

EREM 80/2Journal of Environmental Research,
Engineering and Management

Vol. 80 / No. 2 / 2024

pp. 88–99

10.5755/j01.erem.80.2.34761

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Received 2023/08

Accepted after revisions 2024/01

<https://doi.org/10.5755/j01.erem.80.2.34761>

The Synergy between SDGs and Indonesian Sustainable Palm Oil in Realising Sustainable Oil Palm Development in South Halmahera, Indonesia

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This study attempted to explore the potential of sustainable oil palm development in South Halmahera in line with the government policies reflected in the certification scheme including the Sustainable Development Goals (SDGs) and Indonesian Sustainable Palm Oil (ISPO). This study used structural equation modelling (SEM) with partial least squares (PLS). Government, academia, a village headman, a non-government organisation and a company officer were involved in data collection. The study was carried out in 2021–2022. The results showed that the stakeholder and the company had similar social, economic, environmental and legal development priorities. Both focused on health, food security, poverty alleviation, education, gender, income, economic impact, and infrastructure. Also, both prioritised efficient natural resource use and eco-friendly technology. The stakeholders emphasised the significance of environmental conservation in achieving sustainability. On the other hand, the company prioritised addressing climate change. The findings also offered two paths to achieve sustainability based on the perspectives of the stakeholder and the company. Surprisingly, both agreed that the environment development pillar of the SDGs plays a pivotal role in attaining ISPO.

Keywords: development, oil palm, policy, stakeholder, sustainability.

Introduction

The demand for sustainable palm oil is increasing with the expansion and development potency of palm oil plantations in Indonesia. However, a pessimistic attitude emerged because of the negative campaign from non-government organisations. This sentiment also exists in South Halmahera, a new palm oil development area in the east of Indonesia. Issues such as conflict, land degradation, food security and other sustainability issues were noticed in the oil palm development. Some previous studies have investigated the sustainability of oil palm industry. However, it has not been exhaustive. Begum et al. (2019) have discussed the sustainability of oil palm in environmental aspect. Then, Dewi (2021) has analysed the most influencing actor in achieving ISPO certification. Furthermore, Chiriaco et al. (2022) have figured out the sustainability of oil palm industry in social and economic aspects. Therefore, this study attempted to provide a comprehensive direction for the sustainability of oil palm development in South Halmahera in line with the government policies outlined in 17 goals of the Sustainable Development Goals (SDGs) and 7 principles of the Indonesian Sustainable Palm Oil (ISPO). The way to obtain it is through investigating the focus of the stakeholder and the company to achieve sustainable palm oil development.

Oil palm development in South Halmahera has begun since 2012 in Gane Barat Selatan District. Approximately 11 000 hectares or equivalent to 8.6% of the available convertible production forest areas were executed for oil palm development in South Halmahera (The Government of North Maluku, 2020). South Halmahera is the only one successfully implementing the oil palm development. However, South Halmahera faced various sustainability challenges. The sustainability of the oil palm industry is a collective responsibility (Ardian et al., 2018). It is not solely the government's duty but calls for the active engagement of all stakeholders. Achieving sustainability is a national concern requiring the participation and collaboration of all relevant parties. Therefore, a multi-stakeholder approach is needed to improve the governance of sustainable oil palm in Indonesia.

Studies focusing on sustainability are fragmented and detached (Moreno-Peñaranda et al., 2015). However, the studies from the countries producing palm oil have shown that sustainability is key to the success of the oil palm company. Furthermore, Abdullah et al. (2015)

have noted that environmental awareness, economic growth, and social commitment are the driving forces of the success of Malaysian oil palm companies. The three factors are interrelated and contribute to advancing sustainability. In the case of Thailand, the main challenge faced by oil palm companies is achieving sustainability by implementing RSPO regulations and providing government support to smallholders (Wan-grakdiskul and Yodpijit, 2015).

