

MSME Development and Economic Transformation among Former Tin Mining Communities in Bangka Belitung

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ABSTRACT

Tin mining dependence in Bangka Belitung, Indonesia, raises questions about whether micro, small, and medium enterprises (MSMEs) can support sustained livelihood diversification as mining opportunities decline. This review examines the relationship between MSME development and post-mining economic transformation, focusing on environmental recovery, access to productive resources, community capabilities, and institutional support. The reviewed literature is synthesized to distinguish opportunities for alternative income generation from evidence of sustained livelihood change. Tourism, agriculture, fisheries processing, and small-scale manufacturing offer potential diversification pathways. However, evidence of sectoral opportunities and training participation does not independently establish business continuity, economic independence, or reduced mining dependence. Environmental degradation, contested resource access, and uneven institutional support further complicate livelihood transitions. The synthesis indicates that diversification should be assessed through the interaction of enterprise opportunities and the conditions sustaining them, rather than through business creation alone. The review contributes an analytical framework distinguishing livelihood adaptation from longer-term economic transformation. It identifies the need for longitudinal evidence linking enterprise continuity, household income stability, and changes in mining participation. For policy, the framework directs attention to coordination between environmental rehabilitation, enterprise support, and equitable access to productive assets.

Keywords:

MSMEs, Post-Mining Economy, Livelihood Diversification, Community Empowerment, Bangka Belitung

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1. Introduction

Bangka Belitung Islands has long depended on tin mining, which has shaped local economic structures, livelihoods, and social relations. Research in Belitung shows how interconnected industrial, artisanal, and household livelihood activities reproduce dependence on the mining economy (Vela-Almeida & Karlsen, 2023). Relatively rapid returns have encouraged communities to pursue extractive activities (Sulista, 2019), while mining governance faces the challenge of maintaining livelihood sustainability (F. T. D. Pradipta, 2026a). Previous studies associate movement from agriculture and fisheries into mining with its economic attractiveness and limited

occupational alternatives. When production declines or mining access becomes restricted, this dependence can undermine household income and expose the limited capacity of local economies to accommodate displaced workers (Kusumawati & Ramadani, 2024). Evidence from historical tin mining on Singkep Island similarly demonstrates that sudden mine closure can turn mining-related benefits into long-term socio-economic losses (Syahrir et al., 2020). Environmental damage compounds these difficulties. Land degradation, abandoned mining pits, and declining productivity constrain alternative economic activities (Nurtjahya et al., 2008), connecting environmental deterioration with socio-economic vulnerability (Damayanti et al., 2023). Weak reclamation implementation further restricts productive land use (Haryadi et al., 2023). Research on post-mining land use highlights the importance of assessing environmental suitability alongside stakeholder priorities when identifying alternative productive uses (Worden et al., 2024). Consequently, livelihood diversification requires coordination between environmental recovery and economic development. This integrated perspective is consistent with research emphasizing that post-mining transitions must extend beyond physical rehabilitation to address the social and economic futures of affected communities (Measham et al., 2024).

Micro, Small, and Medium Enterprises (MSMEs) offer a potential pathway for diversification through trade, culinary businesses, fisheries processing, handicrafts, tourism, and agriculture. Research identifies opportunities to reposition former mining areas through tourism (Pradipta, 2025), connect land recovery with green agribusiness, and strengthen familiarity with local agricultural resources (Rahmadani & Pradipta, 2026). International examples demonstrate how mining heritage can be adapted for tourism and recreation (Każmierczak et al., 2019), while mine restoration standards emphasize community participation and the incorporation of local livelihood expectations into restoration planning (Young et al., 2022). Provincial statistics document the economic contribution of micro and small enterprises, although aggregate figures do not independently establish livelihood transitions among former miners. Community-based tourism initiatives illustrate opportunities to develop alternative income sources (Sabri et al., 2018), while brick and paving block production training demonstrates possibilities for former miners to enter productive businesses (Reno Ismanto et al., 2024). However, business opportunities and training participation do not necessarily establish sustained economic independence. Evidence from African SMEs shows that enterprise performance depends partly on regulatory conditions and competitive pressures (Hansen-Addy et al., 2024). Furthermore, evidence from low- and middle-income countries indicates that enterprise formalization does not automatically extend social protection to workers, highlighting the importance of coordinated policies (Torm & Oehme, 2024). MSME development therefore needs to be examined in relation to environmental recovery, institutional support, and the conditions supporting business continuity and reduced dependence on mining.

