

GREEN UMKM DEVELOPMENT POLICY ACCORDING TO BANK INDONESIA'S PERCEPTION OF UMKM DEVELOPMENT IN EAST NUSA TENGGARA PROVINCE

Asnayati V. Liffu^{1(a)}, William Djani^{2(b)}, Nursalam^{3(c)}

^{1,2,3}Faculty Social and Political Science, University of Nusa Cendana

^{a)}asnalifu18@email.com

INFORMASI ARTIKEL

Article History:

Dikirim:

18-06-2025

Diterbitkan Online:

30-09-2025

Kata Kunci:

Green Economy, Bank Indonesia, UMKM

Keywords:

Green Economy, Indonesia Bank, MSMEs

Corresponding Author:

asnalifu18@email.com

ABSTRAK

Usaha Mikro, Kecil, dan Menengah (UMKM) sangat penting bagi perekonomian Indonesia, khususnya di Nusa Tenggara Timur (NTT), yang memberikan kontribusi signifikan terhadap lapangan kerja dan PDRB. Meskipun memiliki potensi, khususnya di bidang pertanian dan kerajinan, sektor-sektor ini masih rentan terhadap perubahan iklim dan sering kali tidak memiliki praktik yang ramah lingkungan. Sebagai respons, Bank Indonesia menginisiasi program pengembangan UMKM Hijau untuk mendorong praktik ekonomi yang berkelanjutan, inklusif, dan sirkular. Penelitian ini bertujuan untuk menganalisis relevansi kebijakan UMKM hijau Bank Indonesia terhadap pengembangan UMKM di NTT dan mengidentifikasi faktor pendukung dan penghambatnya. Dengan menggunakan pendekatan deskriptif kualitatif, data dikumpulkan melalui wawancara, observasi, dan telaah pustaka di Kupang. Temuan penelitian mengungkapkan peran strategis BI NTT dalam mendorong digitalisasi, pelatihan kewirausahaan hijau, dan klaster berbasis sumber daya lokal. Namun, tantangan masih ada, termasuk rendahnya literasi lingkungan, terbatasnya akses terhadap pembiayaan hijau, dan infrastruktur yang lemah. Peluang terletak pada kekayaan sumber daya alam dan budaya NTT, yang jika didukung oleh kolaborasi lintas sektor dan kebijakan kontekstual, dapat memposisikan UMKM hijau sebagai penggerak pembangunan berkelanjutan. Studi ini merekomendasikan penguatan implementasi kebijakan, adaptasi kontekstual, dan sinergi antarlembaga untuk mempercepat transformasi ekonomi hijau di kawasan.

ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are crucial to Indonesia's economy, especially in East Nusa Tenggara (NTT), where they contribute significantly to employment and GRDP. Despite their potential, particularly in agriculture and handicrafts, these sectors remain vulnerable to climate change and often lack environmentally friendly practices. In response, Bank Indonesia initiated the Green MSME development program to promote sustainable, inclusive, and circular economic practices. This study aims to analyze the relevance of Bank Indonesia's green MSME policies to the development of MSMEs in NTT and identify the supporting and inhibiting factors. Using a qualitative descriptive approach, data were collected through interviews, observations, and literature review in Kupang. Findings reveal BI NTT's strategic role in promoting digitalization, green entrepreneurship training, and local resource-based clusters. However, challenges persist, including low environmental literacy, limited access to green financing, and weak infrastructure. Opportunities lie in NTT's rich natural and cultural resources, which, if supported by cross-sector collaboration and contextual policies, can position green MSMEs as drivers of sustainable development. The study recommends strengthening policy implementation, contextual adaptation, and inter-agency synergy to accelerate green economic transformation in the region.

DOI:

<https://doi.org/10.24036/publicness.v4i3.301>

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in the national economy and in East Nusa Tenggara (NTT) Province. According to data from the Ministry of Cooperatives and MSMEs in 2018, Indonesia has more than 64 million MSMEs, accounting for 99% of total business units and absorbing around 96.9% of the national workforce. Of this number, around 52% are engaged in the agricultural sector. In NTT, MSMEs are also the backbone of the economy, with significant contributions to GRDP and employment. In 2018, 430,312 MSMEs (99.45% of total businesses) employed 1,004,829 workers. In addition, until early June 2023, UMi financing in NTT reached IDR 408.11 billion for 17,986 debtors (Ministry of Cooperatives and Small and Medium Enterprises (Kemenkop)).

The agriculture and handicraft sectors (such as ikat weaving) are dominant sectors in NTT and many large islands in Indonesia. Not only does this sector contribute to GDP and employment, but it has also shown positive growth even during the COVID-19 pandemic. However, the sector is highly vulnerable to the impacts of climate change, and most actors still use practices that are not environmentally friendly. This emphasizes the importance of attention and support to the agriculture and crafts sector in relation to climate change adaptation.

