

Financing Sustainable Blue Economy and Development Policies in East Timor National Maritime Cluster

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Abstract

Maritime Clusters are important tools for supporting sustainable growth and jobs. They offer opportunities to promote and uptake innovation, knowledge, and skills as well as to give access to better financing, by ensuring that the support provided is effective and well-placed. Education and the training on how important the sea really is opens thousands of doors for the population, both locally and internationally. The existence of maritime clusters will also help East Timor to develop both its blue economy initiative and future projects, as well as to reach sustainability and carbon neutrality. And with a newer, cleaner and bluer economy - partly thanks to the formation of clusters - East Timor could well be the example most developing countries need to inspire themselves to progress and change for a Blue Economy. For the island of East Timor, the most precious resources may well be the crystalline waters that surround it, as well as the resources and potential projects one can imagine. Its favourable geography and limited development have fostered for many years a uniquely diverse marine ecosystem. With a blank and open-minded nation, the big question facing the country today is: “what role will these waters play, and what legacy can they provide?”.

Keywords: Blue Economy; East Timor; Maritime Clusters

1. Introduction

Maritime industries are seen, for many, as basic for regional, national, and global development. The complex nature of marine and maritime industries - which includes key

players (such as ports, shipping, oil, gas, forwarders, logistics, shipbuilding and repair, fishing) - emphasises the need for coordination and common strategy: ‘when companies are interconnected and have a common labour pool, they are considered to form a cluster’ (Porter, 1998). The role of a cluster in regional and local economies have undergone numerous analyses and been discussed in the literature. As such, the cluster definition can also present specific variations, among different regions and industries.

To set a cluster’ limits, one first needs to select a core activity (i.e. financial services in London). In maritime clusters, firms share state of the art infrastructures and services, specialised customer markets, human capital resources, know-how and information. These shared resources create synergies between companies and fuse local strengths with global best practices (Lagoudis et al., 2019).

These concentrations of companies and related stakeholders (such as Universities, professional training, public sector) exist for decades globally, on different business sectors. Policymakers have embraced the cluster concept, identified regional clusters and developed policies and strategies to enhance them (Markusen, 1996).

2. Methodology

For this paper, research was developed in various websites, scientific (namely economic) papers, documents and discussions related on what East Timor should be focused – on its economic policy, major tools and approaches - the country should adopt to be able to create marine and maritime clusters on its shores, and by doing so, develop and integrate itself within the Blue Economy Initiative.

3. Literature review

Clusters are geographical concentrations of interconnected companies and institutions in a particular field. They also incorporate a range of linked industries and entities that are relevant both to competition and cooperation (‘coopetition’).

The cluster concept was first created by Michael Porter, who stressed that regions with large concentration of similar companies and institutions enhance their economic

strength. According to Porter's Cluster model – also known as the 'Diamond' model - these regions lead innovation and form strong business networks. Economic clusters are known to bring together the production and exchange of goods, services, and tech while also attracting investments, industries, and innovations (Porter, 1998).

A successful economic cluster can benefit from an enabling environment that supports the needs of businesses and the respective workforces. This supportive environment promotes collaboration on a multitude of levels, from individual or corporate, social to environmental, and can also provide multiplier effects to drive regional and national growth.

Marine and maritime clusters refer to a group of related stakeholders located in proximity. They can also be defined as “naturally-occurring collections of different types of maritime activities” that arise to benefit all parties involved.

Usually, firms integrated in a cluster tend to get linked by buyer-supplier relationships, operating closely together as partners. An example of this would be two companies, one for storage of shipping containers and the other in the transportation of these containers.

Maritime clusters can be divided into four types:

- Maritime activities are focuses on the port (cargo loading and discharging functions) and shipping functions. These tasks are usually local and territorial dependent, and the relationships and connections among and within maritime sectors are simple and loose. These activities are usually unrelated to one another when making decisions, since their users tend to prefer individual sectors, as well as multiple port services, than a maritime cluster. The pioneers for this cluster type were both London and Rotterdam and today's examples are Dublin (Ireland) and Selangor (Malaysia).
- Cargo allocation and value-added processing are at the heart of the second type of maritime cluster. Usually, the centre of logistics and cargo allocation aims to provide value-added production and services. Like the 1st type, it is usually a regional scale cluster, although larger in size. The Port-focused cluster typically includes transport, industrial and commercial services. Osaka (Japan) and Kaohsi-ung (Taiwan) are current examples.

