

## STRENGTHENING BLUE ECONOMY MANAGEMENT BASED ON *PENTHA HELIX* COLLABORATION IN ORDER TO REALIZE THE WELFARE OF THE PEOPLE IN INDONESIA

By

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### ABSTRACT

The potential of Indonesia's marine wealth is very large but the utilization is only about 7 percent of the Gross Domestic Product (GDP) since it was proclaimed as the World Maritime Axis (PMD) in 2014, so it is necessary to strengthen blue economy management efforts based on *pentha helix* collaboration in order to realize people's welfare. With a descriptive qualitative research design and combined with SWOT analysis, the results show that the strengths are: a) The regulation of the marine sector already exists (Law No.32 of 2014 concerning Maritime Affairs along with its derivative regulations); b) Sovereignty over Indonesia's sea territory based on the 1957 Djuanda Declaration; c) Recognition of other countries over Indonesia's sea territory according to the Convention on International Law of the Sea - United Nations (UNCLOS 1982); d) The existence of four basic national consensus namely Pancasila, 1945 Constitution, NKRI and Unity in Diversity; and e) Indonesia is declared as the World maritime Axis. The weaknesses are: a) Maritime technology support is still limited; b) Maritime human resources are still lacking both quantity and quality; c) Sectoral ego is still high; d) Illegal Fishing is rampant and e) Prone to threats from abroad.

The opportunities are very potential, among others: a) Utilization of demographic bonuses as HR Talents; b) Preparation of the Golden Indonesia in 2045 c) to become an Advanced Indonesia; d) *Pentha Helix* partnership cooperation; and e) Utilization of digital-based maritime technology. The challenges include: a) Geographical conditions that are in the cross position of world trade; b) The vastness of Indonesia's sea area has the potential to be a threat. The vastness of Indonesia's sea area is a potential threat; c) Indonesia as a *center of gravity* for other countries; d) The escalation of *the* South China Sea conflict has widened to the Indopacific; and e) The uncertain global geopolitical dynamics.

Therefore, efforts are made to strengthen blue economic management based on *pentha helix* collaboration in order to realize the welfare of the people in Indonesia, among others, through joint forums to discuss various issues to find the best solution so that it is effective, efficient, fast and precise. In this case, the Coordinating Ministry for Maritime Affairs and Investment is the leading sector in managing Indonesia's seas for the benefit of all the people, the nation and the Unitary State of the Republic of Indonesia.

Based on the above conclusions, it is recommended to: a) The central government, in this case the Coordinating Ministry for Maritime Affairs and investment, must really focus on being the *leading sector* in managing the blue economy in Indonesia based on the *pentha helix* which involves elements of government, universities, industry, society and the media.

**Keywords :** Blue Economy, Pentha Helix, Prosperity

## 1. Introduction

Sovereignty over the territory of the Republic of Indonesia must continue to be maintained for the existence and sustainability of the life of the nation in line with the national goals set forth in the Preamble of the 1945 Constitution and the 1957 Djuanda Declaration Declaration which is recognized internationally in UNCLOS 1982. Where, the area of water / sea area changes to be as long as 5 miles from the coastline and became the world's largest *archipelago state*. Indonesia's sea area based on the 1957 Djuanda Declaration which has been recognized internationally in the 1982 Indonesian Convention on the Law of the Sea (UNCLOS) reached 3,257,483 km<sup>2</sup> (not including ZEE). The success of the 1957 Djuanda Declaration which has been recognized in the 1982 International Convention on the Law of the Sea (UNCLOS) and has been ratified by 60 countries in 1994 is a challenge for the management of marine natural resources. Indonesia's sea area plus the EEZ is approximately 7.9 million km<sup>2</sup> or 81% of the country's total area with a total coastline of 81,497 km<sup>2</sup>, the longest coastline in the world. The previous sea area was 2,027,087 square kilometers according to the Territoriale Zee en Maritieme Kringen Ordonantie (TZMKO) 1939. The map of the Republic of Indonesia also still follows the map made by the Dutch colonizers. The potential of Indonesia's marine resources reaches US\$ 1.4 trillion/year (or 7 times the 2021 State Budget (IDR 2,750 trillion = US\$ 196 billion) or 1.2 of the 2020 National GDP as argued by Prof. Rokhmin Dahuri; however, the achievement is only around 7% of the Gross Domestic Product (GDP) after 10 years of Indonesia being proclaimed as the World Maritime Axis (PDM) in 2014. Luat has not been able to be utilized for the greatest prosperity of the people as mandated by Article 33 of the 1945 Constitution.

