10.21544/2359-3075.v28n1.f

CONCEPTUALIZATION OF OCEAN DEVELOPMENT: THE EVOLUTION OF THE LAW AND THE NAVAL STRATEGY FOR SUSTAINABILITY

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ABSTRACT

Taking into consideration the radical changes concerning development in the past century, this work has been formulated to see a new perspective where the ocean can be revived as a fundamental player for sustainable growth and development today. Structured in three sections, this paper goes through the geographers' vision of the ocean as an original and rediscovered space of society, followed by juridical thought and its application to international ocean governance. That culminates with the capacity to systematically consolidate the different aspects of the military navies and how the navy can be reorganised to fit the reality of ocean sustainability and development.
Keywords: Sustainable Development. Navy. Ocean. Governance. International Cooperation.

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INTRODUCTION

Since the mid-nineteenth century, with the Industrial Revolution, the world has seen an acceleration of history, which was never registered before. The 150 years following the invention of the steam engine have brought a massive technological change in which: men, technology, time, and natural resources are in a difficult position to cope in an ever-changing and demanding industry for raw materials. The decrease in natural deposits and the growing emissions of *Carbon Dioxide* (CO_2) are a direct result of the development that the world has seen. Altogether, this has created a global challenge for humanity, climate change is clearly a consequence of the use, transformation, and burning of hydrocarbons which are the main source of energy for any human activity (Sachs, 2015: 9).

The burning of fossil fuels can be identified as the main accelerator of development worldwide. There is a clear positive correlation between growing emissions of CO_2 and the Gross Domestic Product (GDP) of a country. Good examples are the United States of America (USA) and its economic history which entirely depended on fossil fuels; China being the main producer and user of coal worldwide today; Europe, which is still depending on oil and natural gas; the Arab nations that are the major producers and exporters of gas and oil in the world; and Asia, Africa, and Latin America where fossil fuels are still playing an enormous role in economic activity and growth of these areas. In addition to that, hydrocarbon energy materials are still valued and the shift to clean and sustainable energy is occurring slowly in a world where emissions of CO_2 compromise the integrity of the planet and the durability of the same sources of energy for the future (Sachs, 2015: 1-44).

This paper aims to understand how ocean development can be an alternative method for the constant growth required for today's economy. The conceptualization of development conveys questions such as: can the ocean be a new space for society? Can the ocean address development challenges? How progression of the law of the sea can bring cooperation and ocean governance? To conclude, the link between sustainability, law, and naval thought will be reflected in the evolution of military naval strategy, bringing the military navy part of the ocean sustainability revolution occurring in today's world. This paper follows an analytical methodology with state-of-the-art literature followed by a reflection on the implementation of sustainable development practices in war navies.

CONCEPTUALIZATION OF OCEAN DEVELOPMENT

According to the United Nations (UN), Charter,[2] development is seen as a right of every nation, and all countries must think of their development solutions for the well-being of their citizens and the world. Sustainability policies are henceforth included in any development plan of a modern State. The academic subject of development studies has shown that development is a component of the entire being, meaning that social relations, culture, human needs, politics, natural resources, skills, climate, transformation capacity, and strategy are in the equation (Kothari, 2005: 5).

The first concrete work published about sustainable development was written in 1713 by Hans Carl von Carlowitz named *Sylvicultura Oeconomica*. The book targets the replacement of forests in Germany and better management of wood and forest resources. It is remarkable for a work written in the 18th century, a time when the replacement of natural resources such as wood was not regarded as important. Despite some flaws in Carlowitz's thought on sustainability such as reforesting with only one type of tree (monoculture). Carlowitz's work serves above all in historiographical terms to start the debate about the finiteness of natural resources and the importance of ensuring the continuity of an indispensable natural product (World Ocean Review, 2015: 10-11).