Climate change poses serious challenges that include water scarcity, damage to land and marine ecosystems, deterioration of health, and food scarcity. Various global initiatives have been pursued to address this issue, starting with the Stockholm Conference in 1972, the Brundtland Report in 1987, the Earth Summit and Agenda 21 in 1992, the Kyoto Protocol in 1997, the UNFCCC Green Climate Fund in 2010, Rio+20 in 2012, the Sustainable Development Goals in 2015, the Paris Agreement in 2016, and COP26 in 2021. Indonesia responded by ratifying various international agreements: UNFCCC (Law No. 6/1994), Kyoto Protocol (Law No. 17/2004), Paris Agreement (Law No. 16/2016), as well as developing national policies such as RAN-GRK (2011), RAN-API (2014), NDC (2016, updated 2021), RPJMN 2020–2024, and LTS-LCCR 2050.

Bank Indonesia, as part of the national effort in supporting the climate change agenda, initiated the Green MSME development

program to encourage a sustainable economy. The intermediate objectives of Green MSME development include implementing environmentally friendly practices, achieving zero waste, implementing circular economy practices, and promoting social inclusion. The three main pillars to achieve these goals are the use of environmentally friendly raw materials, the implementation of circular economy business value chains, and green financial inclusion. To achieve this, support is needed through synergy and coordination among institutions, as well as systematic reporting of green MSMEs.

BI implements strategic actions through push (encouraging MSME players to adopt green practices) and pull (attracting environmentally conscious market players and buyers) strategies. The ultimate goal is to realize MSMEs that run a circular economy, use environmentally friendly materials, and are socially inclusive. MSMEs are encouraged to use resources sustainably to reduce the exploitation of nature, which can lead to excessive waste and a high carbon footprint. The utilization of green technology and the implementation of circular economy principles are key, including recycling that turns waste into valuable resources.

Although the green MSME agenda has been widely promoted at the national level, empirical studies that critically examine how Bank Indonesia's green MSME policies operate at the regional and sectoral level, particularly in climate-vulnerable provinces such as East Nusa Tenggara, remain limited. This gap is especially evident in studies that link policy instruments, institutional roles, and local economic characteristics within specific leading sectors such as agriculture and handicrafts.

Previous research on green MSME development policies by Bank Indonesia and their relevance to MSME development in East Nusa Tenggara Province includes several studies that provide theoretical foundations, support arguments, and identify research gaps that this study will address.

Some relevant previous studies include research by Harymawan, et al., (2022), which discusses the impact of climate change on MSMEs, including supply shocks and decreased purchasing power, underscoring the need for policy adaptation and increased sustainability competencies through the Sustainable Finance Lab. The similarity

between this research and the research conducted is the focus on strengthening MSME policies, while the difference lies in this research's focus on the role of green MSMEs and Bank Indonesia in NTT.

Research by Latifah and Muradi (2024) evaluated Bank Indonesia's MSME development program in Tegal to improve economic resilience, with key findings on bureaucratic challenges and a lack of regulatory literacy. The similarity is the role of Bank Indonesia in strengthening MSMEs, while the difference is that this research highlights BI NTT's role in supporting green MSMEs.

Research by Regif, et al., (2023) highlights the importance of digital literacy in the green economy for empowering rural MSMEs, especially to improve operational efficiency and adopt environmentally friendly practices. This research is similar in that it discusses the green economy, but differs in that it focuses on the role of BI NTT in supporting green MSMEs in the agriculture and craft sectors.

Research by Hidayat (2021) discusses the integration of eco-business in MSMEs through environmentally friendly practices and green marketing strategies, as well as the importance of socialization and sustainable business strategies. The similarity is the encouragement of MSME green practices, while this research specifically assesses the role of BI in supporting green MSMEs in NTT.

Research by Rany, et al., (2020) discusses Indonesia's Green Growth Program and the challenges of balancing economic growth with environmental preservation. The similarity is the focus on sustainability, but this study differs by more specifically examining green MSMEs and the role of BI at the regional level.

Research by Nurbaiti, et al., (2021) emphasizes the importance of green industrial technology for MSME sustainability, including reducing plastic use and the role of education and collaboration. The similarity is the focus on MSME sustainability, while this study focuses more on the agriculture and handicraft sectors and the role of BI NTT in supporting the regulation and development of green MSMEs.

Taken together, existing studies have not sufficiently explored how Bank Indonesia's green MSME policies are translated into concrete institutional practices at the subnational level, nor have they adequately examined the interaction between policy strategies (push-pull mechanisms), sectoral

characteristics, and local constraints in peripheral regions such as NTT.

Based on this background, the problem formulated in this study is: how the green MSME development policy, as outlined by Bank Indonesia, relates to the development of MSMEs in East Nusa Tenggara Province, and which factors support and hinder the policy. The purpose of this study is to describe and analyze the green MSME development policy formulated by Bank Indonesia and its relevance to MSME development in East Nusa Tenggara Province, and to identify and analyze the policy's supporting and inhibiting factors. This research is expected to provide academic benefits in the form of contributions in the development of science, especially in the field of administration and policies related to green MSME business models according to Bank Indonesia to support sustainable development, as well as practical benefits as input for the government and related parties in the development of green MSMEs, especially in the agricultural and wastra or handicraft sectors which have a large contribution to GRDP in East Nusa Tenggara Province.

