

DETERMINANT OF FARMERS' READINESS LEVEL AND THEIR STRATEGIES IN INDEPENDENT PALM OIL PLANTATIONS IN KAPUAS HULU REGENCY

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Abstract: The development of oil palm plantations in Indonesia is increasing because oil palm is one of the most important plantations in the economy of Indonesia. Sustainable management of oil palm is vital because it could reduce threats to natural resources, deforestation, expansion of land in ways that are not environmentally friendly such as by burning, and damage to peat ecosystems. The study aimed to determine farmers' readiness level in implementing ISPO certification for independent oil palm plantations in Kapuas Hulu Regency and to determine the right strategic priorities for managing independent oil palm plantations based on sustainable palm oil (ISPO) in Kapuas Hulu Regency. The data were analyzed descriptively with Analytical Hierarchy Process (AHP). The data was collected from 100 respondents taken by purposive sampling. The results show that overall the application level of compliance with laws and regulations is 24.8%, implementing good plantation practices is 31.33%, environmental management of natural resources and biodiversity is 42.5%, implementing transparency of 28.5%, and sustainably increasing business by 40%. Overall the average level of ISPO implementation achievement among the independent oil palm smallholders in Kapuas Hulu District is low, with a percentage of 30.8%. The optimal top priority for the strategy of independent oil palm plantations is mediation between conflicting parties, independent oil palm farmer groups, transparency regarding environmental impacts, extension agents in the plantation division and quality improvement of production.

Keywords: farmers' readiness level, palm oil, ISPO, independent smallholders, AHP

Abstrak: Perkembangan perkebunan kelapa sawit di Indonesia saat ini semakin meningkat karena kelapa sawit merupakan salah satu perkebunan terpenting dalam perekonomian di Indonesia. Pengelolaan kelapa sawit berkelanjutan sangat penting karena dapat mengurangi ancaman terhadap sumber daya alam, deforestasi, perluasan lahan dengan cara yang tidak ramah lingkungan seperti pembakaran, dan kerusakan ekosistem gambut. Tujuan penelitian adalah untuk mengetahui tingkat kesiapan petani dalam mengimplementasikan sertifikasi ISPO pada perkebunan kelapa sawit mandiri di Kabupaten Kapuas Hulu dan menentukan prioritas strategis yang tepat dalam mengelola perkebunan kelapa sawit mandiri berbasis sustainable palm oil (ISPO) di Kabupaten Kapuas Hulu. Data dianalisis secara deskriptif dengan Analytical Hierarchy Process (AHP). Data dikumpulkan dari 100 responden yang diambil secara purposive sampling. Hasil penelitian menunjukkan bahwa secara keseluruhan tingkat penerapan kepatuhan terhadap peraturan perundang-undangan sebesar 24,8%, penerapan praktik perkebunan yang baik sebesar 31,33%, pengelolaan lingkungan sumber daya alam dan keanekaragaman hayati sebesar 42,5%, penerapan transparansi sebesar 28,5%, dan peningkatan usaha secara berkelanjutan sebesar 40%. Secara keseluruhan rata-rata pencapaian implementasi ISPO di kalangan pekebun swadaya di Kabupaten Kapuas Hulu tergolong rendah dengan persentase 30,8%. Prioritas utama yang optimal untuk strategi perkebunan kelapa sawit mandiri adalah mediasi antara pihak-pihak yang berkonflik, kelompok tani kelapa sawit mandiri, transparansi mengenai dampak lingkungan, penyuluh di divisi perkebunan dan peningkatan kualitas produksi.

Kata kunci: tingkat kesiapan petani, kelapa sawit, ISPO, petani swadaya, AHP

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INTRODUCTION

Agriculture is an essential activity carried out by humans. Agribusiness development is vital to help the government grow the economy and improve people's quality of life. One of the sectors in the Indonesian agricultural sector is plantations. This sector is a leading agribusiness activity capable of providing a high trade surplus. The development of oil palm plantations in Indonesia is increasing because oil palm is an essential crop in the Indonesian economy. The promising prospect of oil palm plantations creates a tendency for farmers to immediately invest their land in becoming land for oil palm plantations. So many independent oil palm plantations have developed (Bakce, 2021).

