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NON-COMPLIANCE OF FORESTRY PERMITS WITH THE REGIONAL SPATIAL PLAN (RTRW) IN SIAK REGENCY

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Abstrak

Ketidaksesuaian antara izin kehutanan dan Rencana Tata Ruang Wilayah (RTRW) merupakan salah satu persoalan penting dalam tata kelola sumber daya alam di Kabupaten Siak. Penelitian ini bertujuan untuk menganalisis bentuk ketidakpatuhan izin kehutanan dan perkebunan terhadap RTRW Kabupaten Siak Tahun 2020–2040, mengidentifikasi indikasi maladministrasi dalam proses perizinan, serta merumuskan langkah kebijakan untuk memperkuat kepatuhan tata ruang. Penelitian ini menggunakan pendekatan hukum normatif yang didukung oleh analisis kualitatif dan data kuantitatif-spasial. Data diperoleh melalui studi dokumen peraturan perundang-undangan, dokumen RTRW, data perizinan kehutanan dan perkebunan, observasi lapangan, serta wawancara dengan informan kunci. Hasil penelitian menunjukkan bahwa terdapat izin Hutan Tanaman Industri (HTI) seluas 126.737 hektare dan izin perkebunan seluas 57.866 hektare yang beroperasi di luar koridor peruntukan ruang sebagaimana ditetapkan dalam RTRW Kabupaten Siak. Ketidaksesuaian tersebut menunjukkan adanya persoalan koordinasi antarlevel pemerintahan, lemahnya verifikasi spasial, serta belum optimalnya mekanisme pengawasan dan penegakan sanksi. Dampaknya tidak hanya bersifat administratif, tetapi juga menimbulkan ketidakpastian hukum, konflik agraria, kerusakan ekosistem gambut, dan meningkatnya kerentanan terhadap kebakaran hutan dan lahan. Penelitian ini merekomendasikan penyusunan peraturan bupati sebagai pedoman teknis pelaksanaan RTRW, penguatan peran TKPRD, integrasi data perizinan melalui sistem GIS dan One Map Policy, audit berkala terhadap izin yang bermasalah, serta penerapan sanksi administratif berupa pembatalan atau pencabutan izin terhadap korporasi yang terbukti melanggar tata ruang.

Kata kunci: Izin Kehutanan; RTRW; Kabupaten Siak; Maladministrasi; Tata Ruang; Konflik Agraria.

Abstract

The inconsistency between forestry permits and the Regional Spatial Plan (RTRW) has become a significant issue in natural resource governance in Siak Regency. This study aims to analyze the forms of non-compliance of forestry and plantation permits with the 2020–2040 Siak Regency RTRW, identify indications of maladministration in the licensing process, and formulate policy measures to strengthen spatial planning compliance. This research employs a normative legal approach supported by qualitative analysis and quantitative-spatial data. The data were obtained through the examination of statutory regulations, spatial planning documents, forestry and plantation permit data, field observations, and interviews with key informants. The findings reveal that Industrial Plantation Forest (HTI) permits covering 126,737 hectares and plantation permits covering 57,866 hectares operate outside the spatial allocation corridors stipulated in the Siak Regency RTRW. This mismatch indicates problems of intergovernmental coordination, weak spatial verification, and the suboptimal implementation of monitoring and sanction mechanisms. The impacts are not merely administrative but also include legal uncertainty, agrarian conflicts, peat ecosystem degradation, and increased vulnerability to forest and land fires. This study recommends the formulation of a regent regulation as a technical guideline for RTRW implementation, the strengthening of the Regional Spatial Planning Coordination Team (TKPRD), the integration of licensing data through GIS and the One Map Policy, periodic audits of problematic permits, and the enforcement of administrative sanctions in the form of permit cancellation or revocation against corporations proven to have violated spatial planning regulations.