Therefore, this study fills an important empirical and analytical gap by examining Bank Indonesia's green MSME development policy in the specific context of East Nusa Tenggara Province, with particular attention to push-pull strategies, leading agricultural and handicraft sectors, and the identification of supporting and inhibiting factors at the regional level.

RESEARCH METHODS

This research employs a qualitative design grounded in content analysis to examine Bank Indonesia's green Micro, Small, and Medium Enterprises (MSME) development policy and its relevance in East Nusa Tenggara (NTT). Qualitative content analysis is well-suited for systematically interpreting policy texts, institutional documents, and formal narratives to identify patterns, meanings, and policy orientations within official discourse (Schreier, 2018; Kuckartz, 2019). Instead of utilizing primary field data, the analysis centers on how green MSME policies are framed, justified, and operationalized by Bank Indonesia at the subnational level.

The study deliberately uses secondary data sources, reflecting its objective of conducting a policy-oriented analysis rather than an

evaluation based on stakeholder perceptions. Data sources include academic journal articles, official policy documents, annual reports, program descriptions, publicly available publications issued by the Bank Indonesia Representative Office of East Nusa Tenggara Province (BI NTT), and institutional documents related to selected MSMEs. The reliance on document-based data is consistent with established approaches in public policy and governance research, where policy texts are treated as primary empirical material for understanding institutional logic, strategic priorities, and implementation frameworks (Bowen, 2009; Prior, 2014).

Document selection was guided by a purposive sampling strategy, emphasizing relevance to the research objectives and the thematic focus on green MSME development. Documents were chosen according to three criteria: explicit reference to green economy, sustainability, digitalization, or MSME development; relevance to the regional context of NTT; and representation of agriculture and handicraft sectors as leading economic activities in the province. Policy materials referencing MSMEs such as GS Organik, Noetnana Farmers Group, and Ina Ndao were included as documented illustrations frequently cited in BI NTT publications, rather than as case studies based on field observation.

The data analysis employed a thematic qualitative content analysis procedure. Initially, all selected documents were read iteratively to develop familiarity with their content and institutional context. Subsequently, an initial coding process identified key concepts, policy instruments, and recurring themes related to green MSME development, including digitalization, green entrepreneurship training, cluster-based development, green finance, and multi-stakeholder collaboration. This inductive coding approach follows recommendations by Schreier (2018) and Saldaña (2021), emphasizing flexibility and reflexivity in qualitative analysis.

In the third stage, codes were systematically grouped into broader analytical categories to capture dominant policy narratives and strategic orientations. These categories were interpreted using relevant theoretical frameworks in green economy, MSME development, and public policy implementation. This interpretive stage advances the analysis from descriptive summarization to analytical explanation,

consistent with qualitative policy analysis approaches proposed by Yanow (2014) and Howlett et al. (2019). The results are presented in tables and analytical narratives to enhance transparency and coherence.

Several qualitative validity strategies were implemented to ensure the trustworthiness and rigor of the study. First, source triangulation was conducted by comparing information across various document types, including policy texts, academic literature, and institutional reports, to mitigate single-source bias (Creswell & Poth, 2018). Second, an audit trail was maintained by documenting coding decisions, theme development, and analytical interpretations, thereby supporting analytical transparency and methodological consistency (Nowell et al., 2017). Third, reflexive analysis was applied throughout the research process to acknowledge the interpretive role of the researcher in policy discourse analysis.

It is important to note that this study does not aim to measure causal effects or evaluate policy outcomes at the level of individual MSME performance. Instead, it seeks to provide an analytical understanding of the policy orientation, institutional capacity, and governance mechanisms underlying Bank Indonesia-led green MSME development initiatives led by Bank Indonesia in NTT. This methodological positioning is consistent with qualitative governance studies that emphasize meaning-making, institutional roles, and policy design rather than outcome attribution (Ansell & Gash, 2018; Emerson et al., 2020).

The adoption of qualitative content analysis grounded in secondary data ensures methodological coherence with the results and discussion sections, which interpret BI NTT's green MSME policies as institutional and governance phenomena rather than empirical behavioral outcomes. This approach enables a nuanced examination of how green economy principles are translated into subnational policy narratives and development strategies within the structural constraints of Indonesia's decentralized governance system.

RESULT AND DISCUSSION

Based on a qualitative content analysis of policy documents, official reports, and published initiatives from the Bank Indonesia Representative Office of East Nusa Tenggara Province (BI NTT), this study identifies a set of recurring policy themes and implementation

patterns that illustrate Bank Indonesia's strategic role in promoting the transformation of MSMEs toward a green and sustainable business model.

