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Article

Policy governance in the plantation sector: Challenges and impacts of palm oil in Riau Province, Indonesia

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Abstract: This study aims to examine and challenge the impact of local government policy governance on the oil palm plantation sector in Riau Province, Indonesia. It was discovered that 1,628 million hectares of illegal oil palm plantations are located within forest areas. Plantation area and crop harvest areas are declining due to the increase in damaged old plants, low productivity of plantation crops, inadequate facilities and infrastructure conditions, low technology application, plantation business licensing, limited downstream plantation industry and marketing, assistance in changing the attitudes, behavior, and skills of farmers. The methodology used was exploratory qualitative to explore this topic, and the determination of research topics was conducted using Biblioshiny application analysis. Then, the data was analyzed using Nvivo 12 Plus software. The results of this study discovered that the policy governance of the oil palm plantation sector as a leading commodity in Riau Province, Indonesia, is influenced by three dimensions: firstly, the actor dimension; secondly, the structural dimension; and third, the empirical dimension of governance. This research contributes as a knowledge reference to oil palm plantations.

Keywords: policy governance; plantation; oil palm; local government

1. Introduction

Based on its geographical location, Riau Province, Indonesia, is strategically significant in geopolitics and the national and regional economy (Setijadi, 2023). One of the advantages gained based on this geographical location is being on the international trade route of the Malacca Strait, close to Malaysia and Singapore (Cosar and Thomas, 2021). In addition, it is in the triangular economic growth triangle of Indonesia, Malaysia, and Thailand (Hatane et al., 2021; Kim and Baniamin, 2022). Furthermore, Riau Province has the potential for plantation development in order to accelerate access to encourage the development of economic potential and create economic growth and equity in Riau Province (Ali et al., 2021). Most of Riau Province's labor force is employed in the agricultural sector in the broadest sense, with an average of 34.57% in 2018. According to Regional Regulation No. 10/2018 on Riau Province's (Ruang Tata dab Ruang Wilayah/RTRW), land use for the plantation sub-sector is 2,602,746.47 hectares or 28.87%, and land for agriculture is 514,130.01 hectares or 5.7% of the total land use of 9,012,875.96 hectares (Bakce et al., 2019). Moreover, the land area for plantations is dominated by oil palm land as a superior commodity in Riau Province (Dinas Perkebunan Provinsi Riau, 2020). Data from the Riau Province Plantation Office in 2020 indicates the following **Figure 1**:

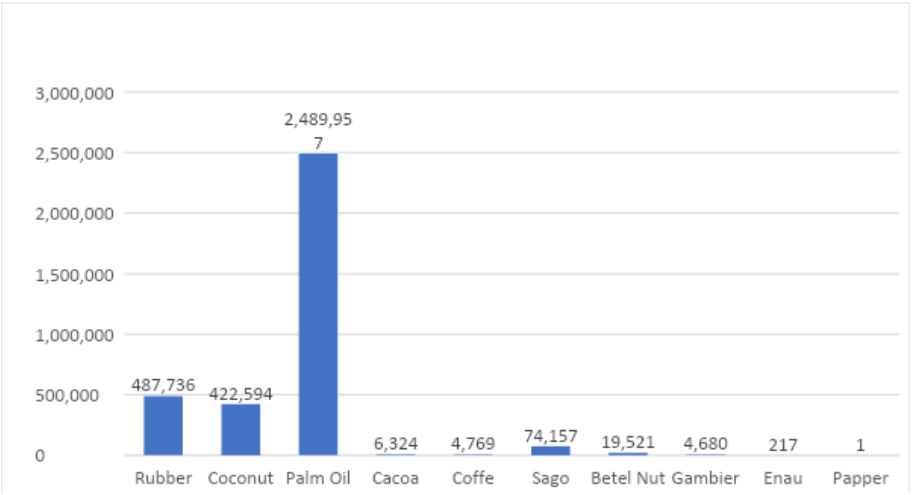

Figure 1. Palm oil land area in Riau Province.

Source: Riau Province Plantation Office, Indonesia 2020.

From **Figure 1** above, it can be observed that oil palm is the largest plantation in Riau Province, Indonesia. In general, various problems and constraints are faced in the development of each commodity, including issues from the technical aspect in the form of (1) the planting area and harvest area of plantation crops are decreasing due to the increase of old and damaged plants; (2) the low productivity of plantation crops; (3) the condition of facilities and infrastructure is not adequate; (4) the application of plantation technology is still low; (5) the plantation business licensing issues are not yet orderly; (6) the downstream plantation industry and marketing are still limited; and (7) there is still a need for assistance in changing the attitudes, behavior, and skills of farmers. Other problems include limited accessibility to capital sources and low human resource capacity of farmers (Cofré-Bravo et al., 2019; Hernita et al., 2021; Savari and Amghani, 2022). The Riau Provincial Government's policy in the plantation sector referred to in this study is observed from the Regional Medium-Term Development Plan (RPJMD) of Riau Province in 2020–2024 (Pemerintah Provinsi Riau, 2019). The focus of the issues raised in the research is on superior commodities, namely palm oil (Yuslaini, Suwaryo, et al., 2023). The main problem in managing oil palm is that the added value of oil palm plantation products has not been able to improve the community's economy (Pasaribu et al., 2020; Syahza and Irianti, 2021; Widiati et al., 2020). Downstreamization is not yet optimal. Hence, people who depend on oil palm plantations are only limited to enjoying Fresh Fruit Bunches (Tandan Buah Segar (TBS)) (Maika and Darman, 2016; Nurfatriani et al., 2019; Salleh et al., 2020). Second, data from the Sumatra Ecoregion Development Control Center (Pusat Pengendalian Pembangunan Ekoregion Sumatera, PPES). The Ministry of Environment and Forestry in 2020 discovered 1.628 million hectares of illegal oil palm plantations owned by oil palm farmers or community-owned plantations in Riau (Dinas Perkebunan Provinsi Riau, 2020). This threatens its sustainability in accordance with the rules of Law Number 11 of 2020 concerning Omnibus Law Job Creation since the government has set a policy for oil palm plantations owned by farmers to be located in protected and conservation forest areas (Astuti et al., 2022; Li, 2021; Pramudya et al., 2022; Putri et al., 2022). Therefore, oil palm land owned by farmers will be returned to the State and no longer allowed to be controlled by farmers.

Thirdly, there are 84 companies out of 224 plantation companies in Riau Province have not obtained their Cultivation Rights Title licenses (Hak Guna Usaha (HGU)) (Rahmadani et al., 2020; Sudha, 2020). On the other hand, law enforcement officials appear to be silent about this fact. Departing from these problems, the researcher raised a study of the governance of the plantation sector policy by the Riau Provincial Government, studying the strategic issues of the leading sector (Roengtam and Agustiyara, 2022).

The Riau Provincial Government is the leading sector to manage the complex palm oil policy (Ekawati et al., 2019; Nurfatriani et al., 2022). This study is interesting since oil palm as a superior commodity is dominated by actors from Palm oil farmers with a land area of 61.57% of the total land in Riau Province. This research is relatively new from the perspective of policy governance. Based on the identification of previous research, governance studies have been widely used as an analytical tool to study policies in various sectors, including the governance analytical framework (Diaz-Castro et al., 2023; Liang et al., 2015; Syahrir et al., 2021).

On the practical side, the study of the superior sector of oil palm plantations is interesting due to the dominance of plantation studies in practical studies in the field of plantations, such as oil palm development in Indonesia (Dharmawan et al., 2020), weeds assessment in peatland oil palm plantations, and oil palm environmental policy management (Abdul Majid et al., 2021; Monzon et al., 2021). Community Oil Palm Replanting in Reducing Deforestation in Indonesia. The use of the concept of governance can be operationalized in various sectors since, after all, the government still plays a significant role in the governance process (Moeliono et al., 2020; Reed et al., 2023). The government is in charge of formulating the set of objectives of the governing process (Gjaltema et al., 2020; Savini, 2019). As the institution authorized to allocate values to society, the government plays the role of formulating public policy based on the wishes and demands of the people (Dewi et al., 2017; Krupiy, 2020).