The plantation sector in the West Kalimantan region experiences a significant increase every year, especially in the development of oil palm plantations. It is not only the people who benefit from the development of this oil palm plantation, but the oil palm management companies also benefit from the results of palm oil products on the market. The development of oil palm plantations and palm oil processing factories provides many things for economic development through increasing exports of non-oil and gas commodity products, opening and expanding employment opportunities, boosting the regional economy and developing the agricultural sector in the plantation sub-sector (Zulkarnain, Suriaatmaja, & Rahmi, 2021).

The negative impacts of oil palm development in West Kalimantan include environmental damage. However, there are also positive impacts, such as creating new jobs. Oil palm cultivation has had a positive impact on the socioeconomic situation of rural development. However, the negative impacts of oil palm development, such as the expansion of oil palm plantations, are widely criticized for causing environmental problems.

Oil palm plantations are replacing the richness of biodiversity and landscapes consisting of tropical forests. Land use transformation that occurs causes loss of biodiversity and increases carbon emissions. Many oil palm plantation actors still need to implement a system of sustainable development by considering three aspects: economic, social and environmental. Business actors tend only to consider economic aspects, while

social and environmental aspects have yet to work as expected (Aleksander, Hutabarat, & Eliza, 2019). The Indonesian Forum for the Environment (WALHI) stated that throughout 2021 there were 58 criminalization cases, 34% of which were in the plantation and forestry sectors.

Sustainable palm oil management is important because it will reduce threats to resources, deforestation, and the expansion of land in ways that are not environmentally friendly (e.g., burning) and can reduce damage to peat ecosystems. Currently, land expansion is still being carried out in an unsustainable manner, which negatively impacts the environment and the trade of palm oil in the international market (SPKS, 2019). Indonesian Sustainable Palm Oil (ISPO) certification exists as an alternative that provides a tool for assessing and managing oil palm plantations to address environmental risks and the issue of low production credibility in international markets (primarily Europe) currently being faced. It is still a challenge for oil palm plantations, especially independent oil palm plantations.

The management system (certification) of oil palm plantations can be carried out by companies and independent oil palm smallholders in Kapuas Hulu District, which must be regulated according to the principle of sustainability. ISPO certification for independent oil palm smallholders has five principles: compliance with laws and regulations, application of good plantation practices, environmental management of natural resources and biodiversity, application of transparency and business improvement in a sustainable manner (Permentan No. 38 Tahun 2020).

The purpose of this study was to determine farmers' readiness level in implementing ISPO certification for independent oil palm plantations in Kapuas Hulu Regency and determine the right strategic priorities for managing independent oil palm plantations based on sustainable palm oil (ISPO) in Kapuas Hulu Regency. The benefit of this research is that the government can apply criteria and alternatives that have priority to provide solutions to obtain or improve better management of independent oil palm plantations in Kapuas Hulu District.

METHODS

This research was located in Kapuas Hulu Regency, more precisely in the Silat Hilir, Seberuang and Badau Districts. This location was chosen purposively with the consideration that this location has the highest number of farmers, land area and production of oil palm plantations in Kapuas Hulu District.

The research method used is descriptive quantitative through testing, measurement, and hypotheses based on statistical calculations. The sample in this study were 100 independent oil palm smallholders and key informants from the Kapuas Hulu District Agriculture and Food Service, the Kapuas Hulu District Environmental Service, agricultural extension officers and village heads. Data collection techniques were carried out through interviews by distributing questionnaires. The variables in this study are the five principles of Indonesian sustainable palm oil by Minister of Agriculture Regulation No. 38 of 2020 and data analysis with the Analytical Hierarchy Process (AHP) Expert Choice 11 software. Research framework in Figure 1.

Farmers' readiness level in implementing ISPO is measured by the ratio of respondents who apply the ISPO indicator to the number of respondents. The formula for the level of application of indicators is as follows:

$$TP = (np/N) \times 100$$

Where: TP (Indicator application rate (%)); np (Number of respondents applying ISPO standards (Respondents)); N (Number of respondents (Respondents)).