These conditions extend beyond individual entrepreneurial capacity. An entrepreneurial ecosystem perspective situates business development within interdependent institutions, infrastructure, networks, and resources (Stam & van de Ven, 2021). Studies of social cohesion and political participation (T. D. Pradipta et al., 2026), political representation and social recognition (F. T. D. Pradipta et al., 2026), and village autonomy provide contextual perspectives on participation in local development. Evidence from a meta-analysis of environmental governance indicates that stakeholder representation and delegated decision-making power influence the environmental quality of governance outputs (Newig et al., 2023). Research on mobility inequalities (F. T. D. Pradipta, 2026b) and transportation policy identifies considerations relevant to market connectivity, while public budget governance and administrative implementation capacity inform the delivery of development support. Resource access also warrants attention: agricultural land conflicts (Irawan & Robing, 2025), customary land administration (Tory et al., 2026), and indigenous community recognition illustrate institutional issues surrounding productive assets. These issues can be examined through distributive, procedural, and recognition dimensions of justice in ecosystem governance (Sikor et al., 2014). Broader studies of energy transition politics (Irawan, 2026b), community-based resource governance (Irawan, 2026a), marine spatial interests in Bangka Belitung, and ecological justice situate diversification within debates about sustainable resource governance. Research on blue justice further highlights risks involving resource exclusion, livelihood disruption, and unequal benefit distribution in coastal economic development (Bennett

et al., 2021). These studies offer contextual insights, but their implications for MSME development require synthesis rather than being treated as direct evidence of business outcomes.

Despite these contributions, the literature reviewed provides a fragmented account of the relationship between MSME development and post-mining economic transformation. Studies address mining dependence, tourism opportunities, and business training for former miners (Reno Ismanto et al., 2024), but their findings do not sufficiently clarify how alternative enterprises interact with environmental recovery, productive resource access, community capabilities, and institutional support. Research on post-mining planning in Indonesia identifies access to assets, information, and institutional relationships as important components of community adaptive capacity (Sutrisno et al., 2023). Migration and reclamation challenges, alongside political arrangements shaping development opportunities, further complicate this relationship. Research on Indonesian coal mining also shows how legal preferences for extraction can constrain alternative land uses (Muhdar et al., 2023). Within the literature reviewed, the central gap therefore concerns how these interacting conditions shape the capacity of MSMEs to move beyond temporary income replacement and support sustained livelihood diversification. The study's proposed contribution is an integrated analytical framework that distinguishes livelihood adaptation from longer-term economic transformation, drawing on the conceptual distinction between adaptability and transformability in social-ecological systems (Folke et al., 2010). Building on perspectives concerning environmental recovery and community protection, and the institutional dimensions of resource-related transitions, the framework connects diversification opportunities with the conditions that may enable or constrain their sustainability. Research on mineral-energy linkages further supports examining diversification through coordinated policies, infrastructure, and productive value chains (Weldegiorgis, 2023).

Accordingly, this study aims to analyze how MSME development may support economic transformation among former tin mining communities in Bangka Belitung and identify the principal conditions shaping this process. Through an integrative literature review, it synthesizes evidence on livelihood change, local economic opportunities, community capabilities, market access, environmental recovery, infrastructure, and institutional support. It also examines whether the reviewed evidence indicates short-term adaptation or sustained diversification, providing a basis for understanding the potential and limitations of MSMEs in post-mining economic development.

2. Method

This study employs a qualitative approach using an integrative literature review to analyze MSME development as a pathway for economic transformation among former tin mining communities in the Bangka Belitung Islands. An integrative literature review was selected because it allows the researcher to synthesize findings from different types of empirical, theoretical, and policy literature and to develop a comprehensive understanding of a complex research problem. The review focuses on the relationship between tin mining dependence, livelihood transformation, post-mining conditions, MSME development, local economic potential, and institutional support. The conceptual unit of this review is former tin mining communities, referring to communities and households living in areas where tin mining activities have declined, ceased, or no longer provide the same economic opportunities as previously available. The term includes community members whose livelihoods are directly or indirectly affected by changes in the mining-based economy. Former miners are treated as a subgroup within former tin mining communities and are therefore not used interchangeably with the broader community concept. The review prioritized literature published between 2010 and 2026, with greater emphasis on recent studies published during 2019–2026, with greater emphasis placed on recent studies published during 2019–2026 to capture current developments in post-mining economic transformation and MSME development. The sources consisted of peer-reviewed journal articles, academic books, conference proceedings, government reports, official statistical publications, and relevant scientific documents. Literature was obtained from academic and institutional sources, including Google Scholar, journal databases and publishers, the Central Statistics Agency (BPS), and official government publications. The review also incorporated relevant studies on Bangka Belitung concerning tin mining, post-mining tourism, green agribusiness, community empowerment, local governance, environmental management, and

economic transformation. The literature selection followed several stages. First, relevant literature was identified using keywords related to tin mining, former tin mining communities, post-mining communities, livelihood transformation, MSMEs, economic diversification, post-mining development, community empowerment, and Bangka Belitung. Second, the identified sources were screened according to their relevance to the research objectives. Third, the selected literature was classified according to the main themes of mining dependence, environmental conditions, livelihood transformation, MSME development, local economic resources, and institutional support. Relevant information was then extracted and compared across the selected sources. Finally, the findings were integrated through thematic synthesis to identify relationships, recurring patterns, and differences in the existing literature and to develop an interpretation of how MSME development can contribute to economic transformation among former tin mining communities.

