Enhancing Productivity and Welfare: The Impact of Farmer-Cooperative Partnerships in the Oil Palm Sector

Relansius Yosua[1*], Achmadi Susilo[2], Nughraini Susantinah Wisnujati[3]
[1]Department of Agribusiness, Universitas Wijaya Kusuma Surabaya, Indonesia
[2]Department of Agribusiness, Universitas Wijaya Kusuma Surabaya, Indonesia
[3]Department of Agribusiness, Universitas Wijaya Kusuma Surabaya, Indonesia.

[*]e-mail: relansiusyosua123@gmail.com

Abstract

This study investigates how palm oil farmers can enhance their productivity and welfare through strategic partnerships with cooperatives, with a focus on the Sinar Berkah Cooperative. Using a quantitative approach and employing structural equation modeling (SEM), the research examines the influence of cooperative membership, access to resources, education and training, and government support on farmers' productivity. Data was collected from both primary and secondary sources, with respondents purposefully selected from the largest farmer groups within the cooperative. Key findings highlight the significant role of resource access—such as capital, raw materials, and technology—in driving productivity improvements. The study also underscores the cooperative's critical role in facilitating legal recognition and improving market access, helping farmers overcome business challenges. However, it reveals that current education and training initiatives, along with government support, have not yet yielded significant improvements in productivity. These findings suggest that more targeted interventions are required to fully realize the potential benefits of such partnerships. The SEM analysis provides insights into the key factors influencing the productivity and welfare of oil palm farmers, offering valuable recommendations for enhancing business outcomes through more efficient and supportive cooperative-farmer collaborations.

Keywords : Farmer productivity, Cooperative partnership, Oil palm sector, Business strategy.

1. Introduction

Palm oil is a strategically vital asset for Indonesia's economy. With an area of 16.38 million hectares of plantations, Indonesia became the largest producer and exporter of palm oil in the world in 2023. This sector plays a crucial role in increasing government revenue, creating jobs, and supporting economic growth in rural areas. Palm oil producers are central to this sector, with approximately 2.4 million palm oil farmers in Indonesia, most of whom are smallholders with land sizes of less than 2 hectares (Kementan Republik Indonesia, 2023). However, the welfare and productivity of palm oil producers in Indonesia remain considerably low. The average production is only 14 tons per hectare per year, which is significantly lower than in other countries like Malaysia and Thailand, where it reaches between 20 to 25 tons per hectare annually (Kementan Republik Indonesia, 2023). Several factors, including unstable and fluctuating prices of fresh fruit bunches (TBS), lack of financial capital, and inadequate knowledge of sustainable farming practices, often hinder the productivity and welfare of palm oil farmers. Smallholder farmers frequently face challenges in improving their productivity and welfare (Fan et al., 2013; Jayne et al., 2010; Muimba-Kankolongo, 2018).

Partnerships between palm oil producers and plantation companies, cooperatives, or other institutions are seen as a solution to these issues. Such partnerships aim to help farmers enhance their access to inputs, technology, and markets while strengthening their bargaining power in TBS

Received: October, 10, 2024 | Accepted: December, 12, 2024 Available online: https://ejournal.sangadjimediapublishing.id/index.php/aurora

pricing (Baka, Rianse, & la Zulfikar, 2024; Baka, Rianse, & La Zulfikar, 2024; Larsen & Nsimbila, 2017; Messayi, 2013; Musebe et al., 2017). Cooperatives can provide access to financial capital, education, and technical support to farmers, ultimately leading to increased productivity and welfare (Topan & Ifrani, 2021). According to research by Anantanyu (2011), the role and strategies for developing farmer institutions are essential to improving their living standards and dignity. This study aims to explore the role of cooperatives in the core-plasma partnership program in the palm oil sector and the contributions of cooperatives within this program.

Despite the potential benefits, challenges in establishing effective partnerships persist. Issues such as a lack of transparency, accountability, and weak farmer institutions pose significant obstacles that need to be addressed (Poulton & Macartney, 2012; Spielman & Von Grebmer, 2004). Research conducted by Topan & Ifrani (2021), revealed numerous shortcomings in the implementation of core-plasma partnership programs. The management of plasma estates in partnership with core estates has varied management statuses, including individual and group management, such as cooperatives or GAKOPTAN. The unfavorable conditions faced by farmers are often due to the inadequate execution of these programs.