Independent oil palm smallholders in Kapuas Hulu District still need help with many problems, especially in the sustainability of the oil palm plantation business. Many farmers need to meet the requirements of the ISPO certification regulations. Based on these problems, an analysis is carried out on how many farmers have implemented ISPO. After that, an appropriate strategy will be carried out so that the ISPO principles and criteria can be applied by farmers evenly.

Research Hypothesis

- Ho: Farmers' readiness level in implementing ISPO certification for independent oil palm plantations in Kapuas Hulu Regency is in a low category.
- H1: The level of readiness of farmers in implementing ISPO certification for independent oil palm plantations in Kapuas Hulu Regency is in the High category.

RESULTS

Characteristics of Respondents

The characteristics of the respondents were classified based on age, gender, farming experience, education and land area. The sample in this study was 100 respondents who were independent oil palm smallholders in Kapuas Hulu District.

The age range that received the most choices was 36-41 years. There are three different age groups in an economically productive society. They are young, middle-aged and elderly groups. The young are not yet productive, the middle-aged are productive, and the old are no longer productive. The average age of respondents who work as oil palm farmers is 40 years. The respondent has enough potential to carry out his farming activities (Yutika, Cahyadi, & Mulyati, 2019).

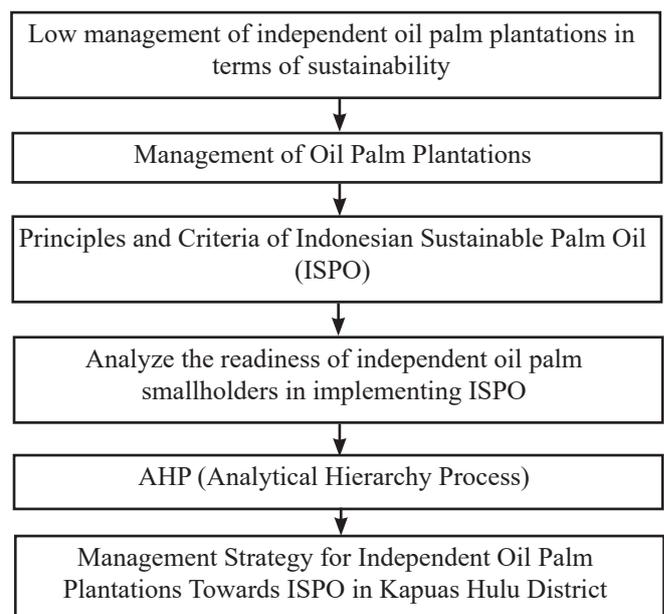


Figure 1. Thinking framework

The Table 1 shows that the most dominant gender of the respondents is male. Men are more needed to work in the field than women. The type of work in the field requires more male workers than women (Febrinawati, Eliza, & Sayamar, 2015).

Table 1. Characteristics of Respondents

Characteristics of Respondents	Description	Percentage (%)
Respondent Age	24–29	6
	30–35	20
	36–41	52
	42–49	22
Gender	Man	92
	Woman	8
Experience	2–3	14
	4–5	32
	6–7	19
	8–10	35
Education	SD	60
	SMP	21
	SMA	19
Land Area	0–1	79
	2–3	15
	4–5	6

The experience of independent oil palm farming is dominant for 8-10 years, meaning that farmers have been farming for a long time. As well as receiving formal and informal education, having farming experience can help farmers better understand the risks involved in farming and make better decisions based on that knowledge. In addition, the farming experience can provide farmers with a solid foundation to continue farming activities. With limited education and experience of farmers in farming, farmers will be weak in competition and mastering production factors, especially capital and management (Sari, Hasnah, & Budiman, 2020).

The education of the dominant respondents is at the Elementary School (SD) level, so the education of independent oil palm smallholders is still relatively low. The level of education can be a determining factor in business development and productivity. If the level of education is high, productivity will be high. This is related to a pattern of thinking that is rational in making decisions compared to those with a low level of education who have adapted to innovations and are relatively indecisive in making decisions (Herdiana, Rusdiyana, & Febrinova, 2016).