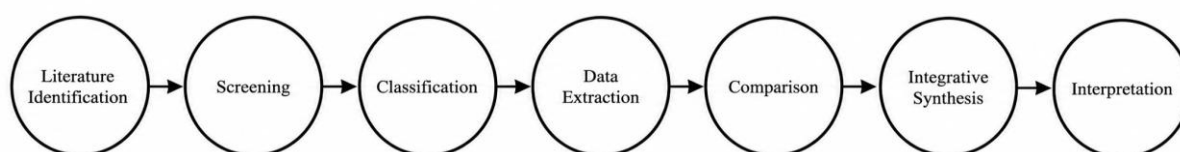


Figure 1 presents the analytical process of the integrative literature review

The final synthesis was used to identify the opportunities and challenges of MSME development and its relationship with economic transformation among former tin mining communities in the Bangka Belitung Islands.

3. Results

Socio-Economic Conditions of Former Tin Mining Communities

Tin mining activities in Bangka Belitung Islands have long shaped a socio-economic structure that is highly dependent on the mining sector. The high economic value of tin encouraged many local communities to shift from agriculture, plantations, and fisheries into artisanal and unconventional mining activities. This condition significantly transformed community livelihood patterns, particularly in areas with intensive mining activities. Sulista (2019) explains that unconventional mining became the primary occupational choice because it provided faster economic returns compared to traditional sectors. Economic dependence on mining eventually created vulnerability when mining activities began to decline. Decreasing tin reserves, regulation of illegal mining, commodity price fluctuations, and environmental degradation caused many communities to lose their primary source of income. Adiatma et al. (2013) describe fishing communities' shift toward tin mining as an adaptation to climatic and economic pressures, while noting its environmental consequences. The socio-economic conditions of former mining communities have also been affected by post-mining environmental impacts. Land degradation and abandoned mining pits reduced agricultural productivity and limited alternative economic activities. Damayanti et al. (2023) explain that tin mining activities not only affect environmental sustainability but also influence social and economic stability within local communities. This condition demonstrates that dependence on extractive economies has not been able to create long-term economic sustainability for local communities. On the other hand, declining mining activities have encouraged some communities to seek alternative economic opportunities through small businesses and informal sectors. This transformation can be observed through the growth of small-scale trading, culinary businesses, fishery product processing, and the utilization of former mining land for productive economic activities. Nevertheless, the economic transformation of former mining communities still faces major obstacles such as limited capital, low entrepreneurial skills, and weak market access. These conditions indicate that former mining communities remain in an unstable phase of economic transition.

Table 1. Livelihood Changes among Former Tin Mining Communities in Bangka Belitung

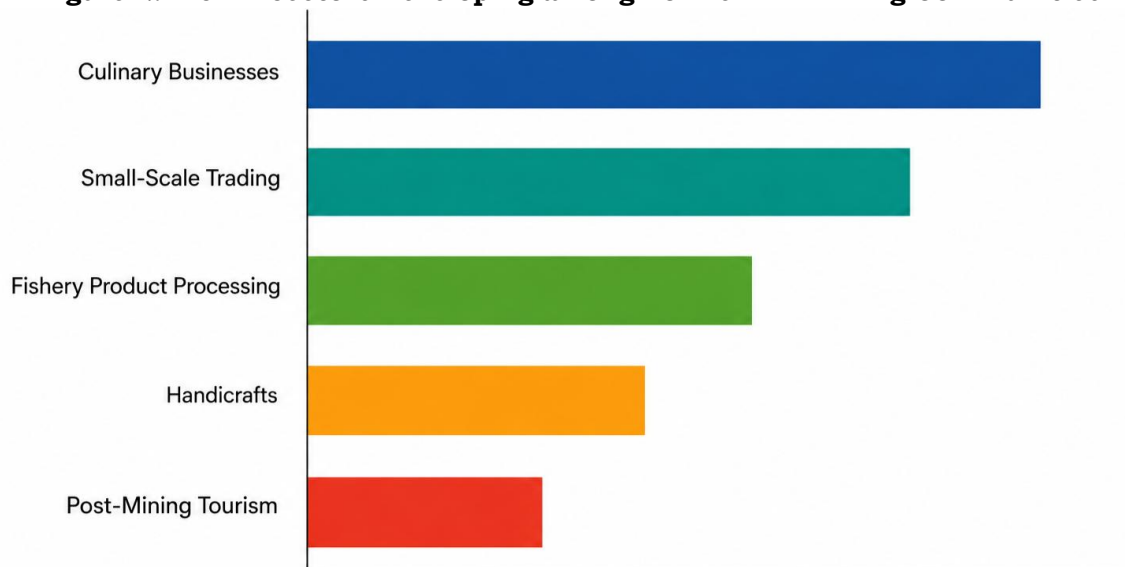
Before Mining Decline	After Mining Decline
Artisanal tin miners	MSME actors
Mining laborers	Small-scale traders
Unconventional mining workers	Culinary businesses
Mining-based economic activities	Fishery product processing
Income dependent on tin	Community business diversification

