Non-Registered Coastal Land Tenure and Community Protection in the Energy Transition Era

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Abstract. Community tenure over unregistered state land in coastal areas, such as former fish ponds, coastal boundaries, and reclaimed land, has existed for generations but lacks formal legal recognition. The absence of normative integration between key agencies, particularly the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) and the Ministry of Maritime Affairs and Fisheries (KKP), leads to overlapping authority in coastal land management. In the era of energy transition and circular economy, this legal vacuum increases the risk of marginalizing coastal communities from their living space and resources. This study examines the impact of disharmony between land and maritime regulations on the legal protection of communities controlling unregistered land, particularly in the context of expanding renewable energy and circular economy projects. Using a normative legal approach, it analyzes legal instruments such as the Basic Agrarian Law (UUPA), Coastal Law, Spatial Planning Law, Government Regulation, and KKPRL policies. It also refers to Constitutional Court Decision No. 3/PUU-VIII/2010 and the principles of UNCLOS. Findings show that the lack of harmonization between land registration and marine spatial planning permits fosters conflicting jurisdictions, digital disparities, and weak legal standing for local communities. An integrated legal framework is needed to recognize social tenure, support system integration, and ensure legal protection and ecological justice.

1. Introduction

Indonesia's coastal areas play a strategic role in the blue economy and are also vital spaces for energy transition initiatives, such as the development of offshore wind power plants, seaweed cultivation for bioenergy, and biorefinery projects that support the circular economy. On Madura Island, most of the coastal land managed by residents consists of unregistered state-owned land, former ponds, coastal zones, and sedimentation-affected land that is not recorded in the electronic land registration system of the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN).

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A study on the implementation of Government Regulation No. 18/2021 reveals that online registration coverage is limited to the coastline and has not yet been integrated with the marine spatial layer [1]. As a result, the community's de facto control has never been recognized as a subject of rights, despite being cultivated for generations.

The legal framework has become increasingly complex following the Ministry of Marine Affairs and Fisheries' (KKP) issuance of the Marine Spatial Utilization Activity Compliance Instrument (KKPRL) as a prerequisite for all business permits at sea, including those for renewable energy installations. This dualism of authority is reflected in the "sea fence" case in Tangerang, where HGB certificates issued by ATR/BPN were revoked because they were not accompanied by KKPRL, resulting in investor losses and concerns among local fishermen [3]. An analysis of electronic land certificate documents also confirms the absence of data exchange mechanisms between ministries, causing delays in verifying land rights (HAT) along the coast [2].

From a macroeconomic policy perspective, the Indonesian government aims to achieve net-zero emissions by 2060, promoting the development of wind power plants up to 60 GW and leveraging marine biomass as a key pillar of the circular economy [8]. Recent studies on seaweed bioenergy highlight the potential for biorefineries in Java and Nusa Tenggara, but emphasize the importance of securing coastal land use rights to ensure project bankability [6]. Similarly, circular economy literature emphasizes that distributive justice must be integrated from the permitting stage to avoid social trade-offs [5]. Without legal certainty, green projects risk exacerbating coastal land-use changes that displace indigenous communities and fishermen [7].

At the international level, UNCLOS requires coastal states to ensure the fair and sustainable use of marine resources; the 2023 Ocean Governance study notes that Indonesia remains weak in aligning marine cadastre data with land cadastre data, making it vulnerable to jurisdictional disputes [4]. This lack of harmony directly impacts the Sustainable Development Goals (SDG 14 and 7) because the uncertainty of land status slows down renewable energy investments and increases transaction costs for circular projects.

The urgency of this research lies in the fact that digital agrarian reforms (One Map Policy and PP 18/2021) have not addressed unregistered state land in coastal areas, while pressure for green investments is increasing. This gap creates a power asymmetry where capital-holding parties easily obtain KKPRL, while local communities struggle to prove historical rights due to a lack of official documentation. This access disparity exacerbates structural injustice in agrarian and maritime policies, and has the potential to create new socio-ecological conflicts. The objectives of this research include analyzing the disharmony between land and maritime regulations in the context of unregistered coastal land. Examining conflicts of authority between ATR/BPN and KKP and their impact on legal protection for coastal communities in the era of energy transition and circular economy. Additionally, to formulate an integrated normative framework model that integrates ecological justice principles and UNCLOS provisions into land digitalization.

The issues raised include how the authority disharmony between ATR/BPN and KKP affects the legal certainty of unregistered coastal land. This includes the impact on the economic, social, and cultural rights of coastal communities when renewable energy and circular economy projects are carried out on land without legal status.

The national legal framework can be harmonized to recognize de facto community control within the digital system of PP 18/2021 while meeting the requirements of KKPRL and UNCLOS principles.

