

Indonesia's tuna industry: Policies and market barriers

Sriwiyata Ismail Zainuddin^{1*}, Andi Ismira², A. Mappatunru³, Ester Lita Soreang⁴, and Gabriel Edo⁵

¹Universitas Sulawesi Barat, Majene, Indonesia, email: sriwiyataismail@unsulbar.ac.id

²Universitas Sulawesi Barat, Majene, Indonesia, email: andi.ismira@unsulbar.ac.id

³Universitas Sulawesi Barat, Majene, Indonesia, email: andimappatunru@unsulbar.ac.id

⁴Universitas Sulawesi Barat, Majene, Indonesia, email: esterlita33@gmail.com

⁵Universitas Sulawesi Barat, Majene, Indonesia, email: gabrieledo004@gmail.com

*Corresponding author

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ABSTRACT

This paper aims to explore the multifaceted dynamics of Indonesia's tuna export sector, focusing on key internal and external factors influencing its growth. Internally, the study examines the policies from the Ministry of Maritime Affairs and Fisheries aimed at reducing Illegal, Unreported, and Unregulated fishing. While these initiatives offer notable ecological benefits, they have also led to economic challenges, particularly in reducing the export potential and revenue from both fresh and processed tuna products. Externally, the paper assesses the significant barriers posed by global trade regulations, including both tariff and non-tariff measures, which impede Indonesia's ability to fully leverage its tuna export potential. These complex international trade constraints hinder Indonesia's competitiveness, particularly in markets like the EU and the U.S., where stringent non-tariff barriers, such as quality standards and traceability requirements, place additional pressure on the industry. Using a qualitative research approach and comprehensive literature review, this study advocates for a balanced and inclusive approach to fisheries management. This approach should prioritize both ecological sustainability and economic development, aiming to improve Indonesia's processing capabilities and better position it in the global tuna value chain.

Keywords:

sustainable; tuna; Indonesia, upgrading; export

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INTRODUCTION

Indonesia fisheries industry is playing a significant role in the tuna production global value chain. Indonesia is the world's largest tuna producer, contributing approximately 19.1% of the global tuna supply (Ministry of Marine Affairs and Fisheries, 2024). It is because

Indonesia tuna products supply the top three tuna consumer countries like the European Union, United States of America, and Japan. The changes in international management norms and market requirements for tuna commodities inevitably necessitate adjustments to ensure that tuna is caught and produced in alignment with sustainability values (Liu et al., 2024). The narrative of sustainable tuna fisheries has been shaped and enacted by various state actors at different levels (Andriamahefazafy et al., 2020), including the Indonesian government. Therefore, the Indonesian government is keen to promote the sustainability of its tuna production to maximize exports and Indonesian Tuna competitiveness (Karningsih et al., 2018), not only in the fresh or chilled tuna category but also in the processed and preserved tuna market that exposed in the Ministry of Maritime Affairs and Fisheries (MMAF) policies and strategies. The government attempt to achieve ideal the sovereignty and sustainability fisheries commodity in Indonesia through several national policies not simultaneously achieved with the increasing export volume and value for fresh and processed tuna (tuna-skipjack-longtail). The assumption is proven by statistical evidence that shows in the statistics from 2012 to 2021 there is a decline in export volume between 2014-2016 export volumes. In this essay, the dynamics of domestic politics in that era are considered as the internal factor for Indonesia tuna export development and a significant step toward transforming sustainable tuna governance in Indonesia. Arguing the internal dimension is insufficient in understanding Indonesia tuna export development. Therefore, this essay deliberates the external factor by understanding the global tuna production structure.