- The third type of maritime clusters emerged due to the world trade' changing pattern, developing what is now called an 'extensive transport network'. This type of cluster adapted through the allocation of products, capital, technology, and information. These activities carried on a much larger geographical area than Types 1 and 2, and have an influence of regional or even global proportions. These clusters allow for the creation of global/regional supply chains, thanks to its capacity of processing and distributing information. Such characteristics satisfy the new international trade pattern, as they are now regarded as supply chain hubs for global/regional economic and trade markets. Rotterdam, Hong-Kong and Singapore are top examples of this type of maritime clusters.
- The last generation of clusters appeared with the physical separation - while linked through a common operator or management - resulting in both vertical and horizontal integration adopted by transport operators. This type of cluster performs centred around maritime services, instead of taking port or physical cargo logistics as core its activities. The concept of local or regional territory vanishes, since now they can provide services to users at world scale. These maritime services are provided in a wide range, such as ship finance, maritime law, marine insurance, ship registry, ship chartering, ship brokering, etc. London serves as example from today's maritime world.

Although maritime clusters exist in many countries around the world, their structures and goals vary depending on their geography.

The World Ocean Council (WOC) states that European clusters tend to be "well-structured in looking at global competitiveness, providing platforms that can link national maritime-level strategic interests to their government interest in economic development".

In what concerns the cases of small, but dynamic, Asian economies, the WCO argues that they have "a very natural evolution of a triple helix between the industry, government, and research communities, that was able to quickly develop collaboration - facilitated by national policies".

For larger Asian countries, since developing clusters pose a 'challenging process for their communities and dynamics at a national level', they use these emerging clusters as keys for maritime centres.

4. East Timor: History and Economy

East Timor is located between Southeast Asia and the Northern part of Oceania. The island is divided between Indonesia, in the West part of the island, and East Timor.



Figure 1 – Map of East-Timor

East Timor was a Portuguese colony since the 16th century. It was occupied by the Japanese, during the 2nd World War. In 1975, the Portuguese ‘Carnation Revolution’ declared all colonies independent, which lead Indonesia to occupy Timor, as a pretext to prevent communism. This gave rise to a Timorese nationalist movement that fought against the occupation for several decades.

Timor-Leste only secured independence in 2002, thanks to an international campaign. It is, therefore, a very young nation, with just over 20 years of existence.

At independence, Timor-Leste's economy had very low levels of development, with extremely high poverty indicators. The economy was based on subsistence agriculture and fishing, with virtually no modern private sector.

Even so, Timor's economy was able to start growing, since 2018, when both Timor and Australia settled its maritime boundary: in this way, the division of oil and gas revenues was settled.

As of now, the major concern for oil and gas will be where they are going to be processed. While East Timor looks to create a new petrochemical facility on the South part of the island, the international oil companies prefer to ship them to facilities located in Australia. And even though East Timor's oil and gas revenues ease the budget constraint, there are risks that can act as obstacles to development.

5. East Timor: Marine and Maritime industries

5.1. - Fishing and Aquaculture

As a poor coastal country, East Timor is highly dependent on fishing (both for the population's food and economic growth).

In fact, Timorese people that depend on fish as their primary livelihood have higher levels of well-being - linked to their income and food – than those who depend on other natural resources. The ocean provides excellent fishing opportunities for locals. Fish is one of the main sources of livelihood in the country, and its biggest market.

However, due to the war, vessels were either destroyed or taken away. Only few remain functional. But, as more people see fisheries as a mean of life, more vessels appear on Timor's waters, which increases the risk of overfishing.

Most vessels go to the southern part of the country, where the waters are shallower and easier to trawl, which damages the coral reefs ecosystem.

Similarly, in what other maritime sectors are concerned, the growth has been very slow.