Keywords: *Forestry Permits; RTRW; Siak Regency; Maladministration; Spatial Planning; Agrarian Conflict.*

Introduction

Sustainable development in Indonesia is often faced with a tension between the economic impetus of forestry licensing and the obligation to enforce fair spatial planning. This study expands the framework of thought by placing Siak Regency, Riau Province, as a prominent study location in the dynamics of conflicts between corporate interests and the rights of local communities, as well as how licensing mechanisms can interfere with the implementation of RTRW that has been established. This description is also based on the 2025 field findings and related policy documents that describe patterns of non-compliance with the RTRW and efforts to restructure licensing across sectors (Fatahillah et al., 2025)

Forest use data in Siak Regency shows a broad composition of forest functions and has significant policy implications. Based on 2025 field data, protected forests are only 1.6%, nature reserve forests are 14.4%, production forests are 37.9%, limited production forests are 44.5%, and other forests are 1.4%. This structure places most of the area in a category that allows for industrial utilization, so HTI and Plantation licensing has the potential for conflict with the RTRW if zoning and zoning are not done appropriately. Furthermore, several villages such as Olak in Sungai Mandau District, as well as Rantau Bertuah and Dayun Villages, have historically been in industrial forest areas without the release of appropriate areas, so they have the potential to become points of dispute between local communities, business actors, and local governments (Undari & Lubis, 2021).

Legally, national and regional frameworks form complex operational contexts. The Forestry Law No. 41 of 1999 and the Plantation Law No. 39 of 2014 provide the basis for licensing forest use, while Government Regulation No. 6 of 2007 regulates forest management and forest management plans and their use. At the regional level, Regional Regulation No. 1 of 2020 concerning the Siak Regency RTRW (2020–2040) affirms the principles of balanced spatial planning between economic development and environmental sustainability, with institutional frameworks, spatial patterns, protected areas, licensing, incentives/disincentives, and dispute resolution.

However, regional data shows that the implementation constraints of around 77% of HTI permits in Riau Province do not meet the criteria for permit-granting areas, and about 1.5 million hectares of forest are illegally managed for oil palm and mining without proper area release. This discrepancy confirms the existence of an institutional paradox between the central encouragement for economic development through forestry permits and the obligation to comply with the spatial planning that has been determined by the region (Nurjaman, 2026)

The context of national and regional policies also presents challenges in the operationalization of sanctions and enforcement mechanisms. Law No. 26 of 2007 on Spatial Planning and national forestry regulations provides a formal foundation, but its implementation is highly dependent on regional technical regulations such as Perbup and GIS technical guidelines that describe the flow of location verification, violation criteria, and permit cancellation mechanisms. In the context of Siak Regency, the framework of Regional Regulation No. 1 of 2020 provides institutional facilities (TKPRD) and sanction instruments (including cancellation of permits and criminal sanctions), which should be able to overcome maladministration and violations of the RTRW if operated consistently (Rifqi et al., 2025).

A review of the field data indicates an institutional paradox between the central drive to encourage economic development through HTI and Plantations and the obligation of regions to enforce spatial planning. The large mismatch between the area of permits and the RTRW boundaries demands a normative evaluation of how sanctions, cancellations, and cross-sectoral coordination mechanisms can be actualized in practice. Field data for 2025 shows that agrarian conflicts between local communities and business actors are an important dimension that needs to be overcome through more firm, transparent, and rights-based policies for local communities.

Within this framework, the research emphasizes the importance of synergy between forestry licensing policies, spatial planning, and the protection of community rights, as recommended in Regional Regulation No. 1 of 2020 and the practice of partnerships with institutions such as ICEL and civil society organizations to critically review licensing. This collaboration is complemented by methodological support by The Asia Foundation through the Forest and Land Conflict Resolution Facilitation Team (TFPK), which targets two companies as an initial case study such as PT Duta Swakarya Indah (DSI) and PT Seraya Sumber Lestari (SSL). This data confirms the need for licensing reviews in response to the high agrarian conflict in Siak Regency (Marfungah & Febrina, 2025).

The field findings are in line with the framework of the 2020 Regional Regulation and how its operational implementation through cross-agency task forces, One Map Policy, and periodic RTRW reforms can prevent the recurrence of maladministration patterns and increase accountability in spatial governance. Concrete steps such as the establishment of a cross-agency enforcement task force, integration of licensing data with a centralized GIS system, and the implementation of licensing reviews with methodologies prepared with ICEL are the main policy focuses. The findings also emphasize the need for ongoing verification of land conversion involving villages bordering industrial forest areas, to optimize fiscal benefits for the region without sacrificing community rights and ecological balance.