Indonesia's commitment to sustainable fisheries is crucial, not only for protecting its natural resources but also for maintaining its position in the global market. International regulations, such as the Port State Measures Agreement (PSMA) and the European Union's stringent import standards, require exporting countries to comply with strict sustainability and traceability measures (European Commission, 2020; Musto & Papastavridis, 2021). Failure to meet these requirements can result in trade restrictions, which would negatively impact Indonesia's tuna exports (Khan et al., 2024; Sahara et al., 2022). As the world's second-largest fish producer, Indonesia has a vested interest in adhering to these global standards (Sabatini & Josupeit, 2014). However, balancing sustainability efforts with economic goals presents significant challenges, as seen in the decline of tuna export volumes during periods of policy implementation (Pramod et al., 2014).

In addition to regulatory pressures, market demand in key importing countries also shapes Indonesia's tuna export trajectory. The European Union, the U.S., and Japan—the top three consumers of tuna—have their own preferences for tuna types and quality, which can affect Indonesia's market share (Hamilton et al., 2011). For example, increasing demand for sustainably sourced and certified tuna in Western markets means that Indonesia must invest in fisheries certification programs to remain competitive (European Commission, 2020). Furthermore, Indonesia faces competition from other major tuna-exporting countries like Thailand and the Philippines, which have established trade relationships and competitive pricing strategies (Hamilton et al., 2011). As global consumer preferences shift and sustainability becomes a central issue, Indonesia's tuna industry must adapt to maintain its competitiveness in the global value chain.

This essay aims to comprehensively examine the development of Indonesia's tuna export sector by analysing internal policies and external dynamics within the global tuna market and value chain. The first section delves into the political and economic challenges surrounding the MMAF policies, which, during their initial implementation, did not significantly contribute to the growth of the fisheries industry. The second section explores the opportunities and challenges Indonesia faces in maximizing its export potential within

the global value chain, emphasizing its capacity for value chain upgrading to achieve greater economic benefits.

METHOD

In this study, the employed method is qualitative research, which is particularly suited for exploring the intricate dimensions of the tuna export industry in Indonesia. The primary objective of qualitative research is to provide detailed and comprehensive explanations of the research topic, allowing for an in-depth understanding of the socio-economic and environmental factors that shape this industry (Bakry, 2016). Qualitative research focuses on the meanings, experiences, and interpretations derived from existing literature offering a comprehensive understanding of the complexities and nuances of the industry's dynamics and the various stakeholders' perspectives, which are critical for interpreting the broader implications of trade policies and practices (Mason, 2002).

The data collection technique utilized in this study is a desk study or literature review, which involves examining relevant secondary sources integral to the research focus. This process includes analyzing a range of texts such as scholarly journals, books, government reports, and industry publications. By synthesizing findings from diverse sources, the literature review not only situates the current research within the existing body of knowledge but also identifies gaps and emerging themes that warrant further exploration (Boote & Beile, 2005). This comprehensive examination of secondary data is essential for developing a nuanced understanding of Indonesia's tuna export industry, as it allows for the integration of diverse viewpoints and information regarding trade dynamics, regulatory frameworks, and market conditions.

RESULT AND DISCUSSION

Illegal, Unreported, and Unregulated (IUU) fishing in Indonesia's Fisheries Management Zone (Wilayah Pengelolaan Perikanan Negara Republik Indonesia, WPP-NRI) poses a serious threat to national sovereignty, the sustainability of marine and fishery resources, and the well-being of Indonesian communities. A 2014 study by the University of British Columbia revealed that, in 2011, 20-35% of Indonesia's tuna exports to the United States, amounting to 3,889–6,805 tons, originated from illegal and unreported fishing activities (Pramod et al., 2014). The study also found that 25% of Vietnam's tuna catch comes from illegal fishing within Indonesia's Exclusive Economic Zone (EEZ) (Pramod et al., 2014). While The Illegal, Unreported and Unregulated Fishing Risk Index released in 2023 released Indonesia ranks sixth in the category of the ten worst-performing countries (Poseidon, 2023). The significant level of IUU fishing in Indonesia's waters has become a major concern for the government in Indonesia, national government under President Joko Widodo's first period account this issue through Nawacita development agenda. The President's directives are reflected in the vision and mission of the MMAF, emphasizing sovereignty with a mission to eradicate IUU Fishing, sustainability with a mission to achieve independence in the sustainable management of marine and fisheries resources, and prosperity with a mission to promote empowerment, competitiveness, independence, and business sustainability (Muchlist, 2016). In response, the MMAF, under the leadership of Minister Susi Pudjiastuti, introduced policies aimed at combating IUU fishing. These include Ministerial Regulation No. 56/2014, which imposed a moratorium on foreign vessel operations and restricted fishing activities by vessels over 30 Gross Tons (GT). This was further reinforced by Ministerial Regulation No. 57/2014, which prohibited transshipment at sea, a common practice linked to IUU fishing (Cabanelas et al., 2020).