The government is also responsible for the policy implementation process, especially in terms of its outcomes and impact on society (Park and Kim, 2020; Tien et al., 2020). In a competitive and complex society, the presence of the government is required as a facilitator, which facilitates or bridges the play of political and economic actors in society (Soberón et al., 2022). Governance is a mechanism for managing economic and social resources that involves the influence of the state sector and the non-government sector in a collective activity (Begum et al., 2021; Kramar, 2022). Additionally, governance is the process of exercising state power in providing public goods and services, good governance, and global governance (Brennan et al., 2019; Mansoor, 2021; Omri and Mabrouk, 2020). The best practice is referred to as good governance (Korosteleva and Flockhart, 2020). Through the concept of governance, communities can help manage social, political, economic, and institutional processes for development and to create community cohesion, integration, and well-being (Ciasullo et al., 2020).

The results of research conducted by Yusliani et al. (2022) discovered that the development of oil palm plantations in Riau Province, Indonesia, is huge. This is attributed to the fact that oil palm is a superior plantation commodity in Riau Province, Indonesia. Palm Oil plantations are a promising investment both now and in the future.

The research conducted by Yuslaini et al. (2023) discovered that Palm Oil plantations in Riau Province, Indonesia, have multiple impacts on the regional economy, especially in creating jobs. Hence, this development also provides a trickle-down effect that can expand the spread in the Riau Province, Indonesia community.

Previous research has discussed various developments in oil palm plantations as well as the downstream of the palm oil industry. The researcher conducted an analysis related to the novelty of the research using the Biblioshiny Application to analyze what topics researchers have discussed, the origin of researchers, country contributions, and keywords in previous studies (Abafe et al., 2022). Data collection was performed to find suitable research topics to observe research development using data from the Scopus database. The search was conducted in October 2023, using the keywords policy governance AND palm oil plantation. This research forms the basis of a study that focuses on the governance of government policies towards oil palm plantations in Riau Province, Indonesia. The data obtained with the results of the keywords entered in the search, 76 articles were discovered. Then, the researcher analyzed the 76 articles to find research facts and research sources using Biblioshiny. The author's contribution can be observed in **Figure 2**.

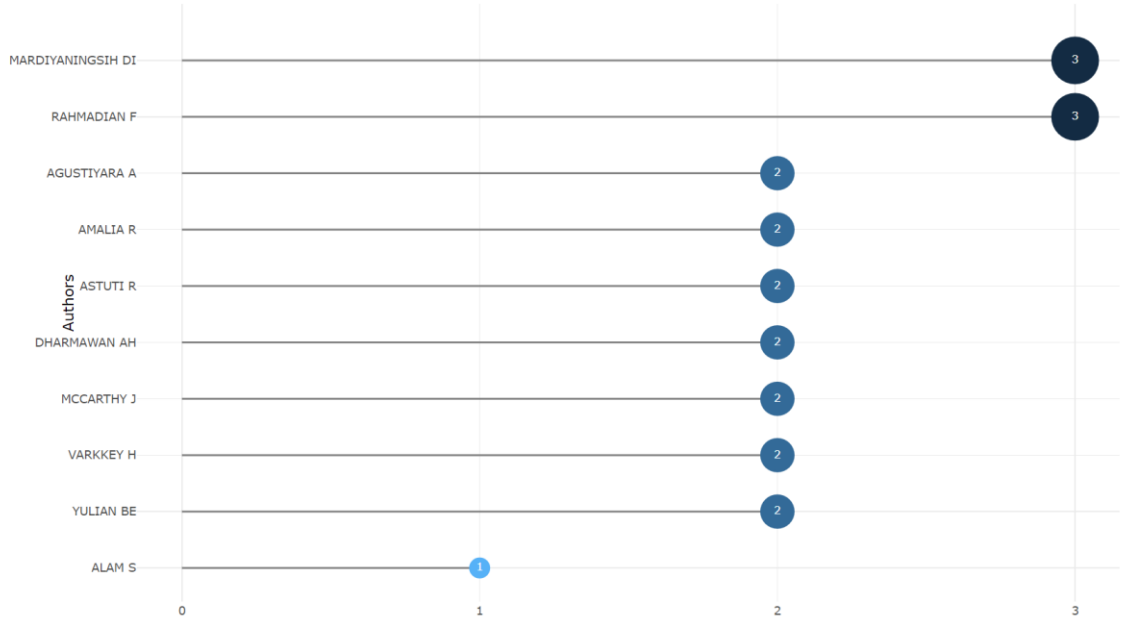

Figure 2. Author's most relevant contribution.
Source: Processed from Biblioshiny from Scopus database, 2023.

Based on **Figure 2**, researchers mapped the author's contribution related to the keywords entered into the Scopus database. From the visualization results using the Biblioshiny application, they found 14 authors who appeared most frequently related to the topic in question. As for the identification conducted, the author discusses the most "policy governance AND palm oil plantation" in only three articles, namely Mardiyaningsih DI, Rahmadiani F. Meanwhile, Agustiyara A, Amalia R, Astuti R, Dharmawan AH, Mccarthy J, Varkkey H, Yulian BE each has two articles, while Alam S only has one article. From the identification results, it can be concluded that in articles related to "policy governance AND palm oil plantation," there is still not much that contributes to the author discussing this.

Figure 3 displays thematically the issues related to the governance of government policies towards oil palm plantations. Then, the researchers re-mapped using the Co-occurrence Network stage on the Scopus database. However, based on the results of research mapping with 76 data using Biblioshiny software, it is known that the governance of government policies towards oil palm plantations is still rare, especially in studies conducted in Riau Province, Indonesia. Based on the trend of issues regarding previous research that will be published and related to the topic of this research based on the mapping above, it indicates that issues regarding policy governance are still being researched today, so this is the reason for the research to be conducted. It also raised a research topic on strengthening the concept of policy governance of oil palm plantations in Riau Province, Indonesia.

