Volume 4 Number 2 (2026)
July-December 2026
Page: 2643-2658

Journal of Creative Power and Ambition (JCPA)
https://edujavare.com/index.php/jcpa
E-ISSN: 3031-4054
DOI: 10.70610/jcpa.v4i02.1990

Green Economy Transition and Sustainable Regional Development in Indonesia: A Systematic Literature Review

Tiur Roida Simbolon[1], Dedi Takari[2], Suherman[3], Danna Solihin[4], Aulya Rahma T.[5]
[12345] Universitas Palangka Raya, Indonesia
Email: tiur.roida@feb.upr.ac.id, dedi.takari@feb.upr.ac.id, suherman@feb.upr.ac.id, danna.solihin@feb.upr.ac.id, aulya.rahma@feb.upr.ac.id

Article history Submitted: 2026/06/10; Revised: 2026/07/06; Accepted: 2026/08/24;

Abstract

The green economy transition has become an essential component of Indonesia's development agenda. However, differences in economic structures, fiscal capacity, institutions, human resources, and ecological conditions have resulted in unequal regional readiness. This study analyzes publication trends, methodological characteristics, major themes, enabling factors, barriers, research gaps, and policy implications of the green economy for sustainable regional development in Indonesia. A systematic literature review was conducted following the PRISMA 2020 guidelines. Literature published between 2015 and 2026 was retrieved from Google Scholar using seven combinations of Indonesian and English keywords. Of the 105 records identified, 27 articles met the inclusion and quality assessment criteria and were included in the final synthesis. The results show that 77.8% of the articles were published between 2023 and 2026, 51.9% employed quantitative approaches, and the regency or city level was the most frequently examined territorial unit. Twenty-four articles were classified as high quality and three as medium quality. Six major themes emerged: circular economy and resource management; regional green economy policy and governance; green finance and fiscal capacity; green growth and regional inequality; natural resource sector and local economy transformation; and energy transition, green jobs, and human development. Institutional capacity, financing, technology, infrastructure, human resources, participation, and local value chains determine regional transition outcomes. The study concludes that green economy policies should be territorially differentiated and place just transition at their core to ensure that economic, environmental, and social benefits are distributed more equitably across Indonesia's regions

Keywords Green Economy; Regional Development; Green Growth; Just Transition; Systematic Literature Review.

INTRODUCTION

Climate change, ecosystem degradation, resource scarcity, and increasing social inequality have driven a paradigm shift in development from growth oriented toward

increasing output toward development that considers the balance of economic, social, and environmental dimensions. The green economy has developed as an approach that integrates economic growth with resource efficiency, emission reduction, ecosystem protection, job creation, and equitable distribution of welfare. The United Nations Environment Programme defines a green economy as an economy that is low-carbon, resource-efficient, and socially inclusive. Thus, the green economy is not only related to environmental policies, but also to investment, infrastructure, production, consumption, employment, and the distribution of development benefits (UNEP, 2019).

For Indonesia, the transition to a green economy is important because economic growth remains strongly linked to the exploitation of natural resources and the use of fossil-based energy. The economic structure of several regions depends on mining, plantations, forestry, agriculture, and coal-fired power generation. These conditions create employment and regional revenues, but also generate risks of emissions, deforestation, land degradation, pollution, resource conflicts, and vulnerability to climate change. Land and energy are estimated to contribute around 90% of Indonesia's greenhouse gas emissions, while the capacity of regions to cope with environmental impacts and changes in economic structures is not always the same (World Bank, 2023).

The Indonesian government has integrated low-carbon development and climate resilience into the national development agenda. Indonesia's Low Carbon Development or Low Carbon Development Indonesia was developed to link economic growth with emission reductions, resource efficiency, and social justice. The low-carbon development and climate resilience agenda was subsequently incorporated into the National Long-Term Development Plan 2025–2045. This policy is directed toward supporting sustainable economic growth, creating green jobs, and achieving emission reduction targets (Kementerian PPN/Bappenas, 2023). Indonesia also targets an emission reduction of 31.89% through its own capabilities and 43.20% with international support by 2030, as well as achieving net-zero emissions by 2060 or earlier (Kementerian PPN/Bappenas, 2024).