On the other hand, Indonesia's marine pollution is very alarming which affects the marine ecosystem, so a commitment is needed to manage the sea sustainably so that the sea becomes healthier and more productive based on the blue economy paradigm. Blue economy, which is a new paradigm for sustainable use of marine resources, must be a guide in activities to meet the needs of the current generation and prepare future generations to meet their needs for their welfare. A joint commitment from marine stakeholders is needed to realize a healthy and productive ocean through wise management. A blue economy can improve economic growth and community welfare while maintaining the sustainability of marine

resources and the environment. It covers sectors such as fisheries, renewable energy, coastal tourism, marine transportation and marine science research. The benefits of the blue economy are numerous, including increased job creation, food provision, renewable energy development, vital trade and transportation routes, and tourism growth.

The challenge is enormous, given the current state of maritime technology, dependence on external factors such as climate change, and potential resource conflicts between different interests. Thus, it is necessary to favor the sea so that its great potential can be utilized in such a way as to increase sustainable economic growth that improves the welfare of the people. In this case, the management of the blue economy will be more effective and efficient if it involves various stakeholders in implementing the *pentha helix* collaboration involving the government (*government*), universities (*academica*), industry (*industry*), society (*community*), and the media. Synchronizing the role of each stake holder is important in strengthening the management of the blue economy in order to realize the welfare of the people.

## 2. Theoretical Review

In Law No.32 of 2014 concerning Maritime Affairs, the management of marine resources is carried out through a legal framework to provide legal certainty and benefits for the entire community as an archipelago characterized by the archipelago. Where, Marine Management is the implementation of activities, provision, exploitation, and utilization of Marine Resources and marine conservation so that Marine Space Management is needed from planning, utilization, supervision, and control of marine space. Marine Management for the greatest prosperity of the people through the utilization and exploitation of Marine Resources using the principle of blue economy, including:

a) fisheries; b) energy and mineral resources; c) coastal resources and small islands; and d) non- conventional resources. Law No.1 Year 2014 on the Management of Coastal and Small Islands confirms that the Management of Coastal Areas and Small Islands is a coordinated planning, utilization, supervision, and control of coastal and small island resources carried out by the Government and Regional Governments, between sectors, between land and marine ecosystems, and between science and management to improve people's welfare. Also, in Law No. 32 of 2009 concerning Protection and Management of the Environment Protection and Management, Sustainable development is a conscious and

planned effort that integrates environmental, social, and economic aspects into development strategies to ensure the integrity of the environment as well as the safety, ability, welfare, and quality of life of present and future generations.

Presidential Regulation No. 16/2017 on the Indonesian Ocean Policy (KKI) emphasizes that the preparation of KKI uses 6 (six) basic principles, namely a) Archipelago Concept; b) Sustainable Development; c) Blue Economy; d) Integrated and Transparent Management; e) Participation; and f) Equality and Equity. Then, the Presidential Regulation of the Republic of Indonesia No.34 of 2022 concerning the Indonesian Maritime Policy Action Plan for 2021-2025 emphasizes that the Vision of the World Maritime Axis (PMD) is a geopolitical vision as an affirmation of the manifestation of national goals as well as a momentum in implementing a maritime-based national development strategy. The existence of an economic gap between coastal communities and fishermen and other populations requires strengthening their capacity and capability in a sustainable manner. Accompanied by forestry of blue economy management based on pentha helix collaboration, considering that the contribution of the marine sector is only around 7 (seven) percent of Gross Domestic Product (*The Habibie Center*, 2019), so it must be increased significantly.