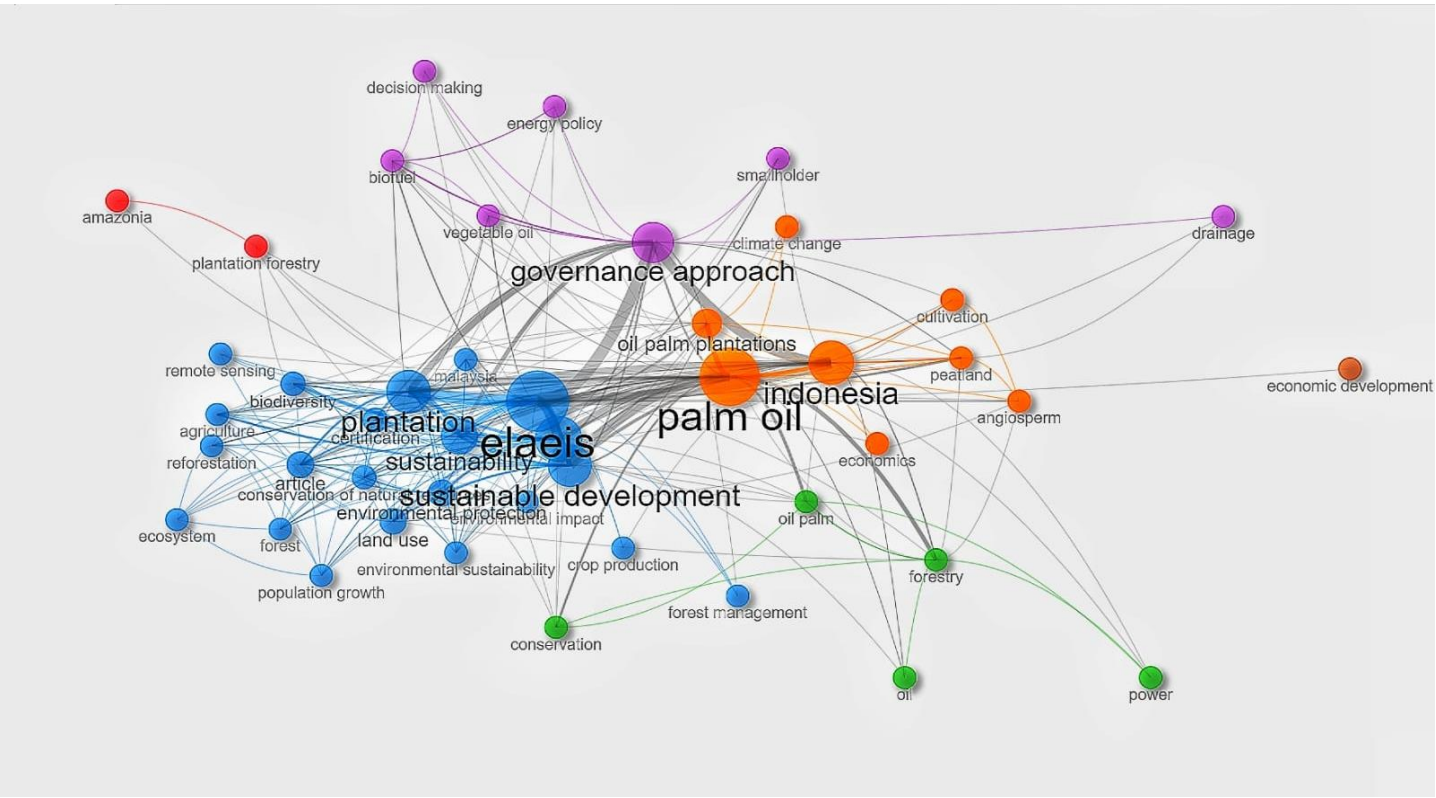

Figure 3. Co-occurrence network.
Source: Biblioshiny processed from Scopus database 2023.

This study examines the challenges and impacts of oil palm plantation policy governance in the government of Riau Province, Indonesia. It was discovered that 1,628 million hectares of illegal oil palm plantations are located within forest areas. Plantation area and crop harvest areas are declining due to the increase in damaged old plants, low productivity of plantation crops, inadequate facilities and infrastructure conditions, low technology application, plantation business licensing, limited downstream plantation industry and marketing, assistance in changing the attitudes, behavior, and skills of farmers. To understand this issue, we define policy governance as a theoretical framework to examine oil palm plantations in Riau Province, Indonesia, empirically. This research has three dimensions, namely the actor dimension, structural dimension, and empiric governance dimension. The research questions that will be conducted are. RQ 1: What is the policy governance of oil palm plantations in

the government of Riau Province, Indonesia? RQ 2: What are the challenges and impacts of oil palm policy governance in the government of Riau Province, Indonesia?

The results of this study can be useful for the government policy of Riau Province, Indonesia, in seeing the challenges and impacts of oil palm plantations, this research can provide input to the government, especially to the plantation office to pay attention to the challenges and impacts of oil palm plantations.

2. Methodology

2.1. Research methodology

This research will examine the policy governance of the government of Riau Province, Indonesia, in the palm oil plantation sector. The location of this research is in Riau Province, Indonesia. The reasons for choosing the location are that Riau Province has a vast land area in the oil palm plantation sector, and geographically, Riau Province, Indonesia, is directly adjacent to Malaysia and Singapore.

2.2. Study design

This research employs a qualitative method with an exploratory approach. The purpose of this research is to produce in-depth and in-depth results that will describe the actual situation that is unable to be measured by numbers (Creswell, 2021; Harsono et al., 2012; Hsieh et al., 2019; Ishtiaq, 2019; Moon et al., 2019). In addition, this research was assisted by Nvivo 12 Plus software to obtain qualitative data analysis results. The reason researchers chose this research method is that the data used is usually secondary data. This includes electronic documents, government websites, digital reports, and statistical data on oil palm plantations in Riau Province, Indonesia. This study examines the governance of oil palm plantation policy in the government of Riau Province, Indonesia. Moreover, it was discovered that 1,628 million hectares of illegal oil palm plantations are located in forest areas. Consequently, it is processed through secondary data consisting of various studies, electronic documents, reports, government websites, research investment statistics, and relevant social media trends (Leung et al., 2022).

2.3. Data collection techniques

Data was obtained through field observations and literature research (Fadli, 2021; Yusanto, 2020), and documentation studies were chosen to search for more accurate, demonstrable information and facts about oil palm plantations in Riau Province, Indonesia. The steps in qualitative data collection (Adlini et al., 2022) are shown in **Figure 4** below.

From the general procedures in the qualitative analysis tool Nvivo Plus 12. We decided to categorized these concepts into three areas, namely (1) Data Collection is the process of collecting and analyzing various information as much as possible, observable and recorded, non-numerical data types, this type of data is collected through observation methods in the field; (2) Data observation is a method of data collection, where research, and direct observation in the field of situations or events in the field; (3) Documentation study is a method of collecting information by studying

documentation to obtain information related to the problem being studied (Creswell et al., 2007).

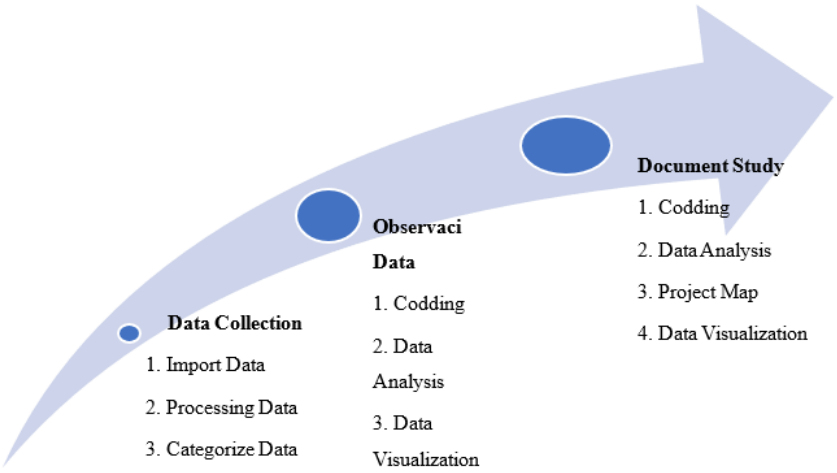

Figure 4. Technical data collection and analysis with Nvivo Plus 12: Processed from the researcher, 2023.

The weakness in this research method is more on the weakness of qualitative research, which is too subjective. Qualitative research methods are very dependent on the character and subjectivity of the researcher. Hence, to overcome this weakness, researchers triangulate data and methods, where the data used is rechecked for validity, and the methods used are rechecked for suitability.

2.4. Data analysis

Qualitative data is obtained and analyzed through the interactive data analysis techniques described (Kiger and Varpio, 2020). The steps through technical and interactive analysis are explained by data verification, data presentation, and drawing conclusions (Linneberg and Korsgaard, 2019). Note that this process was also assisted using Nvivo 12 Plus. The data analysis of this research refers to the research issue trends regarding the governance of government policies towards oil palm plantations found by researchers through identification and analysis using Nvivo 12 Plus, as illustrated in **Figure 5** below:

Figure 5. Trending issues relate to governance policy in the plantation sector palm oil, Indonesia.

Source: Reworked NVivo 12 Plus, 2023.