This study aims to investigate how palm oil farmers can enhance their productivity and welfare through collaboration with cooperatives. It is anticipated that the findings will provide new insights into developing and managing these partnerships, along with recommendations to improve their effectiveness. The research is expected to contribute to the existing literature and offer practical insights that can be utilized by palm oil farmers, companies, cooperatives, and other stakeholders to boost productivity and welfare. Therefore, this study is crucial for examining how partnerships between palm oil farmers and companies or cooperatives can enhance productivity and welfare, contributing to the sustainable development of the palm oil industry and achieving Sustainable Development Goals.

2. Method

This study employs a quantitative approach with an associative method, aiming to measure the influence of independent variables on dependent variables. Both primary and secondary data were utilized. Primary data were collected directly from respondent farmers, while secondary data were obtained from previous studies, relevant institutions, and other credible sources. For sample selection, the quota sampling technique, as described by Sugiyono (2017); and Supriatin et al. (2022), was used to target a sample with specific characteristics until the desired number of respondents was reached. Since the three farmer groups have the largest membership in the Sinar Berkah Cooperative, respondents were purposefully selected.

The statistical analysis in this research was conducted using structural equation modeling (SEM) with Smart PLS software. The dependent variable in this study is oil palm farmer productivity, which is measured through three indicators: harvest yield per hectare, oil palm oil yield, and harvest frequency. On the other hand, several independent variables are considered in this study. These include the partnership with cooperatives, which is indicated by the number of cooperative members and the frequency of cooperative activities. Another key independent variable is education and training, which is evaluated based on the farmers' education levels, training in oil palm cultivation techniques, and business management skills. Access to resources is also analyzed, focusing on the farmers' access to capital, raw materials, and agricultural technology.

Additionally, the role of government support is considered by examining programs that benefit oil palm farmers, such as subsidies, incentives, and training programs. The quality of seeds used by farmers is another important variable, measured through their use of certified seeds, pesticides, fertilizers, and their adherence to proper agricultural practices. The SEM analysis enables the

researchers to explore the relationships between these independent and dependent variables, assessing how each factor influences the productivity of oil palm farmers. Furthermore, the analysis helps identify critical factors that impact farmer welfare through improvements in productivity.

3. Result and Discussion

3.1 Characteristics of Respondents

The respondents consisted of both male and female participants, totaling 43 individuals. Based on the data, male respondents made up 86.05% (37 respondents), while female respondents comprised 13.95% (6 respondents). This demonstrates a significant dominance of male participants in the sample.

Table 1. Gender Distribution of Respondents

Gender	Frequency	Percentage
Male	37	86,05
Female	6	13,95
Total	43	100

As shown in Table 1, the majority of the respondents were male. This skewed distribution may reflect the gender dynamics in the oil palm farming sector, where men often take on more active roles, especially in field operations and decision-making processes. The dominance of male respondents suggests that gender plays a role in the representation of oil palm farmers. This may influence the outcome of cooperative partnerships, as the decision-making and engagement with cooperatives are likely male-driven.

Table 2. Age Distribution of Respondents

Age Range	Frequency	Percentage
18–28 years	6	13,96
29-39 years	21	48,84
>39 years	16	37,20
Total	43	100

The age distribution of respondents is led by individuals aged between 29–39 years, comprising 48.84% (21 respondents). This is followed by respondents aged above 39 years, who made up 37.20% (16 respondents), and those aged 18–28 years, accounting for 13.96% (6 respondents). Table 2 illustrates the age distribution of the respondents, where the majority fall within the 29–39-year age group. This suggests that the oil palm farming sector is primarily driven by individuals in their prime working years, while older and younger farmers form smaller portions of the population. The concentration of respondents in the 29–39 age range indicates that the oil palm farming sector is largely composed of individuals in their productive years, who may have more experience and resources to engage in cooperative activities. Meanwhile, the smaller proportion of younger and older respondents highlights potential challenges in youth involvement and the aging farmer population.