Later, more authors started to see that sustainable development is a fundamental issue for society. Already in the 18th and 19th centuries authors such as Adam Smith, Karl Marx, George Perkins Marsh, and John Stuart Mill included in their economic, political, ecological, and philosophical works those themes. Although, not agreeing on one common definition, more importantly, realise from different points of view that the earth and society would need to create a cycle to proceed further into the industrial era (Klarin, 2018: 70).

For this work, sustainability strategy always will be regarded as a human and natural occurrence for development.

The definition of sustainable development that will be used for this research is the one given by the report titled *Our Common Future* from the World Commission on Environment and Development (WCED) or also called the Brundtland report. Widely accepted today as the most complete definition: "*Sustainable development is development that meets the needs of*

[2] United Nations Charter and Statute of the International Court of Justice. Article 55

the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Nonetheless, the classification of sustainable development was never universally agreed upon among stakeholders, such as International Organisations, governments, aid agencies, and academia even though a standardisation is trying to be implemented through the UN system.

Since the debate on the definition of sustainable development is not of general agreement among the pairs. It is important for the methodology of this project that the characterisation that more comprehensively describes sustainable development is the one to be used in this research. Hence, the Brundtland report involves several variants in its definition that must not be ignored. A definition of sustainable development today is regarded not to exclude several factors that must build together to achieve the cycle that is the core of sustainability (Mensah, 2019: 1- 21).

In other words, the architecture of sustainable development consists of a strong foundation; natural resources, and climate; that supports three basic pillars; economy, culture, and society. This intrinsic and symbiotic structure is fundamental for the equilibrium and cycle of continuity that sustainability demands. Where human and nature are in balance, the needs of the present and generations to come are met, structured in a stable building, as exemplified by the image below (Sachs, 2015: 5).

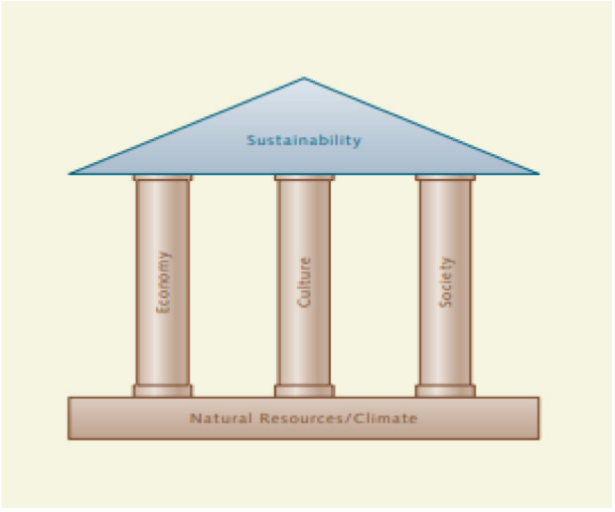

Figure 1. The extended three pillars model. (World Ocean Review, 2015: 16)

In that sense, attention should be paid to the oceans, when adopting sustainable policies for its natural, and social capitals as those are key factors in drawing strategies. Steinberg, emphasises in his work *The Social Construction of the Ocean*, that the ocean is not a resource space to be used by society as it is widely seen, but instead, a space of society, where the interaction with the sea should not be understood as only in a one-way direction of collecting resources, but rather as a reciprocal system where society interferes in a territorial, political, and economic perspective that encompasses three different functions: use, regulation, and representation (Steinberg, 2001: 20).