Source: Adapted from Sulista (2019), Adiatma et al. (2013), and Damayanti et al. (2023).

MSME Development as an Alternative Post-Mining Economy

The decline of tin mining activities in Bangka Belitung Islands has encouraged former mining communities to seek alternative sources of income beyond the extractive sector. One of the sectors that has developed during this economic transformation process is Micro, Small, and Medium Enterprises (MSMEs). The growth of MSMEs represents a community adaptation strategy toward the instability of mining-based economies while also serving as an effort to maintain sustainable household income. The emerging businesses are generally based on local potential, including culinary businesses, small-scale trade, fishery product processing, handicrafts, and the utilization of former mining areas for tourism and creative economic activities. The shift in community economic orientation indicates that MSMEs are increasingly perceived as more stable compared to artisanal mining activities, which heavily depend on tin reserves and commodity price fluctuations. Ismanto et al. (2024) explain that productive business training programs for former miners have created new economic opportunities, particularly in brick and paving block production businesses. This condition reflects an ongoing economic transformation from extractive activities toward more sustainable productive sectors. In addition, former mining areas have gradually been utilized as alternative economic resources through the development of local tourism and environmentally based businesses.

Figure 2. MSME Sectors Developing among Former Tin Mining Communities



Source: Adapted from Ismanto et al. (2024), Sabri et al. (2018), and BPS Bangka Belitung (2016a).

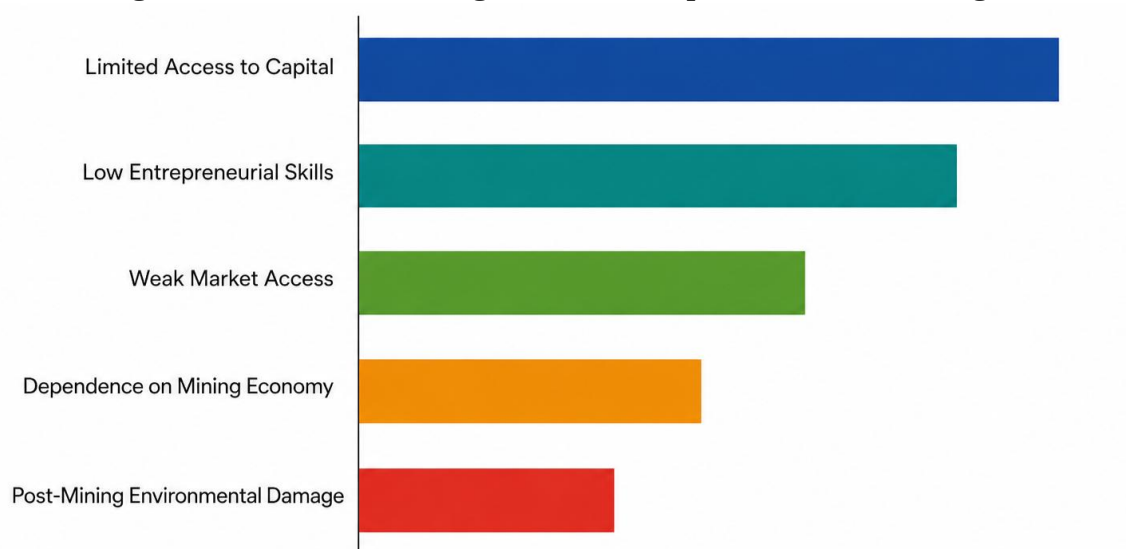
Sabri et al. (2018) argue that abandoned mining pits possess economic potential for green economy-based development capable of creating new employment opportunities for surrounding communities. This transformation demonstrates that post-mining areas are no longer viewed solely as environmentally degraded spaces but also as potential productive economic zones for local communities. However, MSME development among former mining communities is still dominated by small-scale businesses with limited production capacity. Most business actors continue to face

obstacles related to capital access, marketing, and business management capabilities. Community dependence on mining-oriented economic patterns also causes the transition toward productive economic sectors to progress gradually. These conditions indicate that MSME development in post-mining areas still requires policy support, business assistance, and community capacity strengthening to ensure sustainable growth.

