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Inequality in the Recognition of Status and Fiscal Benefits of Mineral Processing Regions

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Abstract

Morowali Regency and North Morowali Regency in Central Sulawesi Province have emerged as major nickel processing hubs in Indonesia, with production capacities comparable to or exceeding those of regions designated as Mineral Processing Regions under Decree of the Minister of Energy and Mineral Resources Number 157.K/KU.01/MEM.S/2026. Similar circumstances exist in Palu City, where PT Citra Palu Minerals (CPM) conducts integrated gold processing activities without the region being formally recognized as a Mineral Processing Region. These three jurisdictions are recognized only as Producing Regions and, consequently, do not receive the additional 8% allocation from the Revenue Sharing Fund (Dana Bagi Hasil, DBH) provided for under Article 116 of Law Number 1 of 2022 concerning Financial Relations between the Central Government and Regional Governments (Hubungan Keuangan antara Pemerintah Pusat dan Pemerintahan Daerah, HKPD Law). The findings indicate that the primary issue lies not in the provisions of the HKPD Law but in the restrictive interpretation of the criteria for integrated processing facilities by the Ministry of Energy and Mineral Resources. This interpretation has not adequately accommodated industrial estate models involving supply chains supported by multiple Mining Business Permits (Izin Usaha Pertambangan, IUP), as practiced in Morowali and North Morowali. Employing the Urgency, Seriousness, and Growth (USG) method to prioritize policy problems and Bardach's (2012) policy analysis criteria to assess alternative solutions, this study recommends accelerating the verification process and revising the fourth and sixth operative provisions of Ministerial Decree Number 157.K/KU.01/MEM.S/2026. These recommendations align with initial administrative measures reportedly undertaken by the Central Sulawesi Provincial Government to address disparities in regional recognition and fiscal benefit allocation.

INTRODUCTION

Mineral downstream processing has become a national policy priority in Indonesia, aimed at increasing the domestic value added to natural resources and strengthening industrial competitiveness (Pradana et al., 2024; Purwana et al., 2026). This policy has encouraged the development of mineral processing and refining industrial estates across various regions, including Central Sulawesi Province, particularly Morowali Regency and North Morowali Regency for nickel processing and Palu City for gold processing (Muhyiddin et al., 2026).

Morowali and North Morowali Regencies have emerged as major nickel processing hubs in Indonesia, supported by industrial facilities such as the Indonesia Morowali Industrial Park (IMIP) and the rotary kiln–electric furnace (RKEF) facilities operated by PT Gunbuster Nickel Industry (GNI) in North Morowali. The latter reportedly has an annual production capacity of approximately 1.8 million metric tons of nickel pig iron (NPI), making it one of Indonesia's

largest individual nickel smelting operations. Meanwhile, PT Citra Palu Minerals (CPM) operates under a mining business license (Izin Usaha Pertambangan, IUP) covering approximately 27,079.7 hectares in Palu City, with an integrated carbon-in-leach (CIL) gold processing facility that supports operations from ore extraction to gold bullion production.

However, under Decree of the Minister of Energy and Mineral Resources Number 157.K/KU.01/MEM.S/2026, dated April 22, 2026, concerning the Designation of Producing Regions and Mineral and Coal Natural Resource Processing Regions for 2026 (Minister of Energy and Mineral Resources of the Republic of Indonesia, 2026), these three jurisdictions are listed in Attachment I as Producing Regions but are not included in Attachment II as Processing Regions. This classification contrasts with the designation of Central Halmahera, Kolaka, South Halmahera, and East Luwu Regencies as Nickel Processing Regions, despite the substantial mineral processing activities conducted in Morowali, North Morowali, and Palu (Sofianti et al., 2025; Vitriano, 2026; Ya'la et al., 2025).

Recognition as a Mineral Processing Region carries significant fiscal implications. The sixth operative provision of Ministerial Decree Number 157.K/KU.01/MEM.S/2026 identifies such regions as locations where mineral processing or refining activities occur and where communities may experience adverse environmental and socioeconomic externalities. This designation is relevant to the allocation of additional revenue-sharing funds (Dana Bagi Hasil, DBH) associated with mineral processing activities (Lewis, 2023; Republic of Indonesia, 2022). Notably, Morowali reportedly has an annual production capacity of approximately 1.2 million metric tons of NPI across more than 40 smelting facilities, while North Morowali has an estimated annual capacity of 1.8 million metric tons of NPI through PT GNI. These reported capacities exceed the nominal production volumes of several regions already designated as Processing Regions, including Central Halmahera, with approximately 300,000 metric tons of ferronickel (FeNi) annually, and East Luwu, with approximately 94,000 metric tons of nickel matte annually. However, comparisons of processing capacity should account for differences in product composition and nickel content, as NPI, ferronickel, and nickel matte are not directly equivalent measures of nickel production.