It is the case of aquaculture. There are three types of aquaculture in East Timor: freshwater; brackish; and water (PEMSEA, 2019):

- **Freshwater** - Freshwater aquacultures focus on the production of 'tilapias' a freshwater fish that is easy to breed and can reach huge sizes. Various efforts to

promote and distribute freshwater farms across the country has been made, even though the main locations are Baucau, Ermera, and Bobonaro, since they have better resources available;

- **Brackish water** – This type has a smaller farmers' number, which engage in the shrimp or milkfish' culture. Unfortunately, most of these farms are operated in an extensive way, what results in low productivity and weak degree of modernisation;
- **Mari Culture** – In East Timor, mari culture is mainly focused on seaweed. Initially a small number, thanks to its great success in the testing, it quickly gained popularity. The farms are mostly located on the island of Atauro, north of Dili. Unlike freshwater aquaculture, most of the seaweed produced ends up being exported, giving a higher revenue and making these farms the major income-generating activities in the area.



Figure 2 - Map of Potential Aquaculture Area in Timor-Leste. Source: PEMSEA, 2019

Presently, there are three types of aquacultures in East Timor: (i) Freshwater; (ii) Brackish water; (iii) Marine

But even though aquaculture seems beneficial for East Timor, there are some issues emerging:

- **Numbers:** Fish are being breed and are successfully growing in these farms, however, as the demand for fish rises, it becomes obvious the quantity of fish in these farms are not enough. The current number of fish produced rounds between 60,000 – 80,000, which barely fills 3ha of ponds out of the 41 available, while the demand for aquaculture fish surpasses 1.2 million. This indicates the need to increase the fish production to meet demands.
- **Food:** Fish feed is usually imported, and the government subsidizes them to fisherman. Nevertheless, the amounts available are insufficient and farmer only feed them occasionally, leading to low productivity of fish due to inadequate feed supplies. Plans for the creation and use of fish feed based on on-farm resources are undergoing but many are still unaware of such resources for fish feed.
- **Models:** Pond aquaculture will remain the dominant freshwater aquaculture system for the next years, and it needs to improve. New interventions are required to develop better techniques and turn this activity economically viable while also following an Agro-ecological focus increasing its productivity for local communities.

5.2. - Offshore Oil and Gas

The offshore gas and oil market creates the biggest percentage of income for Timor's economy. Approximately 66% of the country's GDP is made by these two offshore resources, which finances 90% of the government's expenditures.

One previous concern was the long dispute East Timor had with Australia related to the maritime boundaries and to the ownership of certain areas of the oil and gas endowments (PEMSEA, 2019).