The norm framework of the 2020 Regional Regulation, highlights how the outline of the pattern of spaces and protected areas (Articles 20–26) can be used as a verification standard for new permits and existing permits. With the discussion of agrarian conflicts raised by Afni Zulkifli and her team and the support of ICEL, this study emphasizes that licensing reform is not only technical but also social-institutional, where public participation and cross-sector accountability are the main components.

That way, through Regional Regulation No. 1 of 2020 and cross-institutional collaboration, Siak has the potential to change the dynamics of RTRW compliance into a fairer and more sustainable spatial governance practice. The implementation of the task force, the integration of licensing data with the One Map Policy, and the licensing review mechanism guided by ICEL are expected to be able to reduce agrarian conflicts, increase regional revenue from forestry DBH in proportion to the social and environmental burden, and strengthen the legitimacy of regional spatial planning. The next research structure will be compiled to display a review of the literature, methodology, empirical findings related to HTI and Plantations outside the RTRW, policy analysis based on the 2020 Regional Regulation, as well as practical implementation recommendations for the Siak Regency government. The main sources referenced include local government data, 2025 field reports, as well as relevant national and regional policy references (Marfungah & Febrina, 2025).

Based on the description of the incompatibility between forestry and spatial planning, the high potential for agrarian conflicts, and indications of maladministration in the permit issuance process in Siak Regency, this study departs from the main problem regarding the extent to which non-compliance with the 2020–2040 Siak Regency Regional Spatial Plan (RTRW) permits occurs. These problems are important to study considering that the inconsistency between licensing policies and spatial planning can have broad legal, social, economic, and environmental impacts. Therefore, this study aims to describe and analyze non-compliance with forestry permits against RTRW in Siak Regency, examine the potential for maladministration in the process of issuing forestry permits, and propose "null and void" sanction-based policy steps accompanied by more firm, transparent, and accountable governance practices to strengthen spatial planning compliance, increase legal certainty, and protect community rights and environmental sustainability.

METHODS

This study uses a qualitative approach with a normative-empirical legal research design supported by quantitative-spatial data analysis. This approach was chosen because the research focuses on evaluating the conformity of forestry and plantation permits with the Siak Regency Regional Spatial Plan (RTRW) for 2020–2040 and identifying potential maladministration in the permit issuance and implementation process. Normative legal analysis was carried out by examining relevant laws and regulations, spatial planning documents, forestry policies, plantation regulations, and regional legal instruments. Meanwhile, empirical legal analysis was used to understand how licensing policies and spatial planning provisions are implemented in practice, particularly in areas where forestry and plantation permits are indicated to overlap with or deviate from the RTRW.

In addition, quantitative-spatial data analysis was used to strengthen the empirical description of forest area distribution, plantation areas, permit locations, and spatial patterns established in the Siak Regency RTRW. Spatial analysis through Geographic Information System (GIS) techniques was used to compare forestry and plantation permit locations with the spatial allocation set out in the RTRW. This combination of normative legal research, empirical legal research, document analysis, spatial analysis, and environmental governance analysis allows the study to integrate legal perspectives, institutional governance, and factual field conditions in order to produce a more comprehensive analysis (Nasution et al., 2025).

The object of this research is the conformity of forestry and plantation permits with the Regional Spatial Plan of Siak Regency for 2020–2040. The main focus of the study is not only on the existence of permits, but also on the relationship between licensing documents, spatial planning provisions, forest area functions, plantation activities, and land-use conditions in the field. Therefore, the main unit of analysis in this research consists of legal norms, forestry and plantation permit documents, RTRW documents, spatial maps, institutional policies, and field-based information from key informants.