Although the direction of national policy is increasingly clear, the implementation of the green economy takes place in regions with different characteristics. Each region has a different economic structure, fiscal capacity, human resources, infrastructure quality, ecological conditions, and institutional capacity. Mining-based regions face different challenges from agricultural areas, forest regions, metropolitan areas, coastal areas, and archipelagic regions. These differences affect the

capacity of regions to develop clean energy, reduce emissions, obtain green financing, create green jobs, and distribute the benefits of economic transformation.

The regional dimension is important because green economy policies implemented uniformly may produce different impacts. Regions with better fiscal capacity, infrastructure, technology, and access to financing tend to be more prepared to capture new economic opportunities. In contrast, regions dependent on primary commodities or fossil energy may face greater adjustment costs. A green transition that does not consider these differences risks reinforcing the concentration of investment and increasing disparities between growth centers and peripheral regions.

Several studies have demonstrated these variations. Colenbrander et al. (2015) found that low-carbon investment in Palembang has the potential to generate economic savings and reduce emissions, but its implementation is constrained by institutional capacity and the risk of dependence on high-carbon infrastructure. Adetama et al. (2021) showed that the use of indicators of the economy, human development, environmental quality, emissions, and food security resulted in different rankings of low-carbon development among provinces. Juniardi et al. (2022) found that human development, fiscal capacity, infrastructure, and disaster resilience influence inclusive green growth, while environmentally intensive industrialization may have a negative effect.

Differences in regional readiness are also evident in financing and the transformation of economic sectors. Miranti et al. (2025) found that green finance development remains uneven across regions and is influenced by industrial structure, digital infrastructure, environmental protection, and financial sector depth. Fitrianto et al. (2025) showed that nickel downstreaming in South Halmahera has encouraged structural transformation, but some of its economic benefits have leaked to other provinces because local industrial linkages remain weak. Jariyah and Qurrata (2026) also found that digital transformation and the green economy provide stronger benefits to growth centers, while the distribution of benefits to supporting regions remains limited.

At the local level, the green economy is closely related to people's livelihoods. The transformation of agriculture, plantations, forestry, fisheries, waste management, and MSMEs requires not only technology, but also access to financing, business capacity, local knowledge, institutions, and community participation. Otten et al. (2020) showed that sustainable rubber production standards may overlook the realities of farmers' livelihoods when developed without considering power inequalities and local conditions. Nasution et al. (2024) found that the revitalization of coconut

plantations in Simeulue is influenced by cultural values and community orientations toward traditional crops. These findings demonstrate that the green economy transition is a social and institutional process, rather than merely a change in production technology.

The literature on the green economy in Indonesia has developed across various sectors and regions. However, existing studies remain dispersed across themes of green growth, low-carbon development, the circular economy, green financing, natural resource transformation, employment, and regional governance. Differences in concepts, indicators, methods, and regional units mean that the available knowledge has not yet provided an integrated picture of how the green economy transition takes place at the regional level in Indonesia. Several previous literature reviews have also tended to discuss the green economy in the broader context of sustainable development and have not specifically synthesized regional differences, driving factors, barriers, distribution of benefits, and policy implications.

In addition, there is still an imbalance in attention across themes. Research has focused more heavily on measuring green growth, environmental quality, or the transformation of natural resource-based sectors. Meanwhile, regional green financing, the circular economy, green jobs, skills, participation of vulnerable groups, and just transition have received less attention. Research is also still dominated by descriptive designs, case studies, and cross-sectional analyses, resulting in limited evidence regarding the long-term impacts and causal relationships of green economy policies.

Based on these conditions, a systematic literature review is needed to integrate various studies on the green economy and regional development in Indonesia. The systematic literature review approach enables the identification, selection, quality assessment, and synthesis of articles to be conducted transparently and traceably. This review is also necessary to explain not only the number and characteristics of studies, but also the patterns of findings, driving factors, implementation barriers, research gaps, and policy directions emerging from the literature.

This study aims to analyze the development of literature on the green economy transition and sustainable regional development in Indonesia during the period 2015–2026. Specifically, this study addresses four questions. First, how have the development and methodological characteristics of research on regional green economy in Indonesia evolved? Second, what themes dominate the literature? Third, what factors drive and hinder the green economy transition at the regional level?

Fourth, what research gaps and policy implications can be formulated to support sustainable regional development?