Management or management is an activity process that includes *planning (planning)*, *organizing (organizing)*, implementing (*actuating*) and supervising (*controlling*) as an activity process to achieve goals using human and other resources.(George R.Terry). While the Blue Economy is an economic concept put forward by Gunter Pauli in 2010 with his book entitled "Blue Economy-10 Years, 100 Innotions, 100 Billion Jobs" or Blue Economy-10 Years, 100 Innovations, 100 Million Jobs. Where, in managing pro-environmental marine resources to transform the overall economic system towards long-term prosperity. **It is emphasized that** *"the Blue Economy must respect ecosystem integrity, and that the only secure pathway to long-term prosperity is through the development of a circular economy"*. Then, there are (seven) main aspects of the nature of the Blue Economy approach, namely: a) concern for the environment; b) sustainable development: c) missions should be minimal pollution or ideally Zero Waste; d) *multiple cash flow*; e) encourages innovation; f) is closely related to science and technology; and g) community empowerment and *stake holders* participation. According to him, the end of the blue economy is healthy seas and bright blue skies.

According to him, economic practices are still oriented towards the exploitation of natural resources that ignore environmental sustainability. It is explained that the anthropocentric view and focus on the exploitation of resources without consideration of reciprocal relationships to nature called: red economy is the cause of the destruction of the world today. Then, awareness of the importance of the environment has given birth to the concept of green economy, which requires more investment from companies and higher payments from consumers to produce environmentally friendly products, but is sometimes difficult to implement in times of crisis and is considered expensive and exclusive, but cannot guarantee sustainability. He also explained that the blue economy is more environmentally friendly with the aim of transforming the economic system as a whole. The implementation of the blue economy will create future employment opportunities, expand social capital, and move the economy and people's lives in a sustainable direction. The origins of the blue economy go beyond discussing the sustainable use of marine resources. The concept initially highlighted the importance of transitioning to clean, renewable energy sources and creating equitable and sustainable economic alternatives overall.

The following is an illustration of the comparison between red, green and blue economics proposed by Gunter Pauli:



Source : [www.theblueeconomy.org](http://www.theblueeconomy.org)

Figure 01: Red, Green and Blue Economy Comparison

According to the World Bank, the Blue Economy is an effort to utilize marine resources in an environmentally sound manner to support economic growth, welfare, livelihoods and conservation of marine ecosystems. And, Rear Admiral TNI Maman Firmansyah, Acting Governor of Lemhannas R.I. stated that the blue economy is a concept of economic management with sustainable use of marine resources, increasing jobs and livelihoods while maintaining the health of marine ecosystems in order to meet the needs of the present generation and prepare future generations to meet their needs. Collaboration is an organizational or institutional strategy in leveraging resources to achieve goals effectively, efficiently and quickly. The elements involved must be managed professionally by a good system under a visionary leader. *Pentha Helix* collaboration involves 5 (five) elements of stakeholders as follows:



Source: Riyanto (2018)

Figure 02: *Pentha helix* collaboration

Blue Economy is a pro-environmental marine economic paradigm so that marine ecosystems are maintained sustainably to meet the needs of current and future generations so that marine ecosystems have optimal carrying capacity. In this regard, there are at least 6 (six) dimensions of the blue economy that must be prioritized in *sustainable* marine resource management, namely:



#### 1) Economic Dimension

The blue economy encourages the utilization of marine resources that are pro-environment, growing and lasting for the welfare of the people, nation and state.

#### 2) Social Dimension

The Blue Economy ensures that people involved in marine resource management benefit equitably. The principle is to develop cooperation with communities so that they contribute and get added value for their lives.

#### 3) Environmental Dimension

The Blue Economy ensures that marine ecosystems remain healthy and intact. Its principles focus on ensuring that economic activities do not cause harm to the natural sustainability of marine resources.

#### 4) Technology Dimension

The Blue Economy develops new technologies to support economic activities that are good for the marine environment. Its principles focus on encouraging new ideas, helping new technologies to be deployed and used wisely so as not to harm the environment.

#### 5) Dimensions of Culture

The Blue Economy recognizes the local wisdom and traditions that develop in coastal communities and respects cultural values and diversity and encourages cross-cultural cooperation in managing a healthy and blue ocean.

#### 6) Dimensions of Governance

Governance in the Blue Economy focuses on creating effective rules for managing marine resources sustainably. The principles emphasize creating clear, multi-stakeholder and accountable rules to support the sustainable use of marine resources.

