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1.	Judul (Title)	Well-written
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6.	Penutup (Conclusion)	Well-written
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Environmental and Social Injustice: Impact And Sustainability Of Small Scale Tin Mining Under Indonesia's New Mineral And Coal Regulation

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Abstract

The purpose of this research was to explore the influence of Indonesia's mineral and coal new regulation on tin mining activities carried out by the people in Bangka Belitung. Using qualitative and socio-legal approach, this study is significant for the quality of the data obtained through site visits, in-depth surveys, and interviews with the affected local community, representing different subsistence groups and socio-economic background. This study found that the transition of mining authority from the central government to the regional government directly has an impact on the proliferation of illegal mining activities. Substantive changes in the mineral and coal law have not provided a strategic solution because the tug-of-war over authority ends with the continued delegation of authority to grant community mining permits to local governments. Meanwhile, the unpreparedness of local governments has resulted in the continued marginalization of mining communities and has an impact on widespread environmental damage. The lack of fair decision-making processes for people mining licences is indicative of an immature tin mining management in Bangka Belitung.

Keywords: *injustice, small scale tin mining, mineral and coal regulation*

A. Introduction (Times New Roman (12 pt) & Bold)

Indonesia is one of the most highly mineralized country in the world, and relies heavily on its mining extractive industry, such as nickel, copper, natural gas, gold, and tin.¹ Indonesia's geographical location, which is in the path of The Southeast Asia Tin Belt along with Myanmar, Thailand, and Malaysia, makes it the second largest tin producing country in the world after China by contributing as much as 26% of the total global tin production.² Tin sediments are widespread throughout Indonesia's western islands—including Bangka, Belitung, Singkep, and Karimun Kundur—which are regarded as 'The Indonesian Tin Islands'.³ Mining policy regulation and management is a crucial aspect to ensure optimal tin utilization in Indonesia.

¹ Terry O'Callaghan. "Patience is a virtue: problems of regulatory governance in the Indonesian mining sector." *Policy*: (2018):224.

² Isma Rosyidah and Masatoshi Sasaoka. "Local political dynamics of coastal and marine resource governance: A case study of tin-mining at a coastal community in Indonesia." *Environmental Development* (2018):33-18

³ G.J.J. Aleva, E.H. Bon, J.J. Nossin, W.J. Sluiter. "A Contribution to the Geology of Part of the Indonesian Tinbelt: the Sea Areas Between Singkep and Bangka Islands and Around the Karimata Islands." *Geological Society Malaysia* (1973):295-266.

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Moreover, the mining sector produces various types of risks that are often associated with the 'resource curse', the phenomenon of degradation and systemic losses due to improper resource management. Basically, the resource curse that always ends in environmental and social injustice is related to several main factors, such as mismanagement, weak institutions, rent-seeking, neglect of local communities, and corruption.⁴ For Indonesia, the issue of resource curse in the tin mining sector is a real challenge.

Indonesia is currently the world's second largest exporter of tin, with 98% of its total production exported to other countries and only 2% used for domestic industrial needs.⁵ With total production reaching 76,400 tons in 2017 and an average of 60,000 tons in the last ten years, 99% of all Indonesian tin is produced in Bangka Belitung.⁶ Indonesia's tin mining sector has been subject to different governance approaches thorough the years since colonialism ended. Three tin mining companies operating under Dutch ownership were nationalized and united in 1958 and became Tin Mining State Company in 1968. Over the next 31 years, the Indonesian government fully controlled and controlled tin mining as a strategic excavation material.

The government's policy to maintain the centralization of tin mining encountered difficulties as market price fluctuations declined into the 1980s. Efforts to maintain the stability of world tin prices through International Tin Agreement and International Tin Council failed to produce a positive surplus. In 1980, the failure of the 6th ITA agreement, the accumulated ITC debt, discovery of substitution materials, and the recycling of post-usage tin has disrupted global tin prices and had a far-reaching impact on Indonesia.⁷ Although tin production figures continued to stay at an average rate, state revenues continued to decline sharply in the following 10 years.

Table 1. Indonesia's tin and foreign exchange production in 1980-1991

<i>Year</i>	<i>Production (ton)</i>	<i>Price (USD/metric ton)</i>	<i>Exchange (Milion USD)</i>
1980	32.500	17.090	555,43
1984	23.200	12.442	288,65
1986	24.000	5.386	129,26
1989	32.000	9.605	237,09
1991	29.400	5.703	167,67

The government's initiation to reorganize tin mining management was carried out in 1999 which established tin as an export item that was no longer regulated and supervised by the central government. Law Number 22 of 1999 concerning Local Government shifted the responsibility

⁴ Micheal L. Ross. "The Political Economy of the Resource Curse." *World Politics* (1999): 299-311

⁵ Agus C., Wulandari D., Pramananda E., Hendryan A., Harianja V. "The Role of Soil Amendment on Tropical Post Tin Mining Area in Bangka Island Indonesia for Dignified and Sustainable Environment and Life." *IOP Conf. Series: Earth and Environmental Science* (2017): 2-9

⁶ Ministry of Energy and Mineral Resources, 2016

⁷ Munandar, A. I., Siregar, H., Andati, T. dan Anggraeni, L., . "Price determinant of tin price.," *Journal of Economic & Management Perspectives* (2019): 33-40.

to local governments to regulate and manage mining in their respective regions.⁸ This provision is part of the regional autonomy project. The decentralization politics launched by the government in the early days of the Reformation Era aimed to reduce the centralization of authority that curbed during the New Order era, while providing space for regions to develop their economic potential independently.