The novelty of this study lies in combining the green economy perspective with regional development through a synthesis of the level of analysis, methodological characteristics, research themes, driving factors, barriers, and policy implications. This study also positions spatial inequality, regional capacity, local value chains, and just transition as important elements in understanding the green economy. The findings are expected to provide a conceptual contribution to the development of regional green economy studies and serve as a reference for governments in designing policies that are aligned with the economic, social, fiscal, and ecological characteristics of each region.

METHODS

The study uses a systematic literature review (SLR) method to identify, evaluate, and synthesize research findings on the green economy transition and sustainable regional development in Indonesia. The review process was designed with reference to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines, which include the stages of identification, screening, eligibility assessment, and determination of articles included in the final synthesis (Page et al., 2021). The SLR approach was selected because it enables the study to systematically map the development of the literature while identifying dominant themes, methodological characteristics, key findings, implementation barriers, policy implications, and research gaps. The literature search was conducted in August 2026 through Google Scholar with the assistance of Publish or Perish software. Google Scholar was used because it provides broad coverage of publications, including national and international journal articles discussing the green economy in the Indonesian context. The search was limited to articles published during the 2015–2026 period. Keywords were developed in both Indonesian and English to capture variations in terminology used in the literature. Seven main keyword combinations were used: “ekonomi hijau daerah Indonesia”; “ekonomi hijau pembangunan wilayah Indonesia”; “green economy province Indonesia”; “green economy regional development Indonesia”; “green growth regional Indonesia”; “low carbon development regional Indonesia”; and “pertumbuhan hijau wilayah Indonesia”. An additional search using the keyword “green economy local development” without including the word “Indonesia” produced 23 documents. However, these results were not included in the main selection process because most did not discuss Indonesia or did not have a direct relationship with regional development in Indonesia. A search

using the combination "green economy", "local development", and "Indonesia" simultaneously did not produce any documents. Therefore, the main analysis used the seven searches that explicitly included the Indonesian context.

FINDINGS AND DISCUSSION

Circular Economy and Resource Management

Circular economy and resource management are one of the themes that are still relatively under-researched. Only two articles, or 7.4% of the sample, place this theme as the main focus. Although the number is limited, the two studies show that the implementation of a circular economy in regions depends not only on processing technology, but also on behavioral changes, local institutions, information systems, and community participation.

Muljaningsih et al. (2023) show that waste banks in Malang City function as instruments of social engineering that connect environmental objectives with community economic empowerment. The success of waste banks is determined by policy support, education, service procedures, institutional networks, and community participation. These findings show that waste management based on a green economy cannot be achieved merely through the provision of facilities. Its sustainability requires changes in community behavior and institutional mechanisms capable of maintaining participation.

In the fisheries sector, Widiastuti et al. (2024) found that the integration of information technology through the INFINITY concept can increase transparency, expand marketing networks, and support green fisheries port governance. Digitalization enables information regarding catches, prices, distribution, and business partners to be managed more openly. However, the sustainability of the system is still influenced by changes in management officials and limited data consistency.

The two studies show that the circular economy in regions requires a combination of infrastructure, digital technology, education, incentives, and governance. A circular economy model that is oriented only toward waste reduction risks neglecting economic and social aspects. Conversely, resource management will provide broader regional benefits if it is able to create added value, local employment, behavioral changes, and strengthen community institutions.

However, the available evidence is still limited to a small number of cases. There are still few studies evaluating the contribution of waste banks, green ports, and waste management systems to community income, employment absorption, reductions in local government costs, and emission reductions simultaneously. Future research needs to use longitudinal designs and interregional comparisons to assess the sustainability and replicability of circular economy models.

Green Economy Policy and Governance at the Regional Level

A total of six articles, or 22.2%, discuss regional green economy policy and governance. The synthesis shows that various local governments have incorporated elements of the green economy into planning documents and development programs. However, there are gaps between policy commitments, institutional capacity, and implementation in the field.

Setiadi (2017) found that development planning in Central Java has paid attention to welfare and justice, but environmental protection and climate stabilization objectives have not yet been strongly embedded. The transformation from research activities toward green investment is also still limited. This finding shows that the inclusion of sustainability terms in development documents is not always followed by changes in investment allocation and regional development practices.