The Indonesian government demonstrated the commitment to realising sustainable oil palm by the Indonesian Sustainable Palm Oil (ISPO) certification. ISPO is a national certification scheme and Indonesian government commitment to improve Indonesian palm oil competitiveness, reduce greenhouse gas and pay attention to environmental problems. The government improved the certification system by adopting the Sustainable Development Goals (SDGs) and the Roundtable on Sustainable Palm Oil (RSPO). The Roundtable on Sustainable Palm Oil (RSPO) is a global certification scheme for implementation of sustainable palm oil standards. It indicated that ISPO and SDGs held similar goals in realizing sustainable palm oil. Therefore, this study aims to analyse the synergy between ISPO and SDGs regarding sustainable oil palm development in South Halmahera. Furthermore, this study also identifies the key factors of sustainable development goals in oil palm development.

This study is expected to provide a solid empirical foundation for the direction of oil palm development from stakeholder and company perspectives. Also, the findings are expected to contribute to sustainable oil palm development in South Halmahera and provide insights for the government, stakeholders and other parties involved in the oil palm development.

Methods

Location

This study was conducted in Gane Dalam, Jibubu, and Yamli, South Halmahera, North Maluku, Indonesia in the period of 2021 to 2022. The period is post-conflict of oil palm development in South Halmahera. It is geographically located at 0.3955°S 127.90833°E. *Fig. 1* shows the detailed information of the study site. The locations were purposively selected as they represent North Maluku province's sole significant oil palm development area.

Fig. 1. Location of study



Data collection

This study used a survey method. The survey was conducted using questionnaires or structured interviews for data collection. It involved interaction and communication with the respondents to obtain information. The data were collected through the variables and indicators prepared in the questionnaire. *Table 1* explains the details of the variables and indicators used in this study.

Sampling methods

This study used purposive sampling to select respondents from stakeholders. Purposive sampling is one of the non-probability sampling techniques. A

non-probability sampling technique was used to select respondents through an expert judgment approach. The respondents were the government representatives, academia, non-government organisations and village representatives who were directly related to palm oil development in South Halmahera. Then, stratified random sampling was applied as a sampling method for respondents from the company. This method was selected since the company had a management hierarchy including top, middle, and bottom management. Each stratum was represented by 30 respondents. Therefore, this study involved 90 respondents from the company. The following is detailed respondent information.

Table 1. Variables and indicators of this study

Variable	Indicator	Empirical Basis
Social	Poverty alleviation	Alwarritzi et al. (2015); Edwards (2015); Fahamsyah et al. (2021); Hasan et al. (2021); Nutongkaew et al. (2019); Qaim et al. (2020)
	Food security	
	Health	
	Training and education	
	Gender equality	
Economy	Income	Krishna and Kubitza (2021); Naylor et al. (2019); Santika et al. (2019)
	Processing industry	
	Infrastructure	
	Unemployment	
	Development disparity	
Legal and Governance	Conflict	Arifandy et al. (2018); Beckert et al. (2014); Haq et al. (2021); Juniyanti et al. (2021); Li (2018); Setiawan et al. (2016)
	Company's consistency on community welfare	
	Overlapping interest	
Environment	Efficient use of natural resources	Jamian et al. (2017); Mahmud and Chong (2021); Murta et al. (2021)
	Land use	
	Wildlife protection	
	Environmental conservation	
ISPO	Compliance with rules and regulation	Moreno-Peñaranda et al., 2015
	Adoption of good agricultural practices	
	Environmental and natural resources management and biodiversity	
	Responsibility for employment	
	Social responsibility and community economic empowerment	
	Transparency practice	
	Continuous business improvement	

Table 2. Information of respondents

Respondent	Affiliation	Total of Respondent
Government	Department of agriculture	6
	Department of forestry	8
	Department of environment	8
	National land agency	4
	Department of license and investment	4
	Research and regional development planning agency	6
Academia	Khairun University (UNKHAIR)	3
	College of agricultural sciences (STIPER LABUHA)	8
Village representative	Village headman	8
	Religious leader	1
NGO	Environmental sector	6
Company	Top management	30
	Middle management	30
	Bottom management	30