The ocean has played an enormous role in the development of the world since the beginning of civilization - the collection of fisheries, molluscs, crustaceans, minerals, and more recently fossil fuels triggered the aptitudes of society. However, as mentioned by Steinberg this assistance was never mutually reciprocal. In the ten thousand years preceding the industrial revolution the levels of CO_2 in the atmosphere had been around 260-280 parts per million (ppm). In 2011, the CO_2 levels in the air were at 390 ppm (Aricò in UNESCO, 2015: 3). On the way to development, the ocean accumulates more CO_2 than the atmosphere and the terrestrial biosphere[3]. Today the oceanFs contain 38,000 gigatons[4] of accumulated carbon, 16 times more than the terrestrial biosphere and 60 times more than pre-industrial revolution levels. Through a biogeochemistry process, the oceans' waters can absorb, recycle, and transform the CO_2, however, due to high emissions of greenhouse gases in a short period of time, the CO_2 does not dissolve in the ocean, creating carbonic acid and increasing the temperature and the acidity of the oceans. Therefore, all ecosystems of the ocean's fauna and flora are affected. The water molecules duplicate with the increasing temperatures due to global warming and melting of the ice poles, raising the sea levels worldwide. This process also slows down the ocean oxygen cycle and increases the carbon levels in the atmosphere (World Ocean Review, 2010: 28-29). Consequently, Steinberg proposes to view the ocean as a space of society, cultivating political and social intervention to improve better natural and social conditions.

For Steinberg, the construction of an ocean space focuses on three categories: development, geopolitics, and law. The first category

[3] The lithosphere accumulates more CO_2 than the oceans i.e., rocks plus lime stones, mainly containing calcium carbonate ($CaCO_3$) (World Ocean Review, 2010: 28-29).

[4] 1 gigaton is equivalent to 1 billion tons.

is the *discourse of development*, according to which the ocean should be considered as a physical space as well as a demarcated territory to promote development in a specific area. A good example of Steinberg's proposal can be seen in demarcated territories such as the Amazon rainforest, the Sahara Desert, or the Alps. For each one of these three territories, we know in advance how we can explore and develop it accordingly, the same can be done with the ocean. The notion that the ocean is a non-territory that can be regarded as a place for all sorts of development enterprises needs to be progressively changed (Steinberg, 2001: 176). The second one is the *discourse of geopolitics*, in which the key unit is the territorially defined State. Steinberg wants to reinforce the governability of the ocean, following the same logic as in the first discourse. The ocean is still considered to be a neglected area in governability and in the implementation of policies, where the interaction between States is less noticed. He aims to improve relations and dialogue between States across oceanic affairs. Ultimately, Steinberg suggests an order of national and international governability in the ocean (Steinberg, 2001: 206-210).

The third discourse referred to by Steinberg is the law. In the *discourse of law*, the author presents the sea as a place where the law is not present, and the rule of law does not exist. The idea is that most of the law of the sea is binding by the ship's flags and the vessel's conduct in international waters. Therefore, society, again, has no place in ocean affairs. For Steinberg, cartography and the law of the sea should be closely interrelated. The reason is that the law only applies according to the specific geophysical conditions of the ocean. Thereby, the drawing of oceanographic maps will either determine what kind of jurisprudence the State will apply in the area, or how society can act in the sea, which is clearly reflected, with a large margin for improvements, in the United Nations Convention on the Law of the Sea (UNCLOS) (Steinberg, 2001: 180-188).

As for John Hannigan, in his book *The Geopolitics of Deep Oceans*, Steinberg's ideas serve to emphasise how the ocean is a space of society and subjected to social conflict within a geopolitical perspective (Hannigan, 2016: 10). Steinberg clarifies that the ocean is a space where nature, social conflict, and order are in cooperation and competition with each other (Steinberg, 2001:210).

In these intersections, ocean sustainability gets its meaning. The pillars' discourse structure, proposed by Steinberg, on the sea, law,

geography, and conflict, involves fundamental premises in the field of development studies, as Robert Chambers emphasises:

> …development studies themselves, radical or not, undergo radical changes. They are and should be, in constant flux and evolution. They are, and should be, influenced by and influence the ever-changing external environment of development policy, power, relationships, and practice (Chambers, 2005: 73).

Therefore, ocean sustainability is a component of crucial concern in an ever-changing world and with consequences for the 21st century. The threats to ocean sustainability can be found in six topics of concern. They are marine pollution, growing demand for resources, overfishing, habitat destruction, bio-invasion, and climate change (World Ocean Review, 2015: 54).