Similar conditions were found in green economy policies in Riau. Aryani and Nugroho (2024) showed that low-carbon development has been integrated into the planning of Riau Province through the development of energy from palm oil waste, sustainable agriculture, mangrove rehabilitation, and ecotourism. However, its implementation is still constrained by weak law enforcement, limited budgets and technology, resistance from business actors, and dependence on natural resource exploitation. Safitri et al. (2025) also found that the Riau Green Policy has encouraged renewable energy, social forestry, and sustainable fisheries, but its effectiveness is constrained by weak operational regulations, fiscal incentives, financing, and community participation.

In West Kalimantan, Kartika et al. (2023) identified REDD+, fire control, reforestation, protection of customary forests, and downstreaming as instruments toward a green economy. However, deforestation, land-use violations, dependence on raw commodities, and ecological risks from downstreaming remain challenges. Downstreaming can create added value and employment, but it does not automatically become green if the production process increases environmental pressure or reduces local communities' access to resources.

Green economy governance is also related to the government's ability to utilize technology. Hasmawaty et al. (2022) showed that the green smart city concept in South Sumatra is supported by command centres, green information technology, pollution prevention, and clean technology investment. However, system integration and public participation still need to be strengthened. Meanwhile, Adi (2025) demonstrates that cultural capital and the Betawi community in Jakarta can support urban agriculture, river conservation, waste management, ecotourism, and the promotion of cultural products. These findings emphasize that green economy governance is not only bureaucratic in nature, but also needs to recognize local knowledge and community capacity.

Overall, regional green economy governance faces three problems. First, economic and environmental objectives are not always positioned in balance within planning. Second, interorganizational coordination and program continuity remain weak. Third, communities are often positioned as program recipients and have not been fully involved as actors in planning, implementation, and evaluation.

Therefore, the green economy needs to be integrated more operationally into RPJMD, strategic plans of regional government agencies, key performance indicators, and budgeting systems. Local governments also need indicators that can measure the relationship between economic growth, environmental quality, equitable distribution of benefits, and social resilience. Collaboration among government, businesses, universities, indigenous communities, and local communities needs to be established from the planning stage.

Green Financing and Regional Fiscal Capacity

Green financing and fiscal capacity are discussed in three articles, or 11.1%. Although the number remains limited, this theme has an important position because the green economy transition requires large and sustainable financing. The synthesis results show that the benefits and capacity for green financing differ across regions because they are influenced by economic structure, fiscal capacity, financial sector depth, and digital infrastructure.

Kamil et al. (2023) showed that the implementation of a carbon tax on coal-fired power plants generates revenues whose distribution is uneven across regions. Power generation activities and carbon tax revenues are more concentrated in Java. Recycling carbon tax revenues can increase output, wages, and GRDP, but the magnitude of the impact is determined by the economic structure and sectoral linkages in each region. Thus, the use of carbon tax revenues should not be carried out uniformly, but rather directed toward sectors that have strong linkages and economic multipliers in each region.

Miranti et al. (2025) found that green finance development at the provincial level shows spatial inequality. Industrial structure, the quality of environmental protection, financial sector depth, digital infrastructure, and knowledge dissemination influence the ability of provinces to develop green financing. Provinces located in peripheral areas, particularly those with limited financial and digital infrastructure, have the potential to fall behind in obtaining the benefits of green financing.

At the city level, Afifa et al. (2026) showed that the fiscal independence of Surabaya City provides room for environmental innovation through green budgeting and central-regional financial coordination. Large locally generated revenues enable the city government to support green programs more independently. However, dependence on central government standards, limited green financing instruments, and suboptimal environmental budget tagging remain obstacles.

The findings from the three articles indicate that the green economy transition can increase inequality if access to financing is only enjoyed by regions with strong fiscal capacity, infrastructure, and financial institutions. Regions with large transition needs may instead have the lowest financing capacity. Therefore, green financing policies require an affirmative approach based on regional characteristics.

The government needs to develop mechanisms for environmental performance-based fiscal transfers, green budget tagging, regional green bonds, blended financing, and environmental tax and levy incentives. Technical support is also needed so that local governments are able to prepare green projects that are economically viable and meet

financing requirements. Central-regional coordination needs to ensure that revenues from carbon instruments and green financing can be returned to finance the transition in affected regions.

Green Growth and Regional Inequality

Green growth and regional inequality constitute one of the largest themes, with seven articles, or 25.9%. The synthesis results show that green growth achievements are uneven because they are influenced by economic structure, environmental quality, human development, fiscal capacity, infrastructure, and institutional capacity.