Data analysis

Structural equation modelling (SEM) analysis with partial least squares (PLS) was applied in this study. SEM-PLS was selected due to its robustness and ability to handle non-normal data, multicollinearity, and other assumptions required by ordinary least squares (OLS). SEM-PLS was a confirmatory analysis employed to test empirical models. This analysis method also allowed the construction of path models graphically (Cheah et al., 2020). SEM-PLS could be used to compare predictive models based on information criteria (Chin et al., 2020). Additionally, the method also performed composite confirmation analysis. The SEM-PLS analysis was first applied in social sciences by Joreskog and Sorbom in 1982. It could also be performed for small sample sizes of 200 or less. This analysis comprised the measurement or outer model and the structural or inner model. SmartPLS 3.0 was used as software for data analysis.

Outer model

The outer model or the measurement model showed the loading factor for each indicator. The indicators

that had a loading factor below 0.7 were removed. The outer model was tested by reliability and validity. The validity of the outer model was measured through the loading factor, average variance extracted (AVE), and cross-loading. Meanwhile, the reliability was measured by the Cronbach alpha and composite reliability (Hair et al., 2018). *Table 3* presents the criteria for evaluating the SEM-PLS outer model.

Table 3. The criteria for evaluating SEM-PLS outer model

Component	Parameter	Rule of Thumb
Validity	Loading factor	> 0.7
	Average variance extracted (AVE)	> 0.5
	Cross loading	> 0.7
Reliability	Cronbach alpha	> 0.7
	Composite reliability	> 0.7

Inner model

The inner or structural model was used to predict the causal relationships among latent variables. The model was assessed through several assessments including coefficient of determination (R-square or R^2), Q-square (Q^2), and hypothesis or significance testing. R^2 is the predictive power in the sample. Meanwhile, Q^2 is predictive relevance serves to validate the model (Rigdon, 2012). *Table 4* presents the criteria for evaluating the SEM-PLS inner model.

Table 4. The criteria for evaluating SEM-PLS outer model

Parameter	Rule of Thumb
R^2	0.75, 0.50, 0.25 indicates a strong, moderate, and weak model
Q^2	$Q^2 > 0$ shows the model has predictive relevance
Significance (two-tailed)	T-statistics 1.65 ($\alpha = 10\%$); 1.96 ($\alpha = 5\%$); 2.58 ($\alpha = 1\%$)

The next step was to validate the overall structural model of SEM-PLS using the goodness of fit (GoF) index. This index is a single measure to validate the combined performance of the measurement and structural models (Henseler and Sarstedt, 2013). *Table 5* explains the criteria of the GoF index for SEM-PLS as small, medium, or large.

Table 5. The criteria for GoF index

GoF index	Criteria
≥ 0.10	Small
≥ 0.25	Medium
≥ 0.36	Large

The GoF index is obtained from the square of the average communality index multiplied by the average R^2 formulated as:

$$GoF = \sqrt{\overline{Com} \times \overline{R^2}} \quad (1)$$

Where: GoF Goodness of fit; \overline{Com} average communality index; $\overline{R^2}$ average R^2 .