Table 3. Education Level of Respondents

Education Level	Frequency	Percentage
Not Completed Primary	8	18,61

Education Level	Frequency	Percentage
Primary School	11	25,58
Junior High School	8	18,61
Senior High School	12	27,90
Bachelor's Degree	4	9,30
Total	43	100

Regarding the educational background, most respondents have completed high school, totaling 27.90% (12 respondents). This is followed by those with primary school education, comprising 25.58% (11 respondents), while respondents with higher education accounted for 9.30% (4 respondents). Table 3 outlines the educational attainment of the respondents, with a significant portion having completed senior high school. A relatively smaller group of respondents holds a bachelor's degree, while a considerable portion of the respondents has a basic education level. The predominance of respondents with senior high school education suggests that the majority of oil palm farmers have sufficient formal education to engage in cooperative agreements and farming practices. However, the low percentage of respondents with higher education may indicate a lack of advanced agricultural knowledge and business management skills among the farmers.

Table 4. Occupation of Respondents

Occupation	Frequency	Percentage
Farmer/Cultivator	18	41,86
Employee	23	53,48
Trader	2	4,66
Student	-	-
Civil Servants	-	-
Total	43	100

The respondents were mainly employed as workers, with 53.48% (23 respondents) identifying as employees. Farmers or cultivators represented 41.86% (18 respondents), while traders made up the smallest group, accounting for 4.66% (2 respondents). Table 4 shows the occupational breakdown of the respondents. The majority of respondents are employed as workers, while a significant portion is involved in farming or cultivation. Traders form a small minority. The high percentage of employees among the respondents suggests that many farmers engage in other forms of employment alongside farming, possibly due to economic necessity or the desire for stable income. The substantial number of farmers or cultivators underscores the agricultural focus of the respondent group, particularly in the oil palm sector.

3.2 Description of the Partnership Between Independent Oil Palm Farmers and the "Sinar Berkah" Cooperative

A partnership refers to a mutually beneficial relationship between two or more individuals or entities. In the case of the Sinar Berkah Cooperative, the relationship between the cooperative and

the independent oil palm farmers is based on mutual needs, with an interdependence between the farmers and the cooperative forming the foundation of their collaboration.

The Sinar Berkah Cooperative works with oil palm farmers to improve their welfare and formalize their farming practices through the issuance of Cultivation Registration Certificates (STDB). This partnership enables farmers to access government support and infrastructure, including credit from BPDPKS, as well as guidance on proper fertilization and plant care. Additionally, the cooperative provides a marketing guarantee, allowing farmers to sell their oil palm products at favorable prices. The farmers, in turn, engage in this partnership because they often lack the capital, knowledge, and market access needed to sell their fresh fruit bunches (FFB). Through the partnership, farmers receive capital support in the form of loans, as well as technical guidance on oil palm cultivation to improve their productivity. The cooperative also ensures market access by offering competitive prices for FFB, which helps increase farmers' income.

3.3 The Partnership Model Between Independent Oil Palm Farmers and the "Sinar Berkah" Cooperative

A partnership is a business strategy between two or more parties that is established for a specific time period, aiming for mutual benefits based on interdependence and reciprocity (Hafsah, 2000). Various partnership models exist, including agency agreements, subcontracting, nucleus-plasma partnerships, and agribusiness operational cooperation (KOA). Each model has distinct characteristics, and it appears that the Sinar Berkah Cooperative and the independent oil palm farmers follow a subcontracting partnership model based on local conditions.

In the subcontracting model, a business partner works with a group of smaller partners to produce specific components required for the company's production process. Contracts detailing quantity, price, quality, and delivery time define this model. The subcontracting model helps develop technical knowledge, increase capital, strengthen partnership networks, and enhance productivity, while also ensuring market access for the partner group. When the subcontracting model is applied between the Sinar Berkah Cooperative and the oil palm farmers, each party has specific roles and responsibilities based on the rights and obligations agreed upon in the partnership contract.