Colenbrander et al. (2015) showed that low-carbon investment in Palembang City is economically feasible and has the potential to reduce emissions by 24.1% compared with the 2025 business-as-usual scenario. The investment is also estimated to generate energy expenditure savings greater than its investment costs. However, the main obstacles are not only economic limitations, but also institutional capacity, ad hoc decision-making, limited data, and the risk of locking the city into high-carbon infrastructure.

At the provincial level, Adetama et al. (2021) showed that combining indicators of the economy, human development, unemployment, environmental quality, emissions, and food security results in changes in low-carbon development rankings. These results demonstrate that assessing regional performance using only GRDP may provide an incomplete picture. Provinces with high economic growth do not necessarily have equally strong human development and environmental quality.

Juniardi et al. (2022) found that inclusive human development, regional financial performance, infrastructure, and disaster management capacity support inclusive green growth. Conversely, environmentally intensive industrialization may have a negative effect. This relationship indicates that industrialization does not automatically produce green growth. Its impact is determined by resource efficiency, technology use, emission intensity, and the ability of regions to distribute economic benefits.

Ayuningsih et al. (2024) showed that environmental quality and employment resilience during the COVID-19 recession and recovery differed across regions. Variations in GRDP growth, information technology, demographics, and recovery capacity shaped differences in environmental quality at the provincial level. Meanwhile, Fahly et al. (2024) found that the sustainability of development in nine districts in the Riau peatland area ranged from less sustainable to moderately sustainable. The sensitive factors in each district differed, so uniform policies were insufficient to address issues of poverty, peatland fires, deforestation, waste management, and institutional capacity.

Rahmat et al. (2025) found a positive relationship between green economy indicators and economic growth in West Sulawesi. However, weaknesses in several measurement indicators indicate the need for caution in interpreting this relationship. This reinforces the need for more standardized green economy measures that can be compared across regions.

Inequality is also evident in digital and green transformation. Jariyah and Qurrata (2026) found that core provinces such as DKI Jakarta and South Sulawesi have more basic sectors

than several supporting provinces. Differences in infrastructure, human resource quality, connectivity, and investment concentration make the benefits of transformation stronger in growth centers. The distribution of benefits to surrounding regions remains limited and may even generate a backwash effect.

This synthesis shows that green growth has a strong spatial dimension. The same national policy can produce different impacts because each region has a different economic structure, fiscal capacity, natural resources, and ecological risks. Therefore, policies need to be developed based on regional typologies. Industrial regions require decarbonization and technological innovation, resource-based regions require diversification and ecosystem protection, while underdeveloped regions require strengthening of infrastructure, human resources, and connectivity.

Transformation of Natural Resource Sectors and Local Economies

The transformation of natural resource sectors and local economies also encompasses seven articles, or 25.9%. This theme shows that the green economy in Indonesia is closely related to agriculture, plantations, forestry, mining, MSMEs, and the coastal economy. The potential for local added value is considerable, but benefits are often constrained by weak value chains, technology, market access, financing, and the bargaining position of communities.

Otten et al. (2020) showed differences in narratives regarding sustainable rubber production among the government, industry, and farmers in rural Sumatra. Sustainability standards developed from an industry perspective may overlook livelihood conditions, resource access, and power inequalities at the village level. These findings remind us that green transitions do not always provide equitable benefits when smallholder farmers are not involved in the formulation of standards and policies.

Annisa and Harahap (2023) found that organic agriculture in Deli Serdang is ecologically and economically feasible, but its implementation remains limited due to small-scale operations, weak incentives, limited markets, and insufficient institutional support. Nasution et al. (2024) also showed that the revitalization of coconut plantations in Simeulue faces not only technical problems, but also relates to cultural orientations and community reluctance to replace traditional crops. Thus, the transformation of the agricultural sector requires an approach that understands cultural values, community experiences, and local livelihood patterns.

At the micro-enterprise level, Ilham et al. (2025) found that business capacity, external support, and green awareness increase the economic independence of women in Tolitoli Regency. However, limited capital, low adoption of green technology, and unsustainable assistance constrain business development. This finding shows that the green transition can function as an empowerment strategy if financing policies, training, product innovation, and market access are designed in an integrated manner.