Table 1. below compares the capacity of the three regions with the two registered nickel processing areas.

Regions	Commodities	Input Capacity (tpy)	Output Capacity (tpy)	Jml Facilities
Central Halmahera Regency (registered)	Nickel	3.600.000	300,000 (FeNi)	1
East Luwu Regency (registered)	Nickel	14.143.097	94.289 (Matte Nickel)	1
Morowali Regency (not yet registered)	Nickel	± 1,900,000	± 1,200,000+ (NPI)	40+ Smelter
North Morowali Regency (not yet registered)	Nickel	± 3,000,000	1,800,000 (NPI)	1 multi-line area

Regions	Commodities	Input Capacity (tpy)	Output Capacity (tpy)	Jml Facilities
Palu City (not yet registered)	Gold	N/A (Integrated Mining-Production)	gold bar production (CIL method)	1 (PT CPM, ± 27,079.7 Ha)

Table 1. Comparison of Input and Output Capacities Between Designated Mineral Processing Regions and Existing Processing Facilities in Morowali Regency, North Morowali Regency, and Palu City. Source: Decree of the Minister of Energy and Mineral Resources Number 157.K/KU.01/MEM.S/2026, Attachment II; Central Sulawesi Provincial Development Planning Agency (Badan Perencanaan Pembangunan Daerah, Bappeda), Study on the Proposed Designation of Mineral Processing Regions (Regional Development Planning Agency of Central Sulawesi Province, 2026b).

Conversely, large-scale nickel downstream processing activities have imposed substantial environmental and public health burdens on surrounding communities. Reported deforestation increased by 128.40%, from approximately 8,360 hectares in 2024 to 19,090 hectares in 2025 (MapBiomas Indonesia, 2025). Public health concerns have also intensified, with 1,480 reported cases of acute respiratory infection (ARI) across three areas surrounding mining operations in North Morowali—Maliau, Pancamakmur, and Petasia—alongside nine reported infant deaths associated with respiratory complications (North Morowali Regency Health Office, 2025). Meanwhile, the direct fiscal benefits received by local communities appear relatively limited. The combined Village Fund (Dana Desa) allocations for 12 villages in Bahodopi District amounted to approximately IDR 4.25 billion, equivalent to approximately 0.02% of the IDR 18.56 trillion in tax payments reportedly contributed by PT Indonesia Morowali Industrial Park (IMIP) to the central government (Regional Revenue Agency of North Morowali Regency [Bapenda], 2025). Although these figures illustrate disparities between industrial activity and local fiscal allocations, the two amounts represent different fiscal categories and should not be interpreted as a direct measure of revenue-sharing entitlements. These findings are consistent with Lo et al. (2024), who examined 7,721 villages across Sulawesi between 2011 and 2018 and found that deforestation rates in villages surrounding nickel mining operations increased at nearly twice the rate observed in villages without mining activities. Their study further indicated that improvements in infrastructure and overall living standards did not adequately offset the deterioration in environmental conditions.

The disparity between actual mineral processing activities and their formal recognition under national administrative policies underscores the urgency of this study. This issue extends beyond the technical classification of administrative regions and raises broader concerns regarding interregional fiscal equity, distributive justice, and the recognition of environmental and socioeconomic burdens borne by communities hosting downstream mineral processing industries (Lo et al., 2024; Owen et al., 2021). The significance of these concerns was acknowledged by the Central Sulawesi Provincial Government through an official proposal submitted by the Head of the Provincial Development Planning Agency (Bappeda) to the Minister of Energy and Mineral Resources on August 7, 2026 (Regional Development Planning Agency of Central Sulawesi Province, 2026a). The proposal recommended amending the fourth and sixth operative provisions of Ministerial Decree Number

157.K/KU.01/MEM.S/2026 to include Morowali Regency, North Morowali Regency, and Palu City as additional designated Mineral Processing Regions, thereby strengthening the alignment between actual industrial activities, administrative recognition, and the allocation of regional fiscal benefits.