The average land area of independent oil palm smallholders is 1 Ha. With a total of 100 respondents, it can be concluded that the area of land owned by oil palm farmers is quite large and with this area of land, farmers can already get satisfactory results.

Application of Indonesian Sustainable Palm Oil

According to the Minister of Agriculture Regulation Number 38 of 2020 concerning the Indonesian Sustainable Palm Oil Certification System, one of the particular subjects of certification in strengthening the ISPO certification system is for community smallholders or independent smallholders to actively participate and be integrated into the oil palm plantation system. The ISPO standard for independent oil palm plantations consists of five principles, namely: (1) compliance with laws and regulations, (2) implementation of good plantation practices, (3) management of the environment, human resources and biodiversity, (4) application of transparency, (5) business improvement in a sustainable manner. Furthermore, there are 13 criteria, namely: (1) legality and management of planters, (2) location of plantations, (3) land disputes and other disputes, (4) legality of plantation business, (5) obligations related to environmental permits, (6) institutional organization of planters, (7) management of smallholders, (8) application of cultivation techniques, (9) fire prevention and control, (10) biodiversity conservation, (11) sale and price agreement of TBS, (12) provision of data and information, (13) improve performance.

Principle of Compliance with Rules and Regulations

The level of application of independent oil palm smallholders to the principle of compliance with laws and regulations in Kapuas Hulu Regency can be seen in the picture above, which shows that the application rate for the legality and smallholder management criteria is 32% for plantation location criteria the application rate is 40%, for dispute criteria land and compensation as well as other disputes the rate of application is 11%, the application rate for plantation business legality criteria is 13%. The application rate for obligations related to environmental permits is 28%. This indicates that the level of application of independent smallholders to the principle of compliance with laws and regulations still needs to be higher. This is in accordance with the research that states that the average application of the principle of compliance with laws and regulations is

42%, which is categorized as very low (Azizah, Hadi, & Dewi, 2020).

The level of application of independent oil palm smallholders to the principle of implementing good plantation practices in Kapuas Hulu Regency can be seen in the figure above, which shows that the criteria for institutional organization of smallholders are 24%, the criteria for smallholder management is 35%. In contrast, the criteria for implementing smallholders' cultivation technique implementation rate of 35%. This indicates that the level of application of independent smallholders to the principles of good plantation practices could be higher. This is in accordance with the research that states that independent smallholder institutions still need to be implemented. This is because the institutions in the smallholders' environment are only working groups and lottery clubs, which still need clear legality (Sabinus, Yurisinthae, & Oktoriana, 2021). This is also in accordance with research which states that the weakness of gardeners needs to have recorded every time they carry out maintenance (fertilizing, germinating, spraying). There are no records, facilities or teams for controlling organisms and plant pests (OPT), as well as cooperatives that do not have fruit delivery certificates (SPB) directly to the factory (Victorya, Hutabarat, & Dewi, 2018).

The Principles of Implementing Good Agricultural Practices

The level of application of independent oil palm smallholders to the principles of managing the environment, natural resources and biodiversity in Kapuas Hulu Regency can be seen in the figure above, which shows that the application rate for fire prevention and control criteria is 65% and for biodiversity conservation criteria the application rate is 20 %. This indicates that the level of application of independent smallholders to managing the environment, natural resources, and biodiversity is low. This is consistent with research that states that in terms of managing and monitoring the environment of independent oil palm plantations, clearing of oil palm plantations by independent smallholders by burning has long been abandoned. They understand that these actions damage the environment and violate existing regulations set by the government. However, due to efficiency (economic) considerations, a handful of independent smallholders still clear land for oil palm by burning (Dharmawan et

al. 2019). 27.17% knew flora and fauna in the garden, and its surroundings before the garden had not been opened, and now, farmers only know. There are no rescue efforts; some flora and fauna have died, and some have moved to other locations. This has happened to farmers that open up new land, but that is different for farmers who only change the function of land from other crops to oil palm (Yusmini & Heriyanto, 2018).