The introduction of these ministerial regulations has been widely applauded by

environmentalists and fisheries experts as a key advancement for Indonesia's fisheries sector. Greenpeace campaigner Arifsyah M Nasution highlights three major improvements: reinforcing the legal framework for fisheries management, improving fish resources and marine ecosystems, and enhancing cooperation among stakeholders (Haris, 2024). Adrianto (2016) agrees, emphasizing that the Ministry's actions against IUU fishing have ushered in a new era, promoting legal compliance, transparency, and accountability, which are foundational for a sustainable fisheries industry (Hanifan, 2017). These measures also aim to ensure that local fishermen benefit both ecologically and economically from sustainable practices. This aligns with Roheim (2005) assertion that fisheries management is a "necessary condition" and the most important factor in trade liberalization outcomes. Without proper management, liberalization risks accelerating stock depletion. However, despite the good intentions, the policies have encountered challenges, particularly in the form of political opposition and unintended economic consequences.

Since their enactment in October 2014, the MMAF has sunk 363 illegal foreign vessels by December 2017 as part of its enforcement strategy (Ristanti, 2022). However, this aggressive approach has sparked significant debate. While President Joko Widodo has expressed support for Minister Pudjiastuti's firm stance, other high-ranking officials, including Vice President Jusuf Kalla and Coordinating Minister for Maritime Affairs Luhut Binsar Pandjaitan, have criticized the policies. They argue that the diplomatic and economic costs of these measures, particularly the strain on relationships with neighboring countries and the potential reduction in export revenues, have not been adequately considered (Ihsanuddin, 2018). This divide within the government underscores the complexity of addressing IUU fishing in a way that balances environmental protection with broader political and economic interests.

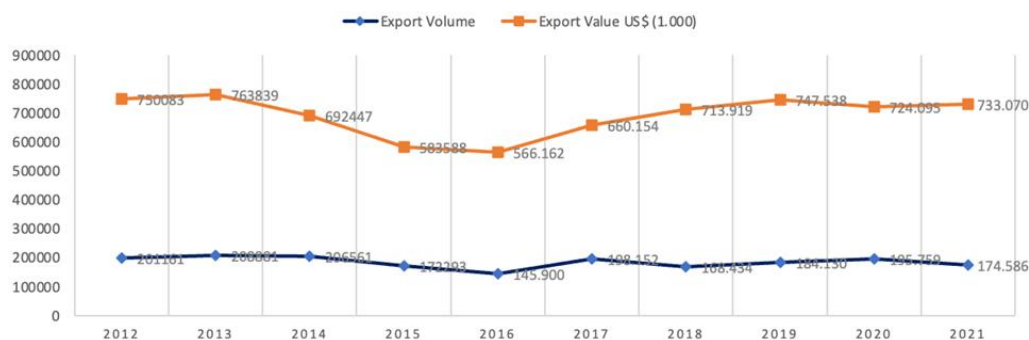


Figure 1. Graph export volume and value of Indonesia tuna 2012-2021
(Source; kkp.go.id / MMAF 2022)

Statistical data of export Volume and Value of Indonesia Tuna 2012-2021 show that in the period from 2014 to 2016, when the moratorium on foreign fishing vessels and the prohibition of transshipment were implemented, there is a decline both in the volume and value of Tuna's export. This decline is primarily due to the decrease in fresh/chilled tuna exports, from 77,465 tons in 2015 to 56,853 tons in 2016. This decline suggests that the MMAF policies were insufficient in fostering a competitive fisheries industry. These policies can be viewed as a double-edged sword: while they successfully addressed ecological concerns, they simultaneously had a detrimental impact on the economic sector.