Identify Issues and Problems

From the main issue related to the gap between the reality of mineral processing activities in the field and the recognition of administrative status in national policies, three main problems related to the above can be identified, including:

Problem 1: The non-recognition of Morowali Regency, North Morowali Regency, and Palu City as Processing Areas in Appendix II of the Ministry of Energy and Mineral Resources 157/2026, even though the mineral processing capacity and/or integration level is equal to or exceeds the predetermined area (Minister of Energy and Mineral Resources of the Republic of Indonesia, 2026; Regional Development Planning Agency of Central Sulawesi Province, 2026a, 2026b).

Problem 2: The low proportion of fiscal benefits received by local and village governments compared to the economic contribution generated by the nickel downstream sector, including a potential loss of IDR 6 billion in regional own-source revenue (PAD) in 2025 related to the transfer of foreign worker compensation funds (Regional Revenue Agency of North Morowali Regency [Bapenda], 2025; Republic of Indonesia, 2021).

Problem 3: High negative environmental and health externalities due to nickel downstream activities that have not been adequately compensated (MapBiomas Indonesia, 2025; North Morowali Regency Health Office, 2025).

Determination of the Main Problem (Ultrasound Method)

The three problems above are assessed using the Urgency, Seriousness, Growth (USG) scoring method to determine the priority of the problem to be analyzed further. This scoring should ideally be carried out with 4-5 experts/stakeholders (Bapenda, DLH, Provincial Bappeda, natural resource management academics); The following values are the author's initial estimate that needs to be reconfirmed with the expert team before being used as the basis for official determination.

Table 2. Determination of Key Problems by Ultrasound Method

List of Issues	Urgency	Seriousness	Growth	Total Value
Problem 1: The status of the Processing Area is not recognized (Morowali, North Morowali, and the proposed expansion of Palu City)	5	4	5	14
Problem 2: Inequality of regional and rural fiscal benefits	4	4	4	12
Problem 3: Environmental and health externalities have not been compensated	4	5	4	13

Based on the scoring results, Issue 1 obtained the highest total score (14) so that it was determined as the main problem, according to the ultrasound rule that the problem with the highest score is a priority for handling. Urgency is rated high (5) because the verification

cycle/proposal revision of the Ministry of Agriculture is annual and is bound by administrative deadlines; Growth is considered high (5) because the addition of smelter capacity in both districts continues to take place every year so that the gap in status recognition has the potential to continue to widen if it is not corrected immediately. Problem 1 is also logically a root trigger that connects directly to the problem of fiscal inequality (Problem 2) and recognition of the burden of externality (Problem 3): the status of the Processing Region is a legal prerequisite for the acquisition of an additional 8 percent DBH which directly answers Problem 2, as well as a form of formal recognition of negative externalities as referred to in Problem 3.

Analysis of the Causes of the Problem

Causes of Level 1 Problems

Why are Morowali and North Morowali Regencies not recognized as Processing Areas?

- 1a. The criterion of "integrated processing facility" in the Fourth Dictum (b) of the Ministry of Energy and Mineral Resources 157/2026 is interpreted narrowly as a smelter facility that is in the same mining permit entity (IUP), as modeled by PT Vale Indonesia in East Luwu or PT Weda Bay Nickel in Central Halmahera.
- 1b. Data on the output capacity of mineral processing facilities in 2025 in Morowali and North Morowali Regencies has not been officially verified and updated to the Ministry of Energy and Mineral Resources as the basis for the determination of Annex II.
- 1c. There has been no official proposal accompanied by a technical database from the Central Sulawesi Provincial Government to the Ministry of Energy and Mineral Resources before Ministerial Decree 157/2026 is stipulated in April 2026.

Note: Palu City has a different gap mechanism — PT CPM's facilities actually meet the criteria of "one integrated permit entity" (mining to gold bullion production), so the omission is more of an administrative/data negligence (not yet proposed) than a narrow interpretation of the definition. To keep the root cause analysis focused, the following level 1-2 root cause reductions are focused on the Morowali and North Morowali cases; the Palu City case is treated as an expansion of the scope of the proposal in Chapters III-IV, rather than part of the main root chain of issues.