In this partnership, farmers are entitled to receive high-quality seed loans from the cooperative when opening new land or replanting, with the amount of seed provided corresponding to the size of the farmers' land, typically requiring 120-125 seedlings per hectare. Farmers can also access financial loans without collateral, with no set minimum or maximum limit. The cooperative collaborates with BNI and BRI banks to ensure adequate cash flow for purchasing FFB or providing loans. Loan repayments are deducted directly from FFB sales, as per the agreement between the farmers and the cooperative. These funds serve as working capital for managing oil palm crops, covering labor, fertilizer, and pesticide costs. Additionally, farmers are entitled to fertilizer loans, primarily for inorganic fertilizers, based on their land size, which helps them meet their fertilizer needs more easily. Farmers also receive technical guidance and training on proper oil palm cultivation, from fertilization to plant maintenance, to ensure their crops meet quality standards. Furthermore, the cooperative guarantees a market for the farmers' produce, offering competitive prices.

On the other hand, the Sinar Berkah Cooperative holds the exclusive right to purchase the farmers' FFB, which will then be sold to PT Rezeki Kencana, the business partner. The harvested oil palm fruits are transported to the cooperative before being delivered to PT Rezeki Kencana for processing. The cooperative also has the authority to supervise the farmers' activities, ensuring they follow proper cultivation techniques to produce high-yield crops. Both parties have specific

responsibilities in this partnership. Farmers must follow the technical guidance provided by PT Rezeki Kencana, which covers everything from fertilization to plant care, helping farmers achieve optimal yields. Farmers are also required to sell their FFB to the Sinar Berkah Cooperative, where the produce will be transported to PT Rezeki Kencana. Additionally, farmers must repay their loans after each harvest, with loan repayments deducted from the payment for their FFB. The cooperative is obligated to provide financial loans to farmers as additional working capital. These loans are offered without any collateral and have no set minimum or maximum limits. The cooperative must also offer both technical and non-technical training sessions, either at the cooperative or in the field, to assist farmers in applying good agricultural practices and achieving optimal production. Finally, the cooperative provides inorganic fertilizers based on the farmers' land size and ensures that it purchases the farmers' FFB at competitive prices, guaranteeing a favorable return for the farmers.

3.4 Results of the SEM (Structural Equation Modeling) Analysis

SEM is a multivariate analysis technique that integrates two statistical concepts: factor analysis through a measurement model and regression analysis through a structural model. The goal is to examine how the variables within the model interact with each other, both between indicators and their constructs as well as between the constructs themselves.

