actors, mainly non-transmigrants or migrants' landholders, have to follow PO joint venture system and NES scheme. They are also 'non-registered' farmers who settled in this zone, in addition, they are not supported by the local governments and plantation companies. Empirical data obtained from the field shows that these non-joint ventures and non-NES farmers are able to sell their TBS directly to tengkulak (intermediaries) or mills around their settlements. At least, they have options concerning the sale of their TBS. The mushrooming of migrants into North Mamuju continues to accelerate the complexity of PO industry in the region mainly because they have been the leading players of these plantations genuinely found in tropical forests. These farmlands are expanded to the southern and eastern part of North Mamuju, and it constitutes the massive forest in Sulawesi. Based on the ethnographical research carried out in 2014, it was recounted that the width of the plantations was approximately 20 km. Moreover, in 2020, it was believed that the width was multiplied because PO was getting closed to Donggala District, Central Sulawesi.

In terms of scale, scholars divided PO into 3 types, namely (1) large-scale (either state-owned or private companies, e.g., Perusahaan Terbatas Perkebunan Negara (PTPN). However, state establishments such as the PTPN did not exist in West Sulawesi. (2) Medium-scale plantations are either collectively owned by a group of companies or individuals. It seems that all PO enterprises in North Mamuju are categorized under this type. (3) Small-scale plantations cover less than 25 hectares, mostly owned by a farmer's household (Colchester et al., 2006). The ethnographic data shows that several households possess more than 25 ha. In fact, relatively 2 or 3 farmers have approximately 100 to 300 ha of PO plantations in North Mamuju. On average, they possess 4 to 8 ha of farms. The inexplicit type refers to some hectares of 'collectively-owned' ('arisan') lands, namely plantations purchased through 'lottery club or communally.' The data acquired from the field shows that this circumstance exclusively occurred among the Balinese community who bought the lands through 'arisan'. Meanwhile, this 'Tanah arisan' tends to be more than 25 ha in aggregate.

4.6 Plantation companies

The key players in PO industry are big enterprises, such as PT Astra Argo Lestari – AAL (with its sub-branches) and PT Unggul Widya Lestari in North Mamuju. Seemingly, there have been no state-owned plantations, such as the PTPN in Sumatra or elsewhere in Indonesia. A farmer stated that these companies were merely profit-oriented. Along with the provincial agriculture service (Dinas Pertanian), farmers' groups (kelompok

Tani), and PO establishments, the provincial government (Pemprov) carried out a monthly meeting to decide the TBS worth through the so-called 'Price Decision on Palm Oil's TBS Team' (Tim Penetapan Harga TBS Kelapa Sawit). Therefore, they decided its value as shown in Table 7.

Table 7. The decided price of TBS in March 2017

Palm Oil Company	CPO Price (IDR/kg)	KPO Price (IDR/kg)
PT. Unggul WTLestari	6963.55	5754.19
PT. Letawa	7034.71	5546.93
PT. Pasangkayu	7051.01	5452.20
PT. Surya Raya Lestari	6896.04	5323.98
PT. Manakarra Unggul Lestari	6963.38	5754.13
PT. Trinity Palmas Plantation	6871.50	5616.00
Verified Average Price	**6963.58**	**5.832.50**

[Source: Agriculture Service of West Sulawesi, 2017]

The various groups of farmers were also invited, and then sometimes they felt reluctant to attend these meetings because companies and provincial governments frequently set up the price. According to many farmers, the 2 parties, sometimes 'main mata' ('flirting with'), decide the TBS price.

PO companies in North Mamuju are supposed to support public facilities. However, it is exclusively for their workers and laborers, such as free buses for students, healthcare benefits, and easy credit access. A farmer stated that in 2000, these companies donated water supply during the dry seasons. In the past, they supported the community's social activities, specifically the farmers' group committees or boards. For example, they were given donations for religious exercises or significant events such as the August 17 celebration. Presently, these supports are no longer available, and according to the majority of the farmers, "the companies [Table 7] in this area are private firms. This indicates they are only interested in getting more benefits and limits its expenses" (Andi Kaluru; Daeng Magotong; Daeng Macommo, pers. comm., 2014). There is a need for the government authorities to regulate such establishments, thereby ensuring that they are benefit-oriented. On the contrary, in the Pasangkayu area, PO companies provide support for neighboring communities, such as maintaining better road access and social activities (Sembodo; Daeng Macommo; Kepala Desa Balanti; Andi Kaluru, pers. comm., 2014).