The study population includes forestry and plantation permits issued and operating in the Siak Regency area, Riau Province. Considering that this study uses a qualitative approach, the selection of informants was carried out through non-probability sampling with a purposive sampling method. Informants were selected based on their knowledge, experience, and direct involvement in issues related to spatial planning conflicts, forestry licensing, plantation activities, customary land, and agrarian disputes. The research participants consisted of two

customary stakeholders who had a deep understanding of the history of land tenure, changes in forest area use, and the social impact of forestry and plantation company activities. Customary stakeholders were chosen because they have a strategic position as representatives of local communities directly affected by licensing policies and spatial changes (Pecamuya, 2025).

The research instruments consisted of semi-structured interview guidelines, field observation sheets, document review formats, and spatial analysis matrices. The semi-structured interview guidelines were prepared based on indicators of RTRW compliance, permit issuance procedures, agrarian conflicts, environmental impacts, and aspects of maladministration. These indicators were adapted from the provisions of Law Number 26 of 2007 concerning Spatial Planning, Law Number 41 of 1999 concerning Forestry, Law Number 39 of 2014 concerning Plantations, and Siak Regency Regional Regulation Number 1 of 2020 concerning the Siak Regency RTRW for 2020–2040.

Field observation sheets were used to record the physical condition of areas indicated to experience incompatibility between actual land use and the spatial allocation established in the RTRW. Document review formats were used to examine legal documents, forestry permits, plantation permits, regional spatial planning documents, policy reports, and relevant institutional data. Meanwhile, spatial analysis matrices were used to compare permit locations, forest area functions, protected areas, plantation areas, and spatial pattern allocations. To ensure the credibility of the data, this study applied source triangulation and method triangulation by comparing interview results, field observations, spatial data, and relevant policy documents (Husnullail & Jailani, 2024).

Data collection was carried out in several systematic stages. The first stage was literature study and legal-document analysis, which included the examination of the Siak Regency RTRW, forestry licensing documents, plantation permit documents, local government reports, national regulations, regional regulations, policy documents, and relevant previous research. This stage was intended to identify the legal framework governing forestry permits, plantation permits, spatial planning, sanctions, and institutional responsibilities in the implementation of the RTRW. The second stage was the collection and examination of spatial data. Spatial data included RTRW maps, forest area maps, forestry and plantation permit maps, protected area maps, and other geospatial data relevant to land-use planning in Siak Regency. These data were used to identify areas where forestry and plantation permits were indicated to overlap with or operate outside the spatial allocation corridors stipulated in the RTRW. The third stage was field observation in areas indicated to have overlap between forestry or plantation permits and space allocation in the RTRW. Field observations were conducted to obtain factual information on land-use conditions and to verify indications of spatial incompatibility found in documents and maps. The fourth stage was in-depth interviews with customary stakeholders to obtain information on the dynamics of land conflict, the history of area use, community perceptions, and the social impacts of forestry and plantation licensing. All data were then compiled, categorized, and verified through a triangulation process to improve the consistency and validity of research findings (Malik et al., 2025).

Data analysis was carried out using normative legal analysis, document analysis, spatial analysis, descriptive analysis, and thematic analysis. Normative legal analysis was used to assess the suitability of forestry and plantation licensing practices with the applicable regulatory framework, especially laws and regulations concerning spatial planning, forestry,

plantations, regional government authority, and the Siak Regency RTRW for 2020–2040. Document analysis was conducted on forestry permits, plantation permits, RTRW documents, policy reports, and relevant legal instruments. This analysis focused on identifying licensing procedures, institutional authority, spatial allocation provisions, sanction mechanisms, and potential maladministration in the permit issuance and implementation process. Meanwhile, spatial and statistical data on forest area use and permit distribution were analyzed descriptively to identify patterns of mismatch between forestry permits, plantation permits, and the RTRW.

Spatial analysis was carried out using Geographic Information System (GIS) techniques by comparing forestry and plantation permit maps with the spatial pattern map of the Siak Regency RTRW. This analysis was used to identify areas of overlap, spatial deviation, and permits located outside the designated allocation zones. The results of spatial analysis were then tabulated using Microsoft Excel to describe the scale and pattern of permit non-compliance.