According to the Indonesia Tuna Association (ASTUIN), the implementation of strict regulations on fishing vessels contributed to a loss of potential tuna exports worth Rp 82.7 billion (US\$6.22 million) from major markets like Japan and the United States during the 2015-2016 period (Hoshiko, 2017). The MMAF policies, particularly the moratorium on foreign vessels and the restriction on vessels over 30 Gross Tons (GT), significantly affected

the volume and value of tuna exports. The tuna industry relies heavily on large vessels to maintain high production volumes. As ASTUIN reported, 15 vessels with a capacity of 400 GT, registered with the Japan-based Organization for the Promotion of Responsible Tuna Fisheries (OPRT), ceased operations due to the enforcement of government regulations (Hoshiko, 2017). The regulations primarily benefited local fishermen, but they lacked the technology and capacity to compensate for the halted large-scale operations. This regulatory impact also extended to local governments, as Rahmayanti et al., (2017) found that the moratorium positively supported small-scale fishermen but negatively affected large-scale enterprises operating vessels over 30 GT.

A similar situation occurred in Vietnam, where yellowfin tuna production declined after the government introduced the Fishery Improvement Project (FIP), which focused on ecological sustainability. Nguyen & Jolly (2018) highlighted the need to evaluate strategies for balancing exports with environmental sustainability, concluding that balancing both often results in trade-offs. Both the Indonesian and Vietnamese cases demonstrate that pursuing ecological sustainability and export growth can conflict, leading to outcomes where one goal is achieved at the expense of the other. This case is further supported by the study conducted by Hosch & Macfadyen (2022), which found an inverse relationship between efforts to combat IUU fishing and national income levels. In other words, as a country's national income rises in Asia, efforts to address IUU fishing weaken.

In response to this challenge, Adrianto (2016) introduced the concept of "Inclusive Fisheries," which emphasizes the need for a holistic approach that integrates both ecological and economic concerns. Fisheries management should not involve trading off one objective for the other. Instead, a co-management approach, where responsibilities are equally shared between the government and fisheries enterprises, is essential to achieve sustainability. Based on the preceding discussion, the policies of the MMAF illustrate a significant internal factor impacting the evolution of Indonesia's tuna export industry. Enhanced implementation and inclusive management of these policies could yield positive contributions to both the volume and value of tuna exports, while also creating an environment conducive for Indonesian capital owners to invest in the mid-scale segment of the industry and to support small-scale initiatives led by the government. However, Scarpello (2020) notes that there were no significant changes in the large-scale industry's willingness to invest in supporting the small-scale segment at least until the end of 2018.

Government intervention can indeed play a significant role in moderating the development of various sectors, including economic and technological growth. When well-designed, government policies can enhance progress, foster innovation, and stabilize markets. However, the impact of government intervention can also be detrimental if mismanaged, leading to inefficiencies, resource misallocation, or resistance from stakeholders (Sadeh et al., 2020). In this context, the MMAF's policies under the leadership of Susi Pudjiastuti have been labeled as obstacles to growth. Furthermore, the policy of sinking vessels and banning ex-foreign boats faced considerable resistance from various fisheries stakeholders, including affected companies both in Indonesia and abroad, lawmakers, senior politicians, academics, civil society organizations, and fisheries associations. As noted by Scarpello (2020), these actors formed a coalition that propagated an anti-development narrative against Susi's policies, arguing that they adversely affected Indonesia's fishing industry, local fishermen, and the nation's export potential. This opposition was fundamentally based on concerns regarding the negative economic ramifications for the fisheries sector.