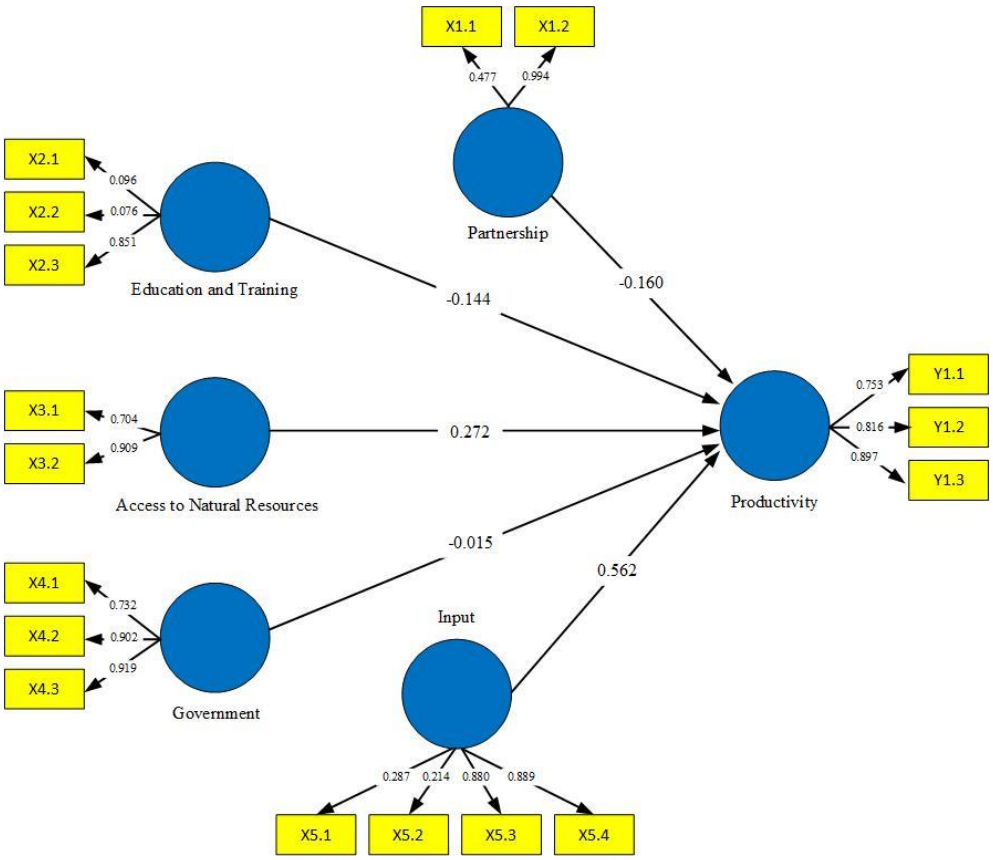

Figure 1. Factor Loading Analysis

This figure shows that X1.1, the factor loading of the Partnership variable (X1), has a loading factor of 0.47, which is below 0.6, indicating that it is weak and should be removed. For the Education and Training variable (X2), only X2.3 is considered acceptable, with a value above 0.7, while X2.1 and X2.2 should be excluded from the model. As for the X3 variable, all factors meet

the criteria, as their values exceed 0.7. Regarding the Government Role variable (X4), all factor loadings are deemed satisfactory, with values above 0.7. For the Input variable (X5), only X5.3 and X5.4 meet the requirements, necessitating the removal of X5.1 and X5.2 from the model.

Table 1. Results of Bootstrapping Analysis

	Original Sample Estimate (O)	Sample Mean (M)	Standard Deviation (STD)	T Statistcs (IO/STDEVI)	P Values
Access to Natural Resources (X3) -> Productivity (Y)	0.282	0.300	0.126	2.241	**0.025**
Input (X5) -> Productivity (Y)	0.551	0.557	0.126	4.363	**0.000**
Partnership (X1) -> Productivity (Y)	-0.127	-0.122	0.112	1.134	**0.257**
Government (X4) -> Productivity (Y)	0.115	0.103	0.133	0.863	**0.388**
Education and Training (X2) -> Productivity (Y)	-0.240	-0.235	0.122	1.966	**0.050**

The bootstrapping analysis reveals the effects of various factors on productivity. Access to Natural Resources (X3) has a positive and significant impact on productivity, with a coefficient of 0.282 and a p-value of 0.025, indicating significance at the 5% level. The Input (X5) variable demonstrates the strongest positive influence, with a coefficient of 0.551 and a highly significant p-value of 0.000. In contrast, Partnership (X1) shows a negative relationship with productivity (-0.127), though this effect is not statistically significant (p-value = 0.257). Similarly, the Government Role (X4) has a positive but insignificant effect, with a p-value of 0.388. Lastly, Education and Training (X2) has a negative and marginally significant effect on productivity, with a coefficient of -0.240 and a p-value of 0.050, showing borderline significance.

3.5 Discussion

Access to resources plays a critical role in the productivity of palm oil farmers. The Indonesian Sustainable Palm Oil (ISPO) standard was established to mitigate the negative environmental and socio-economic impacts of domestically produced palm oil. This standard has a significant influence on palm oil productivity in Indonesia. To achieve the desired outcomes, ISPO is regulated by policies from the Ministries of Agriculture, Agrarian Affairs and Spatial Planning, and Forestry. However, Indonesia's reputation for sustainable palm oil production is often called into question due to recurring issues such as forest fires, extensive peatland clearing, and continuous deforestation. These environmental challenges have spurred efforts to enhance palm oil productivity (SPKS, 2020). In this context, farmers' access to capital, raw materials, and modern agricultural technologies is essential for fostering improved productivity.