Causes of Level 2 Problems

Why is the "integrated facility" criterion narrowly interpreted? (lowered 1a)

- 1a1. The derivative regulations governing the determination of Processing Areas do not contain an explicit operational definition for the "supply chain-based integrated industrial estate" model, which is different from the "one permit entity" model.
- 1a2. The industrial model in Morowali and North Morowali — industrial estates with dozens of smelter facilities/Industrial Business Permits (IUI) supplied by many independent IUP holders — is structurally different from the reference model compiled by the Ministry of Agriculture, so it cannot be read as "integrated" even though it is substantially (substance over form) carrying out the same processing function.
- 1a3. There is no precedent or standard mechanism for the regions to apply for re-verification/adjustment of classification based on factual data on processing capacity for the current year.

Why hasn't the output capacity data been verified and updated? (down 1b)

- 1b1. There are differences in data coverage between sources — for example, the Ministry of Industry's macro estimate records the NPI capacity of the IMIP area at around ±1.2 million

tons/year, while granular data per company (14 production tenants) shows a combined capacity of around 4.4 million tons/year — which has not been reconciled.

- 1b2. There is no mandatory annual reporting mechanism from industrial estate managers to provincial/central agencies for regular updating of production capacity data.
- 1b3. Limited institutional capacity of Bappeda/Bapenda Province in collecting primary data on production capacity independently from dozens of IUP/IUI holders in industrial estates.

Why is there no official proposal based on technical data before the Ministerial Decree is determined? (down 1C)

- 1c1. The cycle of preparation of the Regional Ministry of Producers/Processors is annual with a deadline for submitting regional proposals that are not in sync with the regional planning cycle (RKPD/Renja).
- 1c2. The province does not yet have a consolidated technical database (IUP recapitulation, production capacity, employment data) ready to be submitted before the deadline for the determination of the Ministry of Agriculture — the database of 148 nickel IUP entries and 188 manufacturing industry entries will only be completed in 2026 through this study.
- 1c3. Coordination across OPDs (Bapenda, Provincial Energy and Mineral Resources Office, DLH, Legal Bureau) in the preparation of joint proposals has not been institutionalized regularly as an annual agenda.

Root of the Problem and Problem Statement

Based on the search for the cause of the problem above, the root of the problem is assembled as follows.

- Root of Problem 1 (from the level 2 cause, closest to the issue): The regulation does not contain an operational definition that accommodates the integrated industrial estate model based on a multi-IUP supply chain (1a1).
- Root Problem 2 (from related level 1 cause): The criteria of "integrated processing facility" are interpreted narrowly so that they do not reach the industrial model of Morowali and North Morowali (1a).
- Root Problem 3 (main problem): Morowali Regency and North Morowali Regency are not recognized as Processing Areas in the Ministry of Energy and Mineral Resources Decree 157/2026 even though their processing capacity is equal to or exceeds the designated area.

Problem Statement

"The absence of an operational definition that accommodates the multi-IUP supply chain-based integrated industrial estate model in the regulation on the determination of Processing Areas causes the criteria of 'integrated processing facilities' to be interpreted narrowly, so that Morowali Regency and North Morowali Regency — which factually carry out large-scale nickel processing and refining activities — are not recognized as Processing Areas in the Ministry of Energy and Mineral Resources Regulation Number 157.K/KU.01/MEM. S/2026, and as a result do not receive recognition of status or fiscal benefits commensurate with the scale of downstream activities and externality burdens beared."

METHOD

Study Types and Approaches

This study employed a problem-oriented qualitative policy analysis approach to examine discrepancies between regulatory provisions and actual conditions in mineral processing

regions and to formulate policy alternatives using an established analytical framework (Achmadi, 2024).

Data Sources and Types

The data used are all in the form of secondary data, consisting of three categories as shown in Table 3.

Table 3. Sources and Types of Study Data

Categories	Source	Usage Examples
Laws and regulations	HKPD Law, Ministry of Energy and Mineral Resources 157/2026, PP 34/2021, Coordinating Minister for the Economy 16/2025, Minister of Environment 7/2014	Basis of regulatory gap analysis (Chapters I & II)
Official documents of the Provincial/Regency Government	Letter of Proposal from the Head of Bappeda of Central Sulawesi Province to the Minister of Energy and Mineral Resources (August 7, 2026); Appendix to the Study of the Proposal for the Determination of Producing and Processing Regions (2026); Bapenda of North Morowali Regency; Health Office of Morowali and North Morowali Regency	Basis of official proposal argumentation, capacity data, fiscal data, health data
Non-government data/research	Mapbiomes; AEER; IUCN-Auriga-Y-KOMIU	Data on deforestation and coastal pollution as an indicator of externality

Data Analysis Techniques

The analysis was carried out through three stages: (1) prioritization of problems using the ultrasound method; (2) tiered root cause analysis until the root of the problem and problem statement were obtained; (3) alternative policy assessment using Bardach (2012) criteria with a score scale of 1-10 per criterion.