Opportunities and Barriers in Indonesia's Tuna Processing Industry

Indonesia, as the world's largest tuna producer, holds significant potential to enhance its export value by expanding its capacity as a canned fish producer. In 2024, the Ministry of Marine Affairs and Fisheries (KKP) highlighted the importance of stakeholder collaboration to boost the competitiveness of canned fish products, particularly those made from tuna, skipjack, mackerel, and sardines. This collaboration involves government agencies, the Food and Drug Monitoring Agency (BPOM), the Ministry of Industry, and the Investment Coordinating Board (BKPM), aiming to strengthen the domestic supply chain, increase local content, and improve market access for Indonesia's canned fish products.

Table1: Top 10 exporting and importing countries of tuna products 2018-2020

Exporter					Importer				
No.	Country	QUANTITY (Ton)			No.	Country	QUANTITY (Ton)		
		2018	2019	2020			2018	2019	2020
WORLD		1,639,879	1,635,129	1,790,803	WORLD		1,627,812	1,657,691	1,783,999
1	Thailand	514,272	532,924	582,668	1	United States of America	208,737	212,934	260,464
2	Ecuador	222,299	239,017	245,27	2	Italy	128,93	118,115	126,422
3	Spain	100,659	94,459	104,916	3	Spain	128,278	154,657	136,955
4	China	105,794	123,437	136,253	4	France	99,893	95,924	99,37
5	Philippines	156,881	94,508	103,022	5	United Kingdom	104,899	103,661	99,132
6	Indonesia	82,234	95,572	82,059	6	Germany	92,174	79,578	105,333
7	Netherlands	51,107	48,696	56,991	7	Netherlands	48,038	65,501	91,402
8	Mauritius	53,868	53,267	54,075	8	Japan	65,203	65,091	67,217
9	Vietnam	43,673	48,167	60,846	9	Saudi Arabia	42,981	52,105	64,623
10	Italy	24,753	26,03	32,58	10	Australia	47,117	44,146	42,393
Top 10 Country		1,355,540	1,356,077	1,458,680	Top 10 Country		966,25	991,712	1,093,311
Others		284,339	279,052	332,123	Others		661,562	665,979	690,688

(Source: TradeMap)

Indonesia's position as a major player in the global tuna supply chain offers a strong foundation for shifting toward higher-value products, specifically canned tuna. Despite Indonesia ranking as the 6th largest exporter of canned fish globally, with a market share of only 4.5% (Table 1), the country has significant potential to expand its market presence by improving its processing capabilities. Strengthening its position in key markets such as the European Union and the United States—both of which account for over 50% of the global canned fish market—will be critical to increasing export volumes. Canned tuna is a key product category for retailers in both regions due to its high sales turnover and the tendency of customers to compare prices across outlets, making it a highly competitive segment (Havice & Campling, 2017). As such, the government's efforts to reduce tariff barriers, particularly with the EU and the US, are vital in enhancing market access for Indonesian canned tuna.

The concept of "upgrading" within the Global Value Chain (GVC) framework is essential for understanding how Indonesia can enhance its tuna sector. Upgrading refers to the process through which countries or firms transition to higher-value activities within the global value chain. For Indonesia, this means moving from raw tuna exports to more processed products, such as canned tuna. This form of "product upgrading" can significantly increase the value of exports (Gereffi & Fernandez-Stark, 2016). Historical examples, such as the successful "upgrading" of small island states in the African, Caribbean, and Pacific (ACP) Group between 1976 and 2008 under the EU's preferential trade regime, illustrate how targeted efforts can help nations transition to higher-value manufacturing sectors. These island states leveraged opportunities in canned tuna production to achieve more integrated roles within the tuna commodity chain. However, their successes were mediated by dynamics of inclusion and exclusion, emphasizing the need for consistent investment, supportive policies, and alignment with global standards (Havice & Campling, 2013). For Indonesia, addressing similar challenges requires investing in processing technologies and meeting international certifications, such as HACCP (Hazard Analysis Critical Control Point),

to ensure compliance with safety and quality standards required by major importing countries.