### 3. Research Method

This research uses a qualitative Descriptive Research method to find and describe the variables of blue economic management based on *pentha helix* collaboration to realize people's welfare. The data collected was analyzed using *SWOT Analysis* (Albert Humphrey) to describe the phenomenon of blue economy management based on *pentha helix* collaboration to realize people's welfare. To get the factors of Strengths, Weaknesses, Opportunities and

Threats in the management of the blue economy.

#### 4. Result and Discussion

Before discussing the management of the blue economy, it is first presented about the Djuanda Declaration on December 13, 1957 by the Prime Minister of the Republic of Indonesia Djuanda Kartawidjaya declaring the boundaries of Indonesia's marine territory, as follows :

"The Council of Ministers, in its session on Friday, December 13, 1957, discussed the question of the territorial waters of the Republic of Indonesia. The geography of Indonesia as an archipelagic State consisting of (thousands of) islands has its own characteristics and patterns. For territorial integrity and to protect the wealth of the Indonesian State, all islands and the sea located between them must be considered as a unified whole. The determination of the boundaries of the territorial sea as set out in the "Territoriale Zee en Maritieme Kringen Ordonantie 1939" Stbl.1939 No.442 article 1 paragraph (1) is no longer in accordance with the aforementioned considerations, because it divides the Indonesian land area into separate parts with their own territories. Based on these considerations, the Government declares that: "all waters around, between and connecting islands or parts of islands belonging to the mainland of the Republic of Indonesia, regardless of their size or width, are natural parts of the mainland territory of the Republic of Indonesia and thus form part of the national waters which are under the absolute sovereignty of the Republic of Indonesia. Peaceful traffic in these inland waters for foreign vessels is guaranteed as long as and only if it does not conflict with / disturb the sovereignty and safety of the Indonesian state ". Determination of the boundary of the territorial sea (which is 12 miles wide) is measured from a line connecting the outermost tip points on the islands of the Indonesian State. The above-mentioned provisions will be regulated as soon as possible by law. The stand of the Government will be taken into account at the international conference on the rights of the seas to be held in February 1958 in Geneva".

In essence, the 1957 Djuanda Declaration contains 3 (three) things, namely: a) Indonesia states as an archipelago that has its own style; b) The sea area in the archipelago is the absolute sovereignty of Indonesia; and c) Indonesia's territorial sea boundary is 12 miles measured from the outermost point of the island. The struggle to be recognized



internationally was long enough for 25 years, where on December 10, 1982 in Jamaica the international world in the United Nations Convention on the Law of the Sea (UNCLOS) recognized the vast territory of the Republic of Indonesia. By with the success of the 1957 Djuanda Declaration, Indonesia's territory increased by 2.5 times from the previous 2,027,087 square kilometers to 5,193,250 square kilometers (excluding the Irian Jaya sea area which was not yet recognized internationally). The leaders who continued PM Djuanda Kartawidjaja's struggle were Dr. Hasyim Djalal and Dr. Mochtar Kusumaatmadja. However, it is regrettable that on December 17, 2002 the Indonesian territories of Sipadan Island and Ligitan Island were annexed by Malaysia, where the International Court of Justice ruled in favor of Malaysia over the two islands and the current President of the Republic of Indonesia is Megawati Soekarnoputri.

In relation to the region, it has been synchronized into One Map of the Republic of Indonesia, which is one spatial data from each sector that is integrated with one another and there are no overlapping boundaries. One Map of Indonesia, as shown in the following figure:



Source : <http://portal.ina-sdi.or.id/home/node/134>

Figure 03: Map of the Republic of Indonesia

In 2014, the Government launched Indonesia as the World Maritime Axis (PMD) in which there are 5 (five) main pillars: a) First pillar: rebuilding maritime culture Indonesia; b) Second

pillar: Committed to protecting and managing marine resources with a focus on building marine food sovereignty through the development of the fishing industry by placing fishermen as the main pillar; c) Third pillar: Commitment to encourage the development of maritime infrastructure and connectivity by building sea tolls, seaports, logistics, and shipping industries, as well as maritime tourism; d) Fourth pillar: Maritime diplomacy that invites all Indonesian partners to cooperate in the maritime sector; and e) Fifth pillar: Building a maritime defense force.