Qualitative data from interviews, observations, and documentation were analyzed using thematic analysis. The data were coded and grouped into several main themes, namely compliance with the RTRW, the permit issuance process, agrarian conflicts, environmental impacts, institutional coordination, and licensing maladministration. NVivo 14 was used to assist the grouping and organization of qualitative data, while GIS software was used for spatial analysis. The combination of these techniques was used to produce findings that are valid, systematic, and academically accountable.

RESULTS AND DISCUSSION

Non-Compliance of Forestry and Plantation Permits with the Siak Regency RTRW

The findings of this study indicate that non-compliance with the Regional Spatial Plan (RTRW) in Siak Regency occurs through the operation of forestry and plantation permits outside the spatial allocation corridors stipulated in Siak Regency Regional Regulation Number 1 of 2020 concerning the RTRW for 2020–2040. The study found that Industrial Plantation Forest (HTI) permits covering approximately 126,737 hectares and plantation permits covering approximately 57,866 hectares operate outside the area designated in the RTRW (Dian et al., 2025). These findings show that the problem is not merely technical in nature, but is also related to spatial governance, administrative control, and the consistency of licensing policies with regional spatial planning.

The existence of forestry and plantation permits outside the RTRW corridor indicates a potential pattern of maladministration in the licensing process. This maladministration may arise from weak spatial verification, limited synchronization between central and regional policies, inadequate monitoring of permit implementation, and the absence of clear technical guidelines for enforcing spatial compliance. In this context, the findings support the argument that spatial planning violations at the regional level are closely related to the weakness of institutional coordination and the limited effectiveness of administrative sanctions (Hafidzudin et al., 2025). Siak Regency Regional Regulation Number 1 of 2020 has provided a normative basis for controlling spatial use through provisions on spatial patterns, protected areas, licensing, incentives and disincentives, administrative sanctions, and dispute resolution mechanisms. In principle, the regulation seeks to balance economic development with environmental sustainability and community protection (Siak Regency, 2020; Rahmi et al., n.d.).

However, the findings show that the existence of a legal framework alone is insufficient if it is not supported by operational instruments, updated spatial data, and strong institutional enforcement.

Normative Framework of RTRW Compliance and Institutional Enforcement

The Regional Spatial Planning Coordination Team (TKPRD), as regulated in Article 77 of the Regional Regulation, has an important role in coordinating spatial planning policies across sectors. TKPRD is expected to strengthen coordination between agencies responsible for spatial planning, forestry, environment, licensing, and regional development. If this institution functions effectively, it can assess the feasibility of forestry and plantation permits, identify permits that deviate from the RTRW, and recommend administrative measures in accordance with Article 76 concerning administrative sanctions and Article 81 concerning criminal sanctions (Iskandar, 2020).

Articles 20–36 of the Regional Regulation concerning spatial patterns, regional outlines, and protected areas provide the legal basis for verifying whether new and existing permits are consistent with the spatial allocation established in the RTRW. These provisions are particularly important because forestry and plantation activities often intersect with protected forests, peat ecosystems, mangrove areas, and other environmentally sensitive zones. The availability of accurate and updated spatial data is therefore essential to detect violations and prevent the issuance or continuation of permits that are inconsistent with the RTRW (Sulastri & Latief, 2024; Julian & Umar, 2025)

Articles 72–76 concerning licensing, incentives, disincentives, and administrative sanctions also provide a legal foundation for controlling permit compliance. These provisions may support the review, suspension, cancellation, or revocation of permits that are proven to violate spatial planning regulations. However, their implementation requires more detailed technical regulations, including standard operating procedures for location verification, criteria for spatial violations, stages of administrative sanctions, and mechanisms for permit cancellation. Without such technical instruments, the enforcement of RTRW compliance may be delayed or inconsistently applied (Sekarmadji & Moechthar, 2023).

The provisions concerning licensing transition and dispute resolution, particularly Articles 72–75, Articles 83–85, and Article 79, provide a basis for reviewing existing permits and resolving conflicts through deliberation or legal mechanisms. These provisions are important in cases where forestry or plantation permits conflict with environmental protection and community land rights. In this regard, dispute resolution should not only be understood as a legal procedure, but also as part of broader spatial governance aimed at restoring legal certainty, ecological balance, and social justice (Hastri et al., 2022).