The use of agricultural inputs is another key factor influencing palm oil productivity. The application of pesticides for pest and disease control helps safeguard the health of palm oil plants and prevents production losses caused by pest infestations (Soleh, 2020; SPKS, 2020). Additionally, the use of fertilizers provides vital nutrients necessary for the optimal growth of palm oil plants. Proper and efficient application of fertilizers can significantly boost yields and improve the quality of the palm oil fruit. Moreover, the techniques used in fertilization are crucial for

optimizing nutrient absorption by plants, which can enhance productivity and improve the overall efficiency of fertilizer use.

Despite the recognized importance of partnerships, this variable surprisingly does not have a significant impact on palm oil productivity. This outcome is paradoxical, as partnerships between palm oil farmers and cooperatives are intended to foster better collaboration and resource-sharing. However, several factors hinder the effectiveness of these partnerships. First, many palm oil farmers and cooperatives lack sufficient access to modern technology and the latest knowledge in palm oil plantation management. This limitation prevents the adoption of more efficient agricultural practices that could otherwise enhance productivity (Surianto, 2019). Furthermore, inadequate infrastructure, such as poorly developed irrigation networks and limited transportation options, often hampers the distribution of essential agricultural inputs, such as fertilizers and pesticides, thereby constraining productivity improvements. Another factor is the inconsistency of policies and regulations. Frequent changes in government policies can create uncertainty and instability, discouraging the long-term investments necessary to boost productivity.

Government support, which could potentially enhance palm oil productivity, has also been found to be ineffective in this study. In Kalimantan, the impact of government assistance on palm oil productivity often falls short of expectations. One major issue is the inconsistent implementation of government policies and programs. Although there are well-intended policies in place, their execution is often poorly coordinated or inconsistent at the local level (Biro Adpim Kalteng, 2024). Additionally, infrastructure limitations continue to be a significant barrier, as underdeveloped irrigation systems and transportation networks hinder the distribution of key agricultural inputs like fertilizers and pesticides. Compounding these issues are the high levels of poverty and low education rates in some areas, which reduce the effectiveness of government programs aimed at supporting palm oil farmers (Hidayat, 2018).

4. Conclusion

The partnership between Sinar Berkah Cooperative and oil palm farmers has proven to be a valuable business strategy for improving farmer productivity and welfare. By formalizing oil palm cultivation through the issuance of the Plantation Business License (STDB), the cooperative has enabled farmers to secure legal recognition and access to critical government support. The cooperative also addresses key business challenges faced by farmers, including limited capital, market access, and technical knowledge, while enhancing their capabilities to improve the quality and productivity of their fresh fruit bunches (FFB). This partnership not only strengthens the farmers' position in the market but also ensures more efficient operations by providing essential resources and support.

From a business perspective, the SEM model demonstrates the importance of access to resources and inputs, which have a significant impact on productivity. Factors such as capital, market infrastructure, and input provision are crucial for improving business outcomes for farmers. However, the study reveals that educational programs, training initiatives, and government roles in supporting these partnerships have not yet fully translated into tangible productivity gains, suggesting a need for more targeted interventions.

While the study provides insights into the business dynamics of farmer-cooperative partnerships, several limitations must be acknowledged. First, the research is limited to one cooperative in a specific region, which may not capture the diversity of conditions in other areas. Additionally, the focus on oil palm productivity excludes broader environmental and social implications of the partnership, such as sustainability practices and community impact. The model

also does not fully explore the long-term effects of cooperative support on farmer independence or their ability to navigate market fluctuations.

Future research should expand to include multiple cooperatives and regions to compare different partnership models and their varying business impacts. There is also a need for more comprehensive studies that evaluate the role of sustainability practices in cooperative-business models, considering the environmental challenges in the oil palm sector. Additionally, exploring the role of technology, digital marketing, and financial services in enhancing the business performance of small-scale farmers would provide valuable insights. Finally, further research should assess how improved government policies and stronger infrastructure support can be more effectively integrated into cooperative frameworks to maximize farmer productivity and welfare.

References

Anantanyu, S. (2011). Kelembagaan petani: peran dan strategi pengembangan kapasitasnya. *SEPA: Jurnal Sosial Ekonomi Pertanian Dan Agribisnis*, *7*(2).

Baka, W. K., Rianse, I. S., & la Zulfikar, Z. (2024). Palm Oil Business Partnership Sustainability through the Role of Social Capital and Local Wisdom: Evidence from Palm Oil Plantations in Indonesia. *Sustainability*, *16*(17), 7541.