To implement the PMD, Presidential Regulation No.16/2017 on Indonesia's Marine Policy has been issued. Among others, it regulates: a) Marine Resources Management; and b) Human Resources Development. Marine Resources Management aims to encourage optimal and sustainable utilization and exploitation of marine resources through the application of blue economy principles. The main programs in implementing the marine resource management strategy are: a) sustainable management and utilization of fisheries resources; b) improvement of processing, marketing, added value, as well as standards and safety of marine and fisheries products; c) increased protection of marine biodiversity through conservation of ecosystems, species, and genetics; d) development and utilization of energy and mineral resources in accordance with the principles of the blue economy by taking into account environmentally friendly technology; e) sustainable utilization of unconventional natural resources based on the principle of environmental sustainability; f) development of sustainable marine tourism by taking into account the interests of local communities, traditional wisdom, marine conservation areas, and environmental sustainability; g. development of marine biotechnology industry and marine biopharmacology by utilizing the potential of biodiversity; h) improving the management and utilization of coastal resources and small islands in a balanced and sustainable manner; and i) strengthening marine data and information systems, inventory, and evaluation of marine resources. According to Hadiningrat, Suharyono S. (Kaltimpost, February 27, 2023) asserted that about 45% of all global trade goods worth USD 15 Trillion per year are transported through the Indonesian Archipelago Sea Route (ALKI). Then to utilize marine resources must pay attention to A4, namely *availability*, *accessibility*, *affordability* and *acceptability*. Accompanied by the spirit of nationalism, archipelagic insight and the paradigm of sustainable development for the Indonesian archipelago utilizing marine resources for the greatest prosperity of the people based on Pancasila and the 1945 Constitution of the Republic of Indonesia. It was also stated that according to Prof. Rokhmin Dahuri, Indonesia's marine potential is estimated to be around USD 1.4 Trillion / year or 7 (seven) times the 2021 State Budget of IDR 2,750 Trillion = USD 196 Billion.

Then, Indonesia's Maritime Policy is carried out in the framework of the World Maritime Axis (PMD) which can be seen schematically in the following figure :

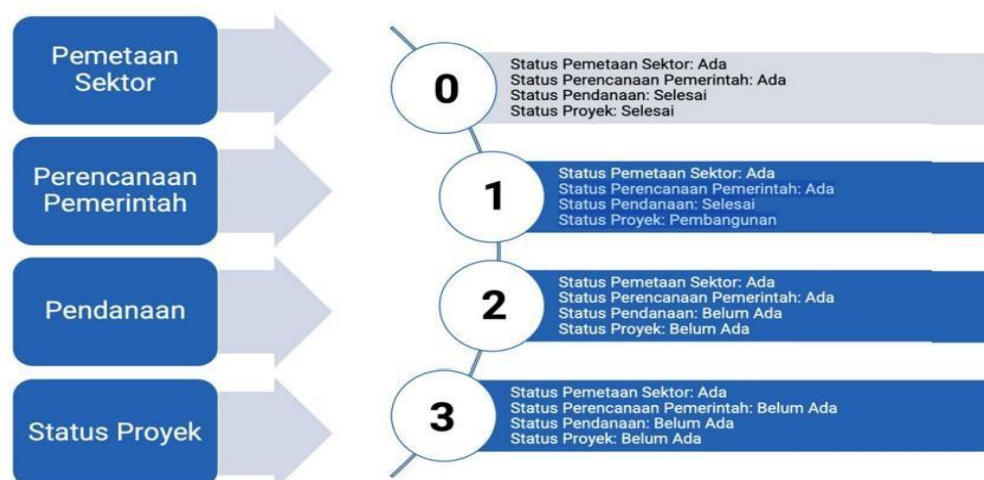


Source : [https://maritim.go.id/konten/unggahan/2017/07/Kebijakan\\_Kelautan\\_Indonesia\\_-\\_Indo\\_vers.pdf](https://maritim.go.id/konten/unggahan/2017/07/Kebijakan_Kelautan_Indonesia_-_Indo_vers.pdf)

Figure 04 : Indonesia's Maritime Policy Roadmap to the World Maritime Axis

With a very large area and separated by water / sea, it is not an easy challenge to manage marine natural resources. Must be managed for the sake of the national interest is in line with national goals as well as Article 33 Paragraphs (1), (2) and (3) of the 1945 Constitution. In line with the main objective of the blue economy concept is a sustainable, pro-environment healthy ocean to transform the overall economic system towards long-term prosperity.