The delegation of tin mining authority to local governments has opened a new phase which in the author's previous research was referred as the 'illegal mining boom'. The local government of Bangka Belitung in 2001 provided access to local communities to be directly involved in mining activities. During the first five years of implementing the decentralisation policy of 2001, there were 75 mining concessions, 37 tin smelters, and 6507 artisanal tin mining units that together drove a significant increase in tin production.⁹ This led to a significant contribution to local revenues as well as increasing income for the people of artisanal mining communities.¹⁰ However, this condition also directly has implications for the widespread destruction of nature which immediately makes Bangka Belitung a 'Dead Islands'. Tin mining activities, especially small-scale unregulated mining, directly associated with environmental damage, landform deforestation, soil degradations, and inconsistency of spatial planning.¹¹ Uncontrolled mining activities are caused by poor management of mining business. The socio-economic impact of tin mining after 20 years since the 'illegal mining boom' began to enter the resource curse phase, which is indicative of slower economic growth, reduced social welfare, landform and environmental degradation, and the very high economic dependence on the tin exploitation sector.¹²

The problems arising during the 20 years of decentralization of mining authority ended in 2020, with the enactment of Law Number 3 of 2020 concerning Minerals and Coal which is new. Consequently, this new regulation revokes the authority of local governments to regulate mining in their territories, as well as return them to the central government. During the first 3 years since its inception, concrete solutions to the problem of tin mining have not yet seen their significance. The revocation of local government authority has the potential to cause illegal mining to mushrooming and more difficult to control. People of Bangka Belitung are still and continue to face the reality of resource curse due to mining activities which boils down to two fundamental consequences, environmental and social injustice.¹³

⁸ Erwiza Erman. "Rethinking legal dan illegal economy: a case study of tin mining in Bangka Island." *Southeast Asia Hist. Cult.* (2008): 91-111

⁹ Bambang Yunianto. "Kajian Problema Pertambangan Timah Di Propinsi Kepulauan Bangka Belitung Sebagai Masukan Kebijakan Pertambangan Nasional". *Jurnal Teknologi Mineral dan Batubara* (2009): 104-110

¹⁰ Erwiza Erman. "Deregulation of the tin trade and creation of a local Shadow State: A Bangka case study". In *Renegotiating Boundaries: Local Politics in Post-Suharto Indonesia*, Brill (2007): 181-199

¹¹ Sulista, Ibrahim, Sandi Pratama. "Accommodation, Resistance And Divided Community: Study Of The Dynamics Of Offshore Tin Mining Conflict Between The Fishermen Of The Coastal Area And Companies In Bangka Island". *People: International Journal of Social Science* (2018): 277-289

¹² Eddy Nurtjahya, Jennifer Franklin, Umroh and Fournita Agustina. "The Impact of tin mining in Bangka Belitung and its reclamation studies". *MATEC Web of Conferences* (2017):2-4

¹³ Ibrahim, Dwi Hariyadi, Nanang Wahyudin. "Knowledge of the context, behavior, and expectations of miners in relation to the tin mining political policies and practices in Bangka Belitung." *Masyarakat, Kebudayaan dan Politik* (2018): 361-266

METHOD

This research was designed with qualitative socio-legal approach. It was chosen by considering that the researcher would be more unimpeded to explore data without having limited with certain questions. Nevertheless, as a limitation, researchers focused on formulation regarding the environmental and social impact of tin mining activities and how the resulting impact of the government's new arrangements in mineral and coal legislation. Data collection technique employed was deep interview by using purposive sampling, direct observation to the mining sites, and documentation to collect important and necessary data in concluding the results of the study. This study's primary source was miners, the affected communities, stakeholders, social and environmental activist. Whereas the secondary data source was obtained through data issued by some institution, the results of previous research, and verified news coverage. Methodologically, this study is aligned with theoretical tools with credibility comparisons through triangulation examination techniques. Triangulation theory allows researchers to check and complete information so as to obtain appropriate and methodological inferences.

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B. Discussion

1. Political Design of The People's Mining Law

The 'Big Bang' decentralisation policy in Indonesia's mineral and coal mining sector was associated with significant economic contributions to the Gross Domestic Regional Product (GDRP) structure of the mineral-producing regions and further correlated positively with per capita income, especially in Bangka Belitung.¹⁴ Before decentralization, the government imposed a ban on the general public from engaging in mining activities directly. Instead, communities receive indirect benefits through the construction of public facilities, educational facilities, and development funds distributed to local governments. However, difficult economic conditions during the 1997-1999 monetary crisis prompted the government to change the politics of mining law and allow people to participate in mining through the People's Mining Permits (IPR) scheme.

In its implementation, the transition of authority to grant mining permits to local governments is not followed by mature policy infrastructure development. This condition can be seen from the imminent proliferation of small-scale mining run by the people illegally. The IPR mechanism, which is narrated as key to community mine management, was never effective until changes in mineral and coal new laws in 2020. The latest data released by the regional government in 2017 only recorded a total of 30 active IPRs, inversely proportional to the number of illegal mining pontoons which in 2018 amounted to 18,000 units spread throughout Bangka Belitung.

The main factors that led to the failure of the IPR scheme to control community mining were divided into three aspects. First, the complicated substance of legislation, complex requirements

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¹⁴ Rian Hilmawan and Jeremy Clark." An investigation of the resource curse in Indonesia". *Resource Policy* (2019): 74-79

in licensing, and convoluted and inefficient registration procedures. Second, the low capacity of the mining community, which is generally run by low-educated and low-income communities, makes it difficult to manage permits. Third, the low quality of law enforcement by the government. The disciplinary action by law enforcement officials did not produce a significant effect on tin miners. The number of illegal tin miners continues to increase following the increase prices of tin in global market.¹⁵

2. A Half-Hearted Solution of People's Mining Management

The existence of illegal tin mining that mushroomed in Bangka Belitung is inseparable from the government's inability to carry out function of control as regulated in Law Number 4 of 2009 concerning Minerals and Coal. During the 11 years since its establishment, local governments have been widely given the authority to make local regulations, grant and coordinate business licenses and community mining permits, guidance, supervision, and resolution of conflicts. This authority is stipulated in Article 7 and Article 8 of Law Number 4 of 2009. However, the realization of local government authority is deadlocked in the face of the large number of illegal mining. Significantly, the incompetence of these local governments has a direct impact on the losses of the state. Indonesian Corruption Watch (ICW) recorded accumulative state losses due to illegal mining during 2004-2013 reaching IDR 50 Trillion. Meanwhile, the Financial and Development Supervisory Agency (BPKP) reported that the country's average loss due to illegal tin mining was IDR 2.5 Trillion per year.¹⁶

The political transition of mining in 2020 led to the centralization of mining authority. Article 35 Paragraph (4) of Law Number 3 of 2020 concerning Minerals and Coal which updates Law Number 4 of 2009 systematically revokes the authority of local governments and returns them to the central government. Article 4 and Article 3 of this law affirm that the authority of mining management is entirely the authority of the central government.¹⁷

However, the polemic of revoking the authority of local governments in mining matters was not immediately completed by the enactment of a new mineral and coal law. Since its enactment on July 10, 2020, the implementation of this law has caused the onset symptoms of 'bureaucratic confusion'. The reason is, the Minister of Energy and Mineral Resources has stipulated Circular which prohibits the issuance of new permits of tin mining in 2020. This step is carried out to wait for legal certainty about the mechanism of the mining licensing process following new mineral and coal regulation.