Spatial Verification, GIS-Based Monitoring, and Licensing Maladministration

The findings show that one of the main weaknesses in enforcing RTRW compliance is the limited integration of licensing data with updated spatial information. Although the Regional Regulation provides spatial planning norms, effective implementation depends on the availability of reliable spatial data, real-time monitoring, and public access to planning maps. Without an updated GIS database, the identification and cancellation of large-scale permits, including HTI permits covering 126,737 hectares, may face administrative and technical obstacles (Mergen et al., 2024).

Policy synchronization between the regional and national levels is also a crucial issue. Law Number 26 of 2007 concerning Spatial Planning and national forestry regulations must be

operationally integrated with the Siak Regency RTRW to prevent policy conflict between central licensing authority and regional spatial planning authority. The lack of synchronization between levels of government may create legal uncertainty, especially when permits issued under national sectoral policies are not fully aligned with regional spatial allocation (Rahman, 2019; Sari & Indra, 2021).

The dependence of RTRW enforcement on regional technical regulations demonstrates the need for a Regent Regulation or detailed technical guidelines. Such instruments should regulate the flow of permit verification, define spatial planning violations, establish GIS-based verification procedures, determine the stages of administrative sanctions, and clarify the mechanism for permit cancellation. Without clear technical rules, the consistency of enforcement against RTRW violations risks weakening in practice (Pleune et al., 2024).

Overcoming the institutional paradox between forestry licensing, plantation expansion, and regional spatial planning requires strict administrative enforcement. Normatively, the Siak Regency Regional Regulation provides a sufficient legal foundation through Article 76 and Article 81, which authorize administrative and legal action against business activities that violate the RTRW. Nevertheless, the effectiveness of these provisions depends on the existence of technical implementing instruments and the willingness of regional institutions to apply sanctions consistently (Dondokambey et al., 2025)

In this context, TKPRD must be optimized as the main coordinating institution for spatial planning enforcement. Its role should include periodic review of existing permits, verification of land-use conformity, coordination among relevant agencies, and the establishment of accessible public reporting mechanisms. Strengthening TKPRD is necessary to reduce sectoral fragmentation and close institutional gaps that may allow spatial planning violations to continue (Pramudiasari, 2024).

The accuracy of licensing supervision requires objective and legally binding spatial verification tools. The provisions on regional outlines and spatial patterns in Articles 20–21 and Article 35 of the Regional Regulation may be transformed into operational verification instruments for assessing both new permit applications and existing forestry or plantation permits. Integrating these instruments into the regional licensing system is important to ensure that all permits are evaluated based on valid and updated spatial data (Mulyadi, 2025).

Environmental Implications of Permit Non-Compliance

The non-compliance of HTI and plantation permits with the Siak Regency RTRW has significant environmental implications, particularly for peat ecosystem protection. Many concessions issued before the enactment of the new RTRW are indicated to overlap with Peat Ecosystem Protected Areas and forest areas. This spatial overlap reflects the legacy of past licensing practices that have not been fully synchronized with current spatial planning norms (Aldisanjaya, 2025). As a result, the conversion of peatland into industrial plantation areas continues to threaten the hydrological stability and ecological function of protected zones (Maisa, 2025).

The extent of spatial violation can also be seen from land drainage activities through canal construction in areas that should be protected. Reports on peatland conversion indicate that weak spatial sanctions and slow environmental compliance audits contribute to the continuation of corporate activities in restricted zones (Badawi & Wedhatami, 2025). Although the 2020–2040 Siak Regency RTRW mandates the protection and restoration of peat

hydrological functions, overlapping central and regional regulations are often used to maintain operations in areas that should be restricted (Simpson & Evens, 2024).

The environmental consequences of this non-compliance include increased vulnerability to forest and land fires. Hotspot distribution data indicate that recurrent fires often occur in plantation and HTI concession areas where water management practices do not fully comply with environmental and spatial planning requirements (PUTRI, 2025). This condition shows that non-compliance is not only an administrative issue, but also a direct threat to environmental protection and greenhouse gas emission reduction targets. When peat ecosystems are exploited beyond spatial planning limits, their carbon storage function is reduced and may turn into a source of emissions (Setiawan, 2024).