A larger transformation can be observed in nickel downstreaming in South Halmahera. Fitrianto et al. (2025) found that downstreaming increases manufacturing sector multipliers

and drives changes in economic structure. However, some economic benefits leak to other provinces due to weak linkages with local suppliers and industries. This condition shows that downstreaming cannot be measured solely by increases in investment and output. Its success needs to be assessed based on the added value retained in the region, job quality, diversification of local businesses, and environmental impacts.

Astuti et al. (2025) showed that urban agriculture in Kendari has the potential to support livelihoods, food security, green cover, and low-carbon development. However, its contribution is not yet recorded separately in GRDP and still faces limitations in land, infrastructure, investment, and economic data. Ap et al. (2026) also identified 61 non-timber forest products in Papua, with eight priority products considered feasible for development. This potential has not yet generated optimal added value because products are still sold in raw form, processing technology is limited, and access to markets and capital remains weak.

These findings show that the green economy transformation needs to be built through local value chains. Regions should not only serve as suppliers of raw materials for industries in other regions. Policies must strengthen processing technology, supporting industries, cooperatives and MSMEs, certification, financing, market information, and community skills. Ecosystem protection and local livelihoods must be part of downstreaming so that economic transformation does not create new ecological pressures and inequalities.

Energy Transition, Green Jobs, and Human Development

The theme of energy transition, green jobs, and human development is discussed by only two articles, or 7.4%. This number indicates that employment and human development dimensions still receive less attention compared with economic growth, policy, and resource management.

Satrianto and Juniardi (2023) found that inclusive human development and inclusive green growth have a reciprocal relationship. Fiscal performance, infrastructure, industrialization, and governance influence the ability of regions to combine improvements in welfare with environmental quality. This finding emphasizes that human development is not only an outcome of green growth, but also a prerequisite for enabling communities to participate in economic transformation.

Fadillah et al. (2025) showed that the energy transition creates technical, operational, and supporting jobs. However, young people in regions have not been able to optimally access these opportunities due to skills gaps, limited vocational training, lack of information, and geographical barriers. If green workforce needs are fulfilled from outside the region, energy-producing regions may bear the impacts of the transition without receiving commensurate employment benefits.

The synthesis results show that a just transition needs to be positioned as a central part of green economy policy. Renewable energy policies should be accompanied by workforce needs mapping, vocational education development, green skills certification, and partnerships between local governments, educational institutions, and industry. Training programs need

to be decentralized so that they can be accessed by youth, women, indigenous communities, and groups living far from economic centers.

Cross-Theme Synthesis

The six themes show that the green economy transition in Indonesia takes place through diverse pathways. At the regional level, the transition encompasses low-carbon development, industrial transformation, resource management, green financing, service digitalization, community strengthening, and green job creation. Although the forms differ, four main patterns consistently emerge.

§ First, the availability of natural resources does not automatically generate a green economy. Its benefits are determined by the ability of regions to create added value, strengthen local value chains, use cleaner technologies, and protect ecosystems and community livelihoods.

§ Second, institutional capacity is a determining factor. Many policies have incorporated green economy objectives, but implementation is constrained by weak coordination, inadequate data, limited budgets, leadership changes, and a lack of measurable performance indicators.

§ Third, the green transition has uneven spatial impacts. Regions with stronger fiscal capacity, infrastructure, human resources, technology, and access to finance tend to be more prepared to obtain benefits. Without affirmative policies, the green economy may widen disparities between growth centers and peripheral regions.

§ Fourth, the social dimension has not received balanced attention. Most research focuses on growth, resources, and policies, while green jobs, skills, vulnerable groups, benefit distribution, and just transition remain limited. A sustainable green economy transition must be able to improve environmental quality while simultaneously creating decent jobs, strengthening community capacity, and reducing regional inequality.

Thus, sustainable regional development in Indonesia requires a contextual green economy approach based on regional characteristics. National policies are needed to establish direction, standards, and financing mechanisms, while local governments need room to adapt policy instruments to the economic structure, ecological conditions, institutional capacity, and needs of local communities.