The Principle of Implementing Transparency

The level of implementation of independent smallholders on the principle of implementing transparency in Kapuas Hulu Regency can be seen in the figure above, which shows that the application rate for TBS sales and price agreement criteria is 33%, and for data and information provider criteria the application rate is 24%. This indicates that the level of application of independent smallholders to the principle of transparency could be higher. This is consistent with research stating that when compared to independent smallholders, the price received at the farmer level is much lower than that of the plasma farmer.

The price received by independent smallholders is not based on the price by the PPHP-TBS team but on the price set by the collecting traders. The price of TBS at the level of independent smallholders tends to be determined unilaterally, and this is because there is no contract between the farmer and the OPM. This differs from plasma farmers, bound by a contract with the core company (Syahza, 2004).

Principles of Sustainable Business Improvement

The level of application of independent oil palm smallholders on the principle of increasing business in a sustainable manner in Kapuas Hulu Regency can be seen in the figure above, which shows that the criteria for increasing performance are at an application level of 40%. This indicates that the level of application of independent smallholders to the principle of increasing business in a sustainable manner is low. This is in accordance with research which states that the sustainability index value of each dimension ranges from 40.60 – 66.83, which is included in the less sustainable category. The institutional dimension has the lowest sustainability value in the less sustainable category (Saragih, Rachmina, & Krisnamurthi, 2020).

Analytical Hierarchy Process (AHP) Data Analysis

The process of assessing the level of importance is carried out with the help of the Expert Choice program. This assessment of the level of importance resulted in a weight value for each criterion. Following the hierarchy that has been prepared, at the first level, an analysis of the criteria of Indonesian Sustainable Palm Oil (ISPO) principles is carried out to increase the application of Indonesian Sustainable Palm Oil (ISPO) to independent oil palm smallholders in Kapuas Hulu District.

The weight value is obtained from the analysis of the respondent's answers, indicating that the greater weight value of the alternative indicates that the alternative is prioritized. Based on the Table 2, the alternative is mediation between conflicting parties, which has the highest priority according to respondents with a weight of 0.209. Test the validity of the consistency ratio value obtained at 0.03, where the CR value is consistent because the CR is categorized as consistent if the CR value <0.1.

Mediation between the conflicting parties is the alternative that is prioritized because what happens in the field is that there are often conflicts over land. Conflicts often occur about land spacing which could be better measured, so farmers often occur when land clearing or planting overlaps with other farmers' or

community lands. This is due to the need for clear land certificates. In addition, several conflicts also occurred, such as land ownership conflicts based on recognition, such as the village head or community members who have power so that they own much land. This creates social jealousy in the village community.

Conflicts with oil palm smallholders can be classified into two types: conflicts between land acquisition and business permits and conflicts in the plantation development stage. This is in line with research which states that policies must be aimed at more sustainable land use. However, this policy must recognize the economic benefits of oil palm cultivation for local farmers. Only when the incentive structures of local smallholders are correctly understood can socioeconomic and environmental objectives be reconciled through appropriate policy interventions (Kubitza, Krishna, Alamsyah, & Qaim, 2018).

The weight value is obtained from the analysis of the respondent's answers, indicating that the greater weight value of the alternative indicates that the alternative is prioritized. Based on the Table 3, the alternative to independent oil palm farmer groups has the highest priority according to respondents with a weight of 0.202. Test the validity of the consistency ratio value obtained at 0.05, where the CR value is consistent because the CR is categorized as consistent if the CR value <0.1.

Table 2. Pairwise comparison matrix between alternatives from the principles of compliance with regulations and legislation

Alternative	Weight	Priority
Search for another land (Resettlement)	0.071	4
Guidance from the government regarding land ownership	0.054	6
Forest lending system	0.040	14
Road access repair	0.045	10
The location of the plantation is by the spatial layout	0.050	7
Improvement of information and technology	0.047	8
Mediation is carried out between the conflicting parties	0.209	1
Collaboration is carried out between the parties to the conflict	0.057	5
Transparency in land measurement	0.046	9
Simplified administrative process	0.042	12
Socialization and training on ISPO principles	0.131	2
There is access to business legality for farmers	0.043	11
The licensing process is simplified	0.040	13
Access to permits is available for farmers	0.036	15
Providing information about SPPL	0.088	3
Inconsistency		0.03

Independent oil palm farmer groups are the priority because many independent oil palm smallholders in Kapuas Hulu District still need clear farmer groups. Hence, farmers need more information on cultivation and marketing. Based on the field, it shows that there are some areas where farmer groups have been formed but still need to be more effective because, during routine meetings, there are still farmers who come late and do not even attend the meeting. Many farmers hope to have groups or institutions with clear legality to efficiently market their crops and get information and knowledge from related extension workers.