Several publications over the past five years have highlighted: i) technical aspects of electronic land registration; ii) legal analysis of the "sea fence" case [3]; iii) evaluation of post-KKPRL marine governance [4]; and iv) the potential of circular economy based on marine biomass [5].

However, there remains a lack of normative studies that: (a) comprehensively mapping inter-ministerial authority conflicts along the coast; (b) directly linking the uncertainty of non-registered land rights to barriers to energy transition and circular economy investments; and (c) offering an integrative design for community protection while accelerating land digitalization. This study addresses this gap through a normative legal analysis that links agrarian, maritime, and international environmental law frameworks, then formulates concrete recommendations for regulatory harmonization and coastal community empowerment.

This study employs a normative legal approach, which is a legal research method that examines law as norms, rules, or regulations that apply in society. The main focus is on relevant legislation, legal doctrine, and court decisions that have precedential value in addressing the legal issues under study. In this context, the research is conducted through several approaches:

1. Statute Approach, Analyzing the hierarchy, principles, and provisions contained in Basic Agrarian Law (Law No. 5 of 1960), Law No. 27 of 2007 in conjunction with Law No. 1 of 2014 on Coastal Zone and Small Islands Management,Law No. 26 of 2007 on Spatial Planning, Government Regulation No. 18 of 2021 on Land Management Rights, Land Rights, and Land Registration, Ministry of Marine Affairs and Fisheries Regulation No. 28 of 2021 on KKPRL, and UNCLOS.
2. Conceptual Approach, using legal concepts such as non-registered state land, ecological justice, de facto control, and administrative authority conflicts. These concepts are analyzed with the help of literature on agrarian law, spatial planning law, and environmental law.
3. Case Approach, examining and comparing Constitutional Court Decision No. 3/PUU-VIII/2010, which prohibits the granting of rights over coastal areas, as well as administrative cases related to the revocation of HGB due to the absence of KKPRL, such as in the “sea fence” incident in Tangerang.

Legal Sources, Primary legal materials: legislation, Constitutional Court decisions, sectoral regulations. Secondary legal materials: books, legal journal articles, research results, and legal expert opinions. Tertiary legal materials: legal dictionaries, legal encyclopedias, and bibliographic indexes. This approach is particularly relevant in the study of conflicts of authority and legal disharmony, as it seeks to determine the most appropriate legal rules (lex certa) and identify the need for new law formation in the policy realm. [12]

2 Regulatory Disharmony in the Management of Non-Registered Coastal Land

Coastal zone management in Indonesia faces serious challenges due to overlapping regulations governing land and maritime space. This disharmony is primarily evident in three sectoral legal regimes: agrarian law (UUPA), maritime/coastal law (Law No. 27 of 2007 in conjunction with Law No. 1 of 2014), and spatial planning and land registration law (Government Regulation No. 18 of 2021).[10]

The UUPA states that all land not subject to rights is state land and is under state control through the ATR/BPN (Articles 2 and 4 of Law No. 5 of 1960). On the other hand, the Coastal Law (Law No. 27 of 2007 as amended by Law No. 1 of 2014) states that coastal areas and small islands cannot be granted ownership rights or land rights as regulated in the UUPA. This is reinforced by Constitutional Court Decision No. 3/PUU-VIII/2010, which explicitly prohibits the granting of private rights in coastal zones, including HGB, as it conflicts with the principles of sustainability and community access rights. Thus, there is a direct contradiction between two legal norms at the level of law: one regulates the granting of rights to state land (UUPA), while the other prohibits the granting of rights to areas that are de facto

part of state land (Coastal Law). The absence of a connecting norm (lex specialis or lex posterior) exacerbates legal ambiguity in the field.

Government Regulation No. 18 of 2021 on Land Management Rights, Land Rights, and Land Registration introduces an electronic land registration system and a digital land database (Articles 7 and 9). [11] However, this regulation does not adequately cover coastal areas, as the registration database is still land-based, while reclaimed land, coastal boundaries, and former ponds are not recorded as separate registration objects.

Technical document analysis from the Ministry of ATR/BPN and recent policy research indicate that the digital system lacks interoperability with the KKP's marine spatial system used for KKPRL applications. [13] This leads to administrative stagnation in land registration in unregistered coastal areas and opens the door to abuse of authority by certain parties with regulatory access.

KKPRL, as a legal instrument regulated in Permen KP No. 28 of 2021, is an absolute requirement before the issuance of marine spatial utilization permits for strategic projects such as offshore wind farm development or marine aquaculture. However, KKPRL is not recognized as part of land data or supporting documents in the rights certification process by ATR/BPN. This indicates a failure of coordination between ministries in integrating the legal basis for marine permits into the national land system.