CONCLUSION

The literature shows that the green economy transition and sustainable regional development in Indonesia are shaped by six main themes: circular economy and resource management, regional green economy policy and governance, green financing and fiscal capacity, green growth and regional inequality, natural resource sector transformation and local economies, and energy transition, green jobs, and human development. Overall, the findings indicate that green transformation depends not only on technology and natural resources but also on institutional capacity,

financing, infrastructure, human resources, local value chains, and community participation. Regional disparities remain a major challenge because regions with stronger fiscal, technological, and institutional capacities tend to benefit more from the green transition, while peripheral and resource-dependent regions face greater adjustment constraints. Therefore, green economy policies need to be adapted to regional characteristics, strengthen local economic value chains, expand access to green financing and skills, promote community participation, and ensure that environmental improvements are accompanied by equitable economic benefits and decent employment.

REFERENCES

Adetama, D. S., Fauzi, A., Juanda, B., & Hakim, D. B. (2021). Measurement of composites index on low carbon development supporting food security. Sustainability, 13(23), 13352.

Adi, R. (2025). Peran modal kultural dan komunitas Betawi dalam mendukung pembangunan berkelanjutan berbasis ekonomi hijau, sirkular, dan digital di Jakarta: Studi kasus pada komunitas Laskaru Jagakarsa. Jurnal Betawi, 1(2), 33–50.

Afifa, R. S., Firginia, I. J., Fanida, E. H., & Hidayat, M. F. (2026). Implementasi ekonomi hijau dalam meningkatkan koordinasi keuangan pusat-daerah: Studi kasus Pemerintah Kota Surabaya. ULIL ALBAB: Jurnal Ilmiah Multidisiplin, 5(7), 1569–1575.

Annisa, N., & Harahap, I. (2023). Analisis pengembangan ekonomi hijau dengan basis pertanian dengan implementasi maqashid syariah di Sumatera Utara. Al-Kharaj: Jurnal Ekonomi, Keuangan & Bisnis Syariah, 5(5), 2535–2543.

Ap, A. T., Wahyudi, Hendri, Allo, A. G., & Warsito, A. P. (2026). Prioritization and feasibility analysis of non-timber forest products for green economy development in Papua Province, Indonesia. Asian Journal of Ethnobiology, 9(1), Article y090103.

Aryani, Z. U., & Nugroho, H. W. (2024). Perencanaan pembangunan Provinsi Riau dalam kerangka pembangunan ekonomi hijau dan berkelanjutan. IPTEKIN: Jurnal Kebijakan Pembangunan dan Inovasi, 7(1), 1–15.

Astuti, T., Hasddin, Marjani, Murini, Yusuf, M., Sondeng, S., Kasim, S., Husen, O. O., Ulyasniati, & Afa, M. (2025). Urban farming and livelihood resilience in coastal cities: An economic and environmental accounting perspective from Kendari. Bulletin of the Serbian Geographical Society, 105(2), 189–204.

Ayuningsih, D. O., Hakim, L., Suryantoro, A., Mafruhah, I., Hassan, S., Gravitiani, E.,

Fathoni, N. Q., & Hakim, A. I. (2024). Impacts of environmental quality and employment resilience during the coronavirus disease 2019 recession and recovery. Global Journal of Environmental Science and Management, 10(Special Issue), 71–88.

Colenbrander, S., Gouldson, A., Sudmant, A. H., & Papargyropoulou, E. (2015). The economic case for low-carbon development in rapidly growing developing world cities: A case study of Palembang, Indonesia. Energy Policy, 80, 24–35.

Fadillah, M. R., Silalahi, L. A., Amalliah, R., Hafizah, S., & Maulida. (2025). Transisi energi dan peluang kerja anak muda daerah: Analisis transformasi ketenagakerjaan dalam ekonomi hijau Indonesia. Jurnal Media Akademik, 3(12), 1–13.

Fahly, A. P., Fauzi, A., Juanda, B., & Rustiadi, E. (2024). Sustainability evaluation of regency development in peatland areas of Riau Province, Indonesia. Challenges in Sustainability, 12(2), 102–121.

Fitrianto, G., Permana, Y. H., Sanjaya, M. R., Sholihin, M., & Farouqi, M. A. (2025). Examining the linkage and structural transformation effects of nickel industrialization: A case of South Halmahera, Indonesia. Asian Journal of Economic Modelling, 13(3), 358–376.

Hasmawaty, Utami, Y. T., & Antoni, D. (2022). Building green smart city capabilities in South Sumatra, Indonesia. Sustainability, 14(13), 7695.