Challenges of MSME Development in Post-Mining Areas

MSME development in post-mining areas of Bangka Belitung Islands continues to face various challenges that affect the sustainability of economic transformation among former mining communities. One of the major problems is limited access to capital. Many former miners experience financial difficulties after the decline of mining activities, making it difficult for them to establish and expand productive businesses. As a result, most MSMEs remain small-scale enterprises with limited production capacity. In addition to capital constraints, limited human resource capacity also becomes a significant obstacle in MSME development. Many former mining workers are more accustomed to mining-oriented economic activities that provide instant income rather than managing long-term productive businesses. This condition causes business management skills, marketing capabilities, and product innovation among communities to remain relatively weak. Ismanto et al. (2024) explain that productive business training programs for former miners still require continuous assistance to achieve sustainable community economic independence. Another challenge relates to weak market access and limited distribution networks for MSME products. Many local business actors still struggle to expand their market reach due to limited utilization of digital technology and insufficient business promotion support. Consequently, MSME products from former mining communities have not been able to compete widely in regional and national markets. Furthermore, inadequate economic infrastructure and limited policy support also influence the growth of community businesses in post-mining areas. Post-mining environmental problems also affect community economic development. Land degradation, abandoned mining pits, and declining environmental quality create limitations for the development of productive economic sectors. Haryadi et al.(2023) explain that ineffective post-mining reclamation policies have slowed the utilization of former mining land as new economic spaces for local communities. This condition indicates that MSME development in post-mining areas is influenced not only by economic factors but also by environmental conditions and mining area management policies.

Figure 3. Factors Hindering MSME Development in Post-Mining Areas



Source: Adapted from Ismanto et al. (2024), Haryadi et al. (2023), and Damayanti et al. (2023).

4. Discussion

Post-Mining Economic Transformation and Changes in Livelihood Structure

The findings indicate that the decline of tin mining activities in Bangka Belitung Islands has triggered significant changes in the livelihood structure of former mining communities. Community dependence on the mining sector, which had long served as the primary source of income, has gradually shifted toward alternative economic activities based on small businesses and informal sectors. This condition reflects an ongoing process of post-mining economic transformation, although the transition remains gradual and relatively unstable. This phenomenon demonstrates that mining-based economies are highly vulnerable to market fluctuations and natural resource depletion. When mining activities decline, communities that heavily depend on extractive industries experience economic pressure due to the loss of their primary income source. This finding supports Erman (2014), who argues that natural resource-based economies often create economic dependency without developing sustainable alternative economic sectors. Such conditions indicate that the dominance of the mining sector in Bangka Belitung has not been able to establish long-term economic resilience for local communities. Changes in the livelihoods of former mining communities also represent a socio-economic adaptation process toward post-mining income crises. Many communities have shifted to small-scale trade, culinary businesses, fishery product processing, and other productive economic activities to maintain household economic stability. These findings support Adiatma et al. (2013), who explain that livelihood transition among mining communities is a strategy of adaptation to local economic changes. However, this adaptation process remains difficult because many communities are still influenced by mining-oriented economic patterns that prioritize instant income. In addition to economic factors, livelihood transformation is closely related to severe environmental degradation in post-mining areas. Declining environmental quality and the loss of productive land have limited community opportunities to return fully to traditional agricultural and fishery sectors. This condition indicates that post-mining issues are not only associated with economic decline but also with changes in social structures and community production spaces. Therefore, the economic transformation of former mining communities requires development strategies that focus not only on economic growth but also on environmental recovery and strengthening local community capacities.

MSMEs as an Instrument of Community Economic Diversification

The findings indicate that MSME development has become an important instrument in the economic diversification process among former mining communities in Bangka Belitung Islands. As the mining sector becomes less capable of providing economic stability, communities have begun seeking alternative sources of income through small-scale productive businesses. This condition demonstrates that MSMEs play a strategic role in reducing community dependence on extractive economies while creating more sustainable income sources. The development of MSMEs in post-mining areas also reflects a shift in community economic orientation from natural resource exploitation toward more adaptive and productive local economic sectors. Culinary businesses, small-scale trade, fishery product processing, and the utilization of former mining areas for tourism activities represent forms of economic diversification that are increasingly emerging within former mining communities. These findings support Sabri et al. (2018), who argue that former mining areas possess significant potential to be transformed into new economic spaces based on green economy principles and community empowerment. In addition to serving as alternative income sources, MSMEs also contribute to strengthening post-mining community economic resilience. Small-scale productive businesses are considered more flexible and sustainable compared to mining economies, which are highly vulnerable to fluctuations in global commodity prices. In this context, MSME development should not only be understood as an economic activity but also as part of a broader social development process within post-mining communities. Ismanto et al. (2024) demonstrate that empowering former miners through productive business training programs can create new economic opportunities for local communities. Nevertheless, MSME-based economic transformation still faces significant structural challenges. Most community businesses remain traditional with limited production capacity and low competitiveness. Limited technological access, inadequate business capital, and weak marketing networks have slowed the growth of MSMEs. These