To boost economic development, both national and local government enterprises promote investments over the mills' capacity. In early 2014, the AAL established PT Tanjung Lestari in Ako Village, Pasangkayu. The new mill was mainly used to produce cooking oil, and it was projected that the finery is expected to produce 2000-ton/day. Raw materials of PO (i.e., TBS) were supplied from the plantations across Sulawesi and Kalimantan. The aim was to cut off the supply-chain costs (mainly shipping), initially sent to Surabaya in Java (SawitIndonesia.com, 2014).

4.7 Actors from rural households outside palm oil zone

Several indigenous people, particularly those villagers (or local government has labeled them as 'Masyarakat tertinggal' or Masyarakat terasing- isolated communities) who were not directly involved with PO business, were pressurized (Regent of North Mamuju, pers. comm., 2014). For example, Binggi and Bunggu communities at upland North Mamuju area have to deal with PO industry's expansion into their traditional farmlands. A report emphasized that presently, their population was approximately 7000 people (Tempo, 2014). These mobile communities are continuously under pressure because of PO industry's expansion. These people still maintain their traditional agricultural system, mainly gardening, cultivations of cassava, sago, cocoa,

banana, and coconut. They were forced to move to the eastern part of North Mamuju, which is currently the upland border between West and Central Sulawesi.

The marginalization of local communities continued in North Mamuju, with several of these villages weaker in forest areas because the government claims that all are perceived as state lands. This is because "it is often easier for companies to obtain large areas for conversion to plantations with minimal compensation" (Anderson, 2013). A similar situation occurred in Towoni Village, Baras, where the local communities were marginalized because they maintained their traditional farming systems. Those villagers who were not strong enough to endure the capitalists' temptation sold their lands to new settlers or PO farmers. The critical issue is the border (batas Tanah) of the company's HGU, former transmigration settlement, PO area, and Towoni's region remains unclear (Figure 7). These outsiders have become the victims of this industry in North Mamuju. Therefore, it is not surprising that some of these plantation zones remained isolated. In such frontier situations, Geiger (2008) highlighted how the intricacy of PO had transformed many areas of Indonesia into accommodative theaters, while the indigenous people's land has become an area of dispossession.

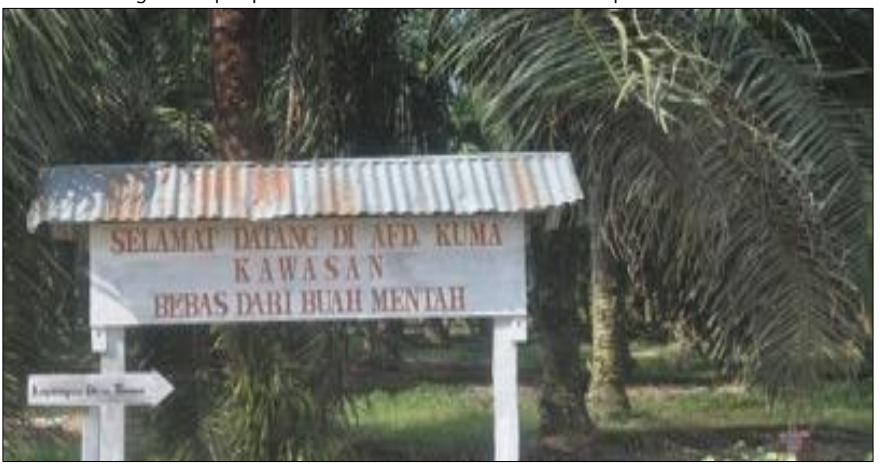

Figure 7. A border between Towoni Village and a PO company's HGU

4.8 Local government

PO industry is a political economy that decentralized these regions. According to Hamilton-Hart, (2014), the local government of North Mamuju needs to attract more investors. This is crucial because it is a new district situated at the center of agricultural sectors in West Sulawesi. Special attention was given to PO investors because they are expected to accelerate it because it remains a crucial source of revenues for the district (Regional Regulation of of North Mamuju, 2014; 2016). For example, the local authority provides them with lower taxes and levies. It is not surprising that indigenous decision-makers play certain roles ('main mata'), such as promoting and facilitating investors to negotiate with people over the use of their lands for plantations. At this point, both politically and economically, the local governments function as 'brokers' or 'middlemen' in PO sector. Instead of being a regulator, they pursue their interests through agenda. In this situation, decentralizing regional and local governments and their natural resources, which is fundamentally aimed at making the people prosper, as its proponents always argue, seems to be on the constitutional papers only.