Ilham, Irvan, M., & Ismail. (2025). Kajian perspektif ekonomi hijau dalam usaha mikro: Tinjauan strategi pemberdayaan perempuan menuju kemandirian ekonomi daerah afirmasi Kabupaten Tolitoli. FORUM EKONOMI: Jurnal Ekonomi, Manajemen dan Akuntansi, 27(4), 853–860.

International Labour Organization. (2023). Resolution concerning a just transition towards environmentally sustainable economies and societies for all.

International Labour Organization. (2025). Guidelines on green employment diagnostics for a just transition (2nd ed.).

Jariyah, A., & Qurrata, V. A. (2026). Ketimpangan spasial dan sektor unggulan dalam arus ekonomi digital dan ekonomi hijau: Studi kasus delapan provinsi di Indonesia. Jurnal Ekonomi Bisnis Manajemen dan Akuntansi, 3(3), 28–38.

Juniardi, E., Amar, S., & Aimon, H. (2022). Panel data regression approach on inclusive green growth. Global Journal of Environmental Science and Management, 8(4), 533–544.

Kamil, A. S., Setyaningrum, L., Lesmana, A. C., Putri, M. S., Negara, S., Susiati, H., & Anggoro, Y. D. (2023). Regional impact analysis of carbon tax implementation on

Indonesia's coal power plant with interregional input-output method. International Journal of Energy Economics and Policy, 13(3), 149–157.

Kartika, A. N., Muliyani, I., Prasetiyo, T., & Mely, P. (2023). Analisis implementasi dalam mewujudkan ekonomi hijau di Kalimantan Barat. Jurnal Ilmiah Ekonomi Global Masa Kini, 14(2), 111–120.

Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional. (2023). Di COP28, Bappenas paparkan strategi wujudkan transformasi ekonomi hijau dan pembangunan rendah karbon.

Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional. (2024). Bappenas dan OECD-SIPA sinergikan perencanaan infrastruktur rendah karbon dalam RPJMN 2025–2029.

Miranti, R. C., Lubis, D. A., & Anam, Y. C. (2025). What drives green finance development? Evidence from provincial-level data in Indonesia. GeoJournal, 90, Article 301.

Muljaningsih, S., Indrawati, N. K., & Asrofi, D. A. N. (2023). Waste bank policy as social engineering based on the green economy concept in Malang City, Indonesia. Civil and Environmental Engineering, 19(1), 271–279.

Nasution, A. A., Ilham, I., Akbar, H., Huda, N., Wulandari, D., & Kudussisara. (2024). Obstacles to revitalizing communities coconut plantations to support the green economy-based coconut industry in Indonesia: The case of Simeulue Island, Aceh Province. Universal Journal of Agricultural Research, 12(1), 65–75.

OECD. (2025). Strengthening regional policy for resilient places: Key issues and policy considerations (OECD Regional Development Papers No. 148). OECD Publishing.

Otten, F., Hein, J., Bondy, H., & Faust, H. (2020). Deconstructing sustainable rubber production: Contesting narratives in rural Sumatra. Journal of Land Use Science, 15(2–3), 306–326.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ, 372, Article n71.

Rahmat, A., Permata, S. U., Saudi, A. I., Azis, A., Said, S., Hafid, H., Tahawa, T. H. B., & Syahrir, N. (2025). Emission reduction and socio-economic indicators as driving factors of West Sulawesi economic growth. International Journal of Sustainable Development and Planning, 20(6), 2533–2539.

Safitri, K. I., Syamsuadi, A., & Anjani, B. P. (2025). Aktualisasi prinsip ekonomi hijau

dalam kebijakan publik: Analisis kebijakan Riau Hijau. Ecoducation: Economics & Education Journal, 7(2), 676–692.

Satrianto, A., & Juniardi, E. (2023). Inclusive human development and inclusive green growth: A simultaneous approach. International Journal of Sustainable Development and Planning, 18(2), 523–530.

Setiadi, R. (2017). An assessment of green economy in Central Java Province, Indonesia: Conformity and transformation. International Journal of Green Economics, 11(3–4), 232–250.

United Nations Environment Programme. (2019). What is an inclusive green economy?

Widiastuti, N. P. E., Kusumajanti, K., & Nashir, A. K. (2024). How the Integrated Fishing Port with Information System for Sustainability (INFINITY) realizes governance of Green Fishing Port. Cogent Business & Management, 11(1), Article 2421409.

World Bank. (2023). Indonesia country climate and development report. World Bank Group.