The analysis in this study is (1) identification of policy governance of oil palm plantations in Riau Province, Indonesia (2) conclusion at this stage, the results of data identification are drawn simple conclusions to evaluate policy governance on the challenges and impacts of oil palm plantations (3) analysis at this stage based on research objectives after the conclusion is drawn, weaknesses in this research method, weaknesses in this method in qualitative methods that are too subjective, this research method depends on the character and subjectivity of the researcher. Therefore, to overcome these weaknesses, researchers triangulate data and methods, where the data is rechecked for validity, and the methods used are rechecked for suitability.

3. Findings (Results and discussion)

3.1. Structural challenges government policy towards oil palm plantations in Riau Province, Indonesia

Palm oil in Riau Province, Indonesia, is the largest commodity in Indonesia with 3.38 million hectares each. Currently, Riau has become a barometer for palm oil policy in Indonesia, for example the Riau Provincial government through Governor Regulation Number 77 of 2020 concerning how to determine the price of Fresh Fruit Bunches (FFB) for palm oil plantation production which made history for the first time in Indonesia. Another policy breakthrough is that Riau province became the first province in Indonesia through setting the Miyra Swayada FFB price. Since June 19 2023, Riau Province has had a price yield table for independent plantations. Riau Province has set the first independent partner price and plasma partner price in Indonesia. Currently, the Riau provincial government and the Riau High Prosecutor's Office are collaborating on the "JAGA ZAPIN" program (guard the Agricultural, Plantation and Industrial Zone) which aims to increase farmers' income which leads to the welfare of the people of Riau Province, Indonesia. Riau Indonesia's largest palm oil production reaches 10 million tons.

The identification of actors in this study focuses on two factors, namely the head of the agency, smallholders, and palm oil company owners. Policies are unable to be separated from decision-making actors and policy target actors (Skjærseth, 2021). The results of field research from the data of the Riau Provincial Plantation Service in 2020 observed from the performance indicators of plantation commodities in Riau Province are production where for the commodities of oil palm, rubber, and coconut, the performance achievement reached approximately 95%, while the sago commodity 112% exceeded the set target. Moreover, problems faced in the oil palm commodity include the use of fake seedlings (uncertified and inferior seedlings), changes in the selling price of TBS, and climate change (drought) that result in plantation fires.

One of the factors leading to the non-achievement of coconut production targets is that farmers do not harvest the crop due to low selling prices. As for the target actors, they feel a loss since the cost of harvesting is higher than the selling price. In addition, many coconut trees are old and damaged, greatly affecting production and productivity. The Riau Provincial Government's efforts to protect oil palm farmers amidst the decline in palm oil prices are considered slow for the palm oil downstream program. In addition, the provincial government does not appear to have a long-term plan

regarding the impact of the palm oil commodity on the people of Riau since the welfare of oil palm farmers is highly dependent on the price of TBS. TBS palm oil fell in each age group of oil palm. For the 10–20 year age group, it was IDR 263 per kg or a drop of 14.48% internal and external factors, namely the selling price of Crude Palm Oil (CPO) and kernels from companies that are the data source. Meanwhile, an external factor is that CPO prices are predicted to plummet due to global market fears of a recession threatening the global economy.

The President, as the main actor in national policy, also impacted the fall in TBS prices due to the policy of banning CPO exports to suppress cooking oil prices. However, the impact is that oil palm farmers lose money. Indonesia is the world's number one CPO producer, and data from the Indonesian Farmers Group Association (Gabungan Kelompok Tani Indonesia (GAPKI)) demonstrates that in 2022, Indonesia exported 33.674 million tonnes of CPO and its derivatives. Another problem faced by smallholders is land legality. Farmers point out that the legality of smallholder or independent oil palm plantations is often faced with overlapping land. Moreover, in Riau Province, some protected areas and some former HPH and APL forest areas have no problem planting oil palm. There have even been cases of smallholders being arrested since they were accused of encroaching and destroying land. Therefore, it is clear that oil palm farmers are the disadvantaged actors in this palm oil plantation sector policy. Based on data collection, the oil palm plantation area in Riau Province in 2020 was 2.86 million hectares or 19.62% of the total oil palm plantation area in Indonesia. Most of them are dominated by smallholder plantations, as portrayed in the following **Figure 6**:

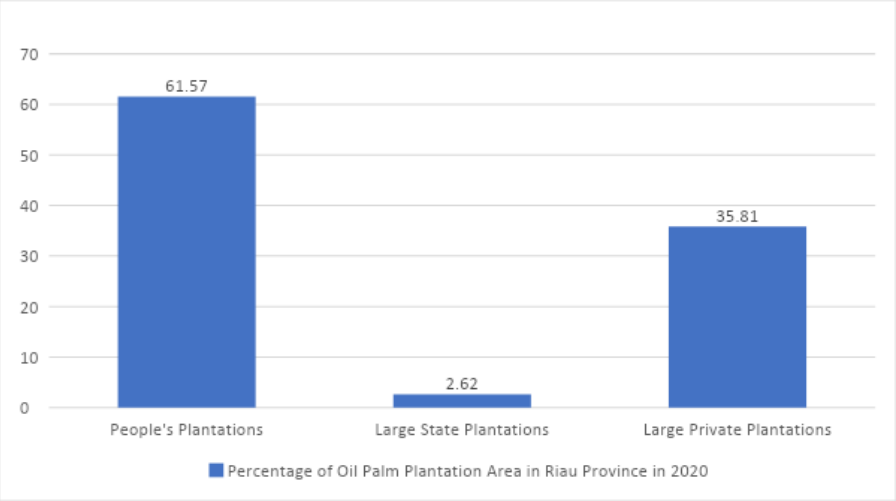

Figure 6. Percentage comparison of oil palm plantation area in Riau Province in 2020.

Source: Renstra of Riau Province Plantation Office, Indonesia.

Land legality, often alleged in palm oil black campaigns as a source of environmental destruction and forest and land burning, has become a significant issue in the plantation sector. However, this issue is unable to be used as a reference since there is no accurate data regarding the number of independent smallholder plantations. Some groups have even urged the central government and local governments to validate and verify whether oil palm plantations are in forest areas or illegal oil palm

plantations in Riau Province. This is certainly a solution so that the process of verifying the validity and clarity of land, especially for smallholders with garden land certificates in the forest area, is completed.

Challenges The budget structure has an impact on performance and regional financial accountability. The realization and budget of the State Budget (Anggaran Pendapatan Belanja Negara (APBN)) and Regional Budget (Anggaran Pendapatan Belanja Daerah (APBD)) of the Plantation Office of Riau Province, Indonesia, which later became the Food Crops, Horticulture and Plantation Office of Riau Province, Indonesia for the period 2015–2019. In terms of indirect expenditure, there were significant changes in the number of Civil Servants (Pegawai Negeri Sipil/PNS) who retired and transferred employees and in the amount of employee allowances. However, the ratio between the realization and budget ceiling of indirect expenditure in 2018 is quite good at 86.51. Note that direct expenditure in 2018, there is considerable budget efficiency (Rationalization) from Rp. 66,387,208,850 to Rp. 33,976,948,232. Additionally, the achievement of budget absorption between realization and pure budget ceiling only reached 51.18%. However, when viewed from the rationalization ceiling, the performance achievement is 82.19%, and the physical implementation is in accordance with the predetermined progress. The ratio between realization and budget for the Deconcentrated APBN Fund is very high at 93.51, and the rest is efficiency or remaining contracts. The average growth of the Deconcentrated APBN budget until 2019 has decreased, with a considerable decline occurring in 2018. In the APBN Fund for Assistance Tasks, the achievement of the ratio between realization and the budget ceiling is quite good. In 2018, it reached 92.07, and the remaining budget was the remaining contract, while the average budget growth decreased by an average of −25.05.