In managing marine resources in line with the principles of the blue economy, starting from the mapping of sectors and sub-sectors of marine resources, government planning, funding and project strus which is a unity. This is illustrated in the following figure:



Source : <https://img.lab45.id/images/article/2023/11/28/262/5955proyek-strategis-ekonomi-biru-menuju-negara-advanced-2045.pdf>

Figure 05 : Blue Economy Project Criteria Determination Framework

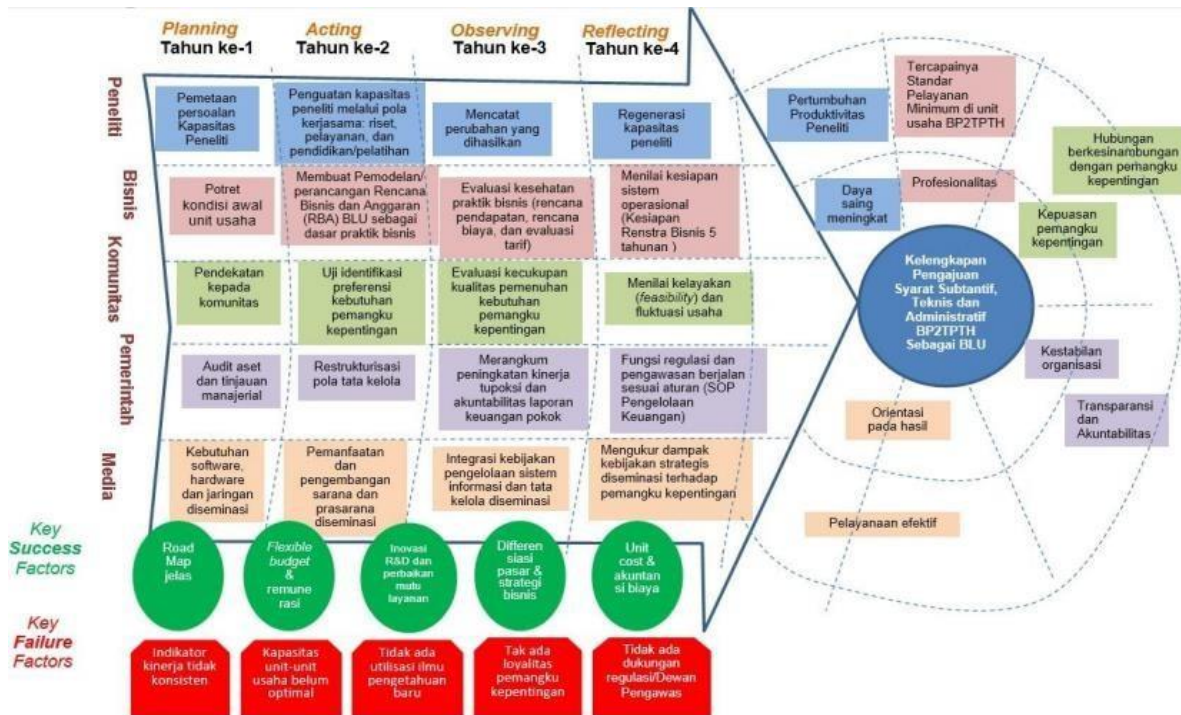
Furthermore, the Ministry of Maritime Affairs and Fisheries (KKP) in implementing the Blue Economy is carried out as part of geopolitics and geostrategy to realize the World Maritime Axis (PMD) as well as strengthening national defense and sovereignty through priority programs in 3 (three) main pillars of the Blue Economy, namely ecology, economy and social with 5 (five) policy implementations, namely: a) quota-based measured fishing; b) expansion of marine conservation areas; c) development of marine, coastal and freshwater aquaculture; d) management of marine debris; and e) sustainable management of coastal and small islands.