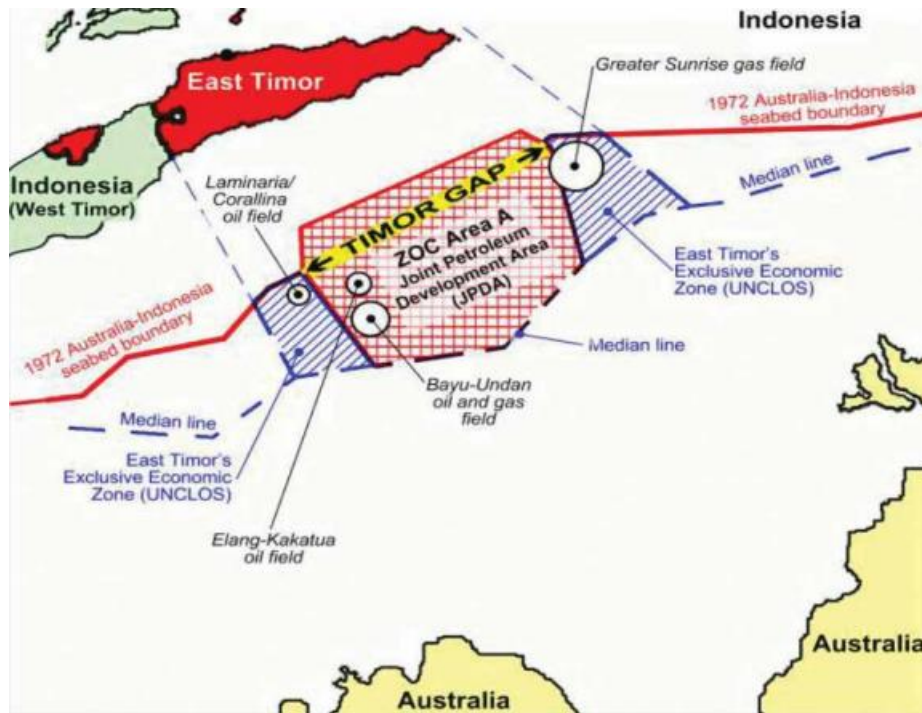


Figure 3 - Oil and Gas Exploitation in the Timor Gap. Source: PEMSEA, 2019

As of now, the major concern for oil and gas will be where they are processed. While East Timor tries to build a new petrochemical facility on the South part of the island, the international oil companies prefer to ship them to the already existent processing facilities, located in Darwin, Australia.

Even though East Timor's oil and gas revenues ease the budget constraints, there are risks that may constitute obstacles to development, rather than being an asset.

The first one is the possibility of leading Timor to what is known as “Dutch Disease”, a “symptom” that refers to the negative consequences that can arise when a nation's currency value spikes due to the discovery or exploitation of a valuable natural resource. It primarily affects the overall economy by decreasing the price competitiveness of exports and increasing imports.

A large revenue can also result in increased spending on poorly developed projects in the hope of succeeding on them, blinding the bigger picture and other more relevant projects.

Another risk that might be brought up is the corruption and political conflict that these natural resources can bring. Many different stakeholders would start fighting over who should control them, deteriorating the quality of the institutions. The fact that existing oil and gas fields are starting to deplete means that East Timor must find a way to diversify

and create opportunities for sustainable employment and decent work in the future, before its fossil fuels reserves dry up.

Besides offshore oil and gas production, there are many other sectors that have been developed and/or are being developed in East Timor (Lundahl & Sjöholm, 2020).

5.3. - Ports and Shipping

Dili is the main city and only international maritime port of entry to the country. Capable of harbouring three cruise ships or commercial vessels, it possesses two roll-on/roll-off ramps and a yacht anchorage zone. The port does not possess any facility to handle bulk cargos and has no dockside crane. As such, private companies must operate their own for loading and unloading of cargo (PEMSEA, 2019).

Projects for expansion and improvement are being completed, though without much support. A new port - specifically for container vessels - has been projected.

5.4. - Coastal and Marine Tourism

Being a tropical island, located within the Coral Triangle, East Timor has stunning beaches and some of the most pristine and ecologically diverse reefs in the globe (PEMSEA, 2019).

Timor's main appeal for coastal tourism is mostly its white sandy beaches (in the regions of Baucau and the Atauro¹ island). Fishing, sailing and water sports are also huge attractions, even if the main reason for tourism in Timor is its magnificent coral reefs.

¹ <https://www.ataurodiveresort.com/>

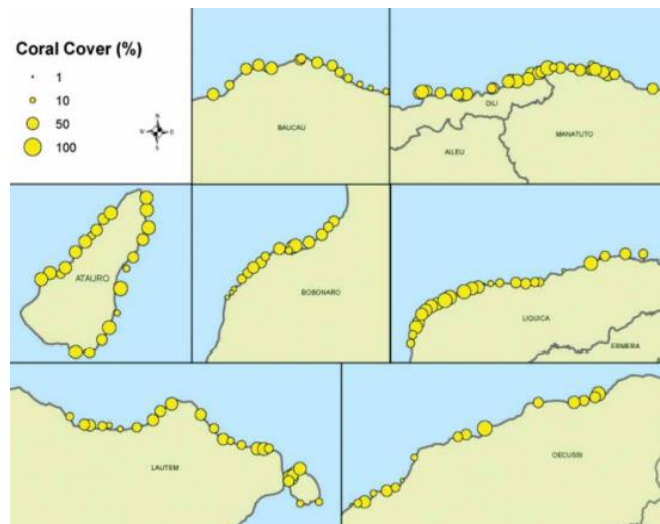


Figure 4 - Mean Coral Cover at Site Surveyed. Source: PEMSEA, 2019

The marine life in East Timor's waters is abundant: from open water species (such as tunas and mackerels), to whale sharks, mantas and turtles, even being able to see endangered elusive dugongs.