The analysis does not rely on primary field data; instead, it systematically examines secondary sources, such as policy briefs, program descriptions, institutional reports, and documented best practices, to capture how green MSME policies are framed, operationalized, and contextualized at the provincial level.

Using a content analysis approach, the data were coded thematically to identify dominant narratives, policy instruments, and institutional mechanisms emphasized in BI NTT's green MSME development agenda.

This approach allows the study to move beyond descriptive reporting and towards an analytical understanding of policy orientation, strategic priorities, and implementation constraints, while remaining consistent with the literature-based research design employed.

The findings reveal that BI NTT's green MSME policy initiatives consistently emphasize several interconnected dimensions, namely digitalization, technology-based green transformation, green entrepreneurship capacity building, cluster-based development rooted in local potential, financial inclusion challenges, and multi-stakeholder collaboration. These dimensions emerge repeatedly across policy documents and program reports, indicating a coherent, though not unproblematic, policy framework aimed at aligning MSME development with green economy principles.

A synthesis of the main findings identified through this content analysis is presented in Table 1.

Table 1. Key Findings from Content Analysis of BI NTT Green MSME Policy Documents

No	Findings	Empirical Illustrations Based on Policy Documents
1	Digitalization boosts MSME competitiveness	BI promotes QRIS, digital payment systems, and MSME integration into digital marketplaces
2	Technology-based green agricultural transformation	GS Organik adopts Jinawi technology and participates in BI-led climate adaptation and digital marketing programs

No	Findings	Empirical Illustrations Based on Policy Documents
3	Limited access to green finance remains an obstacle	BI provides training and market linkage facilitation, but direct green financing schemes remain limited
4	Green entrepreneurship training increases efficiency and innovation	Training programs focus on energy efficiency, waste utilization, and environmentally friendly packaging
5	Green clusters based on local potential strengthen regional economy	Organic coffee clusters in Bajawa, natural salt production in Nunkurus, and natural dye weaving
6	Multi-stakeholder collaboration is essential for sustainability	BI collaborates with local governments, NGOs, private sector actors, and academic institutions

Source: Secondary Data, 2025

Digitalization as a Core Instrument for Enhancing MSME Competitiveness

The content analysis reveals that digitalization is positioned by BI NTT as a foundational instrument for enhancing MSME competitiveness within the green economy framework.

Policy documents consistently frame digitalization not merely as a technological upgrade, but as an enabling infrastructure that supports transparency, efficiency, and market expansion for MSMEs adopting green practices.

BI NTT initiatives emphasize the integration of MSMEs into digital payment ecosystems such as QRIS, digital bookkeeping platforms, and online marketing channels. From a policy perspective, digitalization is portrayed as a mechanism to reduce transaction costs, improve financial traceability, and strengthen MSME resilience in geographically fragmented regions such as NTT. This narrative reflects BI's broader mandate to promote payment system efficiency while simultaneously advancing inclusive and sustainable economic development.

Importantly, the analyzed documents suggest that digitalization serves as a prerequisite for green MSME transformation, as it enables monitoring of production processes, resource efficiency, and market access for environmentally friendly products. However, the content analysis also indicates implicit assumptions within the policy framework, namely, that MSME actors possess sufficient

digital literacy and infrastructure access. These assumptions are not always matched by on-the-ground realities, particularly in rural and peripheral areas.

Technology-Based Green Agricultural Transformation

Another dominant theme emerging from the content analysis is the promotion of technology-based green transformation in the agricultural sector. BI NTT policy materials frequently highlight agricultural MSMEs as priority targets for green interventions, given their vulnerability to climate change and their strategic role in regional livelihoods.

The case of GS Organik, repeatedly cited in BI NTT publications, illustrates how green technology is framed as both an environmental and economic solution. Policy documents describe the adoption of Jinawi technology, climate field schools, and digital marketing training as integrated interventions designed to enhance productivity, climate resilience, and market competitiveness simultaneously.

From an analytical standpoint, this reflects a policy logic that treats green technology adoption as a catalyst for behavioral change among MSME actors, encouraging shifts from conventional, resource-intensive practices toward more sustainable production models. However, the content analysis also reveals that technological interventions are largely promoted through training and facilitation mechanisms, rather than through direct technological subsidies or financing instruments.

Limited Access to Green Finance as a Structural Constraint

Despite the strong policy emphasis on green transformation, the content analysis consistently identifies limited access to green finance as a critical constraint within BI NTT's MSME development framework. Official documents acknowledge that while BI plays an important role in capacity building, market linkage, and policy advocacy, it does not directly provide financing for MSMEs.

This institutional limitation creates a structural gap between green policy aspirations and practical implementation on the ground. BI NTT initiatives often rely on indirect mechanisms, such as connecting MSMEs with financial institutions, promoting financial literacy, and encouraging sustainable finance

discourse, yet concrete green financing schemes tailored to micro and small enterprises remain underdeveloped.

From a policy analysis perspective, this finding highlights an important tension between BI's developmental role and its regulatory mandate, raising questions about inter-institutional coordination and the division of responsibilities in advancing green MSME financing at the regional level.