For the next two years, 2020-2022, illegal mining activities continued to boom in Bangka Belitung. This condition is closely related to the rate of inflation, sluggish economic growth,

¹⁵ Faisal, Derita Prapti Rahayu and Yokotani. "Criminal Sanctions: Reformulation in the Reclamation of the Mining Community." *Fiat Justisia: Jurnal Ilmu Hukum* (2022): 18–21

¹⁶ Derita Prapti Rahayu, Faisal. "Eksistensi Pertambangan Rakyat Pasca Pemberlakuan Perubahan Undang-Undang tentang Pertambangan Mineral dan Batubara." *Jurnal Pembangunan Hukum Indonesia* (2021): 338-344

¹⁷ Ronaldo Irzon. "Penambangan Timah di Indonesia: Sejarah, Masa Kini, dan Prospek." *Jurnal Teknologi Mineral Dan Batubara* (2020) 181–189

and restrictions on activities due to the COVID-19 pandemic, which has encouraged people to start switching to illegal small-scale mining. At the same time, local governments do not have certainty of the authority to exercise control over mining, because the authority has been withdrawn to the center but implementing rules have not been established. During this period, illegal mining became uncontrollable and there were no new government-issued IPRs.¹⁸

On April 11, 2022, the government established Presidential Regulation Number 55 of 2022 which regulates the delegation of mineral and coal mining authority. Article 2 Paragraph (3) of this regulation expressly states that the authority to grant IPR is delegated to local governments. Thus, the IPR provisions have not changed from Law Number 4 of 2009 at all and local governments remain authorized to grant tin mining permits as before the new mineral and coal law. The bureaucratic confusion symptoms that lasted for two years ended in the absence of a change in the licensing authority of the IPR.

In addition to the polemics of laws and regulations that are mutually intertwined between the central and local governments, another problem that arises related to community mining is in regional zoning. In the provisions of the mineral and coal law, it is emphasized that community mining can be granted IPR permits only in areas categorized as People's Mining Areas (*Wilayah Pertambangan Rakyat/WPR*). However, until September 2022, Bangka Belitung still has not submitted a WPR proposal. This means that even if people register to obtain IPR, local governments still cannot grant permits because there is no WPR.

3. Marginalization of Small-Scale Tin Miners

The People's Tin Mining Association (ASTIRA) dataset in 2006 recorded the number of small-scale (unconventional) mines reaching 13,345 units. This number increased to 18,000 units, according to provincial government data in 2018. Meanwhile, PT Timah Tbk in March 2012 released the findings of 6,230 units of illegal suction vessels spreading in the Bangka sea area. Wahana Lingkungan Hidup (Walhi) noted that during 2004-2013, there were 81,000 illegal mining units spread across Bangka Belitung.¹⁹ Although there is no data update until 2023, it is certain that the number of illegal miners has not decreased from the period before 2013 judging from the increase in the number of annual average environmental damage due to illegal mining.

As a form of countermeasures for unlawful acts, law enforcement officials have carried out various disciplinary efforts. However, these efforts are also ineffective as countermeasures against illegal miners. First, there was resistance from miners who had a high economic dependence on tin. In 2019, there was a clash between the police and illegal tin miners in the Belitung protected forest area which caused the deputy governor, Abdul Fatah to be held hostage by miners and 20 policemen injured. Second, miners continue to return after being put in order, as has been the case at the Kelabat Bay mine since 2014 to the present. Third, the

¹⁸ Rizkyana Zaffrindra Putri and Lita Tyesta ALW. "Kajian Politik Hukum Tentang Perubahan Kewenangan Pemberian Izin Usaha Pertambangan Mineral dan Batubara." *Law Reform* (2015): 199-200

¹⁹ Dwi Hariyadi. "Faktor Kriminogen Illegal Mining Timah di Bangka Belitung." *Jurnal Masalah-Masalah Hukum*, (2015) hlm.52-58

court's decision on illegal mineers is relatively light. Fourth, a court ruling that does not confiscate heavy equipment and tin sand from illegal mining.²⁰ In addition to these factors, the ineffectiveness of law enforcement is also influenced by the number of police officers who are also involved in mining activities. Small-scale mining activities carried out by the community only received legal guarantees until 2009, when the government requires people to manage IPR in order to mine.²¹ However, because IPR was never effective (and not entirely due to miners), the mining community became marginalized and discredited as illegal miners. Ironically, small-scale miners still exist and have to catch up with security forces, as the process of obtaining permits to make their mining activities legal is also very difficult to access.

In addition to IPR, another solution to do mining legally is to establish partnerships with mining companies, such as PT Timah Tbk which has a Mining Business Permit (*Izin Usaha Pertambangan/IUP*). In 2023, PT Timah has 127 IUPs with an area covering 473,388 hectares, while other private companies have 517 IUPs with an area of 572,631 hectares. However, partnerships with mining companies are also ineffective because companies have special restrictions and conditions for partnering, such as having to have a legal entity. This condition is difficult for the community, and is not proportional to the number of miners.

The unavailability of a directly accessible licensing mechanism allows smallholder miners to continue mining illegally to meet the needs of life.²² However, the community does not fully reap prospective profits, but also bears the losses caused. Illegal mining is carried out without adequate safety procedures, resulting in a high number of work accidents. In the 2017-2020 period, there were 59 deaths due to illegal tin mining accidents recorded by local governments. The highest death toll occurred in 2019 with 25 deaths in a one-year period.