The performance of plantation development nationally over the past three years has exhibited satisfactory results. Macroeconomic indicators such as gross domestic income, trade balance, and people's employment demonstrated a positive trend. The Regional Spatial Plan (Rencana Tata Ruang Wilayah (RTRW)) is a planning product used to guide activities that use space, so all development planning forms must refer to the applicable spatial plan. Based on Regional Regulation No. 10 of 2018 concerning the RTRW of Riau Province, which is adjusted to the potential of the region, the direction of plantation crop development for the next year's development is more focused on optimizing land use and utilizing technological innovation. Based on development planning documents, synergy with the Strategic Environmental Assessment (Kajian Lingkungan Hidup Strategis (KLHS)) is still required so that plantation development policies become one of the spearheads of creating a green economy that is certainly in line with environmental issues. Furthermore, applying SEA in spatial planning is also useful to improve the effectiveness of implementing the Environmental Impact Assessment (Analisis Mengenai Dampak Lingkungan (AMDAL)) and other environmental management instruments. This is to create better governance through building strategic and participatory stakeholder engagement, cooperation across administrative boundaries, and strengthening the unitary approach. In SEA, there are six aspects of the study, namely: 1) The carrying capacity and capacity of the environment for development; 2) Estimates of environmental impacts and risks; 3) The performance of ecosystem services; 4) The efficiency of Natural

Resource Utilization (Sumber Daya Alam (SDA)); 5) The level of vulnerability and adaptive capacity to climate change; 6) The level of resilience and potential of biodiversity. Moreover, strategic issues are fundamental policy or program priorities that determine the critical situations and choices facing the organization at present and in the future. Issues can also be interpreted as problems that have a significant impact, which are the main tasks and functions of the Regional Work Unit (Satuan Kerja Perangkat Daerah (SKPD)) that are likely to be resolved in the coming period.

3.2. Impacts of oil palm plantation governance in Riau Province, Indonesia

Data from the PPES of the Ministry of Environment and Forestry in 2020 found 1.628 million hectares of illegal oil palm plantations owned by oil palm farmers or smallholder plantations in Riau. This threatens its sustainability in accordance with the rules of Law Number 11 of 2020 concerning Omnibus Law Job Creation since the government has set a policy for oil palm plantations owned by farmers to be located in protected and conservation forest areas. Therefore, oil palm land owned by farmers will be returned to the State and no longer allowed to be controlled by farmers. Researchers suggest that there are 84 companies out of 224 plantation companies in Riau Province that have not obtained HGU permits. On the other hand, law enforcement officials seem to be silent about this fact.

The impact of oil palm plantations is observed on a macro level. First, the area of old and damaged plants is increasing. Potential plantation area in Riau Province over the last five years. From the plantation area, there is an area of old and Damaged Plantation Crop Commodities (Tanaman Tuah Rusak (TTR)) from the total plantation area in Riau Province. There is a decrease in TTR in the following year due to two possibilities: firstly, rejuvenation has been performed, and secondly, the plants have been converted into other types of plants. Second, the low production and productivity of plantation crops plantation production in Riau Province over the last five years. Nevertheless, the productivity of plantation crops in Riau Province is still low, divided according to the productivity of smallholder plantations and the productivity of company plantations.

The problems faced by palm oil commodities include the use of fake seeds (seeds that are not certified and of poor quality), changes in the selling price of FFB and climate change (drought) which results in plantation land fires. One of the factors that causes the coconut production target to not be achieved is that the plants are not harvested by farmers due to low selling prices. Farmers feel at a loss because harvest costs are higher than the selling price. Apart from that, many coconut plants are old and damaged, which has a big impact on production and productivity. The Riau Provincial Government's efforts to protect palm oil farmers amidst the decline in palm oil prices are considered slow for the palm oil downstream program. It seems that the provincial government does not yet have a long-term plan regarding the impact of palm oil commodities on the people of Riau. Because the welfare of oil palm farmers is very dependent on the price of fresh fruit bunches (FFB). For the 10–20 year age group, it is IDR. 263 per kg or a drop of 14.48 percent. The Head of the Riau Province Plantation Service explained that this was caused by internal and external factors,

namely the selling price of crude palm oil (CPO) and kernels from the company that was the data source. Meanwhile, the external factor is that the price of crude palm oil is predicted to fall due to global market fear of a recession that threatens the global economy.

Third, the condition of some plantation facilities and infrastructure is still far from what is expected, both in the form of agricultural machinery, irrigation facilities, and plantation production roads. In some downstream areas (Indragiri Hilir, Rokan Hilir, Bengkalis, Siak, and Meranti Islands), dykes, channels, and valve gates (the trio of water systems) have been damaged, causing seawater intrusion. The influx of seawater causes the physical, chemical, and biological properties of the soil to be damaged and causes agriculture and plantations to be damaged, unable to grow properly. Some coastal areas experience seawater intrusion and abrasion, which is the loss of land area due to the erosion of seawater waves. Additionally, the condition of production roads in plantations with mineral soils is inadequate, causing higher costs for transporting plantation crops.

Fourth, the application of technology, both cultivation and harvest and post-harvest technology, is also still low. Overall, only around 60% of the recommendations were set. The use of quality seeds, planting patterns and spacing, pest and disease control, and fertilization are also still low. Fifth, the rapid increase in population and its uneven distribution has exceeded the carrying capacity of land. Such conditions lead to unhealthy utilization competition for multi-sectoral interests, which often triggers cases of plantation business disruption. The total plantation area in Riau Province in 2018 was 3,520,775 hectares. Based on the spatial pattern map of the Riau Province RTRW according to Regional Regulation No. 10/2018, the allocation for plantations is only 2,602,746.47 hectares, consisting of Large Plantations of 1,632,242.78 hectares and Smallholder Plantations of 970,503.70 hectares. Thus, there is a difference of 918,028.53 hectares. In this regard, it is necessary to inventory, identify, and verify the plantation area in Riau Province. The status of plantation licenses in Riau Province is being monitored by the Corruption Eradication Commission (Komisi Pemberantasan Korupsi (KPK)), which is included in the province as a pilot project for the National Movement to Save Natural Resources (Gerakan Nasional Penyelamatan Sumber Daya Alam (GNPSDA)). Hence, all plantation licensing data should be complete with the Decree of the licensor from the Directorate General of Plantations, Governor, or Regent/Mayor according to their authority, supported by the location permit at the beginning, all of which must be equipped with attachments to the certificate and maps in shapefile form.

Based on monitoring performed at the Riau Province Plantation Office and the results of attending meetings and meetings at the Ministry of Agriculture level, it is possible to identify the types of business disruptions and plantation conflicts, which are divided into two classes of disputes, namely land disputes and non-land disputes. Land disputes are plantation disputes or conflicts directly related to land. The types of land disputes are the issuance of Plantation Business Licenses that are not in accordance with the provisions, plantation development that exceeds the permit area, the use of customary/customary land without the consent of customary/community leaders, the establishment of Spatial and Regional Plans (Rencana Tata Ruang dan Wilayah (RTRW)) in the Regency/City has not been completed. While non-land

disputes are plantation disputes or conflicts that are not directly related to land, divided into farmers are unable and or there is no desire to pay/pay off credit to companies or banks, the determination of the purchase price of plasma plantation production is not in accordance with the provisions. Furthermore, the community rejects the development of Plantations or Palm Oil Mills since they are influenced by NGOs and other third parties (unscrupulous people). Plantation conflicts can result in decreased plantation production. Therefore, given the high number of conflicts in plantations, it is necessary to make efforts to overcome plantation business disturbances, both internally and in coordination with other related agencies.

Based on **Figure 7**, explaining the challenges and impacts of governance policies of the Riau Province government, Indonesia, on oil palm plantations, challenges for the government such as having illegal land, so it is necessary to immediately validate and verify policies carried out by the central government together with local governments. The impact of oil palm plantations, such as conflict and government performance, affects the budget of Riau Province, Indonesia.