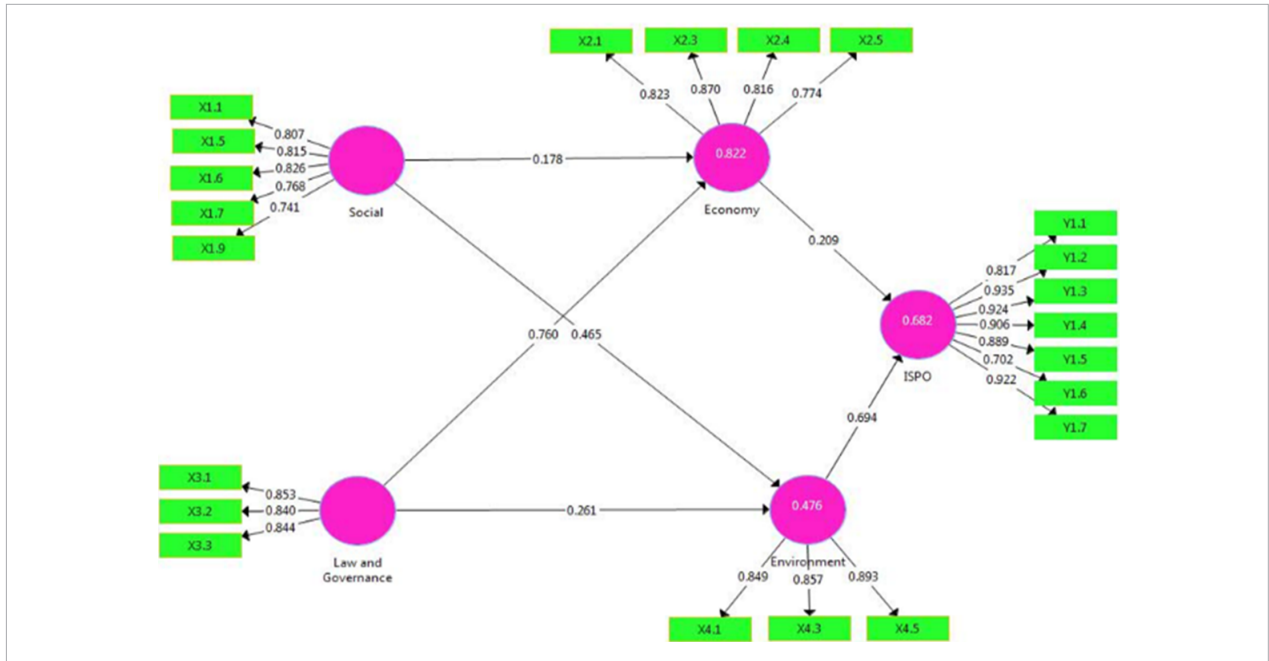
Results and Discussion

The sustainability model of oil palm in South Halmahera was examined from the perspective of the stakeholder and the company as actors in the oil palm development. This model was constructed through SEM-PLS analysis. The model consisted of the outer model and the inner model.

Outer model

The refined outer model showed that the loading factors for the pillars of SDGs and ISPO were more than 0.70. The model met the requirements for reliable composites indicating that each variable depicted highly satisfying internal consistency. *Fig. 2* shows the stakeholder's perspective of social development sustainability pillar explained by five indicators. These included health (X1.1), food security (X1.5), poverty alleviation (X1.6), education (X1.7), and gender equality (X1.9). The economic development pillar was explained by income and economic impact (X2.1), unemployment (X2.3), infrastructure (X2.4), and development disparity (X2.5). Furthermore, the legal and governance pillar was described by conflict (X3.1), company's consistency (X3.2), and overlapping interest (X3.3). The environmental development pillar was explained by efficient use of natural resources (X4.1), land use (X4.3), and environmental conservation (X4.5). All accepted indicators in the refined model had value of loading factors more than 0.7. Meanwhile, the other indicators having the loading factor value below 0.7 were excluded from the refined model.