With the potential for oil palm plantations owned by the Kapuas Hulu Regency area, it is necessary to pay attention to how to increase production, fruit quality and the marketing process. So according to the respondent, a group is needed that can become a forum for farmers to help farmers increase the amount of production, fruit quality and marketing. Therefore, the government needs to form a forum called farmer groups or other institutions. Through farmer groups, implementing activities involve group members in various joint activities. Formation and development

of farmer groups need to be carried out on an ongoing basis and directed at changing the mindset of farmers in implementing the agribusiness system. The formation of the farmer group itself aims to create independent farmers who act as objects in agricultural development in Kapuas Hulu Regency. Previous research stated that farmers could get information through farmer groups. With this exchange of information, farmers can increase their knowledge in oil palm cultivation techniques, the correct use of fertilizers, marketing of crops, as well as more sophisticated technologies and innovations. in the present (Pratama, Sayamar, & Tety, 2016).

The weight value is obtained from the analysis of the respondent's answers, indicating that the greater weight value of the alternative indicates that the alternative is prioritized. Based on the Table 4, the transparency alternative regarding environmental impacts has the highest priority according to respondents with a weight of 0.262. Test the validity of the consistency ratio value obtained at 0.07, where the CR value is consistent because the CR is categorized as consistent if the CR value is <0.1.

Table 3. Pairwise comparison matrix between alternatives of the principles of applying good agricultural practices

Alternative	Weight	Priority
Independent oil palm farmer groups	0.202	1
Belalek group (Gotong Royong)	0.094	6
Independent palm oil association	0.111	3
Increased use of technology	0.104	5
Training and guidance to farmers	0.118	2
Have a record of plantation activities	0.090	7
Access certified seeds	0.109	4
The government provides subsidies according to the needs of farmers	0.088	8
Plantation according to Good Agriculture Practices (GAP)	0.084	9
Inconsistency		0.05

Table 4. Pairwise comparison matrix between alternatives from the principles of management of the environment, natural resources and biodiversity

Alternative	Weight	Priority
Land clearing without burning	0.160	3
Transparency regarding environmental impact	0.262	1
Cooperation with the company	0.110	6
Formation of opinion through community discussion	0.187	2
The assistance of farmers to endangered species	0.149	4
Traditional ceremonial rituals	0.132	5
Inconsistency		0.07

Transparency regarding environmental impacts is the priority because many farmers still need to realize the magnitude of the impact of oil palm plantations on the environment. Many farmers still plant land near forest areas, rivers and community settlements when clearing land. Therefore transparency is needed regarding the environmental impacts given directly to farmers so that they are aware and given the insight to manage their land even better. This is important because oil palm plantations can lead to deforestation, increased carbon emissions and climate change, disrupting environmental conditions. This is in line with research, which states that the environmental impacts due to the expansion of oil palm plantations are reduced groundwater quantity, water pollution and reduced animal populations. The environmental impact of a crude palm oil (CPO) factory is to produce liquid waste from processing palm oil, which creates external costs for the community in the form of replacement costs for clean water and medical expenses (Utami, Putri, & Ekayani, 2017).

The weight value is obtained from the analysis of the respondent's answers, indicating that the greater weight value of the alternative indicates that the alternative is prioritized. Based on the Table 5, it can be seen that the alternative extension agents in the plantation section have the highest priority, according to respondents with a weight of 0.243. Test the validity of the consistency ratio value obtained at 0.04, where the CR value is consistent because the CR is categorized as consistent if the CR value is <0.1.