Some authors refer to ocean sustainability and its threats as a *Panarchy*, a phenomenon that interconnects a multidisciplinary approach to growth, sustainability, and extinction, focusing on the natural and human side of the cycle, structures, and scales of adaptive systems (Huntington, Carmack, Wassmann, Wiese, Leu, and Gradinger in UNESCO, 2015: 110-111). In this study, oceans are the natural approach and humans are the economy, culture, and society with an intervention in the social, and ecological systems. According to these authors, a *Panarchy* is a self-governing operation that is capable of growth, accumulation, extinction, and re-emergence in a cycle, in symbiosis with both natural and human activity. This process can be explained in the following way: First, the building accumulation phase (α): or as a wealthy phase wherein the levels of the ocean are healthy and in equilibrium; second, the locked-in phase (k): overexploitation and pollution levels are increasing due to socio-economic demand; third, the destruction phase (Ω): the socio-economic demand is excessively high, threats to the ocean are almost extinguishing its resources; fourth, the renewal phase (through complex signals of ecological, biological, geophysical and social-economic indicators the ocean starts restoring itself to normal levels. (Huntington, Carmack, Wassmann, Wiese, Leu, and Gradinger in UNESCO, 2015: 110-111).

The *Panarchy* framework was first stated as part of a study in the Arctic Ocean, its generalisation is unlikely to happen to other areas of the sea or even in the Arctic. In addition, all the natural and human components

in this sustainability method are irregular, almost to the point where nature could regulate itself in a short period without human intervention, even though humans have been threatening the ocean's equilibrium for the past centuries. However, the threats to the ocean and its sustainability capabilities can be viewed in a more pragmatic way. According to Daly, there are three ways to implement sustainable development in the ocean. First, for all the sustainable resources that the ocean provides, the rate of use cannot surpass the proportion of regeneration. For non-renewable resources, the rate of use should be even less than the proportion implemented for renewable sources. For a pollutant resource, the rate of use cannot be more than the extent to which pollutants can be absorbed, recycled, or rendered by the ocean (Daly, 1990: 1-6).

In Daly's perspective, the ocean's resources can be extracted, however with certain limitations. The ocean is a finite supplier, and its extinction would affect other earth components, ultimately disturbing its overall wellbeing (Daly, 1990: 1-6). These thoughts are backed in the classical report promoted by the Club of Rome published in 1972: *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (Hannigan, 2016: 125). According to this report, the finiteness of the earth's resources becomes evident considering its growing population and countries' industrial consumption. For the authors, the final consequence of unsustainable growth would be the fall of civilization. (Hannigan, 2016: 125). According to the authors' argumentation, exponential growth with finite funds for the industry will eventually bring the earth's production capacity to an end, the report says:

> Unlimited resources thus do not appear to be the key to sustaining growth in the world system. Apparently, the economic impetus such resource availability provides must be accompanied by curbs on pollution if a collapse of the world system is to be avoided (Meadows, Meadows, Randers, and Behrens, 1972: 133).

For these authors, the solution to sustainability would be an equilibrium State, wherein demography, consumption, and regeneration capacity could constantly be in balance (Hannigan, 2016: 125). Therefore, the paradox that no economist, or government, could yet answer is the imperative question of how to keep economic growth, without material

finiteness? For now, the answer seems a distant solution. However, the law and diversification of the State resources, such as the armed forces can be a mitigation option.

LAW AND GOVERNANCE

The ruling and order in the ocean are an old issue in political history. Since ancient times, when men started to use the sea for transport and fisheries, disputes about to whom the sea belonged and how and when it could be operated erupted. Visualising jurisdictions and governance structures in the context of the ocean is challenging because no human settlement exists purely on the sea, there are no permanent societies, as we know them on land, that need an administration as we commonly identified in city halls, or national assemblies to make laws and rule over a geographically delimitated space. However, since the invention of the boat, the society established itself on the sea, not permanently, always in constant movement, and in delimited geographic areas and channels of communication. Nowadays, the human presence on the ocean cannot be ignored, through the massive flux of activities carried by different enterprises that operate in the seas and undeniably constitute an everlasting settlement on the ocean waters that requires regulation (Steinberg, 2001: 8-52).