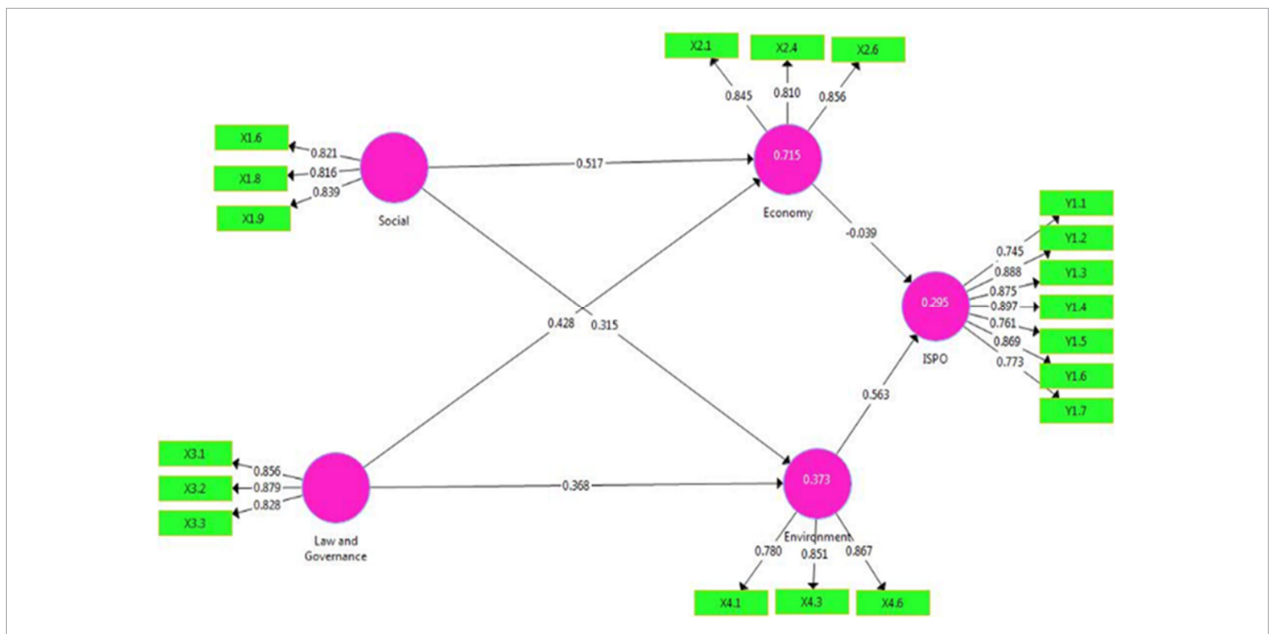
Fig. 2. The refined model of the stakeholder's perspective



Furthermore, Fig. 3 exhibited the company's perspective of the social development pillar explained by poverty alleviation (X1.6), training and education (X1.8), and gender equality (X1.9). The economic development pillar was described by income and economic impact (X2.1), infrastructure (X2.4), and guarantee and

protection (X2.6). The legal and governance development pillar was described by conflict resolution (X3.1), company's consistency (X3.2) and overlapping interest (X3.3). Additionally, the environmental development pillar was explained by efficient use of natural resources (X4.1), land use (X4.3) and climate change (X4.6).

Fig. 3. The refined model of the company's perspective



The loading factor value from the stakeholder and company perspective regarding ISPO was more than 0.7. Based on the stakeholder perspective of the ISPO principles, the indicator of good plantation practices (Y1.2) had the highest value at 0.93. Then, the environmental and natural resources management and biodiversity (Y1.3) and sustainable business improvement (Y1.7) had the same value of 0.92. Responsibility towards employment (Y1.4) had a value of 0.90. Social responsibility and community economic empowerment (Y1.5), compliance with rules and regulations (Y1.1), and transparency application (Y1.6) also had values below 0.9.

Several indicators determined the perspective of company. The indicators with a higher loading factor value (> 0.8) were responsibility for employment (Y1.4), implementing good plantation practices (Y1.2), environmental and natural resources management and biodiversity (Y1.3) and implementing transparency (Y1.6). The other indicators with a loading factor value of > 0.70 were sustainable business improvement (Y1.7), social responsibility, community economic empowerment (Y1.5) and compliance with regulations and legislation (Y1.1) at 0.74. Furthermore, the Cronbach alpha, average variance extracted (AVE), and composite reliability are presented in *Table 6*.

Table 6 indicated AVE for the four SDGs pillars from the perspectives of the stakeholder and the company, which transcended 0.5. It implies that the model could explain more than 50% of the variance of the latent variables. Therefore, each latent variable has been well explained by its indicators. The AVE for ISPO also surpassed 0.5. Moreover, the Cronbach alpha and composite reliability from the perspectives of the stakeholder and the company were more than 0.5. The findings imply that the sustainability indicators for SDGs and ISPO were reliable.