Colourful hard and soft corals cluster the waters from sheltered reef slopes to magnificent walls diving to underwater cliffs plunging into the abyss. All of this, while sighting vivid arrays of reef fish in warm tropical crystal water.

5.5. - Tutoring and Education on the Importance of the Ocean

During the Indonesian occupation, the most skilled teachers were not native to the island of Timor. By the end of the conflict, many left the country, leaving behind just a few.

As such, today's East Timor has three main languages, with each generation respectively speaking at least two of them. These languages are the Indonesian, the Portuguese, and the Tetum (a mixture of both languages), the latter being the most spoken one.

Half of East Timor population was born after the independence and are coming of age with a new understanding of the environment's intrinsic value. Foreign aid abled Timor to improve education, namely on the importance of the ocean.

5.6. - Offshore Renewable Energy

One of the Government's main goals is to reduce the external dependency of energy supply, through the resource to renewable energies sources. The Government intends to implement an extension plan to distribute energy, to increase the well-being and promote economic growth, as Timor possesses strong potential in the renewable energies (PEMSEA, 2019).

6. Timor's Blue Economy today

East Timor is one of several Small Island Developing States (SIDS), that is increasingly recognising the promising sustainable development opportunities represented by the blue economy. Some are also piloting new and innovative approaches to financing key blue economy interventions. These include the issuance of blue bonds and debt-for-nature swap.

The country has been heavily dependent on oil and gas since it regained its independence. However, revenue from oil will start to decline over the next decade. At the same time, poverty levels remain high, at almost 40% of the population. East Timor must therefore diversify its economy.

As such, investments need to establish themselves in the island. Marine renewable energy, green port development and sustainable marine transportation are major blue economy investment opportunities – with the potential to be truly transformational. A new port is under development near Dili, financed through East Timor's first public-private-partnership. The construction of a new port in Tibar is also a welcomed idea, as it could develop the shipping industry, a passenger port, and a cruise ships' terminal.

In order that the country manages to apply the blue economy measures, the country needs to define strategies to reduce the effects of climate change. The creation of a maritime cluster that follows the models established by the 'Blue Economy's Initiative', can bring a positive outcome to the future of the country (UNDP, 2021)

6.1.- Potential Areas for Blue Growth

East Timor 's economy heavily relies on offshore oil and gas, sectors that account for 87% of GDP (Iyengar, 2024). Tourism, fisheries, and aquaculture also have a significant potential to drive food security, employment, and sustainability.

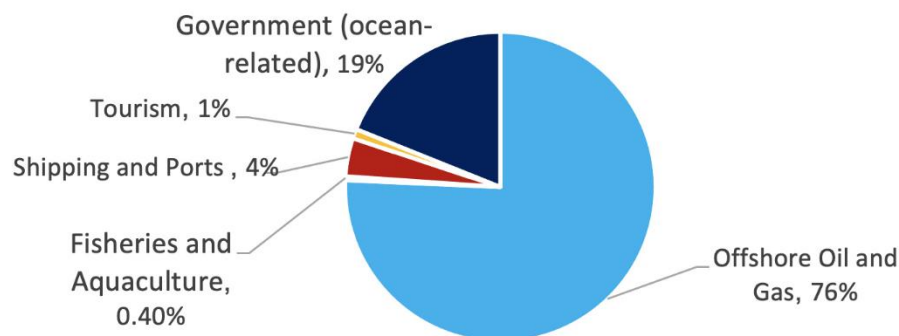


Figure 5 - East Timor' Ocean Economy GDP. Source: Iyengar, 2024

East Timor's coastal tourism accounts for merely 1% of GDP, even if it has the potential of becoming a key economic driver. In 2022, the government allocated \$8.2 million with \$2 million designated for blue economy activities like scuba diving and whale-watching.