Before the codification of law, there was no legislation and governance over the oceans. The systematic juridical thinking over sea-related subjects came much later in the 17th century. In the West, Hugo Grotius the jurist from Delft was the first one to write an entire treaty about this topic with solid arguments, tackling issues such as why the sea should be an open space and why all nations should be able to access it. *Mare Liberum* was written in the years 1604-1605. In *Mare Liberum* Grotius pronounces himself fiercely against the Portuguese doctrine of *Mare Clausum*.

Centuries after *Mare Liberum* an agreement was found with UNCLOS and above all the convention brings about, the creation of structures that support international cooperation, minutely stated from article 156 to article 320 and in the nine annexes attached. The mechanisms for international cooperation are mainly the establishment of the International Seabed Authority (ISA), the International Tribunal for the Law of the Sea (ITLOS), and the UN Commission on the Limits

of the Continental Shelf (CLCS), in addition to different instruments that national governments can adopt in their legislations and policies to simplify communication and engagement among countries.

UNCLOS does not only focus on the distribution of marine spaces, conflict prevention, regulation, and international cooperation, but also the development of oceanographic research and best practices for the implementation of ecological and sustainable marine life throughout the EEZ. This means that the costal State, in addition to exploring the marine area economically, also has responsibility for conservation and proper management of the water, ocean floor, subsoil, and airspace in the entire EEZ, in other words, the costal State must ensure sustainable policies throughout the 200 nautical miles that the EEZ comprises.

UNCLOS is therefore divided into three major categories: the juridical division of the sea into seven different sub-areas, the international cooperation approach, and the conservation of marine spaces. According to Tanaka, even though the convention foresees the division of the ocean into different spaces and allows the State jurisdictional rights upon those areas the convention also highlights that cooperation in ocean affairs and the implementation of ecological and sustainable guidelines are crucial parts of its enforcement. This represents an important interdependence that reflects at last one fundamental aspect of governance for ocean spaces and the implementation of best practices for sustainability issues.

The outline of UNCLOS reflects the aspirations of two key points in the historical context of the 20th century. First, it contains the capacity to postulate on paper consuetudinary rules and norms that have been regulating social relations on the sea for the last centuries. Secondly, the convention already reflects ecological and sustainability issues that were brought to the international scene by scholars in the field of development studies and by natural scientists who had observed the degradation of marine environments.

Ten years before the approval of UNCLOS in 1972 the United Nations gathered for the first time in Stockholm, Sweden at the UN Conference on Human Environment to discuss the environment and its human impact. There, a definition of sustainability was generally agreed upon by the member states. In Stockholm, the motto was that sustainable development was the maximization of the better management of resources. In other words, to continue to grow while passing laws for curbing the environmental impact, raw materials should have a more intensified use

to create supplementary capacity from a single product, hence being more productive and less polluting (Sachs, 2015: 4-7).

The UN Conference on Environment and Development in Rio de Janeiro, Brazil in 1992 saw the concept of development change dramatically from a governance and policy-making perspective. The definition of sustainable development had evolved, meaning that sustainable development had come to be viewed as an intergenerational concept. Thus, development should not pose a threat to the needs of the present and future generations. This idea is in accordance with the concept formulated in "*Our Common Future*" (Sachs, 2015: 4-7).

The Rio+20 UN Conference on Sustainable Development was again held in Brazil in 2012. The introduction of the sustainable development concept, as the main theme of the event for the first time, meant a huge change to sustainable development thought in the global governance context. Sustainable development, henceforth, undeniably means not threatening the needs of the present and future generations. In a broader perspective, for sustainable development we must consider the immaterial values and the clear improvement of human and the planet's wellbeing, thereby leaving behind the idea that sustainable development is only the capacity to generate wealth without damage to the planet. Sustainable development also covers social and psychological aspects for universal and complete wellbeing. Therefore, principles such as access to justice, health, education, gender equality, peace, entrepreneurship, climate change, work conditions, and clean energy are all included in any sustainability plan for development (The Future We Want, UN General Assembly 2012, para.4).