Study Limitations

- The ultrasound and Bardach scoring are the initial estimates of the single author, not yet through a joint assessment forum of 4-5 experts/stakeholders as ideally required; this score needs to be revalidated before the study is used as a basis for official policy.
- Primary data were not collected; all findings were sourced from secondary data and official documents that were available.
- The root cause analysis is focused on the cases of Morowali and North Morowali; the case of Palu City is treated as an extension of the scope of the policy proposal, rather than part of the main cause-and-effect chain, as the mechanisms that cause the non-inclusion are different (see note on 1.4).

RESULTS AND DISCUSSION

Theoretical and Conceptual Framework

Fiscal Decentralization and the Principle of Benefit Sharing of Natural Resources

The Natural Resources Revenue Sharing Fund (DBH) scheme is essentially a fiscal decentralization instrument that aims to distribute the economic benefits of natural resource extraction to the areas where activities take place, while compensating for the burden borne by the area. The principle of benefit-sharing emphasizes that areas that bear externalities are entitled to fiscal compensation that is proportionate to the burden they carry, not solely based on administrative status. Owen et al. (2021) show that the resource economics literature tends to overestimate the benefits received by the mining area, while the opportunity costs and real burdens borne by the surrounding community are often not adequately measurable—a "local resource curse" that is relevant to reading the low ratio of the Bahodopi District Village Fund to corporate tax contributions as described in Chapter I.

Substance Over Form Principle

The substance over form principle emphasizes that the assessment of a situation should be based on the real economic substance of an activity, not solely the formal/administrative form of licensing that overshadows it. Kuźniacki (2024) explains that this doctrine serves to prevent erroneous judgments resulting from rigidly adhering to the formal label or structure of an arrangement, and requires authorities to assess the real economic substance behind it. This principle is relevant for assessing the status of Morowali and North Morowali: although formally some smelter facilities operate under an Industrial Business Permit (IUI) regime separate from the raw material supplier's IUP, in substance the two districts carry out large-scale mineral processing and refining functions.

Negative Externalities and Compensation

Extractive industrial activities and mineral processing cause negative externalities in the form of environmental pollution, deforestation, and public health disturbances whose costs (social costs) are not fully reflected in the state revenue structure of the sector. Environmental economic theory requires a compensation mechanism — one of which is through DBH — so that regions that bear the social cost obtain fiscal resources to mitigate the impacts.

Relevant Regulatory Framework

Law Number 1 of 2022 concerning HKPD

Article 116 of the HKPD Law regulates the distribution of DBH of mineral and coal natural resources sourced from production/royalty contributions: 80% for regions, with details of 16% of provinces, 32% of producing districts/cities, 12% of other districts/cities that are directly bordered, 12% of other districts/cities within the province, and 8% specifically for processing districts/cities. This provision emphasizes that the status of "Processing Area" is not just an administrative label, but a fiscal right guaranteed by law — areas with producer and processing status, as profiled in Morowali and North Morowali, normatively have the opportunity to obtain a total of up to 40% of the DBH allocation of production dues for the regions. Lewis (2023), in a critical review of the HKPD Law, notes that the direction of the latest fiscal decentralization reform implicitly strengthens the central government's control through performance incentive instruments and spending mandates, so that the design of the allocation formula and its derivative technical criteria — including the criteria of "integrated

processing facilities" — become the point that determines whether the goal of equitable distribution between regions is truly achieved.

However, the definition of "Processing Area" in the HKPD Law was further derived through the Ministry of Energy and Mineral Resources which established operational technical criteria, including the criterion of "integrated processing facility". It is at this point that the interpretation gap that is the root of the problem in Chapter I arises: the technical criteria in the Ministry of Energy and Mineral Resources do not explicitly accommodate the industrial estate model with IUI-based smelters supplied by many independent IUP holders.

