

# SWOT Analysis and Development Alternatives Strategy of the Morowali Industrial Estate (IMIP) in Supporting Nickel Downstreaming and Regional Economic Growth

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Mineral downstreaming is a key industrial strategy in Indonesia to increase the added value of natural resources through metal-based manufacturing. The Morowali Industrial Park (IMIP) is one of the largest nickel downstreaming centers in Southeast Asia, contributing significantly to economic and social transformation in Morowali Regency. This research aims to evaluate internal and external strategic factors affecting IMIP using SWOT analysis. A qualitative descriptive method was applied based on a documentary video transcript supported by relevant literature review. The findings show IMIP's strong internal advantages such as modern infrastructure, massive investment, a 60% increase in regional GDP, and more than 13,000 jobs created. Opportunities arise from the global demand for electric vehicle batteries and planned workforce expansion to 85,000 workers. However, weaknesses include dependence on a single commodity and limited local workforce capability. External threats include global nickel price volatility and competition among industrial zones. Based on the SWOT matrix, IMIP falls within the Growth Strategy quadrant, indicating strong potential for sustainable industrial expansion.

**Keywords:** Nickel Downstreaming, IMIP, SWOT Analysis, Industrial Development, Morowali

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## 1. Introduction

Indonesia has the world's largest nickel reserves, so the government is promoting a downstream mineral processing policy to increase the added value of natural resources and strengthen the national industrial structure (Tambunan, 2019). Downstream processing is part of a strategy to increase global industrial competitiveness by developing regional industrial clusters (Porter, 1990).

The Morowali Industrial Estate (IMIP) in Central Sulawesi is a key implementation of this downstreaming process. IMIP is built on 2,000 hectares of land with an investment of IDR 78 trillion (IMIP Video, 00:00:43–00:00:58). Three smelters using Rotary Kiln Electric Furnace (RKEF) technology are used to increase production efficiency by up to 20% (IMIP Video, 00:02:40–00:02:58). Supporting infrastructure, including a 100,000 DWT port and 42 km of electricity transmission, also accelerates the region's logistics access (IMIP Video, 00:03:00–00:03:31).

The presence of IMIP has boosted the regional economy. Morowali's Gross Regional Domestic Product (GRDP) increased by 60% and contributed IDR 1.7 trillion to state tax revenue between 2010 and 2016 (IMIP Video, 00:02:14–00:03:52). Per capita income increased from USD 8,702 in 2015 and is projected to reach USD 30,000–35,000 by 2022 (IMIP Video, 00:03:52–00:04:15). Furthermore, IMIP employs more than 13,000 workers and is targeted to employ 85,000 more (IMIP Video, 00:04:18–00:04:44).

Social impacts are also felt through the electrification of 12 villages, the construction of an industrial polytechnic, and healthcare services for the surrounding community (IMIP Video, 00:02:58–00:05:54).

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Mineral-based industries have been proven to create economic growth and equity in the region, as explained in regional development theory (Todaro & Smith, 2012).

However, rapid development also requires balanced strategic management to anticipate risks and weaknesses (Rangkuti, 2018). Therefore, this study analyzes IMIP's internal and external factors using a SWOT analysis to formulate a sustainable development strategy.



Figure 1. IMIP Pete  
Source: Beritasatu.com

## 2. Method

This study uses a descriptive-qualitative approach to identify and analyze the development strategy of the Morowali Industrial Estate (IMIP). Primary data sources come from documentary media, including transcripts of official IMIP videos explaining the development of the industrial estate. Secondary data were obtained from literature, scientific journals, and supporting documents related to nickel downstreaming and industrial estate strategies.

Data collection techniques included documentation and a desk study of relevant literature. Data analysis was conducted using the Miles & Huberman (1994) model, which includes data reduction, data presentation, and conclusion drawing. Furthermore, strategic conditions were mapped using a SWOT analysis to identify Strengths, Weaknesses, Opportunities, and Threats, and to develop a TOWS strategy.

## 3. Result and Discussion

The development of the Morowali Industrial Estate (IMIP) has significantly contributed to accelerating the economic transformation of Morowali Regency. The development of downstream nickel processing through a smelter using Rotary Kiln Electric Furnace (RKEF) technology has increased energy efficiency by up to 20%, thus supporting increased industrial productivity (IMIP Video, 00:02:40–00:02:58). The use of this technology makes the Morowali Industrial Estate an example of the success of the national industrialization policy, which emphasizes increasing the added value of domestic minerals.