Green Entrepreneurship Training as a Behavioral Policy Instrument

Training and capacity building emerge as central policy instruments in BI NTT's green MSME strategy. Content analysis of program descriptions shows that training modules are designed not only to improve technical skills but also to reshape entrepreneurial mindsets toward sustainability.

These trainings cover topics such as water and energy efficiency, waste minimization, environmentally friendly packaging, and sustainable product innovation. Within BI policy narratives, training is portrayed as a long-term investment aimed at fostering environmentally responsible business behavior rather than short-term profit maximization.

However, the documents analyzed rarely provide evaluative evidence regarding the long-term behavioral impact of such training programs, suggesting an area where future research and policy monitoring could be strengthened.

Cluster-Based Green MSME Development Rooted in Local Potential

The content analysis identifies cluster-based development as a key spatial and sectoral strategy in BI NTT's green MSME policy framework. BI documents frequently reference clusters built around local resources, such as organic coffee in Bajawa, natural salt in Nunkurus, and natural dye weaving.

This cluster approach is framed as a way to integrate environmental sustainability with regional economic identity. By anchoring green MSMEs in local ecological and cultural contexts, BI policies seek to enhance both economic resilience and environmental stewardship.

At the same time, the reliance on cluster narratives may obscure intra-cluster inequalities and governance challenges, an issue that is not explicitly addressed in policy documents but

becomes analytically relevant when viewed through a critical policy lens.

Multi-Stakeholder Collaboration as an Enabling Governance Mechanism

Finally, multi-stakeholder collaboration emerges as a recurring governance theme across BI NTT policy documents. BI is positioned as a coordinator and facilitator that brings together local governments, NGOs, private sector actors, and academic institutions in supporting green MSMEs. This collaborative approach reflects a recognition that green MSME development cannot be achieved through single-institution interventions alone.

However, the content analysis also reveals that roles, responsibilities, and power relations among stakeholders are often described normatively, with limited discussion of coordination challenges or conflicts.

Bank Indonesia, through its East Nusa Tenggara Provincial Representative Office (KPwBI NTT), positions digitalization as a strategic instrument for strengthening MSME competitiveness and supporting sustainable regional economic development. This finding is consistent with the global policy literature, which identifies digital transformation as a critical driver of MSME resilience, particularly in geographically remote and economically peripheral regions (OECD, 2021; UNCTAD, 2023). Rather than treating digitalization as a mere technological tool, BI NTT frames it as an institutional mechanism that enables MSMEs to access wider markets, improve financial transparency, and enhance operational efficiency.

The promotion of digital payment systems such as QRIS, alongside MSME integration into e-commerce platforms and online marketing channels, signifies a transition toward the development of inclusive digital economic ecosystems. Nambisan et al. (2019) and Kraus et al. (2022) argue that digital ecosystems enable small enterprises to overcome scale and distance constraints by reducing transaction costs and facilitating real-time market engagement. In NTT, where logistical and infrastructural barriers are significant, these digitalization strategies serve to mitigate structural disadvantages.

The case of Ina Ndao MSME demonstrates that digitalization contributes to both market expansion and the attainment of symbolic legitimacy within global value chains.

Participation in international exhibitions and the adoption of digital payment systems enhance product credibility and buyer trust, which are increasingly vital intangible assets in sustainability-oriented markets (Gereffi, 2018; Ponte et al., 2019). These findings indicate that digitalization serves as both an economic and reputational lever for green MSMEs.

Within the agricultural sector, BI NTT's focus on technology-driven green transformation is consistent with international frameworks for climate-smart and sustainable agriculture. The integration of Jinawi technology, climate field schools, and digital marketing training demonstrates recognition that technological adaptation requires concurrent institutional learning and capacity-building (FAO, 2018; IPCC, 2022). This approach enables MSMEs to address climate risks while sustaining economic viability.

Nevertheless, reliance on non-financial instruments such as training and facilitation exposes inherent limitations in the scope of BI's intervention. Recent research on green industrial and innovation policy demonstrates that technology adoption without sufficient financial support frequently leads to incomplete or unsustainable transformation (Mazzucato & Semieniuk, 2018; Altenburg & Rodrik, 2023). This evidence points to a structural gap between policy ambition and implementation capacity, especially in regions with restricted access to capital.

Green entrepreneurship training forms a core component of BI NTT's green MSME development strategy. These programs prioritize energy efficiency, waste reduction, environmentally friendly packaging, and sustainable product innovation, indicating a shift toward behavioral policy instruments. This strategy aligns with sustainability transition literature, which contends that enduring environmental change necessitates transformation in entrepreneurial mindset rather than reliance solely on compliance-driven regulation (Schaltegger et al., 2016; Stubbs & Cocklin, 2020).

However, the lack of systematic evaluation mechanisms constrains the effectiveness of these training initiatives. Governance scholars assert that capacity-building programs require feedback, monitoring, and learning systems to achieve behavioral change and policy effectiveness (Howlett, 2019; Ansell et al., 2020). In the absence of such mechanisms,

training may become symbolic rather than transformative.