The provincial government (Pemprov) also organized a monthly meeting to decide the standard-PO prices. There is the so-called BJR cost, which refers to the percentage of these resources. Occasionally, farmers claim that the government always selects the

least price on the BJR. According to these farmers, the local governments (both provincial and district level) had lost some money, including that it was not noticed. The government's calculation dealing with PO price is based on the rupiah, whereas the companies count is based on the US Dollar (H. Daeng Macommo, pers. comm., 2014).

From a governance perspective, it seems that the district government (Pemkab) was unable to control PO companies, as reported by the majority of farmers. For example, North Mamuju is the wealthiest local district in West Sulawesi. However, it was noticed that the development of this district where only PO companies enjoy all the benefits has become more prosperous (H. Daeng Macommo; Kepala Desa Balanti; Andi Kaluru, pers. comm., 2014). Companies' donations and contributions to the local government revenues (Pendapatan Asli Daerah - PAD) from this sector remained low.

4.9 Independent smallholders in the palm oil zone

Recently, new trends have occurred elsewhere in Indonesia's PO industry where smallholders have evolved into independent farmers (Table 2) (McCarthy & Cramb, 2016; Zen et al., 2016; Potter, 2016). A similar pattern also occurred in North Mamuju and West Sulawesi. Independent smallholders are described as those farmers who possess less than 10 hectares of land used for PO cultivation and are neither part of kemitraan nor directly arranged or affiliated by these companies. This category emerged in North Mamuju (and mostly in the West Sulawesi PO sector) by the early 2000s. The field research data shows that at the least, smallholders have several choices to sell their TBS, either directly keep their previous farmer groups or sell TBS through middlemen (*tengkulak*). The mushrooming of these tengkulak became problematic for companies because they are blamed for breaking the established PO systems (Sembodo; H. Daeng Macommo, pers. comm., 2014). It is quite a tricky phenomenon because to be a tengkulak, and one needs to 'orang dalam' (insiders) in the company. In this context, the mean employees within the company always enjoy the benefits of security personnel. This indicates, to sell their TBS to these firms, the independent smallholders need to get in touch with the insiders, and supposing, the reverse has been taken into account, thereby leading to the TBS that was left to rot.

Another option for the smallholders is that with enough capital and a truck loading permit (izin trayek) from the company, they can sell their TBS directly to the mil. Seemingly, due to overwhelmingly overloaded trucks, the companies allowed the public to obtain transportation permits. To attain the izin trayek, truck owners need to have 'orang dalam' (insiders) in the mil (Figure 1). It is common to see a PO truck from somewhere around PT Letawa of Pasangkayu get loaded in PT Unggul of Bulili or from Tommo, and vice versa.

5. CONCLUSION

PO industry in Indonesia has significantly developed in the past decades. Apart from the global, nationally, and locally, trends show that it has become widespread. First, the main reasons are global demand, mainly from the emerging markets, e.g., China and India, which continues to increase. Second, as a consumer and producer, Indonesia also significantly needs oil. Finally, both national and local governments keep calling for more investors to be engaged in the sector.

In the Southeast Asian region (ASEAN) context, PO industry accelerates the ASEAN's economic community. Moreover, two pivotal ASEAN members, Indonesia and Malaysia -- the leading world's producers, integrated the Indonesian Sustainable Palm Oil (ISPO) and Malaysian Sustainable Palm Oil (MSPO) (Pye, 2016), and integration and standardization project from upstream to downstream productions, likely to maintain domination of relatively 90% (Detik.com, 2016). Fortunately, integrating these 2 countries' production, as a result, manifolds PO industry globally.

The aforementioned trends are likely to make PO industry more complex in the subsequent years. Therefore, the complexity of the political economy, as McCarthy & Cramb (1996) briefly reported that "different actors, pursue their varying interests." In Indonesia's context, it is becoming overwhelmingly widespread at the provincial and district levels, as is evident in the case of North Mamuju, West Sulawesi.

Along with the investments needs, local governments continue to convince people that PO is the only shortcut for development. At the same time, many communities, including those in West Sulawesi, are lured with the crop. Moreover, those who failed to accept this analysis remain marginalized and pressured. In West Sulawesi, the local governments' vision is to create North and Central Mamuju Districts to be the center for PO producers in the East Indonesian region, ensuring every sub-district (kecamatan) is presently covered with plantations.

A trend shows that the government no longer dominates actors in the sector through its state-owned and private enterprises. This research proved that smallholders have recently been the leading suppliers and are more independent. The trend is also expected to continue in the subsequent years.

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