The low level of government oversight in carrying out the coaching function also has an impact on the high rate of school dropouts and child labor. In 2015, there were 3,337 child workers under the age of 17 who also worked in the mining sector.²³ Children's involvement in illegal mining activities is clearly a form of marginalization and contrary to the rules of labor law in Indonesia, basic principles in the International Labor Organization, and Human Rights.²⁴

4. Environmental Impact and Sustainability Issue

The exploitation of tin mines left a trace of extensive natural damage in Bangka Belitung. An inventory of environmental damage data released by the Regional Environment Agency of

²⁰ Gatot Subiyaktoro. "Penegakan Hukum Illegal Mining di Babel." *FGD Sinergitas Penanggulangan Illegal Mining Timah Babel* (2014): 1-8

²¹ Bambang Yunanto and Ridwan Saleh. "Persoalan Pertambangan Rakyat Pasca Pemberlakuan Undang-Undang Nomor 4 Tahun 2009." *Jurnal Mineral dan Batubara* (2011): 148-151

²² Ofori, D. R., & Ofori, J. J. "Digging for Gold or Justice? Misrecognition and Marginalization of "Illegal" Small-Scale Miners in Ghana". *Social Justice Research* (2018): 355-373

²³ Putra Pratama Saputra. "Eksplorasi Pekerja Anak Penambang Timah Oleh Orang Tua di Desa Kace, Kecamatan Mendo Barat, Kabupaten Bangka, Provinsi Kepulauan Bangka Belitung, Indonesia." *Jurnal Masyarakat dan Budaya* (2018): 2-4.

²⁴ Netting, F. Ellen, Ketter, Peter M., & McMurty, Steve L.. *Social Work Macro Practice*. (Boston: Pearson Education, Inc, 1993).

Bangka Belitung Province in 2014 reported that of the total land area of 1,675,240.51 hectares, there has been 15.15% critical land, 37.28% of potential critical land, 44.54% of somewhat critical land and only 10.79% of which includes non-critical land. Meanwhile, in a survey conducted by the Wahana Lingkungan Hidup (Walhi) of Bangka Belitung in 2020, the amount of critical land has penetrated into 1,053,253.19 hectares, or 64.12% of the total land area. In the last 10 years, Bangka Belitung has also lost 320,000 hectares of productive land due to mining activities.²⁵

Environmental damage from tin mining is directly associated with the process of dredging and sorting tin ore from the ground and seabed.²⁶ According to data released by PT Timah Tbk, the tin ore content in Bangka Belitung is on average 0.32-0.43 kilograms per cubic meter. With total production reaching 82,820 tons in 2018, it takes 18.6 million cubic meters of land transfer in just one year.²⁷ Within five years, 2017-2021 the total tin production of Bangka Belitung is 291,590 tons, and has dredged 65.8 million cubic meters of land. Data from the Environment Agency in 2021 shows that as many as 75% of the 67 rivers flowing in Bangka Belitung have been polluted due to illegal mining. Meanwhile, 7 rivers that store the largest freshwater reserves in Bangka, namely the Mabet, Kayubesi, Limbung, Baturusa, Selindung, Pangkalbalam, and Rangkui rivers are included in the category of heavily polluted with chemical compounds exceeding water quality standards.²⁸

Environmental degradation that systematically transforms the landscape of Bangka Belitung into 'Dead Islands' is expected to continue in the next few decades. In 2020, the world's total known tin reserves were 4,741,000 tons, with as many as 800,000 tons (17%) in Indonesia. With an average mining rate of 70,000 tons / year, Bangka Belitung will remain mined at least until 2035. However, continued exploration over time is likely to result in new reserve findings, which means extending the life of tin exploitation on the island.

C. Conclusion

Tin mining in Bangka Belitung has undergone a 'from charm to sorrow' phase as a direct result of changes in mining policy and management during the period of regional autonomy that marked the illegal tin mining boom.²⁹ For three decades since 1999, the problem of illegal small-scale mining has not been resolved. The licensing mechanisms put in place through local governments are inefficient and instead encourage the continued proliferation of illegal miners. The change in mining policy through Law Number 3 of 2020 concerning Minerals and Coal has caused bureaucratic confusion for two years, because the licensing authority was withdrawn

²⁵ Isma Rosyida, Wahid Ullah, Alfian Helmi. "Adapting Livelihoods To The Impact Of Tin Mining In Indonesia: Optimisms And Constraints. *The Extractive Industries and Society* (2019): 1305-1308

²⁶ Esmi Warassih, Sulaiman, and Derita Prapti Rahayu. "Sustainable Fishery Campaign by Small-Scale Fishery: A Case Study on Law Protection on Small-Scale Fishers in Morodemak Village, Demak District, Central Java Province, Indonesia." *Environmental Justice* (2018): 12-14

²⁷ Joko Susilo dan Siti Maemunah. *Tiga Abad Melayani Dunia: Potret Tambang Timah di Bangka Belitung*. (Jaringan Advokasi Tambang, 2009)

²⁸ Mentari, Umroh, dan Kurniawan. "Pengaruh Aktivitas Penambangan Timah Terhadap Kualitas Air di Sungai Baturusa Kabupaten Bangka". *Jurnal Sumberdaya Peraliran* (2017): 3-9.

²⁹ Ibrahim, Dwi Hariyadi and Nanang Wahyudin. "From Charm to Sorrow: The Dark Portait of Tin Mining In Bangka Belitung." *People: International Journal of Social Sciences* (2018): 360-368

back to the central government. However, in 2022, Presidential Regulation Number 55 of 2022 was issued which returned the authority of community mining permits to local governments.

As a non-renewable natural resource that requires an extraction process that changes the landscape, tin exploitation without proper management and regulation will have a direct impact on the degradation of environmental quality and socio-cultural aspects. The difficulty of public access to obtain IPR due to the absence of WPR and bureaucratic hierarchy and the complexity of the conditions, makes the mining community marginalized and has no choice but to mine illegally.

The mining sorrow has been basically occurring. Uncontrolled illegal tin mining leads to many miner deaths due to inadequate safety procedures, child labor exploitation, river pollution, environmental damage, and widespread critical land throughout the island. As the second largest tin producing region in the world, with reserves known to still be mined for decades to come, Bangka Belitung needs immediate mining management improvement to alleviate social and environmental problems caused by illegal mining. Indonesia and international institutions must proactively advocate for the rights of people and the environment as a tangible manifestation of real sustainable development.

D. Suggestion

The transfer of authority from the regions to the center has implications for the increasingly difficult efforts to combat illegal tin in Bangka Belitung. For this reason, local governments, which currently have the authority to grant IPR, must optimize its implementation by accelerating WPR proposals and ensuring good management so that IPR can be implemented in accordance with laws and regulations.