Ministry of Energy and Mineral Resources Number 157.K/KU.01/MEM. S/2026

This Ministerial Decree is an annual technical rule that establishes the definitive list of Producing Regions (Attachment I) and Processing Regions (Attachment II) as the basis for distributing DBH. The Fourth Dictum letter (b) requires determination based on "output capacity in integrated processing facilities by 2025", while the Sixth Dictum emphasizes that the status of Processing Regions is a recognition of areas that are at risk of being affected by negative externalities from processing activities.

Other Supporting Regulations

- Regulation of the Coordinating Minister for Economic Affairs Number 16 of 2025 stipulates industrial estates in Morowali and North Morowali as part of the National Strategic Project (PSN), strengthening the argument for the national strategic role of the two regions.
- Government Regulation Number 34 of 2021 concerning the Use of Foreign Workers contains administrative loopholes that are used by a number of companies to shift compensation for Foreign Workers to the provincial level, contributing to the loss of the potential of North Morowali's PAD.
- The Minister of Environment Regulation Number 7 of 2014 concerning Environmental Losses is one of the relevant economic valuation instruments for environmental impact as the basis for compensation arguments.

Discussion: Bridging the Classification Gap with a Regulatory Framework

- Normatively, the HKPD Law has provided adequate legal space for areas such as Morowali and North Morowali to be recognized as Processing Areas — the problem lies at the technical level of implementation (Kepmen EMR), not at the legislative level.
- Substantively, the substance over form principle supports the argument that the integrated industrial estate model based on a multi-IUP supply chain should be treated on an equal footing with the "one permit entity" model, as long as it functionally carries out processing/refining activities with significant capacity.
- Empirically, externality data (deforestation, ISPA) and fiscal data (ratio of Village Funds to corporate tax payments) provide strong evidence that the compensation currently received by the two regions is not commensurate with the burden borne — strengthening the legitimacy of the request for reverification of the status of the Processing Region, as the Central Sulawesi Provincial Government has begun to pursue through an official proposal letter dated August 7, 2026.

The three conclusions of the analysis above are the basis for the preparation of alternative policies that are described and assessed in detail in Chapter III.

Policy Alternatives/Options

Policy Options Description

Based on the results of the analysis in Chapter II, three policy options were identified that logically have the potential to be a solution to the problem statement formulated in Chapter I. The three are not mutually exclusive, but have different characters, time frames, and levels of certainty of results.

Option 1: Acceleration of Verification and Revision of the Fourth and Sixth Dictum of the Ministry of Energy and Mineral Resources 157/2026

This option is in the form of completing and overseeing the application process for re-verification of the output capacity data of mineral processing facilities in Morowali and North Morowali to the Ministry of Energy and Mineral Resources, accompanied by a proposed revision of the Fourth Dictum letter (b) so that the definition of "integrated processing facility" is expanded to include industrial estates based on multi-IUP supply chains, as well as expanding the scope of the proposal to include Palu City. This option is not just a discourse — the Central Sulawesi Provincial Government, through the Head of Bappeda, has submitted an official proposal letter to the Minister of Energy and Mineral Resources on August 7, 2026, equipped with a technical database (148 nickel IUP entries, 188 manufacturing industry data entries). This option targets the root of the problem directly so that, if successful, the three regions will obtain recognition of the status of Processing Regions and are entitled to an additional 8% DBH portion in accordance with Article 116 of the HKPD Law.

Option 2: Strengthening the Non-DBH Compensation Mechanism through the TJSLP Forum

This option does not target a change in administrative status, but rather strengthens compensation channels that are already available and under the control of the Regional Government — namely the integration of Corporate Social and Environmental Responsibility (TJSLP) funds into regional development programs, for example, Morowali Regency already has North Morowali Regency Regional Regulation Number 28 of 2025 and North Morowali Regent Decree Number 188.45/KEP-B. MU/0152/VI/2026 concerning the Establishment of the Corporate Social and Environmental Responsibility Forum (TJSLP) of North Morowali Regency). In addition, there is also a need to optimize the "1 Billion 1 Village" Program which will be fully effective in 2026. This option can be fully implemented by the Regional Government without relying on the decision of the Ministry of Energy and Mineral Resources, but it complements — not replaces — formal fiscal rights in the form of DBH. It should be noted that the effectiveness of this pathway depends on the design of the program: an empirical study by Rela et al. (2020) on the nickel mining industry in Southeast Sulawesi found that CSR programs contribute positively to the resilience of the surrounding community only when they are designed to build collective efficacy and community adaptive capacity, not just the distribution of direct aid — so the design of the "1 Billion 1 Village" Program needs to pay attention to this principle so as not to stop at symbolic compensation.