Economically, IMIP has had a significant impact on improving regional welfare. Data shows that Morowali Regency's Gross Regional Domestic Product (GRDP) increased by 60%, and per capita income reached USD 8,702 in 2015 and is projected to increase to USD 30,000–35,000 by 2022 (IMIP Video, 00:03:52–00:04:15). Furthermore, IMIP contributed IDR 1.7 trillion to the state from tax revenues from 2010 to 2016

(IMIP Video, 00:03:31–00:03:52). This growth illustrates the multiplier effect of downstreaming, in line with the regional economic development theory proposed by Todaro & Smith (2012), which states that industrial investment can accelerate regional growth through employment and economic turnover.

In terms of labor, the Morowali industrial area has employed more than 13,000 workers and is projected to become a center of employment opportunities for 85,000 workers in the future (IMIP Video, 00:04:18–00:04:44). To optimize the capacity of local human resources, the government and industry players are establishing vocational polytechnics that produce technopreneurs in the fields of mechanical maintenance engineering, electrical engineering, and mineral chemical engineering (IMIP Video, 00:05:18–00:05:54). This step represents a concrete implementation of the integration of industrialization and innovation based on superior human resources, as suggested by Porter (1990) in his concept of competitive advantage based on industrial clusters.

In addition to economic benefits, IMIP also provides social impact through the electrification of 12 villages and the construction of health facilities in the form of polyclinics for the surrounding community (IMIP Video, 00:02:58–00:05:54). This demonstrates the industry's emotional connection and commitment to improving the welfare of local communities as part of its corporate social responsibility. To understand IMIP's strategic readiness to face the global dynamics of the metals industry, a SWOT analysis was conducted, the results of which are presented in Table 1 below.

**Table 1.** SWOT Analysis of Morowali Industrial Estate (IMIP)

<b>Strengths (S)</b>	<b>Weaknesses (W)</b>
IDR 78 trillion investment (Video 00:00:43–00:00:58)	Dependence on a single commodity (nickel)
RKEF technology with 20% energy efficiency (Video 00:02:40–00:02:58)	Local human resources need to improve their competencies
100,000 DWT port, 42 km of electricity (Video 00:02:58–00:03:31)	Many workers are brought in from abroad
GRDP increases by 60% (Video 00:02:14–00:02:40)	Potential social disparities
Labor absorption of >13,000 people (Video 00:04:18–00:04:44)	Dependence on foreign investors
Polytechnics & healthcare (Video 00:05:18–00:05:54)	Risk of high infrastructure maintenance costs
<b>Opportunities (O)</b>	<b>Threats (T)</b>
Global demand for EV batteries increases	Fluctuations in global nickel prices
Target of 85,000 workers (Video 00:04:18–00:04:44)	Competition between industrial areas
Derivative industries: batteries, stainless steel	Risk of changes in industry regulations
Tax revenue of Rp 1.7 trillion (Video 00:03:31–00:03:52)	Issues of potential socio-environmental conflicts

Source: Adapted from IMIP Video Transcript (2024)

The results in Table 1 indicate that strengths and opportunities dominate IMIP's strategic position. Support for modern infrastructure and economic growth are significant assets for developing an international-scale downstream nickel industry. However, dependence on a single commodity and the suboptimal quality of local human resources are challenges that must be addressed to ensure balanced and inclusive growth. External threats, such as nickel price fluctuations, must be mitigated through a diversification strategy. Overall, IMIP's SWOT analysis indicates that the region is in Quadrant I: Growth Strategy, a strategy that emphasizes aggressive growth and sustainable expansion.

**Table 2.** IMIP TOWS Alternatives Strategy Matrix

SO (Maxi-Maxi) Strategy	ST (Maxi-Mini) Strategy
Expansion of the battery and stainless-steel industries based on resource and infrastructure advantages	Energy efficiency and policy stabilization to address commodity price volatility
Optimization of smelter capacity and export logistics	Strengthening IMIP's position in the global supply chain
WO (Mini-Maxi) Strategy	WT (Mini-Mini) Strategy
Strengthening vocational education and technology transfer	Diversifying non-nickel industries to mitigate single-commodity risks
Industry-government collaboration in human resource development	More measurable social and environmental protection