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Environmental and Social Injustice: Impact And Sustainability Of Small Scale Tin Mining Under Indonesia's New Mineral And Coal Regulation

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Abstract

The purpose of this research was to explore the influence of Indonesia's mineral and coal new regulation on tin mining activities carried out by the people in Bangka Belitung. Using qualitative and socio-legal approach, this study is significant for the quality of the data obtained through site visits, in-depth surveys, and interviews with the affected local community, representing different subsistence groups and socio-economic background. This study found that the transition of mining authority from the central government to the regional government directly has an impact on the proliferation of illegal mining activities. Substantive changes in the mineral and coal law have not provided a strategic solution because the tug-of-war over authority ends with the continued delegation of authority to grant community mining permits to local governments. Meanwhile, the unpreparedness of local governments has resulted in the continued marginalization of mining communities and has an impact on widespread environmental damage. The lack of fair decision-making processes for people mining licences is indicative of an immature tin mining management in Bangka Belitung.

Keywords: *injustice, small scale tin mining, mineral and coal regulation*

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E. Introduction (Times New Roman (12 pt) & Bold)

Indonesia is one of the most highly mineralized country in the world, and relies heavily on its mining extractive industry, such as nickel, copper, natural gas, gold, and tin.³⁰ Indonesia's geographical location, which is in the path of The Southeast Asia Tin Belt along with Myanmar, Thailand, and Malaysia, makes it the second largest tin producing country in the world after China by contributing as much as 26% of the total global tin production.³¹ Tin sediments are widespread throughout Indonesia's western islands—including Bangka, Belitung, Singkep, and Karimun Kundur—which are regarded as 'The Indonesian Tin Islands'.³² Mining policy regulation and management is a crucial aspect to ensure optimal tin utilization in Indonesia.

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³⁰ Terry O'Callaghan. "Patience is a virtue: problems of regulatory governance in the Indonesian mining sector." *Policy*: (2018):224.

³¹ Isma Rosyidah and Masatoshi Sasaoka. "Local political dynamics of coastal and marine resource governance: A case study of tin-mining at a coastal community in Indonesia." *Environmental Development* (2018):33-18

³² G.J.J. Alewa, E.H. Bon, J.J. Nossin, W.J. Sluiter. "A Contribution to the Geology of Part of the Indonesian Tinbelt: the Sea Areas Between Singkep and Bangka Islands and Around the Karimata Islands." *Geological Society Malaysia* (1973):295-266.

Moreover, the mining sector produces various types of risks that are often associated with the 'resource curse', the phenomenon of degradation and systemic losses due to improper resource management. Basically, the resource curse that always ends in environmental and social injustice is related to several main factors, such as mismanagement, weak institutions, rent-seeking, neglect of local communities, and corruption.³³ For Indonesia, the issue of resource curse in the tin mining sector is a real challenge.

Indonesia is currently the world's second largest exporter of tin, with 98% of its total production exported to other countries and only 2% used for domestic industrial needs.³⁴ With total production reaching 76,400 tons in 2017 and an average of 60,000 tons in the last ten years, 99% of all Indonesian tin is produced in Bangka Belitung³⁵. Indonesia's tin mining sector has been subject to different governance approaches thorough the years since colonialism ended. Three tin mining companies operating under Dutch ownership were nationalized and united in 1958 and became Tin Mining State Company in 1968. Over the next 31 years, the Indonesian government fully controlled and controlled tin mining as a strategic excavation material.

The government's policy to maintain the centralization of tin mining encountered difficulties as market price fluctuations declined into the 1980s. Efforts to maintain the stability of world tin prices through International Tin Agreement and International Tin Council failed to produce a positive surplus. In 1980, the failure of the 6th ITA agreement, the accumulated ITC debt, discovery of substitution materials, and the recycling of post-usage tin has disrupted global tin prices and had a far-reaching impact on Indonesia.³⁶ Although tin production figures continued to stay at an average rate, state revenues continued to decline sharply in the following 10 years.

Table 1. Indonesia's tin and foreign exchange production in 1980-1991

<i>Year</i>	<i>Production (ton)</i>	<i>Price (USD/metric ton)</i>	<i>Exchange (Milion USD)</i>
1980	32.500	17.090	555,43
1984	23.200	12.442	288,65
1986	24.000	5.386	129,26
1989	32.000	9.605	237,09
1991	29.400	5.703	167,67

The government's initiation to reorganize tin mining management was carried out in 1999 which established tin as an export item that was no longer regulated and supervised by the central government. Law Number 22 of 1999 concerning Local Government shifted the responsibility

³³ Micheal L. Ross. "The Political Economy of the Resource Curse." *World Politics* (1999): 299-311

³⁴ Agus C., Wulandari D., Primananda E., Hendryan A., Harianja V. "The Role of Soil Amendment on Tropical Post Tin Mining Area in Bangka Island Indonesia for Dignified and Sustainable Environment and Life." *IOP Conf. Series: Earth and Environmental Science* (2017): 2-9

³⁵ Ministry of Energy and Mineral Resources, 2016

³⁶ Munandar, A. I., Siregar, H., Andati, T. dan Anggraeni, L., . "Price determinant of tin price.," *Journal of Economic & Management Perspectives* (2019): 33-40.

to local governments to regulate and manage mining in their respective regions.³⁷ This provision is part of the regional autonomy project. The decentralization politics launched by the government in the early days of the Reformation Era aimed to reduce the centralization of authority that curbed during the New Order era, while providing space for regions to develop their economic potential independently.

The delegation of tin mining authority to local governments has opened a new phase which in the author's previous research was referred as the 'illegal mining boom'. The local government of Bangka Belitung in 2001 provided access to local communities to be directly involved in mining activities. During the first five years of implementing the decentralisation policy of 2001, there were 75 mining concessions, 37 tin smelters, and 6507 artisanal tin mining units that together drove a significant increase in tin production.³⁸ This led to a significant contribution to local revenues as well as increasing income for the people of artisanal mining communities.³⁹ However, this condition also directly has implications for the widespread destruction of nature which immediately makes Bangka Belitung a 'Dead Islands'. Tin mining activities, especially small-scale unregulated mining, directly associated with environmental damage, landform deforestation, soil degradations, and inconsistency of spatial planning.⁴⁰ Uncontrolled mining activities are caused by poor management of mining business. The socio-economic impact of tin mining after 20 years since the 'illegal mining boom' began to enter the resource curse phase, which is indicative of slower economic growth, reduced social welfare, landform and environmental degradation, and the very high economic dependence on the tin exploitation sector.⁴¹