Inner model

The inner model was analysed to determine the accuracy and robustness of SEM-PLS. The measurement indicators were assessed based on R^2 , Q^2 , and GoF values. The model evaluation result is presented in *Table 7*. The structural model depicted the relationship among the latent variables. The R^2 of the economic development pillar for the stakeholder and the company were 0.82 and 0.71, respectively. The environmental development pillar was moderate with values of 0.47 and 0.37, respectively

Variable	Average variance extracted (AVE)	Cronbach alpha	Composite reliability
Stakeholder			
Economic development pillar	0.675	0.840	0.892
Environmental development pillar	0.750	0.833	0.900
Social development pillar	0.627	0.851	0.894
Legal and governance development pillar	0.715	0.801	0.883
ISPO	0.764	0.948	0.957
Company			
Economic development pillar	0.701	0.786	0.875
Environmental development pillar	0.695	0.780	0.872
Social development pillar	0.681	0.770	0.865
Legal and governance development pillar	0.730	0.816	0.890
ISPO	0.692	0.925	0.940

Table 7. Evaluation of inner model

Variable	R^2	Q^2	Communality	GoF
Stakeholder				
Economic development pillar	0.822	0.532	0.454	0.596
Environmental development pillar	0.476	0.341	0.478	
ISPO	0.682	0.499	0.686	
Mean	0.660	0.457	0.539	
Company				
Economic development pillar	0.715	0.487	0.392	0.455
Environmental development pillar	0.373	0.238	0.378	
ISPO	0.295	0.177	0.580	
Mean	0.461	0.301	0.450	

for the stakeholder and company. Similarly, ISPO had R^2 of 0.68 and 0.29, respectively. The next step of the inner model evaluation was predictive relevance or Q^2 . The value of Q^2 for all latent variables exceeds 0 meaning that the exogenous latent variables are suitable for predicting endogenous variables. The GoF index was 0.59 and 0.45, respectively, for the perspectives of the stakeholder and the company. It implies that the variables used in this study were in a full acceptance (> 0.36).

Path analysis

The path analysis of SEM-PLS was used to figure out the synergy between SDGs and ISPO for the oil palm development in South Halmahera from both stakeholder and company perspectives. The results of the

path analysis are presented in *Table 8*. The findings showed that the stakeholder and company adopted the different starting points to achieve Indonesian Sustainable Palm Oil (ISPO) certification. The stakeholder prioritised the social development pillar as a starting point. Meanwhile, the company considered the legal and governance development pillar. Surprisingly, both perspectives signified the environmental development pillar to achieve ISPO in South Halmahera. It indicated that environment is the key component for the sustainability of oil palm development in South Halmahera. On the other hand, community prioritised social pillar and environmental pillar to achieve sustainability (Teapon et al., 2023). It encouraged all parties involved to have the same perception to achieve ISPO.

Table 8. Path analysis of SEM-PLS

Perspective	Path	Original sample	Standard deviation	T Statistics	P Values
Stakeholder	Social development pillar -> Environmental development pillar -> ISPO	0.323	0.101	3.198	0.001
Company	Legal and governance development pillar -> Environmental development pillar -> ISPO	0.207	0.078	2.655	0.008

Social development pillar

Based on the perspectives of the stakeholder and the company, the indicators of the social development pillar were poverty alleviation, training and education and gender. The existence of an oil palm company in South Halmahera positively impacted the three aspects. Oil palm contributed to poverty alleviation in the surrounding areas by creating job opportunities such as plantation workers and officers. Hence, the existence of oil palm in South Halmahera contributed to and positively impacted the community and it was the evidence of the achievement of SDGs. The oil palm expansion eliminated unemployment and poverty (Burke and Resosudarmo, 2012). Moreover, an oil palm expansion of 10% in a region can lead to a corresponding 10% reduction in poverty (Edwards, 2015). The oil palm expansion is usually accompanied by sustainable economic growth through the improvement of gross domestic product. The Central Bureau of Statistics (2020) noted that oil palm contributed to Indonesia's gross domestic product by 3.5%.