The development of green MSME clusters based on local potential represents another significant policy orientation identified in this study. Clusters such as Bajawa organic coffee, Nunkurus natural salt, and natural-dye weaving illustrate how sustainability can be embedded in place-based economic development strategies. This approach aligns with territorial development theories that stress the importance of linking economic competitiveness with local resources and cultural identity (Rodríguez-Pose & Crescenzi, 2020; Barca et al., 2022).

Simultaneously, cluster-based policies frequently presuppose a high degree of coordination and shared interests among stakeholders. The literature warns that clusters can perpetuate power asymmetries and governance challenges if institutional arrangements are weak or exclusionary (Benner, 2017; Boschma, 2021). The limited focus on these concerns in policy documents indicates a need for more comprehensive institutional analysis in future research.

Multi-stakeholder collaboration is consistently framed as a necessary condition for green MSME development in NTT. BI NTT positions itself as a facilitator that connects local governments, NGOs, academic institutions, and private-sector actors. This reflects contemporary models of collaborative governance, which emphasize network-based coordination to address complex sustainability challenges (Emerson & Nabatchi, 2015; Sørensen & Torfing, 2021).

However, collaboration is largely presented in normative terms, with limited discussion of accountability, power relations, or coordination failures. Studies on collaborative governance caution that without clear role allocation and resource commitments, collaboration may remain rhetorical rather than operational (Ansell & Gash, 2018; Thiel et al., 2022). This highlights the need for stronger governance design in the implementation of green MSME policy.

Structural barriers, including low environmental literacy, inadequate infrastructure, and limited access to green finance, further restrict MSME transformation. Environmental literacy is recognized as a key determinant of green business adoption, shaping whether MSMEs view sustainability as a cost or a strategic opportunity (Del Giudice et

al., 2021; de Jesus & Mendonça, 2018). In regions with low literacy levels, sustainability-oriented policies necessitate enhanced educational and extension components.

Access to green finance remains one of the most critical barriers identified in this study. Research indicates that green finance instruments tend to favor large firms due to risk perceptions, complex compliance requirements, and high transaction costs (OECD, 2020; D’Orazio & Popoyan, 2019). This underscores the importance of inter-agency coordination in designing inclusive financing schemes accessible to micro and small enterprises.

Market demand constraints further limit the commercial viability of green MSMEs in domestic markets. Consumer willingness to pay for sustainable products in emerging economies remains inconsistent and sensitive to income levels (White et al., 2019; Sun et al., 2022). Consequently, MSMEs encounter competitive pressures that hinder the monetization of sustainability practices.

Despite these challenges, East Nusa Tenggara offers substantial opportunities for green MSME development. Its distinctive natural and cultural resources, including forest honey, candlenut oil, and naturally dyed textiles, correspond with increasing global demand for ethical and sustainable products (UNEP, 2021; OECD, 2023). Strategic branding, certification support, and export facilitation can be leveraged to capitalize on these advantages. NTT’s renewable energy potential, particularly solar and wind, offers additional pathways for sustainable MSME transformation. Empirical studies show that decentralized renewable energy systems can significantly reduce operational costs for MSMEs in remote areas (IRENA, 2022; Sovacool et al., 2020). However, realizing this potential requires coherent policies, fiscal incentives, and accessible financing mechanisms.

In summary, the analysis demonstrates that BI NTT’s green MSME initiatives constitute a significant yet incomplete step toward sustainable economic transformation. The emphasis on facilitation and coordination is consistent with BI’s institutional mandate; however, structural barriers remain that extend beyond its jurisdiction. Overcoming these limitations requires integrated governance that aligns monetary policy actors with fiscal

institutions, development agencies, and local governments.

CONCLUSION

This study analyzes Bank Indonesia's green Micro, Small, and Medium Enterprises (MSME) development policy at the subnational level, focusing on its relevance to MSME development in East Nusa Tenggara (NTT). Using qualitative content analysis of policy documents and institutional reports, the research examines the framing, operationalization, and constraints of green MSME initiatives within the socio-economic and ecological context of a climate-vulnerable and institutionally peripheral region.

The findings indicate that Bank Indonesia, through its East Nusa Tenggara Provincial Representative Office, plays a significant role in promoting environmentally friendly and sustainable business practices among MSMEs. Policy instruments including digitalization initiatives, green entrepreneurship training, cluster-based development utilizing local resources, and facilitation of market access through curation and exhibitions enhance MSME competitiveness and integrate sustainability principles into production and management processes. These initiatives demonstrate the potential for a central bank to serve as a catalyst for regional green economic transformation, even without a direct development mandate.

The study confirms that green MSME development aligns with the social, economic, and ecological characteristics of NTT. The province's abundant natural and cultural resources, alongside significant climate risks and infrastructural limitations, render environmentally responsible business practices both necessary and advantageous. In this context, green MSME policies support economic resilience, promote sustainable resource use, and foster social inclusion, particularly in rural and marginalized communities.