East Timor's fisheries are mostly traditional or non-mechanised, contributing only 0.4% to the GDP, despite the abundant fish stocks. The country heavily relies on imports to meet seafood demands. The government plans to invest \$29.3 million to boost fishing and aquaculture production, as well as to develop seafood processing industries, in 2024.

Maritime transport contributes with about 4% to the GDP. About 80% of total international trade relies on sea transport. Investing in efficient port infrastructure can reduce import costs and dependence on basic products.

East Timor relies heavily on oil and gas exports, with coffee as its main non-oil export. To boost its blue economy, the country should focus on seafood processing and follow to trade agreements. Joining key organizations like WTO, ASEAN, and EU-PEPA would also help the fisheries sector' economic growth.

Exploring marine renewable energy and biotechnology to reduce electricity costs and improve energy security. Opportunities in marine biotechnology for pharmaceuticals, enzymes, cosmetics, and more. Collaborations with research institutes under Nagoya Protocol to address capacity gap in East Timor.

6.2. - Challenges and Solutions

In coastal East Timor, 600,000 people face disaster risks like sea level rise and erosion. Residents near mangroves lack awareness of their importance, clearing them for fuel and grazing. They need support for preserving marine ecosystems and creating sustainable business opportunities, such as seaweed farming for income.

East Timor needs to raise awareness, improve infrastructure, and address financing gaps for blue economy growth. This includes integrating coastal adaptation efforts to protect livelihoods and lands, educating through tailored materials for students, setting up ocean literacy centres, implementing nature-based solutions like mangrove protection, and conducting coastal vulnerability assessments for restoration guidance.

Underdeveloped port infrastructure hinders fisheries sector growth in East Timor. Dili port handles all shipments, except for the Oecusse Special Administrative Region. The majority of infrastructure financing is allocated to roads and bridges (51%), airports (9%) and agriculture (4%). Ports represent just 0.35% but – as referred above – the new port of Dili is under construction.

Collaborating with development partners can bridge investment gaps by attracting private investment in innovative and bankable projects.

Infrastructure gaps in ports, maritime transport, and sustainable tourism must be addressed to transition to high value sectors like fish processing. East Timor can learn from Mauritius' roadmap in consolidating tourism, seaports, and fishing industries.

East Timor has enacted laws to tackle environmental issues like marine litter with the 2020 Zero Plastic Rule. However, policies for blue economy need improvement. The new Ministry of Agriculture will focus on developing primary sectors.

Implementation of the ‘National Oceans Policy’ aligns with other small island states for sustainable operations. The policy focuses on ocean governance, blue economy, ecosystems, people, and climate change actions.

East Timor must strengthen its environmental laws, conduct legislative assessment, and enforce existing laws. This includes improving solid waste management and regulating marine fishing. Specialised licensing requirements for ecotourism are needed for high-risk areas. Cohesive policy measures in the ‘Blue Economy Financing Roadmap’ must be approved.

The 2022 budget allocated \$144,000 for the blue economy program on ‘Establish the Maritime Borders Office as a Centre of Excellence on Maritime Borders and Maritime Jurisdiction: Blue Economy’. Constraints on financing options are due to supply and demand side restrictions, lack of information on the market, perceived market risk, and lack of bankable projects and awareness on the business environment.

Projects meeting international standards and supported by a solid business proposal can attract private sector funding. Other revenue options include implementing ecosystem payment schemes and evaluating mangrove ecosystems for carbon credit opportunities in global markets.

East Timor can learn from other small island developing states like Seychelles and Madagascar. Seychelles developed a global marine spatial planning scheme. and launched a sovereign blue bond. And Madagascar initiated a successful mangrove carbon conservation project (Iyengar, 2024).

7. East Timor Maritime Cluster Proposal

Like previously mentioned, East Timor is a young developing country that has declared independence just twenty years ago. East Timor hasn’t been able to properly establish itself, economically speaking, and only recently has begun to attract the attention of international companies.