This lack of harmony directly impacts coastal communities that have long managed unregistered land through inheritance. Their legal status remains uncertain, while capital-intensive actors can exploit regulatory gaps to apply for formal permits on the same land. [14]

To date, there are no connecting norms or cross-referencing regulations that can bridge the authority of ATR/BPN and KKP. Ideally, PP 18/2021 and Permen KP 28/2021 should contain harmonization clauses as mandated in Law No. 12 of 2011 on the Formation of Legislation. This absence creates institutional conflicts and legal uncertainty in coastal development projects, particularly in areas identified as non-registered state land.

The regulatory disharmony between the UUPA, the Coastal Law, PP 18/2021, and the Permen KP on KKPRL creates a significant legal loophole in the management of non-registered coastal land. This gap not only hinders legal certainty and green investment but also harms coastal communities that have long managed the land de facto. Cross-sectoral harmonization and the legal recognition of socially based tenure are urgent priorities in the context of the energy transition and the circular economy.

3 Vulnerability of Coastal Communities in Energy and Circular Projects

Coastal communities in Indonesia, particularly in areas such as Madura, often live and depend on unregistered state land, including former fish ponds, coastal areas, and land formed by sedimentation. These lands have been managed de facto for generations, but are not recognized as legitimate objects of rights within the national land tenure system. This legal uncertainty creates structural vulnerability that is becoming increasingly evident amid the massive investments in renewable energy and circular economy programs in coastal areas [1].

One of the most fundamental forms of vulnerability is the failure to recognize the de facto control of communities as legal subjects within the formal land tenure system. Most of the land they utilize is not registered in the electronic system as stipulated in Government Regulation No. 18 of 2021. Additionally, the land registration process requires formal administrative requirements such as title deeds, land maps, and proof of control, which are often unattainable for small-scale fishermen or farmers.

However, based on progressive agrarian law doctrine, continuous, open, and publicly known land control should be recognized as the basis for rights (both positive law and

substantive justice principles). In practice, however, this has not been accommodated in the digital land system or maritime policies.

Coastal communities living on unregistered land also lack access to various legal and administrative services, such as applications for KKPRL, land certification, or compensation claims when their areas are affected by national strategic projects. According to a UNDP study [13], communities without legal land titles face the risk of double exclusion: first from the land legal system, and second from the marine spatial planning system. This creates chronic legal vulnerability and weakens their bargaining position vis-à-vis investors or authorities.

When circular economy and energy transition projects enter coastal areas, local communities without legal proof of ownership of their residential land or business spaces are often excluded from the planning and decision-making processes. A study shows [4] that most marine bioenergy and blue carbon cultivation projects involve private investors who obtain KKPRL and location permits, while local communities are not involved in zoning planning or receive direct benefits.

This situation risks deepening the power imbalance between communities and capital holders, as communities lack the legal standing to demand participation rights or compensation. In some cases, green projects have even created a new form of "green eviction" that runs counter to the spirit of ecological justice and the right to space.

To date, there is no national legal mechanism that explicitly protects the non-registered land tenure of coastal communities. The UUPA does not provide specific provisions for unregistered state land in coastal zones, while the Coastal Zone Law explicitly prohibits the granting of rights to coastal zones (Constitutional Court Decision No. 3/PUU-VIII/2010). This creates a legal gray area where communities are systematically left unprotected by positive law.

Unlike customary land owned by indigenous communities, which has begun to be formally recognized through Ministerial Regulation No. 18 of 2019, the hereditary control of coastal communities has not received similar protection. Yet, sociologically and economically, their existence as guardians of coastal resources is crucial within the framework of sustainable development.

Coastal communities are in a highly vulnerable position due to the absence of legal norms that explicitly protect non-registered land tenure. Regulatory inconsistencies and conflicts of authority between ATR/BPN and KKP exacerbate this situation, especially when energy transition and circular economy projects are implemented without inclusive participation. There needs to be a reconstruction of legal norms that recognize communities' de facto forms of tenure and guarantee their rights to space, participation, and development benefits.

4 KKPRL as an Instrument for Connecting the Circular Economy and Energy Transition

In the national marine spatial management scheme, the existence of the Marine Spatial Utilization Conformity (KKPRL) has become a key legal instrument for bridging investment licensing and ecological sustainability. As stipulated in Ministerial Regulation No. 28 of 2021, KKPRL is a mandatory document for every business entity utilizing marine space, including for marine aquaculture, renewable energy installations, reclamation, and mineral extraction. In practice, KKPRL functions as a nexus between marine spatial management and land legal instruments in supporting the energy transition and circular economy agenda. However, this connecting function still faces various substantive and institutional challenges, especially in the context of non-registered state land.