The research reveals that the implementation of green MSME policies is constrained by persistent structural and institutional challenges. Limited access to green financing, inadequate infrastructure, uneven digital and technical capacities among MSME actors, and weak inter-agency policy coordination impede the depth and scalability of green transformation. These findings indicate that

capacity-building and facilitative measures alone are insufficient to sustain green MSME development without enhanced policy coherence and cross-sectoral collaboration.

This study contributes to the literature on green economy and MSME development by providing empirical insights from a peripheral and climate-vulnerable region that is often underrepresented in existing research. It advances policy and governance studies by demonstrating how green economic initiatives are implemented as institutional practices at the subnational level, highlighting both the opportunities and limitations of central bank-led interventions. The findings also offer policy-relevant insights for improving coordination among monetary authorities, local governments, financial institutions, and development agencies to address financing and infrastructure gaps. This study should be acknowledged. This study relies solely on secondary data and document-based analysis, which limits its ability to capture MSME actors' perspectives and to assess policy impacts quantitatively. In addition, the focus on a single provincial context may limit broader generalizability. Future research could incorporate primary data collection, comparative regional analysis, and longitudinal designs to evaluate the long-term economic, environmental, and social impacts of green MSME policies.

In summary, green MSME development in East Nusa Tenggara represents both a promising pathway and a complex governance challenge. Although Bank Indonesia has contributed to advancing MSME sustainability, achieving a resilient, inclusive, and globally competitive green economy ultimately requires integrated governance frameworks, sustained policy commitment, and collaborative action across institutional boundaries.

REFERENCES

- Akhyar, & Jasmadi. (2024). *Kebijakan publik: Kajian konseptual teori dan praktis*. Wasatha Media Ummat.
- Altenburg, T., & Rodrik, D. (2023). Green industrial policy: Accelerating structural change towards wealthy green economies. *Structural Change and Economic Dynamics*, 64, 205–216. <https://doi.org/10.1016/j.strueco.2022.12.002>

- Alya, A. P., Farhani, S. A., Nurina, V. R., & Pimada, L. M. (2020). Tantangan Indonesia dalam mewujudkan pertumbuhan ekonomi yang kuat dan pembangunan ekonomi berkelanjutan melalui Indonesia Green Growth Program oleh Bappenas. *Jurnal Ilmu Ekonomi dan Pembangunan*, 20(1), 63–73. <https://doi.org/10.20961/jiep.v20i1.38229>
- Ansell, C., & Gash, A. (2018). Collaborative platforms as a governance strategy. *Journal of Public Administration Research and Theory*, 28(1), 16–32. <https://doi.org/10.1093/jopart/mux030>
- Barca, F., McCann, P., & Rodríguez-Pose, A. (2022). The case for regional development intervention: Place-based versus place-neutral approaches. *Journal of Economic Geography*, 22(1), 1–24. <https://doi.org/10.1093/jeg/lbab043>
- Benner, M. (2017). Cluster policy as a panacea? The role of cluster policy in the new regional policy agenda. *Journal of Economic Policy Reform*, 20(1), 1–14. <https://doi.org/10.1080/17487870.2016.1266463>
- Boulding, K. E. (1968). Review of *A systems analysis of political life* by David Easton. *Behavioral Science*, 13(2), 147–149. <https://doi.org/10.1002/bs.3830130208>
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- Cindy Yolanda. (2024). Peran usaha mikro, kecil, dan menengah (UMKM) dalam pengembangan ekonomi Indonesia. *Jurnal Manajemen dan Bisnis*, 2(3), 170–186. <https://doi.org/10.36490/jmdb.v2i3.1147>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
(Indonesian translation published by Pustaka Pelajar)
- Del Giudice, M., Scuotto, V., Garcia-Perez, A., & Petruzzelli, A. M. (2021). Shifting wealth II in Chinese economy: Digital knowledge spillovers and sustainability. *Journal of Business Research*, 123, 13–23. <https://doi.org/10.1016/j.jbusres.2020.09.045>
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods* (2nd ed.). McGraw-Hill.
- D’Orazio, P., & Popoyan, L. (2019). Fostering green investments and tackling climate-related financial risks. *Ecological Economics*, 160, 25–37. <https://doi.org/10.1016/j.ecolecon.2019.01.029>
- Emerson, K., & Nabatchi, T. (2015). *Collaborative governance regimes*. Georgetown University Press.
- FAO. (2018). *Climate-smart agriculture sourcebook*. Food and Agriculture Organization.
- Gereffi, G. (2018). Global value chains and development. *Cambridge Journal of Regions, Economy and Society*, 11(1), 61–72. <https://doi.org/10.1093/cjres/rsx047>
- Harymawan, I., Indahsari, A. T., & Putra, F. K. G. (2022). Strengthening Indonesian MSME sustainability through sustainable finance lab. *Jurnal Layanan Masyarakat*, 6(2), 421–438. <https://doi.org/10.20473/jlm.v6i2.2022.421-438>
- Hidayat, E. N. (2021). Pengembangan eco-business bagi pelaku UMKM. *Jurnal Penelitian dan Pengabdian kepada Masyarakat*, 2(3), 397–404. <https://doi.org/10.24198/jppm.v2i3.36320>
- Howlett, M. (2019). Policy capacity and effective policy design. *Policy and Society*, 38(1), 1–17. <https://doi.org/10.1080/14494035.2019.1579902>
- IPCC. (2022). *Climate change 2022: Impacts, adaptation and vulnerability*. Cambridge University Press.