conditions indicate that MSME development in post-mining areas requires more integrated policy support through business training, financing access, marketing assistance, and the strengthening of local potential-based economies. Therefore, MSMEs should not only function as temporary alternative economic sectors but also as the foundation for sustainable economic development in post-mining communities.

Policy Challenges and the Sustainability of Post-Mining Economies

The findings reveal that the sustainability of economic transformation among former mining communities in Bangka Belitung Islands is influenced not only by the community's ability to develop MSMEs but also by government policies and post-mining governance. Mining policies in Bangka Belitung have largely remained oriented toward natural resource exploitation rather than the development of alternative community-based economies. As a result, the process of economic diversification has progressed slowly because communities have not received sufficient support for developing productive post-mining businesses. Post-mining land reclamation remains one of the major challenges in achieving sustainable economic development. Many post-mining areas have not been rehabilitated effectively, limiting their utilization as productive economic spaces for local communities. Haryadi et al. (2023) explain that weak reclamation implementation has allowed environmental degradation to continue affecting the social and economic conditions of local communities. This condition indicates that post-mining problems are not solely environmental issues but are also closely related to the long-term sustainability of community economies. Furthermore, economic empowerment policies targeting former mining communities still face coordination and sustainability problems. Many community empowerment programs are short-term in nature and have not been able to establish long-term business independence among local communities. In fact, MSME development requires continuous support through financing access, business training, human resource capacity building, and market expansion. In this context, local governments play a strategic role in creating local economic ecosystems capable of supporting MSME development in post-mining communities. On the other hand, the economic transformation of former mining communities is also influenced by long-standing mining-oriented economic culture. Mining economic patterns that prioritize instant income make it difficult for some communities to adapt to long-term productive business models. This condition demonstrates that post-mining economic development cannot rely solely on economic approaches but also requires broader social and community empowerment strategies. Therefore, successful economic transformation among former mining communities requires synergy between government policies, MSME strengthening, environmental recovery, and sustainable social capacity development within local communities.

5. Conclusion

This study concludes that MSME development has an important role in supporting the economic transformation of former tin mining communities in Bangka Belitung Islands. The decline of mining activities has encouraged communities to shift toward alternative economic sectors such as culinary businesses, fisheries processing, small-scale trade, handicrafts, and tourism-based activities. MSMEs have become a strategic instrument in reducing community dependence on the extractive mining sector while also creating more sustainable local economic opportunities. However, the economic transformation process still faces various challenges, including limited access to capital, low entrepreneurial capacity, weak market access, and environmental degradation in post-mining areas. In addition, the sustainability of post-mining economies is strongly influenced by government policies, reclamation effectiveness, and the continuity of community empowerment programs. Therefore, sustainable economic development in former mining areas requires integrated collaboration between government institutions, local communities, and related stakeholders through strengthening MSME capacity, environmental recovery, and the development of local potential-based economic policies.