As a consequence, East Timor has reduced international investment presence and clusters are still forming. As of now, East Timor can be classified as having the first type of maritime cluster (focus on port-related activities).

According to Iyengar (2024), East Timor's potential lies in the following maritime sectors:

- **Fisheries and Aquaculture:** Although fishing isn't much of a serious concern for investment in East Timor (maybe this is only possible with the development of new ships and better sustainable techniques), aquaculture is a very promising industry for local communities. The country should focus on fish farms, instead of fishing wild fish, risking damaging the coral reefs. Fish farms will also help in sustaining the population, and due to the large number of available ponds and different environments, East Timor is a great location to introduce this technique and make it profitable, both nationally and internationally.
- **Ports and shipping:** Ports in East Timor are poor and inefficient. They are only able of handling three medium size vessels at a time. Therefore, expansions and the creation of new ports (like the Ports of Dili and Tibar) are decisions to support, due to its high potential.
- **Coastal and Marine Tourism:** for many, East Timor is the Coral reefs' hidden gem. A part of the coral triangle, the country is home to a great variety of marine species. Eco-tourism has been gaining massive support, both by the government, and the 'Blue Economy Initiative'. The fact that Timor is an island helps it to develop various eco-tourism' spots, though the most requested and developed are in the northern part of the island. Many resorts and associations, such as "Compass Diving" and "Atauro Dive Resort" - just to say a few - have establish themselves seeing the potential these locations have. As such, they have gained considerable financial support, both from the national government and foreign ecological forces. Investments such as national parks, community-based eco-tourism, diving and boat operations and cruise tourism seem to be reliable bets in order to build an East-Timorese maritime clusters.
- **Offshore oil and gas:** East Timor's main source of income, offshore oil and gas has sustained the country's economy, since its foundation. But there seem to be

different opinions regarding the potential of unexplored reserves. While some reports argue for the existence of significant underwater oil and gas reserves, others claim that reserves are running out. Of course, this issue has to be quickly resolved. Many gas and petrol companies have shown interest and some even established themselves in Timorese waters. Some, like Australian companies, have even taken over certain areas and underwent legal battles. Still, even though oil and gas is, nowadays, the main source of income for the country, this is a temporary solution in any scenario. Reserves will dry up and the pressures from green parties and ecological movements are increasing hindrances to overcome.

- **Tutoring on the Oceans' importance:** Due to the conflict and the absence of good instructors in East Timor, the education in school almost dropped to rock bottom. As the years went by, Timor managed to recover and improve its education with the help of courses and scholarships from the University of South Pacific (USP), and more recently, the Pacific-European Union Marine Partnership Programme (PEUMP). It became obvious that the island's most precious treasures may well be the crystalline waters that ring around it. By offering and improving the education, training and research, the livelihood of the population, as well as the economic power will greatly improve. With more and better knowledge, new potential jobs and businesses will be created, both working and future generations will manage to see the potential and importance that the ocean can give in the economic, environmental, and social perspectives. And as scholarships are being developed and invested on East Timor population, 'this investment is advancing blended capacity building and knowledge to help Timor's roadmap in achieving environmental, sustainable development and ocean policy goals' (Iyengar, 2024).
- **Offshore renewable energies:** Although East Timor is still critically dependent on gas and oil, as its main economic and financial source of power, projects for the development and creation of green energy farms have been on the making. Since Timor is 'a blank page' on what potential investment and infrastructures are concerned, the island is open for introduction of new, better and cleaner energies in order to reduce the dependency on fossil fuels. A new project revolving around the creation and application of renewable energy (wind) inland and offshore has

been proposed by the ‘Blue Economy Initiative’ in order to boost the economy and reduce the carbon footprint effect of the nation.

Table 1 shows the main features of the East Timor Maritime Cluster proposal.

Table 1 – Future East Timor Maritime Cluster Main Features

East Timor	
Initiative	Bottom-up
Cluster Name	TL Tasi Cluster
Components	Fisheries Associations; Aquaculture Producers ONG + Universities (for education and formation of students) Touristic companies; Energy Sectors Representatives of Port and Shipping Companies
Organisations	East Timor Maritime Cluster
Financing	Mostly Private

Source: Author, 2024

As for the creation of clusters, the best outcome comes from the establishment of downstream industries to ensure additional income and the creation of new jobs, trade, and small/medium enterprise (SME) development is a viable investment plan for the nation.