- IRENA. (2022). *Renewable energy for SMEs*. International Renewable Energy Agency.
- Johansson, B., Karlsson, C., & Stough, R. R. (2006). Entrepreneurship, clusters and policy in the emerging digital economy. *Advances in Spatial Science*, 1–19. https://doi.org/10.1007/3-540-34488-8_1
- Koirala, S. (2019). *Green business models: A pathway to sustainable development*. OECD Publishing. <https://doi.org/10.1787/8a51fc0c-en>
- Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. (2022). Digital transformation in business research. *International Journal of Information Management*, 63, 102466. <https://doi.org/10.1016/j.ijinfomgt.2021.102466>
- Kuckartz, U. (2019). *Qualitative text analysis: A systematic approach*. SAGE Publications.
- Latifah, N., & Muradi. (2024). Pengembangan UMKM Bank Indonesia dalam upaya ketahanan ekonomi Kabupaten Tegal. *NeoRespublica*, 5(2), 586–605. <https://doi.org/10.52423/neores.v5i2.211>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.
- Mazzucato, M., & Semieniuk, G. (2018). Financing renewable energy. *Technological Forecasting and Social Change*, 127, 8–22. <https://doi.org/10.1016/j.techfore.2017.05.021>
- Moleong, L. J. (2006). *Metodologi penelitian kualitatif*. Remaja Rosdakarya.
- Nasution, S. (2003). *Metode penelitian naturalistik kualitatif*. Tarsito.
- Nurbaiti, T., Harefa, S., Zaky, M., Pati, H. K., & Nurhayati. (2021). Sustainability UMKM di era teknologi green industry. *Adibrata Jurnal*, 2(1), 126–134.
- OECD. (2020). *Financing SMEs and entrepreneurs*. OECD Publishing.
- OECD. (2021). *The digital transformation of SMEs*. OECD Publishing.
- OECD. (2023). *SME policy and the green transition*. OECD Publishing.
- Regif, S. Y., Seran, M. S. B., Naif, I. Y., Pattipeilohy, A., & Saputri, L. (2023). Literasi digital ekonomi hijau terhadap pemberdayaan UMKM desa. *Jurnal Ilmu Politik dan Pemerintahan*, 9(1), 49–69. <https://doi.org/10.37058/jipp.v9i1.6922>
- Ryan Nugraha, et al. (2024). *Green economy: Teori, konsep, dan gagasan*. Sonpedia Publishing Indonesia.
- Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016). Business models for sustainability. *Organization & Environment*, 29(3), 264–289. <https://doi.org/10.1177/1086026616631450>
- Schreier, M. (2018). *Qualitative content analysis in practice*. SAGE Publications.
- Sezen, B., & Çankaya, S. Y. (2013). Effects of green manufacturing and eco-innovation. *Procedia – Social and Behavioral Sciences*, 99, 154–163. <https://doi.org/10.1016/j.sbspro.2013.10.481>
- Sugiyono. (2013). *Metode penelitian kuantitatif, kualitatif dan R&D*. Alfabeta.
- Sun, Y., Huang, J., & Lin, X. (2022). Consumer willingness to pay for green products. *Journal of Cleaner Production*, 330, 129801. <https://doi.org/10.1016/j.jclepro.2021.129801>
- Thiel, A., Adamsaged, M. E., Baake, C., & Bose, I. (2022). Governance dynamics of sustainability transitions. *Environmental Policy and Governance*, 32(5), 369–381. <https://doi.org/10.1002/eet.1986>
- Tian Nirwana. (2022). Analisis implementasi kebijakan penyelenggaraan kearsipan. *Jurnal Ilmu Informasi, Perpustakaan, dan Kearsipan*, 24(2), 65–73. <https://doi.org/10.7454/JIPK.v24i2.001>

UNCTAD. (2023). *Digital economy report 2023*. United Nations.

UNEP. (2021). *Making peace with nature*. United Nations Environment Programme.

White, K., Hardisty, D. J., & Habib, R. (2019). The elusive green consumer. *Journal of Consumer Psychology*, 29(1), 25–38. <https://doi.org/10.1002/jcpy.1093>

William Djani. (2022). *Kebijakan publik dan implikasinya di era otonomi daerah*. Zifatama Jawara.

Yanow, D. (2014). Interpretive policy analysis. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 377–390). SAGE Publications.