Option 3: Changes to the Definition of Permanent Operations in the National Technical Guidelines

Different from Option 1 which is a case-by-case basis, Option 3 proposes that the Ministry of Energy and Mineral Resources change the technical guidelines for the preparation of the Ministry of Energy and Mineral Resources to determine the Producer/Processing

Regions permanently and apply nationally. This option has a wider scope of impact but political complexity and a longer turnaround time because it concerns the interests of many regions and business actors nationally.

Table 4. Similarities and Differences of the Three Policy Options

Aspects	Option 1	Option 2	Option 3
Change goals	Status of 3 regions (casuistic, officially proposed)	Non-fiscal compensation mechanism	National criteria (permanent)
Authority of initiators	Ministry of Energy and Mineral Resources (on the official proposal of the Provincial Government, August 7, 2026)	Local Government	Ministry of Energy and Mineral Resources
Dependence on the other party	Moderate-high, but the process is already underway (proposal letter has been sent)	Low (within the control of the district)	Very high (across ministries/regions)
Term	Medium (1 annual verification cycle, process already started)	Short (can be run immediately)	Length (change in national policy)
Fiscal impact for the region	Direct (additional DBH 8% x 3 areas)	Indirect (CSR/APBD funds)	Direct, but delayed

Alternative Selection Methods and Criteria

The alternative assessment of policies uses the Bardach (2012) criteria, consisting of four dimensions: technical feasibility, economic and financial possibility, political viability, and administrative operability. This criterion was chosen because the problems analyzed are cross-authority (central-regional), so that the dimensions of political and administrative feasibility are important determinants of successful implementation.

The author acts as an initial evaluator based on the secondary data that has been collected in Chapter I and Chapter II; the final score should be confirmed with Bapenda, the Legal Bureau, and the Central Sulawesi Provincial Economic Bureau before being used as the basis for official recommendations.

Alternative Policy Assessment

Table 5. Assessment of Policy Alternatives Based on Bardach (2012) Criteria. Score scale 1-10 per criterion.

Options	Technical Feasibility	Economic & Financial Possibility	Political Viability	Administrative Operability	Total Score
Option 1: Verification & Revision of Dictum IV/VI of the Ministry of Energy and Mineral Resources 157/2026 (expanding the scope to	8	7	7	8	30

Options	Technical Feasibility	Economic & Financial Possibility	Political Viability	Administrative Operability	Total Score
Morowali, North Morowali, and Palu City)					
Option 2: Strengthening the non-DBH compensation mechanism (TJSLP Forum & Program "1 Billion 1 Village")	8	6	7	7	28
Option 3: Changes to the definition of permanent operations in national technical guidelines	6	7	4	5	22

Option 1 obtained the highest score (30). Political viability and administrative operability Option 1 is considered higher than the initial assumptions in previous studies, because this process has entered the concrete stage: an official proposal letter has been sent by the Head of Bappeda to the Minister of Energy and Mineral Resources (Regional Development Planning Agency of Central Sulawesi Province, 2026a), and the supporting technical database (IUP recapitulation and industrial data) has been compiled as an appendix to the study. Option 2 obtained the second highest score (28) because it remains relevant as a short-term complementary measure that is fully under the control of the Regional Government. Option 3 obtained the lowest score (22) due to the high complexity and resistance of national politics.

Synthesis

The three options are actually complementary and do not need to be seen as an exclusive single option. However, as part of the options to be taken as part of the policy, the one with the highest score is Option 1: Acceleration of Verification and Revision of the Fourth and Sixth Dictum of the Ministry of Energy and Mineral Resources 157/2026 — chosen as the main recommended policy, with Option 2 still being implemented in parallel as short-term compensation that is completely under the control of the Regional Government.

Policy Recommendations

Recommended Policies

Based on the results of the assessment in Chapter III, the policy recommended as the main solution is the acceleration and supervision of the technical verification process and the revision of the Fourth Dictum letter (b) and the Sixth Dictum of the Ministry of Energy and Mineral Resources Number 157.K/KU.01/MEM. S/2026, by expanding the definition of "integrated processing facilities" to include the multi-IUP supply chain-based industrial estate model, and designating Morowali Regency, North Morowali Regency, and Palu City as additional Processing Areas in Appendix II.