The employment opportunity within the oil palm company allowed the women to work equally without

experiencing gender discrimination. It offered equal job opportunity prospects for rural women in order to engage in regional development decision-making actively. This inclusivity was made evident through the rights granted by the company such as maternity leave for pregnant women. Rural women were employed for low-risk jobs such as planting, fertilising in the nursery, collecting palm kernels and weeding. It was revealed that the company fulfilled gender equality (SDGs #5). It was in line with the perspective of demand from the stakeholders in South Halmahera. The oil palm plantation positively impacted women's empowerment (Chiriaco et al., 2022; Etuah et al., 2020). Furthermore, the palm oil company has also collaborated with educational institutions by providing training, internship and funding assistance for the final-year students living close to the oil palm company. Then, the oil palm company also provided aid such as stationery and bus for primary and secondary school students studying at a school close to the plantation. The oil palm expansion improved access to education, market and healthcare services (Syahza, 2019).

According to the perspective of the stakeholder on the social development pillar, the oil palm development also impacted health and food security. The oil palm company also had a multiplier effect on health and food security for the rural community. For health matter, the oil palm company collaborated with healthcare service to support government policy in the program of COVID-19 vaccination. Subsequently, the downstream palm oil products nationally contributed to health and food security. The oil palm produces the most stable oil essential to prevent diabetes, cardiovascular disease, obesity, and cancer. The oil is widely used in nutrition, food and bio-diesel (Absalome et al., 2020).

Economic development pillar

The stakeholder and company shared the same perspective on the economic development regarding the economic impact and infrastructure. The oil palm development in South Halmahera improved the construction of roads and worship places in Yamli and Jibubu. The oil palm expansion positively affected the provision of household necessities in the development area. The palm oil contributed to the community's livelihood and regional economy (Ayompe et al., 2021). The commodity is also essential in achieving SDGs including poverty alleviation, hunger, decent work, and economic growth. The private investment in the large-scale oil palm plantations promoted the rural development (Naylor et al., 2019). Nevertheless, the central and local governments should not solely rely on palm oil companies for rural infrastructure development (Santika et al., 2019).

Legal and governance development pillar

The stakeholder and company had a perspective regarding sustainable palm oil development of the legal and governance pillar including conflict resolution, company's consistency, and overlapping interests. Conflicts frequently appeared in the new palm oil development area due to the problem of land tenure. This issue should be viewed from all aspects of sustainability. The finding showed that conflicts were caused by dissatisfaction with compensation offered by the oil palm company to the rural community. Most of the land obtained from the rural community was legally uncertified land. It made the price of land overestimated. Therefore, the company should understand the community's social characteristics to ensure a smooth negotiation process. The land for oil palm development in South Halmahera was the convertible production forest area. The regional

government regulation # 2 of 2020 concerning the mid-term development plan of North Maluku stipulated that the oil palm cultivation area was established according to the condition and potential of natural, human, and artificial resources utilised to fulfil human needs. In line with this regulation, the oil palm development in South Halmahera obeyed the applicable laws and governance. The access and claims to land should not be strongly seized by the involvement of various forces from the private sector (Beckert et al., 2014). Furthermore, the oil palm plantations of Indonesia should obey the custom law of indigenous people to make a deal with the rural community in utilizing the land (Li, 2018).

Overlapping interests occurred due to the lack of cooperation among the company, the stakeholder and the rural community. The information obtained by each party is the source of interest conflict for the oil palm development in South Halmahera. In addition, overlapping interests created an authority scramble among the institutions (Setiawan et al., 2016). The development required the role of the headman of the village to mediate between the company and the rural community. Therefore, the headman is a strong actor in the investment of oil palm plantation in South Halmahera. The headman has a strategic role having the most connections and playing a role in mediating among the actors from different groups in the network of development (Juniyanti et al., 2021).