The implementation of blue economy management in Indonesia based on pentha helix collaboration to realize the welfare of the people must be led directly by the President of the Republic of Indonesia, with the *leading sector being the* Coordinating Ministry for Maritime Affairs and Investment and its implementation by Technical Ministries / Institutions such as the Ministry of Maritime Affairs and Fisheries, Ministry of Investment, Bappenas, Ministry of Transportation, Ministry of Environment, Ministry of Defense, Lemhannas, TNI / POLRI, Bakamla, and Regional Governments.

The following is an example of the pentta helix collaboration model in the Roadmap of the



Public Service Agency (BLU) of the Forest Plant Seed Technology Research and Development Center (BP2TPH) using Sibbert: Visual Teams, Elex Media Komputindo, 2016)



Source: Wisudayati, et al.2020.

Figure 06: Implementation of the *Pentha Helix* Collaboration Model in Developing the Potential of Government Agencies to become Public Service Agencies (BLU).

SWOT analysis is used to obtain factors that become Strengths (*Strenght*), Weaknesses (*Weakness*), Opportunities (Opportunities) and Obstacles (*Threats*) in strengthening blue economic management based on pentha helix collaboration to realize people's welfare. The facts and data that have been obtained will be analyzed using SWOT *analysis* in such a way as to produce the right strategy.

		faktor eksternal	
		tujuan analisis	
		<b>O</b> <i>opportunity</i> (peluang)	<b>T</b> <i>threat</i> (ancaman)
faktor internal	<b>S</b> <i>strenght</i> (kekuatan)	<b>S-O strategy</b> memanfaatkan kekuatan untuk meraih peluang	<b>S-T strategy</b> mengerahkan kekuatan untuk mengantisipasi ancaman
	<b>W</b> <i>weakness</i> (kelemahan)	<b>W-O strategy</b> meminimalisir kelemahan untuk meraih peluang	<b>W-T strategy</b> meminimalisir kelemahan untuk mengantisipasi ancaman

Source: [www.repository.dinus.ac.id/SWOT.pptx](http://www.repository.dinus.ac.id/SWOT.pptx)

Figure 07: SWOT Analysis Matrix

From the SWOT analysis, the results show that *the factors that are strengths in Blue Economic Management are:*

- Marine sector regulations already exist (Law No.32 of 2014 on Maritime Affairs and its derivative regulations).
- Sovereignty over Indonesia's maritime territory based on the 1957 Djuanda Declaration.
- Recognition by other countries of Indonesia's maritime territory in accordance with the 1982 UN Convention on the Law of the Sea (UNCLOS).
- There are four basic national consensus, namely Pancasila, the 1945 Constitution, NKRI and Unity in Diversity.
- Indonesia was declared as the World Maritime Axis.

The factors that become weaknesses are:

- Maritime technology support is still limited.
- Maritime human resources are still lacking in both quantity and quality.
- Sectoral ego is still high.



- d) Illegal fishing is rampant.
- e) Vulnerable to foreign threats

Factors that are Opportunities in *Blue Economy Management*, among others:

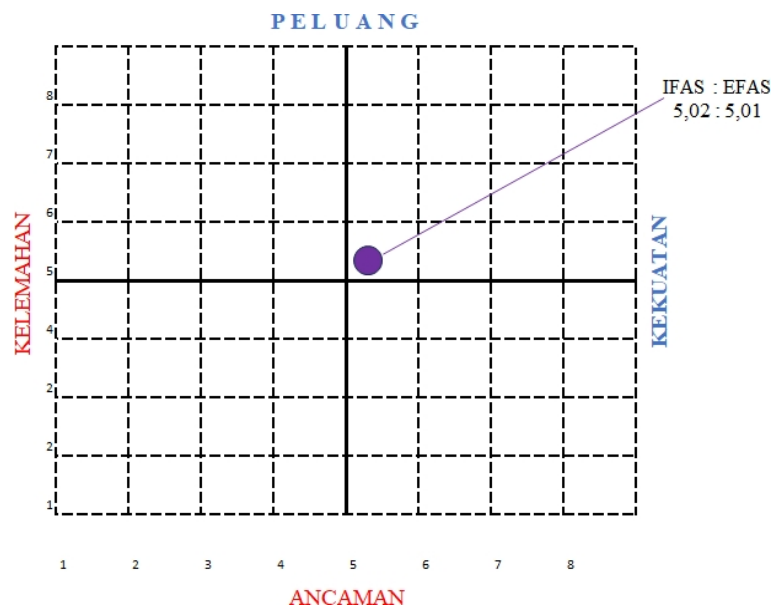
- a) The potential for the welfare of the people due to the abundant potential of Indonesia's marine wealth.
- b) Utilization of demographic bonus as HR Talent
- c) Preparing for the Golden Indonesia of 2045 to become an Advanced Indonesia.
- d) *Pentha Helix* partnership cooperation
- e) Utilization of digital-based maritime technology.