Based on the TOWS Matrix, the development of the Morowali Industrial Estate (IMIP) is directed towards a Growth Strategy, an aggressive growth strategy that leverages the dominant strengths and opportunities. The SO, ST, WO, and WT strategies each focus on the following:

#### SO Strategy (Strength + Opportunity)

This strategy optimizes IMIP's existing capital strengths to capture global market opportunities in the nickel downstream industry. RKEF's technological innovation, the presence of a large industrial port, and the high demand for EV batteries are the key combination to drive:

1. Expansion of nickel-based industrial production capacity
2. Strengthening the stainless steel and battery export logistics supply chain
3. Increasing regional revenue and further investment

#### ST Strategy (Strength + Threat)

This strategy focuses on leveraging robust infrastructure and industrial advantages to mitigate the impact of external threats, such as nickel price volatility and global competition. Anticipation is carried out through:

1. Energy efficiency and downstream product diversification
2. Mutually beneficial international cooperation agreements
3. Strengthening industrial sector policies to ensure resilience to global price fluctuations

#### WO (Weakness + Opportunity) Strategy

This strategy addresses internal weaknesses by capitalizing on external opportunities. The main focus is improving the quality of local human resources and equitable distribution of industrial benefits through:

1. Development of vocational education and industry-based training
2. Technology transfer from foreign workers to the local workforce
3. Industry-academic partnerships for sustainable innovation

#### WT (Weakness + Threat) Strategy

This defensive strategy is used to mitigate the risk of weaknesses that could be exacerbated by threats. IMIP's strategic actions include:

1. Diversification into non-nickel industries to avoid the impact of commodity fluctuations
2. Measurable and documented socio-environmental governance
3. Strengthening labor regulations and social protection for surrounding communities

### Discussion

The analysis shows that the development of the Morowali Industrial Park (Indonesia Morowali Industrial Park/IMIP) plays a significant role in driving the economic transformation of Morowali Regency through nickel mineral downstreaming policies. The implementation of Rotary Kiln Electric Furnace (RKEF) smelter SWOT Analysis and Development Alternatives Strategy of the Morowali Industrial Estate (IMIP) in Supporting Nickel Downstreaming and Regional Economic Growth. Zakaria Trismoyo et.al

technology, which can increase energy efficiency by up to 20%, demonstrates that strengthening the technological base is a key factor in increasing industrial productivity. This finding aligns with the direction of the national industrialization policy, which emphasizes increasing the added value of domestic minerals as a strategy to reduce dependence on raw material exports.

From a regional economic perspective, the 60% increase in Morowali Regency's GRDP and the surge in per capita income demonstrate the substantial economic impact of IMIP. Tax contributions of Rp 1.7 trillion also demonstrate that this industrial park not only drives local economic growth but also strengthens the country's fiscal capacity. This confirms the theory of Todaro and Smith (2012), which states that large-scale industrial investment can create a multiplier effect through employment absorption, increased community income, and a more dynamic regional economic cycle.

In terms of employment, IMIP serves as a driver of job creation, absorbing more than 13,000 workers and potentially increasing to 85,000 in the future. The establishment of a vocational polytechnic oriented to industry needs is a strategic step in building a competitive advantage based on human resources. This strategy aligns with Porter's (1990) concept of competitive advantage, which emphasizes the importance of industrial clusters, innovation, and human resource development for long-term competitiveness. However, the continued dependence on labor from outside the region indicates that the capacity and readiness of local human resources are not yet fully optimized, necessitating continuous strengthening through training and technology transfer.

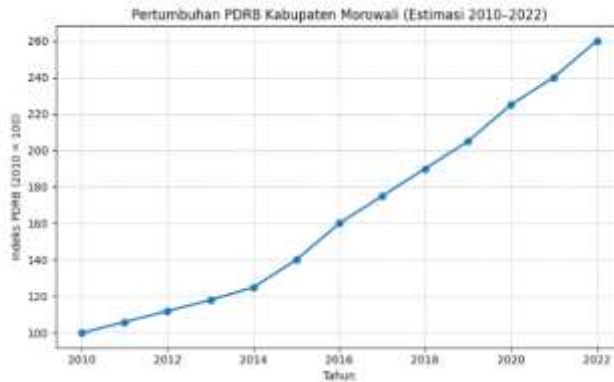
Beyond its economic impact, research also indicates IMIP's social contribution through the development of basic infrastructure such as village electrification and healthcare facilities. These efforts reflect corporate social responsibility practices that have the potential to strengthen the relationship between industry and local communities. However, potential social disparities and environmental issues remain challenges that must be addressed to prevent long-term negative impacts in industrial development. Based on a SWOT analysis, IMIP occupies a strategic position dominated by strengths and opportunities, placing it overall in Quadrant I (Growth Strategy). Key strengths include substantial investment, modern infrastructure, efficient technology, and global market support particularly the demand for electric vehicle batteries providing the primary capital to drive the expansion of the downstream nickel industry. However, dependence on a single commodity and foreign investors, as well as the risk of fluctuations in global nickel prices, require a well-thought-out mitigation strategy to ensure sustainable and inclusive growth.