Despite its strong potential, Indonesia faces significant barriers in its tuna export strategy, particularly when compared to Thailand, which has emerged as a leader in canned tuna production and export capacity. Thailand imports large quantities of raw tuna, including from Indonesia, and has optimized its canning industry to compensate for limited domestic fishing capacity (Shobaruddin, 2018). In contrast, Indonesia exports 89% of its tuna as frozen products, with only 9% classified as ready-to-consume items (Bassford, 2017). This limited production of canned tuna is largely due to trade barriers—both tariff and non-tariff—and restrictive domestic policies, such as limits on raw material imports for local tuna canneries. Currently, only 20% of raw materials for domestic canning are allowed to be imported, leading to inefficiencies and underutilization of production capacity, with some facilities operating at only 50% capacity (Shobaruddin, 2018). These constraints highlight the systemic challenges Indonesia must address to achieve meaningful upgrading in its tuna sector.

The ASEAN Free Trade Area (AFTA) agreement has played a significant role in facilitating trade between Indonesia and Thailand by reducing certain tariffs on imports from Indonesia. This trade structure allows Thailand to import substantial volumes of frozen round tuna and cooked loins from Indonesia, which are essential raw materials for its canning industry. On the other hand, Indonesia's high export volumes to Japan and the United States are driven by strong demand in these markets. However, both still impose tariffs on tuna products. Japan, for instance, applies a relatively low 3.5% tariff on chilled and frozen tuna (Sunoko & Huang, 2014), making it an attractive market for Indonesia, especially since Japan accounts for 14% of global tuna consumption. Recent efforts by Indonesia to remove tariffs on specific tuna products under the Indonesia-Japan Economic Partnership Agreement (IJEPA) further underscore the strategic importance of tariff reductions to enhance market access (Ministry of Trade, 2023).

Thailand's success in becoming the leading global supplier of canned tuna, overtaking the United States in 2001, is linked to the country's ability to streamline its canning industry and facilitate raw tuna imports, while the U.S. has maintained high tariffs (35% on processed tuna products and 6-12.5% on frozen tuna loins) to protect its domestic processing industry (Campling, 2016). Despite these tariffs, the U.S. has remained a significant importer of Indonesian fresh tuna and loins due to its efficient "logic of loining" production method, which imports loins instead of whole fish to minimize labor costs (Campling, 2016). While tariffs on loins are lower than those on whole fish, Indonesia still faces challenges in expanding its market share in the U.S. due to the relatively higher tariffs imposed by the European Union (24% on loins).

The global supply chain for canned tuna, along with the various trade policies, highlights Indonesia's geopolitical position as a crucial supplier. Despite its potential, Indonesia has not fully capitalized on the value-added opportunities in tuna management. This situation reflects the ongoing challenges Indonesia faces in enhancing its role in the tuna industry, particularly when compared to neighboring countries like Thailand. To gain a competitive edge, Indonesia must improve its domestic policies, invest in processing technologies, and enhance trade negotiations to increase the value it captures from its tuna exports. They argue that trade policies within the fisheries sector, including both exporting and importing nations, are evaluated based on tariff and non-tariff measures, fisheries subsidies, and trade agreements (Sumaila et al., 2016).

As tariffs and tariff preferences decline in major markets, non-tariff barriers such as standardization and certification are becoming increasingly significant in regulating market

access for tuna products. Mwikya (2006, cf. Campling, 2016) highlights that the proliferation of various standards "increases business costs, which consequently drives companies to capture larger volumes (economies of scale), ultimately leading to a disregard for stock conservation efforts." The additional costs associated with meeting these standards often present substantial challenges for small enterprises and economically constrained nations, which may struggle to bear the investment required to comply with such regulations.