Based on the perspectives of the stakeholder and the company, the consistency in realising sustainable palm oil is quite good in several aspects. The oil palm company fulfilled the legal requirements to secure the cultivation rights from the government. Moreover, the company fulfilled its obligations to employees such as providing housing, health facility, education and social security. Then, the corporate social responsibility (CSR) program was also implemented for five years such as the repair of bridges after earthquakes. The CSR program had a positive impact on the rural community. However, most CSR programs still need to be well-planned and scheduled. Furthermore, there was no transparency regarding the implementation of the CSR program. Therefore, the company should improve the CSR programs in the future. The transparency and openness of information were important for accessibility to the target of the CSR program (Arifandy et al., 2018; Haq et al., 2021).

Environmental development pillar

In terms of the environmental development pillar, the company obtained ISPO certification through the efficient natural resources use and eco-friendly technology. The company used certified seeds such as Simalungun variety from the Medan's oil palm research centre and DxP Sriwijaya from Sampoerna Group. Furthermore, the company used organic fertiliser from the empty fruit bunches (EFB). The EFB could be used as a bio-fertiliser for sustainable agricultural practices amid modern agricultural development (Murta et al., 2021). EFB is cheaper, eco-friendly, profitable and valuable for environmental protection and public health. The company also applied natural predators to tackle pests as it is one of integrated pest management (IPM) practices. The integrated pest management practices are widely practised in the commercial oil palm companies (Jamian et al., 2017). IPM minimised attacks of pests and mitigated economic losses by reducing chemical use. Then, the company also fulfilled and obtained the legal and environmental permits from the government of South Halmahera. Company has sustainability and ISPO division that is responsible for ensuring the cultivation systems apply good agriculture practices and sustainability principles. Oil palm certification can reduce deforestation and fire (Carlson et al., 2018). Therefore, sustainable oil palm certification is a form of guarantee for the environment.

SDGs and ISPO

The stakeholders have high expectations for the existence of palm oil. The path analysis showed that social and environmental development pillars strongly synergise between SDGs and ISPO. Majid et al. (2021) confirmed that oil palm certification is related to Sustainable Development Goals. The ISPO certification is effort of Indonesian government to sustainable oil palm development. The existence of oil palm oil could contribute to public health, food availability, poverty alleviation, education quality improvement and gender equality. In terms of the environmental development pillar, the next generation should be considered in the oil palm development followed by environmental conservation, efficient natural resources use and eco-friendly technology.

The companies must comply with the regulation and ISPO principles. Based on the path analysis, the company enables to achieve ISPO and sustainability through the legal and governance development pillar.

The process of land clearing and consent for oil palm development should obey the legal regulations. The next step to achieve ISPO and sustainability is the environmental development pillar. The fears of environmental damage due to the oil palm development have been echoed. Therefore, the company should participate in solving environmental issues. The company is committed to protect the environment by implementing a no-burning plantation system and using certified seeds and organic fertilisers. Furthermore, the company also controlled pest populations by applying biological predators.

Conclusions

This study found that the stakeholder and company had the same point of view on the legal and governance development pillar of the oil palm development. The stakeholder prioritised health and food security, poverty alleviation, education, and gender equality. The company focused on income, economic impacts and infrastructure development. The stakeholders and company acknowledged the importance of the efficient natural resources use and eco-friendly technology. Furthermore, the stakeholder emphasised environmental conservation as a crucial indicator in achieving sustainability. Meanwhile, the company prioritised climate change as a crucial indicator of sustainability. Even though the stakeholder and company had different starting points to achieve ISPO and sustainability, the stakeholder and company approved that the environment development pillar is a key factor in achieving ISPO. The government should create regulation and policy regarding action plans for sustainable oil palm development as a continuation to harmonise social, economic and environmental aspects in South Halmahera. Furthermore, analysis of stakeholders mapping is necessary to be conducted as future research.

Acknowledgements

All authors acknowledge the Oil Palm Plantation Fund Management Agency (Badan Pengelola Dana Perkebunan Kelapa Sawit / BPDP-KS) The Ministry of Finance Republic of Indonesia for funding this study under the grant contract number PRJ-35/DPKS/2021. The authors also would like to gratitude to Indonesian Palm Oil Society (Masyarakat Perkelapasawitan Indonesia) for the fieldwork assistance.

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