The provisions on protected area zoning and ecosystem protection in Articles 21–26 of the Regional Regulation provide an important legal basis for evaluating the environmental impacts of HTI and plantation expansion. If field evidence shows that business activities have caused encroachment or degradation in protected zones, environmental law instruments and spatial planning regulations can be used as the basis for administrative sanctions, restoration obligations, or permit cancellation (Adilla, 2025).

Agrarian Conflict and Legal Uncertainty for Local Communities

In addition to environmental degradation, the non-compliance of forestry and plantation permits with the RTRW also contributes to agrarian conflict and legal uncertainty for local communities. Several community-managed areas are indicated to have been included within company concession areas, even though the RTRW map directs such areas for settlement or sustainable agricultural use (Sutrisno, 2022). This condition shows that licensing practices have not fully reflected the principle of spatial justice and community rights protection (Notohadiprawiro et al., 2022).

The case of Olak Village illustrates the social impact of forestry licensing on local communities. Based on an interview with Amrin, the Head of Olak Village, conducted on April 16, 2020, indigenous communities had controlled and utilized customary land in the village for generations before the issuance of Industrial Plantation Forest Control Rights. The community used the area as a community forest to support daily needs. However, after the official HPHTI permit was granted to PT Riau Andalan Pulp and Paper (RAPP), community-managed land and settlements inhabited by approximately 300 households, covering around 600 hectares, were claimed to be part of the company's concession area.

This situation created legal uncertainty for the community because the land could be physically controlled and cultivated, but could not be legally upgraded into certified ownership rights. The case demonstrates that forestry licensing may create overlapping claims between corporate concessions and community land tenure. Such conditions require not only administrative correction, but also a rights-based approach to spatial planning enforcement.

The findings indicate that agrarian conflict in Siak Regency is closely related to the mismatch between concession permits, forest area designation, and the RTRW. Therefore, permit review should not be limited to technical mapping, but must also consider the history of land tenure, community access, customary rights, and the social consequences of spatial policy. In this regard, spatial planning enforcement must be linked to agrarian justice and the protection of local community rights.

Environmental Governance and Policy Implications

The findings of this study indicate that effective enforcement of RTRW compliance requires stronger environmental governance. The Siak Regency Government needs to prepare a Regent Regulation or technical guideline as an implementing instrument of the RTRW Regional Regulation. This regulation should contain clear procedures for permit verification, measurable criteria for spatial violations, stages of administrative sanctions, and mechanisms for permit cancellation or revocation (Notohadiprawiro et al., 2022).

The strengthening of TKPRD should also be directed toward regular compliance audits of forestry and plantation permits. TKPRD needs to conduct periodic evaluations of permits operating outside the RTRW corridor, integrate environmental feasibility requirements such as AMDAL and UKL-UPL into compliance monitoring, and establish cross-sector reporting mechanisms. Environmental documents should not be treated merely as administrative requirements at the beginning of the licensing process, but should be periodically audited as part of the sanction and compliance system (Peat and Mangrove Restoration Agency [BRGM], 2023). This non-compliance is no longer just an administrative violation, but a real threat to the target of reducing regional greenhouse gas emissions. When the peat ecosystem that should be protected continues to be exploited beyond the spatial planning quota, the carbon sequestration function is lost and turns into a source of massive carbon emissions (Nasution et al., 2022).

In addition to environmental degradation, non-compliance with corporate permits for the Siak RTRW also triggers the escalation of prolonged agrarian conflicts with indigenous and local communities. Many people-managed areas are unilaterally included in the company's concession area, even though in the RTRW 2020–2040 map the area is directed to residential zones or sustainable agriculture (Agrarian Reform Consortium [KPA], 2022). The integration of spatial outlines and spatial patterns into a Geographic Information System is also necessary to improve monitoring and transparency. A centralized GIS database aligned with the One Map Policy would allow regional authorities to identify spatial deviations, monitor permit implementation, and support evidence-based decisions regarding permit review or cancellation (Hafsari, 2024). Data synchronization through the One Map Policy is essential to accurately identify deviations in land use and to restore the legal authority of spatial planning (Ministry of Agrarian and Spatial Planning/National Land Agency [ATR/BPN], 2021).