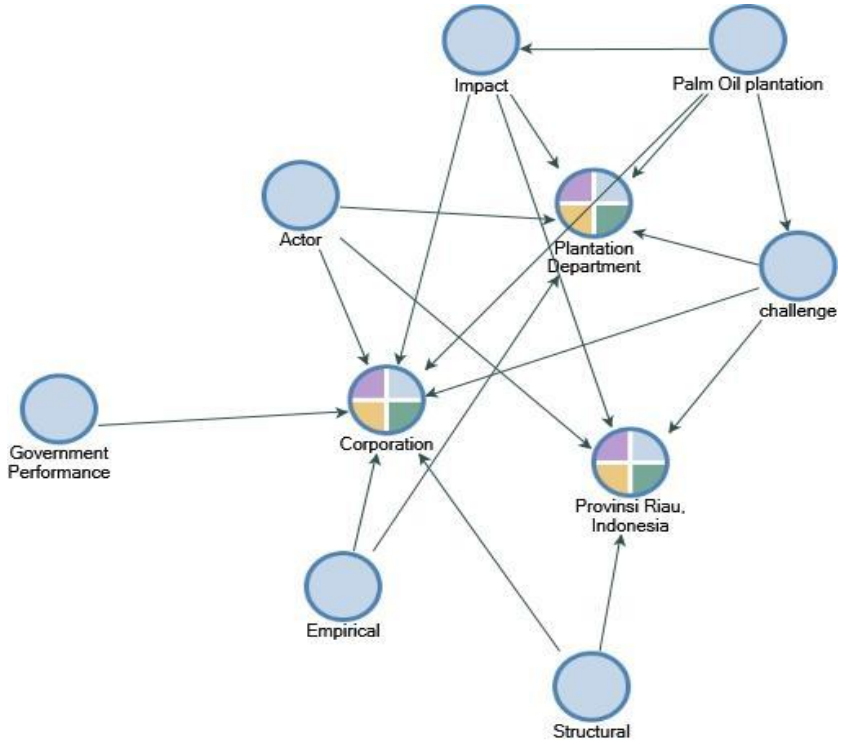

Figure 7. Riau Province, Indonesia government policy governance on oil palm plantation services processed through Nvivo 12 Plus, 2023.

Land disputes are plantation disputes and/or conflicts that are directly related to land. Based on the research results, it can be mapped in the following (**Table 1**):

Table 1. Types of palm oil land disputes in Riau Province, Indonesia 2023.

No	Types of Land Disputes
1	Issuance of Plantation Business Permits that do not/do not comply with the provisions.
2	Garden construction exceeds the permitted area.
3	Use of customary/customary land without the consent of traditional/community leaders.

Table 1. (*Continued*).

No	Types of Land Disputes
4	Determination of Spatial and Regional Planning (RTRW) in Regency/City has not been completed.
5	Land occupation/grabbing by the community.
6	Overlapping land between plantations and forest areas.
7	Overlapping plantation land with mining areas.
8	Overlapping land due to new permits.
9	The HGU issuance process does not follow applicable regulations.
10	Demands for the return of community land in the HGU extension process.
11	Land compensation and planting have not been completed but the company is operational.
12	The company took over the community's land.
13	Plasma plantations that serve as collateral for credit are bought and sold by farmers without the knowledge of the company/bank.
14	The company has not fulfilled the community's demands for plasma plantations that have been promised.
15	The community demanded the return of the land for which the company had compensated.
16	The Location Permit has expired and no renewal/extension has been carried out.
17	The community demands that the company land be owned/controlled.
18	The area of plasma land does not match the determination of the number of prospective participating farmers by the Regent.
19	Community demands for the construction of plasma plantations must be at least 20% of the area cultivated by the company.
20	Land abandoned by the company

Plantation conflicts can result in decreased plantation production. Considering the high level of conflict in plantations, it is necessary to make efforts to overcome plantation business disruptions, both internally and in coordination with other relevant agencies. Apart from palm oil and coconut products that large plantation industries have cultivated, the downstream industries of rubber, cocoa, coffee, and sago commodities are still very limited, developing only on a small scale at the household level. Most of the exports are in the form of raw materials. For this reason, processing plantation commodities is important in order to provide added value to a product, open up labor opportunities, and expand the market absorption of commodities. The Palm Oil Processing Industry (Pengolahan Kelapa Sawit (PKS)) currently totals 227 units, rubber processing plants total 12 units, and coconut processing plants 18 units. Additionally, potential processing of products from coconut trees that household-scale farmers can implement by forming Small and Medium Enterprises (Usaha Kecil Menengah (UKM)), namely from coconut water (28%) made into nata de coco, soy sauce, vinegar, and drinks. Shells (16%) are made into charcoal, charcoal flour, activated charcoal, and household goods such as dippers and ladles. Meanwhile, coconut fiber (20%) can be used to produce mats, carpets, ropes, and mattresses, and sticks (5%) can be utilized to produce brooms, baskets, and plates. This also applies to rubber, cocoa, sago, and coffee derivatives. The level of value-added from plantation commodities as the main product, both in terms of quality and type, is still low since supporting facilities and infrastructure are not yet available. Therefore, it is necessary to facilitate community empowerment to be able to process resources in their respective regions. The problems in this research are seen from the perspective of governance theory. The theory used uses 3 (three) major dimensions in the context

of governance this concept is used as an entry point for analysis. The dimensions are: 1) Actor dimensions, 2) Structural dimensions, 3) Structural dimensions.

4. Conclusion

This research concludes that the challenges and impacts of oil palm plantation policy governance by the Riau Provincial Government. The research findings from the three dimensions of governance, namely, the actor dimension, are dominated by the condition of oil palm farmers as actors who are disadvantaged from the policy side, namely the slow downstream program. This is so that when there is a decrease in the price of oil palm TBS due to unclear CPO prices and the policy of stopping CPO exports, it impacts the welfare of oil palm farmers. The unclear government policy on the legality of smallholder oil palm land is detrimental to oil palm farmers who own illegal land. Hence, there is an immediate need for a validation and verification policy performed by the central government together with local governments. Moreover, the challenges of governance in the structural dimension are dominated by the budget structure, which impacts the performance and accountability of the Riau Provincial Government. The APBD of the Riau Provincial Government through the Riau Provincial Plantation Service, observed from the use of indirect expenditure, occurred quite significantly, and the achievement of budget absorption between realization and pure budget ceiling only reached 51.18%.

Data from the PPES of the Ministry of Environment and Forestry in 2020 found 1.628 million hectares of illegal oil palm plantations owned by oil palm farmers or community-owned plantations in Riau. Empirical conditions also revealed that there are 84 companies out of 224 plantation companies in Riau Province that have not obtained HGU licenses. The impact of the Riau provincial government's policy governance on oil palm plantations is that many plantation conflicts can decrease plantation production. Therefore, given the high number of conflicts in plantations, it is necessary to make efforts to overcome plantation business disturbances, both internally and in coordination with other related agencies.

This study is inseparable from limitations such as only discussing the governance of the Riau provincial government's policy on oil palm plantations. There are still limitations in the information and policy governance of the government of Riau Province, Indonesia, in the expansion of the palm oil industry area. However, the research attempted to collect various relevant information and policies to support this study; hence, the findings of this study are still objective and able to find new findings.