The problems arising during the 20 years of decentralization of mining authority ended in 2020, with the enactment of Law Number 3 of 2020 concerning Minerals and Coal which is new. Consequently, this new regulation revokes the authority of local governments to regulate mining in their territories, as well as return them to the central government. During the first 3 years since its inception, concrete solutions to the problem of tin mining have not yet seen their significance. The revocation of local government authority has the potential to cause illegal mining to mushrooming and more difficult to control. People of Bangka Belitung are still and continue to face the reality of resource curse due to mining activities which boils down to two fundamental consequences, environmental and social injustice.⁴²

³⁷ Erwiza Erman. "Rethinking legal dan illegal economy: a case study of tin mining in Bangka Island." *Southeast Asia Hist. Cult.* (2008): 91-111

³⁸ Bambang Yudianto. "Kajian Problema Pertambangan Timah Di Propinsi Kepulauan Bangka Belitung Sebagai Masukan Kebijakan Pertambangan Nasional". *Jurnal Teknologi Mineral dan Batubara* (2009): 104-110

³⁹ Erwiza Erman. "Deregulation of the tin trade and creation of a local Shadow State: A Bangka case study". In *Renegotiating Boundaries: Local Politics in Post-Suharto Indonesia*, Brill (2007): 181-199

⁴⁰ Sulista, Ibrahim, Sandi Pratama. "Accommodation, Resistance And Divided Community: Study Of The Dynamics Of Offshore Tin Mining Conflict Between The Fishermen Of The Coastal Area And Companies In Bangka Island". *People: International Journal of Social Science* (2018): 277-289

⁴¹ Eddy Nurtjahya, Jennifer Franklin, Umroh and Fournita Agustina. "The Impact of tin mining in Bangka Belitung and its reclamation studies". *MATEC Web of Conferences* (2017):2-4

⁴² Ibrahim, Dwi Hariyadi, Nanang Wahyudin. "Knowledge of the context, behavior, and expectations of miners in relation to the tin mining political policies and practices in Bangka Belitung." *Masyarakat, Kebudayaan dan Politik* (2018): 361-266

METHOD

This research was designed with qualitative socio-legal approach. It was chosen by considering that the researcher would be more unimpeded to explore data without having limited with certain questions. Nevertheless, as a limitation, researchers focused on formulation regarding the environmental and social impact of tin mining activities and how the resulting impact of the government's new arrangements in mineral and coal legislation. Data collection technique employed was deep interview by using purposive sampling, direct observation to the mining sites, and documentation to collect important and necessary data in concluding the results of the study. This study's primary source was miners, the affected communities, stakeholders, social and environmental activist. Whereas the secondary data source was obtained through data issued by some institution, the results of previous research, and verified news coverage. Methodologically, this study is aligned with theoretical tools with credibility comparisons through triangulation examination techniques. Triangulation theory allows researchers to check and complete information so as to obtain appropriate and methodological inferences.

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F. Discussion

5. Political Design of The People's Mining Law

The 'Big Bang' decentralisation policy in Indonesia's mineral and coal mining sector was associated with significant economic contributions to the Gross Domestic Regional Product (GDRP) structure of the mineral-producing regions and further correlated positively with per capita income, especially in Bangka Belitung.⁴³ Before decentralization, the government imposed a ban on the general public from engaging in mining activities directly. Instead, communities receive indirect benefits through the construction of public facilities, educational facilities, and development funds distributed to local governments. However, difficult economic conditions during the 1997-1999 monetary crisis prompted the government to change the politics of mining law and allow people to participate in mining through the People's Mining Permits (IPR) scheme.

In its implementation, the transition of authority to grant mining permits to local governments is not followed by mature policy infrastructure development. This condition can be seen from the imminent proliferation of small-scale mining run by the people illegally. The IPR mechanism, which is narrated as key to community mine management, was never effective until changes in mineral and coal new laws in 2020. The latest data released by the regional government in 2017 only recorded a total of 30 active IPRs, inversely proportional to the number of illegal mining pontoons which in 2018 amounted to 18,000 units spread throughout Bangka Belitung.

The main factors that led to the failure of the IPR scheme to control community mining were divided into three aspects. First, the complicated substance of legislation, complex requirements

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⁴³ Rian Hilmawan and Jeremy Clark." An investigation of the resource curse in Indonesia". *Resource Policy* (2019): 74-79

in licensing, and convoluted and inefficient registration procedures. Second, the low capacity of the mining community, which is generally run by low-educated and low-income communities, makes it difficult to manage permits. Third, the low quality of law enforcement by the government. The disciplinary action by law enforcement officials did not produce a significant effect on tin miners. The number of illegal tin miners continues to increase following the increase prices of tin in global market.⁴⁴

6. A Half-Hearted Solution of People's Mining Management

The existence of illegal tin mining that mushroomed in Bangka Belitung is inseparable from the government's inability to carry out function of control as regulated in Law Number 4 of 2009 concerning Minerals and Coal. During the 11 years since its establishment, local governments have been widely given the authority to make local regulations, grant and coordinate business licenses and community mining permits, guidance, supervision, and resolution of conflicts. This authority is stipulated in Article 7 and Article 8 of Law Number 4 of 2009. However, the realization of local government authority is deadlocked in the face of the large number of illegal mining. Significantly, the incompetence of these local governments has a direct impact on the losses of the state. Indonesian Corruption Watch (ICW) recorded accumulative state losses due to illegal mining during 2004-2013 reaching IDR 50 Trillion. Meanwhile, the Financial and Development Supervisory Agency (BPKP) reported that the country's average loss due to illegal tin mining was IDR 2.5 Trillion per year.⁴⁵

The political transition of mining in 2020 led to the centralization of mining authority. Article 35 Paragraph (4) of Law Number 3 of 2020 concerning Minerals and Coal which updates Law Number 4 of 2009 systematically revokes the authority of local governments and returns them to the central government. Article 4 and Article 3 of this law affirm that the authority of mining management is entirely the authority of the central government.⁴⁶

However, the polemic of revoking the authority of local governments in mining matters was not immediately completed by the enactment of a new mineral and coal law. Since its enactment on July 10, 2020, the implementation of this law has caused the onset symptoms of 'bureaucratic confusion'. The reason is, the Minister of Energy and Mineral Resources has stipulated Circular which prohibits the issuance of new permits of tin mining in 2020. This step is carried out to wait for legal certainty about the mechanism of the mining licensing process following new mineral and coal regulation.