This policy is addressed to the Minister of Energy and Mineral Resources as the holder of the determination authority, with the Governor of Central Sulawesi through the Head of the Provincial Bappeda as the initiator and guardian of the proposal at the regional level.

Concrete Stages of Implementation

- Finalization and resubmission of official proposals — The Head of the Central Sulawesi Provincial Bappeda perfected the proposal letter of August 7, 2026 by attaching a verified database (recapitulation of 148 nickel IUPs, 188 manufacturing industry data entries, smelter capacity data) to the Directorate General of Minerals and Coal of the Ministry of Energy and Mineral Resources, no later than the fourth quarter of the current year so that it can be included in the next year's Ministerial Decree determination cycle.
- Hearing and technical presentation — The Governor of Central Sulawesi assigned the Head of Bappeda and the Head of the Provincial Energy and Mineral Resources Office to present the technical database and substance over form arguments directly to the Directorate General of Mineral and Mineral Resources, including comparative data on capacity with registered processing areas.
- Formation of cross-OPD work teams — The Governor issued a Decree on the establishment of cross-OPD work teams (Bappeda, Bapenda, Provincial Energy and Mineral Resources Office, DLH, Legal Bureau) with clear deadlines and division of duties to oversee the verification process until the issuance of an official decree of the Minister of Energy and Mineral Resources.
- Reconciliation of production capacity data — The Head of the Provincial Energy and Mineral Resources Office coordinates with the Ministry of Industry to reconcile the difference in production capacity data (macro estimation versus granular data per company) before it is included as the final figure in the proposed revision.
- Institutionalization of the annual submission mechanism — The Head of Bappeda sets an annual agenda for the preparation and updating of the Producer/Processing Region database as a permanent part of the RKPD cycle, so that the province no longer loses the deadline for submitting proposals in the next Ministerial Determination Cycle.

Relationship with Problem Statement

This recommendation directly answers the problem statement in Chapter I: with the revision of the definition of "integrated processing facility" to accommodate the multi-IUP supply chain-based industrial estate model, Morowali Regency and North Morowali Regency will obtain recognition of the status of Processing Areas commensurate with the scale of downstream activities and external burdens incurred. This policy is regulatory (through the revision of the Ministerial Decree and the Decree of the working team), is clearly addressed to the authority holder (Minister of Energy and Mineral Resources, Governor), and sets concrete actions and deadlines — not just an appeal for coordination.

CONCLUSION

This study concluded that disparities in the recognition of Mineral Processing Region status and the allocation of associated fiscal benefits to Morowali and North Morowali Regencies primarily stemmed from the restrictive interpretation of technical designation criteria by the Ministry of Energy and Mineral Resources rather than from the provisions of the Law on Financial Relations between the Central Government and Regional Governments (Hubungan Keuangan antara Pemerintah Pusat dan Pemerintahan Daerah, HKPD Law). The Central Sulawesi Provincial Government initiated an appropriate administrative response by submitting an official proposal on August 7, 2026. Further action should prioritize monitoring

the proposal's progress, strengthening supporting technical evidence, and establishing clear implementation timelines. Simultaneously, the second policy alternative, involving the strengthening of the Corporate Social and Environmental Responsibility Forum (Forum Tanggung Jawab Sosial dan Lingkungan Perusahaan, TJSLP) and the "One Billion Rupiah per Village" Program, should be pursued as a complementary short-term measure within regional administrative authority to mitigate socioeconomic disparities while awaiting formal recognition of Mineral Processing Region status.

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CONFLICT OF INTEREST

The authors declare that this study was conducted without any commercial or financial relationships that could be interpreted as a potential conflict of interest.

AUTHORS' CONTRIBUTIONS

Joice Evelyn Ariesabeth: research conceptualization, methodology design, experiment execution, data collection, data analysis, manuscript drafting, and manuscript revision, research supervision, validation of research results, provision of scientific input, and manuscript review and revision. All authors have read and approved the final version of the manuscript.

STATEMENT ON THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE

The authors declare that generative artificial intelligence (AI) was used in the preparation of this manuscript to help improve linguistic clarity, correct grammar, and refine the writing structure. Generative AI was not used to generate, manipulate, or analyze research data. The entire content of the manuscript has been reviewed and verified by the author(s). The author(s) are fully responsible for the accuracy, integrity, and final content of the manuscript.

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