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References

Abafe, E. A., Bahta, Y. T., & Jordaan, H. (2022). Exploring Biblioshiny for Historical Assessment of Global Research on Sustainable Use of Water in Agriculture. Sustainability, 14(17), 10651. https://doi.org/10.3390/su141710651

Abdul Majid, N., Ramli, Z., Md Sum, S., & Awang, A. H. (2021). Sustainable Palm Oil Certification Scheme Frameworks and Impacts: A Systematic Literature Review. Sustainability, 13(6), 3263. https://doi.org/10.3390/su13063263

Adlini, M. N., Dinda, A. H., Yulinda, S., et al. (2022). Qualitative research method: literature study. Edumaspul: Jurnal Pendidikan, 6(1), 974–980. doi: 10.33487/edumaspul.v6i1.3394

Ali, E. B., Anufriev, V. P., & Amfo, B. (2021). Green economy implementation in Ghana as a road map for a sustainable development drive: A review. Scientific African, 12, e00756. https://doi.org/10.1016/j.sciaf.2021.e00756

Astuti, R., Miller, M. A., McGregor, A., et al. (2022). Making illegality visible: The governance dilemmas created by visualising illegal palm oil plantations in Central Kalimantan, Indonesia. Land Use Policy, 114, 105942. https://doi.org/10.1016/j.landusepol.2021.105942

Bakce, D., Syahza, A., & Asmit, B. (2019). Economic Development of Inter-State Border Areas in Riau Province. Unri Conference Series: Agriculture and Food Security, 1, 182–189. https://doi.org/10.31258/unricsagr.1a24

Begum, F., Lobry de Bruyn, L., Kristiansen, P., & Islam, M. A. (2021). Institutionalising co-management activities for conservation of forest resources: Evidence from the Sundarban mangrove forest management of Bangladesh. Journal of Environmental Management, 298, 113504. https://doi.org/10.1016/j.jenvman.2021.113504

Brennan, N. M., Subramaniam, N., & Van Staden, C. J. (2019). Corporate governance implications of disruptive technology: An overview. The British Accounting Review, 51(6), 100860. https://doi.org/10.1016/j.bar.2019.100860

Ciasullo, M. V., Troisi, O., Grimaldi, M., & Leone, D. (2020). Multi-level governance for sustainable innovation in smart communities: an ecosystems approach. International Entrepreneurship and Management Journal, 16(4), 1167–1195. https://doi.org/10.1007/s11365-020-00641-6

Cofré-Bravo, G., Klerkx, L., & Engler, A. (2019). Combinations of bonding, bridging, and linking social capital for farm innovation: How farmers configure different support networks. Journal of Rural Studies, 69, 53–64. https://doi.org/10.1016/j.jrurstud.2019.04.004

Cosar, K., & Thomas, B. (2021). The geopolitics of international trade in Southeast Asia. Review of World Economics, 157(1), 207–219. https://doi.org/10.1007/s10290-020-00403-0

Creswell, J. W. (2021). A concise introduction to mixed methods research. SAGE publications.

Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative Research Designs. The Counseling Psychologist, 35(2), 236–264. https://doi.org/10.1177/0011000006287390

Dewi, L. K., Nasution, A. H., & Noer, B. A. (2017). Model Dasar Pengembangan Business Model Canvas ke Balanced Scorecard (Studi Kasus: PT. Boma Bisma Indra). Jurnal Sains Dan Seni ITS, 6(2). https://doi.org/10.12962/j23373520.v6i2.24371

Dharmawan, A. H., Mardiyaningsih, D. I., Komarudin, H., et al. (2020). Dynamics of Rural Economy: A Socio-Economic Understanding of Oil Palm Expansion and Landscape Changes in East Kalimantan, Indonesia. Land, 9(7), 213. https://doi.org/10.3390/land9070213

Diaz-Castro, L., Suarez-Herrera, J. C., Gonzalez-Ruiz, O. O., et al. (2023). Governance in mental healthcare policies during the COVID-19 pandemic in Mexico. Frontiers in Public Health, 11. https://doi.org/10.3389/fpubh.2023.1017483

Dinas Perkebunan Provinsi Riau. (2020). Rencana Strategis Dinas Perkebunan Provinsi Riau 2020-2024. Available online: https://disbun.riau.go.id/include/assets/file/RENSTRA_Disbun.pdf (accessed on 28 August 2023).

Ekawati, S., Subarudi, Budiningsih, K., et al. (2019). Policies affecting the implementation of REDD+ in Indonesia (cases in Papua, Riau and Central Kalimantan). Forest Policy and Economics, 108, 101939. https://doi.org/10.1016/j.forpol.2019.05.025

Fadli, M. R. (2021). Memahami desain metode penelitian kualitatif. HUMANIKA, 21(1), 33–54. https://doi.org/10.21831/hum.v21i1.38075

Gjaltema, J., Biesbroek, R., & Termeer, K. (2019). From government to governance…to meta-governance: a systematic literature review. Public Management Review, 22(12), 1760–1780. https://doi.org/10.1080/14719037.2019.1648697

Harsono, D., Chozin, M. A., & Fauzi, A. M. (2012). Analysis on Indonesian Sustainable Palm Oil (ISPO): A Qualitative Assessment the Success Factors for ISPO. Jurnal Manajemen &Agribisnis. https://doi.org/10.17358/jma.9.2.39-48

Hatane, S. E., Diandra, J. C., Tarigan, J., & Jie, F. (2021). Voluntary intellectual capital disclosure and earnings forecast in Indonesia–Malaysia–Thailand growth triangle's pharmaceuticals sector. International Journal of Emerging Markets, 18(1), 1–21. https://doi.org/10.1108/ijoem-01-2020-0028

Hernita, H., Surya, B., Perwira, I., et al. (2021). Economic Business Sustainability and Strengthening Human Resource Capacity Based on Increasing the Productivity of Small and Medium Enterprises (SMEs) in Makassar City, Indonesia. Sustainability, 13(6), 3177. https://doi.org/10.3390/su13063177

Hsieh, L., Child, J., Narooz, R., et al. (2019). A multidimensional perspective of SME internationalization speed: The influence of entrepreneurial characteristics. International Business Review, 28(2), 268–283. https://doi.org/10.1016/j.ibusrev.2018.09.004

Ishtiaq, M. (2019). Research Design: Qualitative, Quantitative and Mixed Methods Approaches, 4th ed. Thousand Oaks, CA: Sage. https://doi.org/10.5539/elt.v12n5p40

Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. Medical Teacher, 42(8), 846–854. https://doi.org/10.1080/0142159x.2020.1755030

Kim, S., & Baniamin, H. M. (2021). Understanding the Dynamics of Institutional Trust in Indonesia, Malaysia, and Thailand. International Journal of Public Administration, 45(15), 1092–1102. https://doi.org/10.1080/01900692.2021.1948566

Korosteleva, E. A., & Flockhart, T. (2020). Resilience in EU and international institutions: Redefining local ownership in a new global governance agenda. Contemporary Security Policy, 41(2), 153–175. https://doi.org/10.1080/13523260.2020.1723973

Kramar, R. (2022). Sustainable human resource management: six defining characteristics. Asia Pacific Journal of Human Resources, 60(1), 146–170. https://doi.org/10.1111/1744-7941.12321

Krupiy, T. (Tanya). (2020). A vulnerability analysis: Theorising the impact of artificial intelligence decision-making processes on individuals, society and human diversity from a social justice perspective. Computer Law & Security Review, 38, 105429. https://doi.org/10.1016/j.clsr.2020.105429

Leung, T. N., Chiu, D. K. W., Ho, K. K. W., & Luk, C. K. L. (2021). User perceptions, academic library usage and social capital: a correlation analysis under COVID-19 after library renovation. Library Hi Tech, 40(2), 304–322. https://doi.org/10.1108/lht-04-2021-0122

Li, T. M. (2021). Commons, co-ops, and corporations: assembling Indonesia's twenty-first century land reform. The Journal of Peasant Studies, 48(3), 613–639. https://doi.org/10.1080/03066150.2021.1890718

Skjott Linneberg, M., & Korsgaard, S. (2019). Coding qualitative data: a synthesis guiding the novice. Qualitative Research Journal, 19(3), 259–270. https://doi.org/10.1108/qrj-12-2018-0012