For the next two years, 2020-2022, illegal mining activities continued to boom in Bangka Belitung. This condition is closely related to the rate of inflation, sluggish economic growth,

⁴⁴ Faisal, Derita Prapti Rahayu and Yokotani. "Criminal Sanctions: Reformulation in the Reclamation of the Mining Community." *Fiat Justisia: Jurnal Ilmu Hukum* (2022): 18–21

⁴⁵ Derita Prapti Rahayu, Faisal. "Eksistensi Pertambangan Rakyat Pasca Pemberlakuan Perubahan Undang-Undang tentang Pertambangan Mineral dan Batubara." *Jurnal Pembangunan Hukum Indonesia* (2021): 338-344

⁴⁶ Ronaldo Irzon. "Penambangan Timah di Indonesia: Sejarah, Masa Kini, dan Prospek." *Jurnal Teknologi Mineral Dan Batubara* (2020) 181–189

and restrictions on activities due to the COVID-19 pandemic, which has encouraged people to start switching to illegal small-scale mining. At the same time, local governments do not have certainty of the authority to exercise control over mining, because the authority has been withdrawn to the center but implementing rules have not been established. During this period, illegal mining became uncontrollable and there were no new government-issued IPRs.⁴⁷

On April 11, 2022, the government established Presidential Regulation Number 55 of 2022 which regulates the delegation of mineral and coal mining authority. Article 2 Paragraph (3) of this regulation expressly states that the authority to grant IPR is delegated to local governments. Thus, the IPR provisions have not changed from Law Number 4 of 2009 at all and local governments remain authorized to grant tin mining permits as before the new mineral and coal law. The bureaucratic confusion symptoms that lasted for two years ended in the absence of a change in the licensing authority of the IPR.

In addition to the polemics of laws and regulations that are mutually intertwined between the central and local governments, another problem that arises related to community mining is in regional zoning. In the provisions of the mineral and coal law, it is emphasized that community mining can be granted IPR permits only in areas categorized as People's Mining Areas (*Wilayah Pertambangan Rakyat/WPR*). However, until September 2022, Bangka Belitung still has not submitted a WPR proposal. This means that even if people register to obtain IPR, local governments still cannot grant permits because there is no WPR.

7. Marginalization of Small-Scale Tin Miners

The People's Tin Mining Association (ASTIRA) dataset in 2006 recorded the number of small-scale (unconventional) mines reaching 13,345 units. This number increased to 18,000 units, according to provincial government data in 2018. Meanwhile, PT Timah Tbk in March 2012 released the findings of 6,230 units of illegal suction vessels spreading in the Bangka sea area. Wahana Lingkungan Hidup (Walhi) noted that during 2004-2013, there were 81,000 illegal mining units spread across Bangka Belitung.⁴⁸ Although there is no data update until 2023, it is certain that the number of illegal miners has not decreased from the period before 2013 judging from the increase in the number of annual average environmental damage due to illegal mining.

As a form of countermeasures for unlawful acts, law enforcement officials have carried out various disciplinary efforts. However, these efforts are also ineffective as countermeasures against illegal miners. First, there was resistance from miners who had a high economic dependence on tin. In 2019, there was a clash between the police and illegal tin miners in the Belitung protected forest area which caused the deputy governor, Abdul Fatah to be held hostage by miners and 20 policemen injured. Second, miners continue to return after being put in order, as has been the case at the Kelabat Bay mine since 2014 to the present. Third, the

⁴⁷ Rizkyana Zaffrindra Putri and Lita Tyesta ALW. "Kajian Politik Hukum Tentang Perubahan Kewenangan Pemberian Izin Usaha Pertambangan Mineral dan Batubara." *Law Reform* (2015): 199-200

⁴⁸ Dwi Hariyadi. "Faktor Kriminogen Illegal Mining Timah di Bangka Belitung." *Jurnal Masalah-Masalah Hukum*, (2015) hlm.52-58

court's decision on illegal mineers is relatively light. Fourth, a court ruling that does not confiscate heavy equipment and tin sand from illegal mining.⁴⁹ In addition to these factors, the ineffectiveness of law enforcement is also influenced by the number of police officers who are also involved in mining activities. Small-scale mining activities carried out by the community only received legal guarantees until 2009, when the government requires people to manage IPR in order to mine.⁵⁰ However, because IPR was never effective (and not entirely due to miners), the mining community became marginalized and discredited as illegal miners. Ironically, small-scale miners still exist and have to catch up with security forces, as the process of obtaining permits to make their mining activities legal is also very difficult to access.

In addition to IPR, another solution to do mining legally is to establish partnerships with mining companies, such as PT Timah Tbk which has a Mining Business Permit (*Izin Usaha Pertambangan/IUP*). In 2023, PT Timah has 127 IUPs with an area covering 473,388 hectares, while other private companies have 517 IUPs with an area of 572,631 hectares. However, partnerships with mining companies are also ineffective because companies have special restrictions and conditions for partnering, such as having to have a legal entity. This condition is difficult for the community, and is not proportional to the number of miners.

The unavailability of a directly accessible licensing mechanism allows smallholder miners to continue mining illegally to meet the needs of life.⁵¹ However, the community does not fully reap prospective profits, but also bears the losses caused. Illegal mining is carried out without adequate safety procedures, resulting in a high number of work accidents. In the 2017-2020 period, there were 59 deaths due to illegal tin mining accidents recorded by local governments. The highest death toll occurred in 2019 with 25 deaths in a one-year period.