And regarding the threat factors, among others:

- a) Geographical conditions that are in the cross position of world trade.
- b) Indonesia's vast marine territory poses a potential threat
- c) Indonesia is the *center of gravity* for other countries.
- d) South China Sea conflict escalation extends to Indopacific
- e) The dynamics of global geopolitics are uncertain.

Then, the data is analyzed using SWOT which is carried out systematically in a series of calculations, namely: a) *Internal Factor Analysis Strategy* (IFAS); *External Factor Analysis Strategy* (EFAS); and *Strategy Factor Analysis Strategy* (SFAS) using the calculation of certain values, weights and *ratings*.

The results of the IFAS analysis with a score of 5.02 and EFAS with a score of 5.01 are in quadrant I Aggressive Strategy, namely utilizing strengths to get existing opportunities. This is illustrated in the following matrix :



Source: Processed (Author, 2024)

Figure 08 : *Grand Strategy Matrix from SWOT Analysis*

Strengthening the blue economy based on *pentha helix* collaboration in order to realize the welfare of the people in Indonesia must be done correctly and involve all elements based on *pentha helix* collaboration, namely the government, universities, industry, society and the media as well as utilizing technological advances to facilitate and prosper the entire people and nation. Strengthening *pentha helix* collaboration is carried out, among others, through joint forums to discuss various issues in order to find the best solutions so that they are effective, efficient, fast and precise. In this case, the Coordinating Ministry for Maritime Affairs and Investment is the leading sector in managing Indonesia's seas for the benefit of all the people, the nation and the Unitary State of the Republic of Indonesia.

## 5. Conclusion and Recommendation

Based on the discussion above, it can be concluded that:

- a. The current condition of the utilization of marine resources is still not optimal, so it needs to be strengthened based on *pentha helix* collaboration. Opportunities and challenges in managing the blue economy based on *pentha helix* collaboration to realize the welfare of the people in Indonesia are:
  - 1) Opportunities in *Blue Economy Management* include:

- a) The potential for the welfare of the people due to the abundant potential of Indonesia's marine wealth.
  - b) Utilization of demographic bonus as HR Talent
  - c) Preparing for the Golden Indonesia of 2045 to become an Advanced Indonesia.
  - d) *Pentha Helix* partnership cooperation
  - e) Utilization of digital-based maritime technology.
- 2) Challenges in *Blue Economy Management*, among others:
- a) Geographical conditions that are in the cross position of world trade.
  - b) Indonesia's vast marine territory poses a potential threat
  - c) Indonesia is the *center of gravity* for other countries.
  - d) South China Sea conflict escalation extends to Indopacific
  - e) Uncertain global geopolitical dynamics
- b. Efforts made in strengthening blue economic management based on *pentha helix* collaboration to realize the welfare of the people in Indonesia include joint forums to discuss various issues to find the best solutions so that they are effective, efficient, fast and precise. In this case, the Coordinating Ministry for Maritime Affairs and Investment is the leading sector in managing Indonesia's seas for the benefit of all the people, the nation and the Unitary State of the Republic of Indonesia.

Based on the above conclusions, the following recommendations are made:

- a. The central government, in this case the Coordinating Ministry for Maritime Affairs and investment, must really focus on being the *leading sector* in managing the blue economy in Indonesia based on the *pentha helix* which involves elements of government, universities, industry, society and the media.
- b. The central and local governments must be synchronized in carrying out blue economy management based on the *penrha helix* for the national interest.
- c. The government must strengthen and involve all maritime stakeholders effectively, efficiently, quickly and precisely, among others, through joint forums in managing marine resources for the greatest prosperity of the people, nation and Unitary State of the Republic of Indonesia.

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