6. References

- Adiatma, I., Bambang, A. N., & Purnaweni, H. (2013). Peralihan Mata Pencarian Sebagai Bentuk Adaptasi (Studi Kasus: Desa Batu Belubang, Bangka). *Teknik*, 34(2), 123. <https://doi.org/10.14710/teknik.v34i2.5637>
- Bennett, N. J., Blythe, J., White, C. S., & Campero, C. (2021). Blue growth and blue justice: Ten risks and solutions for the ocean economy. *Marine Policy*, 125, 104387. <https://doi.org/10.1016/j.marpol.2020.104387>
- Damayanti, A., Salsabila, A. P., & Pramasha, R. R. (2023). Pengaruh Pertambangan Timah Terhadap Lingkungan Dan Masyarakat Studi Kasus Di Provinsi Kepulauan Bangka Belitung. *IJEN: Indonesian Journal of Economy and Education Economy*, 01(02), 195–210.
- Folke, C., Carpenter, S. R., Walker, B., Scheffer, M., Chapin, T., & Rockström, J. (2010). Resilience thinking: Integrating resilience, adaptability and transformability. *Ecology and Society*, 15(4). <https://doi.org/10.5751/ES-03610-150420>
- Hansen-Addy, A. E., Parrilli, D. M., & Tingbani, I. (2024). The impact of trade facilitation on African SMEs' performance. *Small Business Economics*, 62(1), 105–131. <https://doi.org/10.1007/s11187-023-00756-4>
- Haryadi, D., Ibrahim, & Darwance. (2023). Environmental Improvement Policy through the obligation of post-tin mining reclamation in the islands of Bangka Belitung. *IOP Conference Series: Earth and Environmental Science*, 1175(1). <https://doi.org/10.1088/1755-1315/1175/1/012021>
- Irawan, H. A. (2026a). PLTN Beriga-Gelasa Sebagai Jalan Keluar Transisi Energi: Kritik Berbasis Bukti Terhadap Penolakan Absolut Dan Model Pembangunan Nuklir Berkeadilan. *Indonesian Journal of Innovation Multidisipliner Research*, 4(2), 3877–3887. <https://doi.org/10.69693/ijim.v4i2.906>
- Irawan, H. A. (2026b). Politik Prefiguratif dalam Tata Kelola Energi Terbarukan Komunitas. *Indonesian Journal of Innovation Multidisipliner Research*, 4(2), 5232–5242. <https://doi.org/10.69693/ijim.v4i2.1067>
- Irawan, H. A., & Robing, R. (2025). Oil Palm Plasma Conflict and Clientelism Politics in Tanjung Labu Village, Lepar Island. *Journal of Politics and Democracy*, 5(1), 14–24. <https://doi.org/10.61183/polikrasi.v5i1.105>
- Kaźmierczak, U., Strzałkowski, P., Lorenc, M. W., Szumska, E., Sánchez, A. A. P., & Baker, K. A. C. (2019). Post-mining Remnants and Revitalization. *Geoheritage*, 11(4), 2025–2044. <https://doi.org/10.1007/s12371-019-00408-8>
- Kusumawati, I., & Ramadani, R. (2024). Analisis Yuridis Peran Tambang Timah Ilegal Sebagai Sumber Mata Pencarian Ekonomi Masyarakat Provinsi Kepulauan Bangka Belitung. *Kultura*, 2(11), 748–759.
- Measham, T., Walker, J., Haslam McKenzie, F., Kirby, J., Williams, C., D'Urso, J., Littleboy, A., Samper, A., Rey, R., Maybee, B., Brereton, D., & Boggs, G. (2024). Beyond closure: A literature review and research agenda for post-mining transitions. *Resources Policy*, 90(February), 104859. <https://doi.org/10.1016/j.resourpol.2024.104859>
- Muhdar, M., Simarmata, R., & Nasir, M. (2023). Legal policy preference for coal mining over other land use alternatives jeopardizes sustainability in Indonesia. *Journal of Land Use Science*, 18(1), 395–408. <https://doi.org/10.1080/1747423X.2023.2264845>
- Newig, J., Jager, N. W., Challies, E., & Kochskämper, E. (2023). Does stakeholder participation improve environmental governance? Evidence from a meta-analysis of 305 case studies. *Global Environmental Change*, 82(May). <https://doi.org/10.1016/j.gloenvcha.2023.102705>
- Nurtjahya, E., Agustina, F., & Putri, W. A. E. (2008). Neraca Ekologi Penambangan Timah Di Pulau Bangka Studi Kasus Pengalihan Fungsi Lahan di Ekosistem Darat. *Berkala Penelitian Hayati*, 14(1), 29–38. <https://doi.org/10.23869/bphjbr.14.1.20085>
- Pradipta, F. T. D. (2026a). Politik Hukum Tata Kelola Pertambangan Timah Dalam Perspektif Pembangunan Berkelanjutan Di Provinsi Kepulauan Bangka Belitung. *JURNAL SUTASOMA*,