Baka, W. K., Rianse, I. S., & La Zulfikar, Z. (2024). *Sustainability of Palm Oil Business Partnerships through the Role of Social Capital and Local Wisdom: Evidence from Palm Oil Plantations in Indonesia*.

Biro Adpim Kalteng. (2024). *Menteri ATR/BPN: Mengurai Permasalahan Industri Sawit Tanah Air, Semua Pihak Harus Duduk Bersama*. https://biroadpim.kalteng.go.id/2024/06/menteri-atr-bpn-mengurai-permasalahan-industri-sawit-tanah-air-semua-pihak-harus-duduk-bersama/

Fan, S., Brzeska, J., Keyzer, M., & Halsema, A. (2013). *From subsistence to profit: Transforming smallholder farms* (Vol. 26). Intl Food Policy Res Inst.

Hidayat, R. (2018). *Petani kelapa sawit perlu dukungan pemerintah untuk berkembang*. Antara Kalteng. https://kalteng.antaranews.com/berita/292511/petani-kelapa-sawit-perlu-dukungan-pemerintah-untuk-berkembang

Jayne, T. S., Mather, D., & Mghenyi, E. (2010). Principal challenges confronting smallholder agriculture in sub-Saharan Africa. *World Development*, *38*(10), 1384–1398.

Kementan Republik Indonesia. (2023). *Laporan Kinerja Kementerian Pertanian*.

Larsen, M. N., & Nsimbila, P. M. (2017). Coordination and upgrading in agricultural value chains: Contract farming arrangements in the Tanzanian cotton sector. In *Contract Farming and the Development of Smallholder Agricultural Businesses* (pp. 1–126). Routledge.

Messayi, R. M. (2013). *Promotion of Household Income through Sunflower Market Access and Value Chain Development in Kinapanda Division, Iramba District*. The Open University of Tanzania.

Muimba-Kankolongo, A. (2018). *Food crop production by smallholder farmers in Southern Africa: Challenges and opportunities for improvement*.

Musebe, R., Karanja, D., Rajendran, S., Kessy, R., Kansiime, M., Marandu, D., Samali, S., Nicodemus, J., Nenguwo, N., & Chiwanga, R. (2017). Development of market opportunities

through post-harvest processing of the African indigenous vegetables in Tanzania. *African Journal of Business Management*, *11*(17), 426–437.

Poulton, C., & Macartney, J. (2012). Can public–private partnerships leverage private investment in agricultural value chains in Africa? A preliminary review. *World Development*, *40*(1), 96–109.

Soleh, M. I. (2020). *Penggunaan Pestisida dalam Perspektif Produksi dan Keamanan Pangan*. https://tanamanpangan.pertanian.go.id/detil-konten/iptek/16

Spielman, D. J., & Von Grebmer, K. (2004). *Public-private partnerships in agricultural research: an analysis of challenges facing industry and the Consultative Group on International Agricultural Research* (Vol. 113). Intl Food Policy Res Inst.

SPKS. (2020). *Petani Sawit, Negara dan Sawit Berkelanjutan*. https://spks.or.id/detail-berita-petani-sawit-negara-dan-sawit-berkelanjutan

Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.

Supriatin, F., Marliana, I., S. Sangadji, S., Afkar, Paerah, A., & Dharta, F. (2022). *Metodologi Penelitian*. Cendikia Publisher. https://doi.org/10.31219/osf.io/ywemh

Surianto. (2019). *Koperasi Sawit Sebagai Wadah Berhimpun Roda Ekonomi Petani*. Humas Dinas Koperasi, Usaha Kecil Dan Menengah. https://kukm.babelprov.go.id/content/koperasi-sawit-sebagai-wadah-berhimpun-roda-ekonomi-petani

Topan, M., & Ifrani, I. (2021). Peran Koperasi pada Program Kemitraan Inti Plasma Perkebunan Kelapa Sawit untuk Meningkatkantaraf Hidup Masyarakat. *Al-Adl : Jurnal Hukum*, *12*(2), 317. https://doi.org/10.31602/al-adl.v12i2.4145