At UN Rio+20, Member States were able to reach an agreement that replaced the Millennium Development Goals with the Sustainable Development Goals (SDGs). The SDGs are a set of seventeen different goals that are interconnected in all scopes. Even though at first look one might think that each SDG works in different aspects of development, in separate ways, they are, however, interlinked. Nonetheless, they tackle seventeen different characteristics of sustainable development, in different areas, that can be easily interweaved: "*We recognize that the development of goals could also be useful for pursuing focused and coherent action on sustainable development*." (The Future We Want, UN General Assembly 2012, para. 246).

Four of the Sustainable Development Goals can be directly connected to ocean affairs, they are SDG 7. *Affordable and Clean Energy*, in the sense that the ocean is a vast source of renewable energy that can be

utilised in many ways; SDG 12. *Responsible Consumption and Production* refer to the extraction of raw ocean materials and the fact that overexploitation has not left sufficient time for auto-regeneration; SDG 13. *Climate Action* refers to the ocean and the changes in the earth's temperature as evidenced by the acidification and rising of water temperature and ice melting from the poles; and 14. *Life Bellow Water*, life in the ocean in its fauna and flora concept are endangered by overuse, pollution, killing of reefs and natural habitats. (Sachs, 2015: 485).[5]

To summarise, the law of the sea today provides the guidelines for human affairs on the ocean. The law comprises the rules of movement and communication, the juridical and geographical marine areas, the conservation of species, regulation of economic activities, maintenance of water quality, habitat, as well as the encouragement of scientific research for a better understanding of the development and conservation of economic potentialities, for fauna and flora preservation and natural physical infrastructures of the marine area by the coastal State. All of this applies, under the principle of international cooperation and assistance to all States, based on the principle of the freedom of the seas and the ocean as property of mankind.

The Sustainable Development Goals constitute a diploma of international law wherein States commit themselves to transforming society sustainably. Therefore, ocean affairs are of relevance to the Sustainable Development Goals. According to Yoshifumi Tanaka, the cooperation principle and the insurgence of international law that regulates ocean affairs is certainly a way forward for ocean sustainability (Tanaka, 2015: 231-374). Moreover, the concept of sustainable development gains with the law, governance, and policy a more robust structure in the construction of the idea of ocean sustainability. In that sense, diversification comes in line with the SDG's. And is in the broadening of concepts that the use of the armed forces as a push for the accomplishment of sustainable development can be seen. The military navies as a distinct and new object in the implementation of ocean sustainability.

[5] In fact, all seventeen Sustainable Development Goals could be interrelated with ocean sustainability matters. But, numbers 7,12,13, and 14 delimit the goals that have a first impact to ocean affairs according to the author's perspective.

THE DEVELOPMENT OF NAVAL STRATEGY

The concepts of ocean sustainability and its relation to society can be outlined in different ways. The international law of the sea brings a social connection to ocean affairs. Still, there are groups in society that are more closely linked to the sea than others. Fishermen and sailors are indeed closer to the sea than any other profession due to the object of their work, however, national military navies and coastguards, for instance, have a more privileged relation, as navies have an almost constant presence in the water, and the ocean is a continuous object of study and strategic planning, which is why navies have an advantageous position in terms of enforcing ocean sustainability. However, there are different types of navies, and they do not assume similar roles. To understand how the military navy can be a key figure in the ocean sustainability stage, it will be necessary to understand the concepts of pre-modern navies, modern navies, and postmodern navies in Geoffrey Till's thought. This author brings about a systematic approach to how to perceive a country's navy and how it is positioning itself in a sustainable development worldview. His methodology is widely seen in studies formulated by the navies of the Netherlands, Canada, the United Kingdom, and others.