4(2), 31–42. <https://doi.org/10.58878/sutasoma.v4i2.455>

- Pradipta, F. T. D. (2026b). Public Transportation Policy Analysis To Reduce Private Vehicle Dependence In Pangkalpinang City And Bangka Regency. *Irpia : Jurnal Ilmiah Riset Dan Pengembangan*, 11(2), 55–64. <https://doi.org/10.71040/jirp.v11i2.323>
- Pradipta, F. T. D., Aliyah, Sofiyanty, S., Harahap, R. O., Sulaiman, A., Hidayat, N., & Bin Raja Sulong, R. H. (2026). The Formation of Chinese Ethnic Political Representation through Social Recognition in Local Public Spaces in Bangka Regency. *Journal of Southern Sociological Studies*, 2(2), 178–200. <https://doi.org/10.26740/jss.v2i2.56633>
- Pradipta, T. D., Aliyah, A., Sofiyanti, S., Ramadhan, G., & Harahap, R. O. (2026). Social Cohesion and Political Participation among Malay and Chinese Ethnic Communities in Sungailiat District, Bangka Regency. *Panrita Journal of Civic Education*, 1(1), 1–11.
- Rahmadani, S., & Pradipta, F. T. D. (2026). Pembelajaran Pertanian Berbasis Potensi Lokal bagi Anak di Wilayah Pertambangan Timah Provinsi Kepulauan Bangka Belitung : Kajian Literatur Integratif. *Tunas Cendekia: Jurnal Program Studi Pendidikan Anak Usia Dini*, 9(1), 102–116.
- Reno Ismanto, Danni, R., & Tauratiya. (2024). Pemberdayaan Eks Penambang Timah Ilegal Melalui Pelatihan Pembuatan Batako Dan Paving Block Di Kabupaten Bangka. *GERVASI: Jurnal Pengabdian Kepada Masyarakat*, 8(2), 475–486. <https://doi.org/10.31571/gervasi.v8i2.7722>
- Sabri, F., Reniati, R., & Suhardi, S. (2018). Model Pemanfaatan Sumberdaya Kolong Bekas Tambang Timah Untuk Meningkatkan Kualitas Sosioekonomi Masyarakat Menuju Green Economy Development Di Desa Parit Padang Kecamatan Sungailiat Kabupaten Bangka. *Jurnal Pengabdian Kepada Masyarakat Universitas Bangka Belitung*, 2(2). <https://doi.org/10.33019/jpu.v2i2.129>
- Sikor, T., Martin, A., Fisher, J., & He, J. (2014). Toward an Empirical Analysis of Justice in Ecosystem Governance. *Conservation Letters*, 7(6), 524–532. <https://doi.org/10.1111/conl.12142>
- Stam, E., & van de Ven, A. (2021). Entrepreneurial ecosystem elements. *Small Business Economics*, 56(2), 809–832. <https://doi.org/10.1007/s11187-019-00270-6>
- Sulista, S. (2019). Tambang inkonvensional: Peran masyarakat dan daya tarik ekonomi bagi penambang. *Jurnal Teknologi Mineral Dan Batubara*, 15(1), 63–75. <https://doi.org/10.30556/jtmb.Vol15.No1.2019.348>
- Sutrisno, A. D., Chen, Y.-J., Suryawan, I. W. K., & Lee, C.-H. (2023). Building a Community's Adaptive Capacity for Post-Mining Plans Based on Important Performance Analysis: Case Study from Indonesia. *Land*, 12(7), 1285. <https://doi.org/10.3390/land12071285>
- Syahrir, R., Wall, F., & Diallo, P. (2020). Socio-economic impacts and sustainability of mining, a case study of the historical tin mining in Singkep Island-Indonesia. *The Extractive Industries and Society*, 7(4), 1525–1533. <https://doi.org/10.1016/j.exis.2020.07.023>
- Torm, N., & Oehme, M. (2024). Social protection and formalization in low- and middle-income countries: A scoping review of the literature. *World Development*, 181(118), 106662. <https://doi.org/10.1016/j.worlddev.2024.106662>
- Tory, F., Pradipta, D., Damara, T., Pengakuan, P., & Ulayat, T. (2026). Problematika Pengakuan Tanah Ulayat Masyarakat Minangkabau dalam Perspektif Hukum Administrasi Negara serta Disharmonisasi Regulasi Disharmonisasi Regulasi. *BELEID: Journal of Administrative Law and Public Policy*, 4(1), 117–139.
- Vela-Almeida, D., & Karlsen, A. (2023). Reinforcing path marginalization: revealing the unaccounted labour organization at a mining frontier in Indonesia. *Cambridge Journal of Regions, Economy and Society*, 16(3), 481–494. <https://doi.org/10.1093/cjres/rsad018>
- Weldegiorgis, F. S. (2023). The interplay of mineral and energy security: A nexus approach to Africa's economic diversification. *Energy Research and Social Science*, 106(May), 103336. <https://doi.org/10.1016/j.erss.2023.103336>

- Worden, S., Svobodova, K., Côte, C., & Bolz, P. (2024). Regional post-mining land use assessment: An interdisciplinary and multi-stakeholder approach. *Resources Policy*, 89(May 2023). <https://doi.org/10.1016/j.resourpol.2024.104680>
- Young, R. E., Gann, G. D., Walder, B., Liu, J., Cui, W., Newton, V., Nelson, C. R., Tashe, N., Jasper, D., Silveira, F. A. O., Carrick, P. J., Hägglund, T., Carlsén, S., & Dixon, K. (2022). International principles and standards for the ecological restoration and recovery of mine sites. *Restoration Ecology*, 30(S2). <https://doi.org/10.1111/rec.13771>