Public transparency is another important element of environmental governance. Local governments should publish forestry and plantation permit data, spatial allocation maps, and compliance status periodically. Public access to such information allows affected communities and civil society organizations to participate in monitoring land-use compliance. Structured public participation can transform spatial planning enforcement from a closed administrative process into a more accountable governance mechanism (Agustin, 2025). Nevertheless, the current regulatory structure still has limitations. Operational details concerning GIS-based verification procedures, technical guidelines for the Regent Regulation, precise definitions of spatial violations, and the flow of permit cancellation with binding legal force have not been explicitly regulated in detail. This creates a potential implementation gap in enforcing the RTRW against non-compliant permits (Adilla, 2025).

Based on the findings, forestry and plantation permit non-compliance in Siak Regency reflects a broader problem of spatial governance. Although the RTRW has been formally

established, a number of permits continue to operate outside the designated spatial allocation. This condition is consistent with the view that conflicts between central policies and regional implementation often contribute to weak spatial compliance (Agustin, 2025). Therefore, the use of administrative sanctions, including permit review and cancellation, is relevant to strengthen accountability, legal certainty, environmental protection, and community rights (Miftahulloh et al., 2026). Overall, the results of this study show that non-compliance with forestry and plantation permits in Siak Regency reflects a broader problem of spatial inconsistency, licensing maladministration, weak intergovernmental coordination, environmental degradation, peat ecosystem vulnerability, agrarian conflict, and the need for stronger environmental governance.

CONCLUSION

This study concludes that the non-compliance of Industrial Plantation Forest (HTI) and plantation permits with the 2020–2040 Regional Spatial Plan (RTRW) of Siak Regency reflects a serious problem in regional spatial governance. The findings show that HTI permits covering approximately 126,737 hectares and plantation permits covering approximately 57,866 hectares are indicated to operate outside the spatial allocation corridors stipulated in Regional Regulation Number 1 of 2020 concerning the Siak Regency RTRW. This condition demonstrates that the implementation of forestry and plantation licensing has not been fully aligned with the legal framework of regional spatial planning.

The non-compliance is not merely an administrative issue, but is also related to weak spatial verification, limited synchronization between central and regional policies, and the absence of detailed technical instruments for enforcing RTRW compliance. These weaknesses create potential maladministration in the issuance and implementation of forestry and plantation permits. In addition, spatial overlap between concession areas, peat ecosystem protection zones, forest areas, and community-managed land has contributed to environmental degradation, increased vulnerability to forest and land fires, and prolonged agrarian conflict involving local and customary communities.

To strengthen spatial planning compliance, the Siak Regency Government needs to formulate a Regent Regulation as a technical implementing instrument of the RTRW Regional Regulation. This regulation should clearly define spatial planning violations, establish standard operating procedures for field and GIS-based verification, regulate the stages of administrative sanctions, and provide a clear mechanism for permit review, cancellation, or revocation. The Regional Spatial Planning Coordination Team (TKPRD) must also be strengthened as a cross-sectoral institution responsible for monitoring permit compliance, coordinating relevant agencies, and conducting periodic audits of forestry and plantation permits.

Furthermore, the enforcement of RTRW compliance should be supported by the integration of licensing data, forest area maps, plantation maps, and protected area maps into an updated Geographic Information System in line with the One Map Policy. Environmental feasibility documents, including AMDAL and UKL-UPL, should not only function as initial licensing requirements but also as instruments for continuous compliance monitoring. Public access to spatial and licensing information must also be improved to ensure transparency, community participation, and accountability in natural resource governance.

Overall, the study achieves its objective by demonstrating that the problem of forestry and plantation permit non-compliance in Siak Regency is rooted in the gap between legal norms, licensing practices, spatial data management, and institutional enforcement. Therefore, effective

reform requires not only the correction of problematic permits, but also stronger legal instruments, reliable spatial data, institutional coordination, environmental monitoring, and protection of local community rights.

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