Indonesia's circular economy policy encourages the utilization of coastal biological resources, such as seaweed and fishery waste, as raw materials for biorefineries and clean energy. On the other hand, marine energy-based energy transition programs such as Tidal

Power Plants (PLTAL) and Offshore Wind Power Plants (PLTB-L) require legally secure marine space free from social claims In this context, KKPRL is a prerequisite before location permits or environmental permits can be issued.

However, KKPRL does not automatically function as recognition of coastal communities' de facto control over unregistered land. In fact, in some cases, KKPRL is granted to businesses that have complete administrative documents but do not involve local communities that have managed the area for generations. This increases the risk of social displacement and reinforces inequality in access to coastal resources.

Although KKPRL has a strong legal position within the maritime legal regime, it is not connected to the electronic land registration system regulated in PP No. 18 of 2021 by the Ministry of ATR/BPN. The lack of integration of spatial data and documents between these systems creates an administrative gap, which causes:[5]

1. Land Rights Certificates (HAT) can be issued without reference to KKPRL (and vice versa);
2. Legal data on maritime territory control cannot be verified by the national land system;
3. Communities or parties that already have maritime permits cannot process land rights applications because the systems do not recognize each other.

This gap is exacerbated by the lack of a data bridge between the electronic land system (Sistem Elektronik Pendaftaran Tanah SEPATAN) and the Indonesian Marine Information System (SIMLALA). However, Article 12 of Government Regulation No. 18/2021 stipulates that land registration must be based on spatial integration and technical data. This disconnect causes cross-sector conflicts and prolongs the licensing process, which impacts the green investment climate in coastal areas.

Global pressure to accelerate renewable energy investment and circular economy development, such as through blue bonds and carbon credits, is forcing developing countries like Indonesia to provide legal certainty over coastal zones. The KKPRL should serve as a “bridge” between marine spatial permits and state land rights underpinning such strategic projects. However, due to overlapping authorities and weak system interoperability, the KKPRL has not optimally supported the acceleration of inclusive and equitable sustainable investment.

The IESR study emphasizes that legal certainty over the use of marine space and recognition of social land tenure are two key prerequisites for marine energy and circular projects to be accessed fairly by local communities and private parties. The absence of integrative norms between KKPRL and land registration creates room for speculation, prolongs bureaucratic processes, and increases the potential for conflict among stakeholders.

For KKPRL to truly function as a bridge between the maritime and land sectors, the following are needed:[11]

1. Cross-sectoral regulation (joint regulation) between KKP and ATR/BPN that recognizes KKPRL as a legal document in the process of state land certification in coastal areas.
2. Digital system integration through the unification of spatial databases between SEPATAN and SIMLALA, in accordance with the One Map Policy mandate.
3. A clause protecting local communities in the Ministerial Regulation on Marine Affairs and Fisheries (Permen KP), ensuring that every issuance of KKPRL includes the results of public consultations and recognition of social control.

KKPRL has great potential as an instrument linking marine and land regulations in support of circular economy projects and energy transition. However, without digital system integration and institutional harmonization, this instrument risks exacerbating access inequalities and expanding legal uncertainty in coastal areas. Normative updates and system interoperability are needed to ensure that ecological sustainability goes hand in hand with social justice.

5 Conclusion

The longstanding tenure of non-registered coastal state land by local communities in Indonesia has yet to receive adequate legal recognition. This legal uncertainty stems from regulatory disharmony across the agrarian, spatial planning, and marine legal systems—each administered sectorally by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) and the Ministry of Marine Affairs and Fisheries (KKP). The absence of bridging legal norms and the weak integration of digital systems across these sectors have led to overlapping institutional mandates, delayed land legalization processes, and increased potential for both administrative and social conflict.

In the context of energy transition and the circular economy agenda, this situation poses serious risks for coastal communities. Not only do they lose legal access to land they have managed de facto for generations, but they also risk marginalization from development projects due to the lack of formal legal standing. The power imbalance between investors and local populations is further exacerbated by the absence of protection mechanisms that acknowledge socially rooted land tenure.

The KKPRL (Marine Spatial Utilization Approval), which was designed as a legal bridge between marine space permits and the national land registration system, has yet to fulfill this integrative function. A lack of spatial data interoperability and disconnected digital systems remains a significant barrier to effective cross-sectoral licensing integration.

Therefore, a comprehensive legal reconstruction is urgently needed that 1) recognizes the social tenure of coastal communities as a legitimate legal subject; 2) harmonizes land and marine regulations into a unified legal framework; and 3). strengthens the role of KKPRL within a national digital legal ecosystem that is equitable, adaptive, and supportive of both social and ecological sustainability.

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