The low level of government oversight in carrying out the coaching function also has an impact on the high rate of school dropouts and child labor. In 2015, there were 3,337 child workers under the age of 17 who also worked in the mining sector.⁵² Children's involvement in illegal mining activities is clearly a form of marginalization and contrary to the rules of labor law in Indonesia, basic principles in the International Labor Organization, and Human Rights.⁵³

8. Environmental Impact and Sustainability Issue

The exploitation of tin mines left a trace of extensive natural damage in Bangka Belitung. An inventory of environmental damage data released by the Regional Environment Agency of

⁴⁹ Gatot Subiyaktoro. "Penegakan Hukum Illegal Mining di Babel." *FGD Sinergitas Penanggulangan Illegal Mining Timah Babel* (2014): 1-8

⁵⁰ Bambang Yunanto and Ridwan Saleh. "Persoalan Pertambangan Rakyat Pasca Pemberlakuan Undang-Undang Nomor 4 Tahun 2009." *Jurnal Mineral dan Batubara* (2011): 148-151

⁵¹ Ofori, D. R., & Ofori, J. J. "Digging for Gold or Justice? Misrecognition and Marginalization of "Illegal" Small-Scale Miners in Ghana". *Social Justice Research* (2018): 355-373

⁵² Putra Pratama Saputra. "Eksplorasi Pekerja Anak Penambang Timah Oleh Orang Tua di Desa Kace, Kecamatan Mendo Barat, Kabupaten Bangka, Provinsi Kepulauan Bangka Belitung, Indonesia." *Jurnal Masyarakat dan Budaya* (2018): 2-4.

⁵³ Netting, F. Ellen, Ketter, Peter M., & McMurty, Steve L.. *Social Work Macro Practice*. (Boston: Pearson Education, Inc, 1993).

Bangka Belitung Province in 2014 reported that of the total land area of 1,675,240.51 hectares, there has been 15.15% critical land, 37.28% of potential critical land, 44.54% of somewhat critical land and only 10.79% of which includes non-critical land. Meanwhile, in a survey conducted by the Wahana Lingkungan Hidup (Walhi) of Bangka Belitung in 2020, the amount of critical land has penetrated into 1,053,253.19 hectares, or 64.12% of the total land area. In the last 10 years, Bangka Belitung has also lost 320,000 hectares of productive land due to mining activities.⁵⁴

Environmental damage from tin mining is directly associated with the process of dredging and sorting tin ore from the ground and seabed.⁵⁵ According to data released by PT Timah Tbk, the tin ore content in Bangka Belitung is on average 0.32-0.43 kilograms per cubic meter. With total production reaching 82,820 tons in 2018, it takes 18.6 million cubic meters of land transfer in just one year.⁵⁶ Within five years, 2017-2021 the total tin production of Bangka Belitung is 291,590 tons, and has dredged 65.8 million cubic meters of land. Data from the Environment Agency in 2021 shows that as many as 75% of the 67 rivers flowing in Bangka Belitung have been polluted due to illegal mining. Meanwhile, 7 rivers that store the largest freshwater reserves in Bangka, namely the Mabet, Kayubesi, Limbung, Baturusa, Selindung, Pangkalbalam, and Rangkui rivers are included in the category of heavily polluted with chemical compounds exceeding water quality standards.⁵⁷

Environmental degradation that systematically transforms the landscape of Bangka Belitung into 'Dead Islands' is expected to continue in the next few decades. In 2020, the world's total known tin reserves were 4,741,000 tons, with as many as 800,000 tons (17%) in Indonesia. With an average mining rate of 70,000 tons / year, Bangka Belitung will remain mined at least until 2035. However, continued exploration over time is likely to result in new reserve findings, which means extending the life of tin exploitation on the island.

G. Conclusion

Tin mining in Bangka Belitung has undergone a 'from charm to sorrow' phase as a direct result of changes in mining policy and management during the period of regional autonomy that marked the illegal tin mining boom.⁵⁸ For three decades since 1999, the problem of illegal small-scale mining has not been resolved. The licensing mechanisms put in place through local governments are inefficient and instead encourage the continued proliferation of illegal miners. The change in mining policy through Law Number 3 of 2020 concerning Minerals and Coal has caused bureaucratic confusion for two years, because the licensing authority was withdrawn

Commented [J10]: The conclusion is very general, it should answer the existing problem formulation.

⁵⁴ Isma Rosyida, Wahid Ullah, Alfian Helmi. "Adapting Livelihoods To The Impact Of Tin Mining In Indonesia: Optimisms And Constraints. *The Extractive Industries and Society* (2019): 1305-1308

⁵⁵ Esmi Warassih, Sulaiman, and Derita Prapti Rahayu. "Sustainable Fishery Campaign by Small-Scale Fishery: A Case Study on Law Protection on Small-Scale Fishers in Morodemak Village, Demak District, Central Java Province, Indonesia." *Environmental Justice* (2018): 12-14

⁵⁶ Joko Susilo dan Siti Maemunah. *Tiga Abad Melayani Dunia: Potret Tambang Timah di Bangka Belitung*. (Jaringan Advokasi Tambang, 2009)

⁵⁷ Mentari, Umroh, dan Kurniawan. "Pengaruh Aktivitas Penambangan Timah Terhadap Kualitas Air di Sungai Baturusa Kabupaten Bangka". *Jurnal Sumberdaya Peraliran* (2017): 3-9.

⁵⁸ Ibrahim, Dwi Hariyadi and Nanang Wahyudin. "From Charm to Sorrow: The Dark Portait of Tin Mining In Bangka Belitung." *People: International Journal of Social Sciences* (2018): 360-368

back to the central government. However, in 2022, Presidential Regulation Number 55 of 2022 was issued which returned the authority of community mining permits to local governments.

As a non-renewable natural resource that requires an extraction process that changes the landscape, tin exploitation without proper management and regulation will have a direct impact on the degradation of environmental quality and socio-cultural aspects. The difficulty of public access to obtain IPR due to the absence of WPR and bureaucratic hierarchy and the complexity of the conditions, makes the mining community marginalized and has no choice but to mine illegally.

The mining sorrow has been basically occurring. Uncontrolled illegal tin mining leads to many miner deaths due to inadequate safety procedures, child labor exploitation, river pollution, environmental damage, and widespread critical land throughout the island. As the second largest tin producing region in the world, with reserves known to still be mined for decades to come, Bangka Belitung needs immediate mining management improvement to alleviate social and environmental problems caused by illegal mining. Indonesia and international institutions must proactively advocate for the rights of people and the environment as a tangible manifestation of real sustainable development.

H. Suggestion

The transfer of authority from the regions to the center has implications for the increasingly difficult efforts to combat illegal tin in Bangka Belitung. For this reason, local governments, which currently have the authority to grant IPR, must optimize its implementation by accelerating WPR proposals and ensuring good management so that IPR can be implemented in accordance with laws and regulations.

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SPECIAL NOTES

Commented [J12]: Note the typos in this manuscript.