Strategy formulation using the TOWS Matrix clarifies IMIP's development policy direction. The SO strategy emphasizes the aggressive expansion of downstream industries such as batteries and stainless steel by leveraging resource and infrastructure advantages. The ST strategy focuses on strengthening energy efficiency, policy stabilization, and strengthening IMIP's position within the global supply chain to address price volatility and international competition. The WO strategy highlights the importance of improving the quality of local human resources through vocational education, technology transfer, and industry-academic collaboration. Meanwhile, the WT strategy serves as a defensive measure through diversification of non-nickel industries and strengthening social and environmental governance.

Overall, this discussion demonstrates that IMIP is a concrete example of the successful implementation of the national downstream and industrialization strategy. However, the sustainability of the growth of this industrial area is highly dependent on the ability of managers and the government to overcome internal weaknesses, manage external risks, and ensure that the economic benefits generated can be felt evenly by the local community.

#### 4. Conclusion

This study concludes that the development of the Morowali Industrial Estate (IMIP) plays a strategic role in supporting the success of Indonesia's mineral down streaming program. Based on a SWOT analysis, IMIP boasts strengths in modern infrastructure, substantial investment support, and significant contributions to increasing GRDP and employment. Global opportunities related to nickel demand for electric vehicle batteries also offer significant potential for industrial growth in the region. The increase in Morowali Regency's GRDP as a result of IMIP's presence can be seen in Figure 2 below.



**Figure 2.** Morowali Regency's GRDP Growth (Estimate 2010–2022)

Source: Adapted from BPS (2024) and IMIP Video (2024).

However, dependence on a single commodity and the suboptimal quality of local human resources are challenges that must be addressed. Externally, fluctuations in global nickel prices and competition between other industrial areas can impact the stability of industrial development achievements. The growth of nickel downstream industries in the IMIP area also has socio-economic impacts by increasing employment, both local and national. This development can be seen in Figure 3 below.



**Figure 3.** IMIP Labor Absorption (Estimates and Projections 2016–2030)

Source: Adapted from BPS (2024) and IMIP Video (2024).

The graph shows that IMIP's labor absorption has increased rapidly since 2016, following the operation of the integrated nickel smelter facility. By 2023, IMIP had employed approximately 13,000 workers, mostly from the metals industry. Future projections indicate a significant increase to 85,000 workers by 2030, in line with plans for the smelter expansion and the electric battery derivative industry. This trend reflects IMIP's role as a center for future industrial growth based on mineral technology and a driving force for job creation in eastern Indonesia.

Based on the TOWS strategy matrix, IMIP's position is in Quadrant I (Growth Strategy) so that the direction of regional development policies needs to be expansive and sustainable through increasing downstream industrial production capacity, strengthening local workforce skills, and diversifying industrial sectors to reduce the risk of global economic uncertainty.



**Figure 4.** IMIP's Strategic Development Position Based on a SWOT–TOWS Analysis

Source: Adapted from Rangkuti (2018), Porter (1990), and IMIP Video (2024).

Figure 4 shows that IMIP is in Quadrant I, indicating a strong internal strength and strong external opportunities. This indicates that the most appropriate development strategy is an aggressive growth strategy through downstream industrial expansion, increased productivity, and strengthened global competitiveness. By leveraging strong resources and infrastructure, along with the growing market opportunity for electric vehicle batteries, IMIP has the potential to become a national strategic metals industry hub, contributing significantly to regional and national economic growth.

Therefore, IMIP is a concrete example of successful downstream-based industrialization that not only enhances national industrial competitiveness but also significantly strengthens regional economic growth. To ensure the sustainability of its benefits, an integrated development strategy is required between the government, industry players, and local communities.

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