East Timor’s development through the creation of a maritime cluster is a very similar process to that of a ‘Bottom-up Initiative’ cluster.

Bottom-up clusters are induced by leader firms and/or sector associations. Usually focused on the enhancement of business efficiency and opportunities, their strength is on finding solutions for problems and being able to work as a single-point-of-entry to the government.

Their main issue tends to be due to the difference in sector preferences, leading to difficult decision-making progresses and narrow focus on topics.

The main components, in order to create a maritime cluster in East Timor, should be based on what the country is most likely to benefit from. As referred above, these are the following:

- Fisheries Associations
- Aquaculture Producers Associations

- ONG + Universities (for education and professional training)
- Touristic companies
- Energy Sectors Associations (or companies)
- Representatives of Port and Shipping Association (or companies)

On what deals to the financing features, although most cases are financed by private companies, public aid can be of paramount importance in order to maximise foreign investment attraction, with more up-dated technologies.

8. Conclusions

In conclusion, the establishment of a national maritime cluster in East Timor is not just a pathway to economic growth but a strategic move towards sustainable development. By aligning with global best practices and fostering local strengths, East Timor can create a vibrant, diversified, and resilient maritime economy. This approach will benefit its population by generating jobs, enhancing livelihoods, and promoting social and economic inclusion. Furthermore, integrating into the regional and global economy will elevate East Timor's standing and open up new opportunities for trade and investment.

As the nation embraces the 'Blue Economic Initiative', it sets a course for a sustainable and prosperous future, rooted in the wealth and potential of its maritime resources. This initiative can transform East Timor into a model for sustainable marine and maritime development, showcasing how responsible and innovative use of marine resources can lead to broad-based economic growth. The successful implementation of a national maritime cluster will depend on the collaborative efforts of all stakeholders, including the government, private sector, local communities, environmental movements, and international partners.

A robust and dynamic maritime cluster will not only enhance East Timor's economic resilience but also contribute to regional stability and cooperation. By fostering a culture of innovation and sustainability, East Timor can inspire other countries and serve as a catalyst for broader regional development initiatives. The focus on education, capacity building, and environmental stewardship will ensure that the benefits of maritime

development are sustainable and inclusive, providing long-term prosperity for future generations.

Moreover, the strategic investment in renewable energy and advanced maritime infrastructure will position East Timor as a leader in the global transition towards greener and more sustainable economies. By harnessing its natural assets and leveraging technological advancements, East Timor can reduce its carbon footprint and contribute to global efforts to fight climate change. This proactive stance will attract international investors and partners who are committed to sustainable development, further boosting the nation's economic prospects.

Ultimately, the vision for East Timor's maritime future is one of innovation, inclusivity, and sustainability. By embracing this vision, East Timor can achieve significant economic milestones while preserving its rich marine biodiversity and cultural heritage. The journey towards establishing a successful national maritime clusters is complex and challenging. But a determined leadership and strategic planning can endow East Timor with the potential to transform its marine and maritime sectors into a cornerstone of national prosperity and a beacon of sustainable development in the region. The establishment of this cluster will also ensure that East Timor becomes a critical player in global maritime logistics, fisheries, and eco-tourism, thereby amplifying its influence and economic footprint.

Through ongoing investment in research and development, East Timor can stay at the forefront of maritime innovation, ensuring that its maritime policies and practices are both forward-looking and environmentally conscious. This commitment will help safeguard marine ecosystems while maximizing economic benefits, ensuring that the blue economy serves as a sustainable engine of growth for generations to come.

To boost East Timor's blue economy, raising awareness among local communities about the importance of oceans and coastal habitats is crucial. This should be aligned with the 'National Oceans Policy' and involve key stakeholders. Additionally, investing in human capital development and exploring innovative financing options like blue bonds and impact funds will be key for sustainable growth.

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