Extension agents for the plantation sector were the priority because, according to respondents, many independent oil palm smallholders in Kapuas Hulu District had never participated in training and counseling on oil palm cultivation or farming, and neither did ISPO. This is because many farmers in Kapuas Hulu District still have not joined farmer groups, and the lack of attention in coaching farmers, especially in fostering farmers to implement ISPO. The situation of farmers in Kapuas Hulu District is that they need to learn what the objectives of ISPO certification are. The implementation of ISPO certification should be understood by independent oil palm smallholders so that smallholders have made proper preparations for the implementation of ISPO certification. This is in accordance with the research that states that independent oil palm smallholders are advised to further increase the capacity of farmers, farmer groups and cooperatives before carrying out ISPO certification (Nurhaliza, Rosnita, & Dewi, 2021).

The weight value is obtained from the analysis of the respondent's answers, indicating that the greater weight value of the alternative indicates that the alternative is prioritized. Based on the Table 6, the alternative to improve product quality has the highest priority according to respondents with a weight of 0.444. Test the validity of the consistency ratio value obtained at 0.04, where the CR value is consistent because the CR is categorized as consistent if the CR value is <0.1.

Table 5. Pairwise comparison matrix between alternatives from the principles of applying transparency

Alternative	Weight	Priority
Formation of BUMDES	0.159	3
Partnership with companies	0.232	2
Independent oil palm cooperatives	0.134	4
Plantation Extension Officer	0.243	1
Improved information on farmers	0.116	5
Technology improvement for farmers	0.116	6
Inconsistency		0.04

Table 6. Pairwise comparison matrix between alternatives from the principles of sustainable business improvement

Alternative	Weight	Priority
Ease of access to finance for smallholders	0.304	2
Improving the quality of production quality	0.444	1
Increasing farmer performance	0.252	3
Inconsistency		0.04

Improving production quality is a priority because the oil palm farmers in Kapuas Hulu District are still waiting to be ready to face efforts to increase sustainable business in realizing sustainable palm oil production due to several factors, one of which is the low quality of the harvested fruit. The age of oil palm is old, and the lack of access to certified seeds and the management of traditional plantations make the productivity of smallholder oil palm plantations still lagging. Therefore, farmers need to study patterns of managing farmer's gardens, including how to prepare the land, select seeds, planting techniques, spacing, how to care for plants (both immature plants (TBM) and those that have produced (TM), types and ways of planting), organic and inorganic fertilization, weeding, eradicating pests, and harvesting methods. This is consistent with research that states that access to independent smallholders regarding access to information, input, finance, and markets can affect the performance of smallholder businesses in increasing the sustainability of their farming (Vicki, Nurliza, & Dolorosa, 2021). Weak aspects of legality impede smallholders' access to funding. Obstacles to the extensification and intensification of smallholder plantations threaten the sustainability of national palm oil production. Genetic improvement of plant material, land legality, and law enforcement of the moratorium policy is needed to increase the productivity of smallholder plantations (Suroso, Pahan, & Maesaroh, 2020).

Managerial Implications

Weak aspects of legality impede smallholders' access to funding. Obstacles to the extensification and intensification of smallholder plantations threaten the sustainability of national palm oil production. Genetic improvement of plant material, improvement of land legality, and law enforcement of the moratorium policy are needed to increase the productivity of smallholder plantations (suroso, pahan, & maesaroh, 2020).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Independent oil palm smallholders in Kapuas Hulu District implement the ISPO principles (1) compliance with laws and regulations, (2) implementing good plantation practices. (3) management of the

environment, natural resources and biodiversity, (4) application of transparency, (5) increase in overall business sustainability with a percentage of 30.8% which is still very low in implementation, or farmers are not yet ready to implement ISPO.

The results of this study obtained the optimal priority for the strategy of independent oil palm plantations, namely mediation between conflicting parties, independent oil palm farmer groups, transparency regarding environmental impacts, extension agents in the plantation division and quality improvement of production.

Recommendations

The Kapuas Hulu District Government needs to pay attention to optimal criteria and alternatives in policy-making to increase the implementation of ISPO to independent oil palm smallholders and the need for programs or activities for farmers aimed at empowering farmers with technological skills, sustainable agricultural practices and helping farmers integrate into the oil palm market so that oil palm plantations can support the economy of independent oil palm smallholders in Kapuas Hulu District.

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