According to Astagia et al. (2022), non-tariff policies in fish trade can be categorized into four areas: quality and safety, sustainability, third-party certification, and traceability. These standards reflect growing consumer awareness about the origins and sustainability of the products they consume. However, as Fuah et al. (2023) points out, these standards present governance and business challenges, particularly in Indonesia, where the implementation of traceability systems remains limited. Despite the introduction of the catch certificate (SHTI) since 2012, which verifies that exported fish are free from IUU fishing practices, the effectiveness of traceability systems in Indonesia is still low. The certificate ensures that fishermen comply with sustainable practices, use environmentally friendly fishing methods, and certify their products with authorities like BKPIM in Indonesia. These challenges in meeting international standards contribute to the underutilization of key markets like the EU and the U.S., as indicated by Fuah et al. (2023).

The EU, a dominant player in global fish consumption, imported 667,220 MT of canned tuna in 2015. However, Indonesia has not capitalized on this opportunity, despite being included in the Generalized System of Preferences (GSP) countries list by the European Commission. The EU imposes a 21.5% tariff on canned tuna and an 18% tariff on frozen whole tuna (Campling, 2016; Sunoko & Huang, 2014). In 2013, Indonesia's tuna loin exports to the EU totaled only 4,300 tons, accounting for just 3.8% of total supplies (Sabatini & Josupeit, 2014). Furthermore, the EU enforces stringent non-tariff barriers, including the anti-IUU fishing legislation (EC Regulation No. 1005/2008), which requires catch certificates for all imported wild-caught seafood and imposes fines of up to 70,000 Euros for violations, along with other Technical Barriers to Trade (TBT) (Bassford, 2017). In response, Indonesia's Ministry of Marine Affairs and Fisheries, particularly under President Joko Widodo's administration, is actively working to combat IUU fishing practices, aiming to meet international standards and improve access to these critical markets. These non-tariff barriers reflect the complex challenges Indonesia faces in upgrading its tuna export strategies. While tariff reductions are crucial for market access, aligning with global standards on sustainability, traceability, and IUU fishing will be key to unlocking Indonesia's full potential in international tuna markets.

CONCLUSION

In conclusion, Indonesia's domestic policies targeting IUU fishing reflect the complexity of balancing environmental sustainability with economic growth in the tuna industry. Initiatives led by the MMAF including the moratorium on foreign fishing vessels and restrictions on large boats, have succeeded in addressing legal and ecological priorities. However, these measures have also imposed significant challenges on the fishing industry, notably by reducing production capacity and export potential, particularly for large-scale operations.

While commendable progress has been made in strengthening legal frameworks and promoting ecological integrity, these policies have inadvertently hindered Indonesia's tuna processing industry. The resultant decline in export volumes underscores the need for a more balanced approach that integrates sustainability with economic viability. A policy

reevaluation is critical, especially as Indonesia seeks to strengthen its position in global canned tuna production.

Indonesia's tuna processing industry holds significant potential for growth, driven by its position as the world's largest tuna producer. However, the country faces several challenges that limit its ability to fully capitalize on this opportunity, particularly in the canned tuna market. While Indonesia ranks among the top exporters of tuna, its market share in the canned tuna segment remains relatively small compared to competitors like Thailand. This is primarily due to constraints in processing capacity, trade barriers, and restrictive domestic policies, such as limits on raw material imports for local canneries.

The country's efforts to upgrade within the Global Value Chain (GVC) framework, transitioning from raw tuna exports to higher-value processed products like canned tuna, are crucial. However, Indonesia needs to invest in processing technologies, meet international quality standards, and align its production with global sustainability and traceability certifications. This is essential to expanding its access to key markets such as the European Union and the United States, both of which are vital to the global canned tuna trade.

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