Mansoor, M. (2021). Citizens' trust in government as a function of good governance and government agency's provision of quality information on social media during COVID-19. Government Information Quarterly, 38(4), 101597. https://doi.org/10.1016/j.giq.2021.101597

Moeliono, M., Brockhaus, M., Gallemore, C., et al. (2020). REDD+ in Indonesia: A new mode of governance or just another project? Forest Policy and Economics, 121, 102316. https://doi.org/10.1016/j.forpol.2020.102316

Monzon, J. P., Slingerland, M. A., Rahutomo, S., et al. (2021). Fostering a climate-smart intensification for oil palm. Nature Sustainability, 4(7), 595–601. https://doi.org/10.1038/s41893-021-00700-y

Moon, K., Blackman, D. A., Adams, V. M., et al. (2019). Expanding the role of social science in conservation through an engagement with philosophy, methodology, and methods. Methods in Ecology and Evolution, 10(3), 294–302. https://doi.org/10.1111/2041-210x.13126

Nurfatriani, F., Sari, G. K., & Komarudin, H. (2019). Optimization of crude palm oil fund to support smallholder oil palm replanting in reducing deforestation in Indonesia. Sustainability, 11(18), 4914. doi: 10.3390/su11184914

Nurfatriani, F., Ramawati, R., Sari, G. K., et al. (2022). Oil Palm Economic Benefit Distribution to Regions for Environmental Sustainability: Indonesia's Revenue-Sharing Scheme. Land, 11(9), 1452. https://doi.org/10.3390/land11091452

Omri, A., & Ben Mabrouk, N. (2020). Good governance for sustainable development goals: Getting ahead of the pack or falling behind? Environmental Impact Assessment Review, 83, 106388. https://doi.org/10.1016/j.eiar.2020.106388

Park, H., & Kim, J. D. (2020). Transition towards green banking: role of financial regulators and financial institutions. Asian Journal of Sustainability and Social Responsibility, 5(1). https://doi.org/10.1186/s41180-020-00034-3

Pasaribu, S. I., Vanclay, F., & Zhao, Y. (2020). Challenges to Implementing Socially-Sustainable Community Development in Oil Palm and Forestry Operations in Indonesia. Land, 9(3), 61. https://doi.org/10.3390/land9030061

Pemerintah Provinsi Riau. (2019). Regional Medium-Term Development Plan of Riau Province 2019-2024 (Indonesian). Available online: https://ppid.riau.go.id/download/11/1591586067rencana-pembangunan-jangka-menengah-daerah-rpjmd-provinsi-riau-tahun-2019-2024.pdf (accessed on 28 August 2023).

Pramudya, E. P., Wibowo, L. R., Nurfatriani, F., et al. (2022). Incentives for Palm Oil Smallholders in Mandatory Certification in Indonesia. Land, 11(4), 576. https://doi.org/10.3390/land11040576

Putri, E. I. K., Dharmawan, A. H., Hospes, O., et al. (2022). The Oil Palm Governance: Challenges of Sustainability Policy in Indonesia. Sustainability, 14(3), 1820. https://doi.org/10.3390/su14031820

Rahmadani, V. G., Schaufeli, W. B., Stouten, J., et al. (2020). Engaging Leadership and Its Implication for Work Engagement and Job Outcomes at the Individual and Team Level: A Multi-Level Longitudinal Study. International Journal of Environmental Research and Public Health, 17(3), 776. https://doi.org/10.3390/ijerph17030776

Reed, J., Chervier, C., Borah, J. R., et al. (2023). Co-producing theory of change to operationalize integrated landscape approaches. Sustainability Science, 18(2), 839–855. https://doi.org/10.1007/s11625-022-01190-3

Roengtam, S., & Agustiyara, A. (2022). Collaborative governance for forest land use policy implementation and development. Cogent Social Sciences, 8(1). https://doi.org/10.1080/23311886.2022.2073670

Salleh, S. F., Mohd Roslan, M. E., Abd Rahman, A., et al. (2020). Transitioning to a sustainable development framework for bioenergy in Malaysia: policy suggestions to catalyse the utilisation of palm oil mill residues. Energy, Sustainability and Society, 10(1). https://doi.org/10.1186/s13705-020-00269-y

Savari, M., & Shokati Amghani, M. (2022). SWOT-FAHP-TOWS analysis for adaptation strategies development among small-scale farmers in drought conditions. International Journal of Disaster Risk Reduction, 67, 102695. https://doi.org/10.1016/j.ijdrr.2021.102695

Savini, F. (2019). The economy that runs on waste: accumulation in the circular city. Journal of Environmental Policy & Planning, 21(6), 675–691. https://doi.org/10.1080/1523908x.2019.1670048

Setijadi, C. (2022). 'We are people of the Islands': translocal belonging among the ethnic Chinese of the Riau Islands. Asian Ethnicity, 24(1), 108–131. https://doi.org/10.1080/14631369.2022.2069082

Skjærseth, J. B. (2021). Towards a European Green Deal: The evolution of EU climate and energy policy mixes. International Environmental Agreements: Politics, Law and Economics, 21(1), 25–41. https://doi.org/10.1007/s10784-021-09529-4

Soberón, M., Sánchez-Chaparro, T., Smith, A., et al. (2022). Exploring the possibilities for deliberately cultivating more effective ecologies of intermediation. Environmental Innovation and Societal Transitions, 44, 125–144. https://doi.org/10.1016/j.eist.2022.06.003

Sudha, S. (2020). Corporate environmental performance–financial performance relationship in India using eco-efficiency metrics. Management of Environmental Quality: An International Journal, 31(6), 1497–1514. https://doi.org/10.1108/meq-01-2020-0011

Syahrir, R., Wall, F., & Diallo, P. (2021). Coping with sudden mine closure: The importance of resilient communities and good governance. The Extractive Industries and Society, 8(4), 101009. https://doi.org/10.1016/j.exis.2021.101009

Syahza, A., & Irianti, M. (2021). Formulation of control strategy on the environmental impact potential as a result of the development of palm oil plantation. Journal of Science and Technology Policy Management, 12(1), 106–116. https://doi.org/10.1108/jstpm-06-2019-0059

Tien, N. H., Anh, D. B. H., & Ngoc, N. M. (2019). Corporate financial performance due to sustainable development in Vietnam. Corporate Social Responsibility and Environmental Management, 27(2), 694–705. https://doi.org/10.1002/csr.1836

Widiati, W., Mulyadi, A., Syahza, A., & Mubarak. (2020). Analysis of Plantation Management Achievement Based on Sustainable Development. International Journal of Sustainable Development and Planning, 15(4), 575–584. https://doi.org/10.18280/ijsdp.150418

Yusanto, Y. (2020). Ragam Pendekatan Penelitian Kualitatif. JOURNAL OF SCIENTIFIC COMMUNICATION (JSC), 1(1). https://doi.org/10.31506/jsc.v1i1.7764

Yuslaini, N., Sumadinata, R. W. S., Fedryansyah, M., et al. (2023). Sustainable investment strategies in the palm oil industry in Indonesia. Journal of Infrastructure, Policy and Development, 7(3). doi: 10.24294/jipd.v7i3.2288

Yuslaini, N., Suwaryo, U., Deliarnoor, N. A., & Sri Kartini, D. (2023). Palm oil industry and investment development in Dumai City, Indonesia: A focus on local economy development and sustainability. Cogent Social Sciences, 9(1). https://doi.org/10.1080/23311886.2023.2235780

Yusliani, N., Suwaryo, U., Deliarnoor, N. A., & Kartini, D. S. (2022). Colaborative Governance in Increasing Foreign Investment in Dumai City, Riau Province, Indonesia. Proceedings of the International Conference on Sustainable Environment, Agriculture and Tourism (ICOSEAT 2022). https://doi.org/10.2991/978-94-6463-086-2_124