The creation of an armed navy is attached either to the defence of investment or to the intention to enlarge State sovereign domain through the sea. These facts can be traced throughout history. More recently, deployments of battleships from the North Atlantic Treaty Organisation (NATO) were sent to the Gulf of Aden with the purpose of protecting the flux of cargo ships from the piracy that heavily affected the area (Till, 2013: 144-183).

Therefore, military navies are normally created to help to defend the crucial economic activities of a country and maintain its territorial sovereignty. The use of such navies is not merely from war to war, but to boost and ensure the economic development of the nations without any unexpected constraint. In the classic overview this can be associated with protecting trade, the exclusivity of action over an area, reclaiming investments, securing readiness in entrepreneurial research and exploration, and safeguarding key geopolitical trade posts (Mahan, 2014:28).

It is important to note that the narrative of sustainable development in the military naval affair is relatively new. Its theory has little more than

a decade, its practice is only now starting to be seen. Sustainability has never been of importance to any of the branches of the armed forces. The army, the air force, and the navy were only concerned about the country's defence. The navy, which is the object of our study, for years focused on control and supremacy over the enemy. This means that the navies were ready to not give access into their area of influence to any threat that could endanger their immediate interests, prepared at any moment to return to war, seeing sustainability as something out of context (Reis & Almeida, 2012: 23-54).

Is fair to say that the thoughts of Alfred Thayer Mahan inspired the policies of navies around the world for centuries. And at a certain point his thinking is still very much alive. Since the publication of his book, *The Influence of Sea Power Upon History: 1660–1783* the concept of security in the ocean remained almost the same for 120 years. Sea supremacy, and control. This means the implication of force and war strategy to impose sovereignty and defence (Matias, 2009). Nonetheless, with the evolution of sustainable development theories and their legal support, the recognition that to fully succeed and see it implemented, sustainability practices are to be applied in all spheres of life and social enterprises. The shift or the evolution of the concept of security in the sea passes through a sustainable approach to matters of defence, to what the navies considered the model of sustainability into security (Cunha, 2016). This is the journey that this paper proposes to explain.

Following the patterns that Till observed in his three models of military navies, this division would merely reflect the actual economic status of a country and its development priorities (Till, 2013: 27-28). It is important to highlight that classifying a country and its navy inside of one of the three framework concepts is a difficult task, because, due to their unique qualities, no country and navy fit perfectly into the theory. However, this framework helps to identify the relationship between a country's navy and its development, national infrastructure and international context. Henceforth, and for this work, it is also important to reflect upon how military navies are involved in the sustainable development of the oceans and their relationship with the three navy models proposed by Till. Thus, analysing the navies involves an examination of the States in which these navies act and to what extent ocean sustainability policies and their priorities are (Till, 2013: 43).

PRE-MODERNISM

The most important characteristic of pre-modern navies is that they have almost no fleets. Pre-modern navies are departments in the national command of military administration which are only reflected on paper. The project of their creation was formally established in legal diplomas such as the constitution, but the command of the sea was under the army or police with a few short-range boats, incapable of covering the territorial sea. The navy department was in most cases a single office in the high military command. According to Till, these navies assume a mere reflection of the general organisational condition of their countries (Till, 2013: 27-28).

In that sense, ocean sustainability constitutes a low priority for pre-modern navies. Their level of ocean contact, and how to develop their country through the sea, still lacks behind other countries, compared with high priority areas concerning nation-building. Corruption can be an impediment to the creation of a navy or at least keep it in the pre-modern stage (Till, 2013: 27-28).

MODERNISM

According to Till, the modern navy is often to be found in developed countries, with enough budget and infrastructure for the creation of a fleet and the employment of sufficient personnel. In the Human Development Index (HDI), modern navies would be positioned across medium, high, and very high places. Argentina, Indonesia, and Vietnam navies are one of them. Modern navies have recognition of their place in a globalized world; however, they choose not to interact much in international scene, opting instead to remain neutral, only active to defend their immediate interests (Till, 2013: 32-33). For Till, modern navies have five key characteristics: sea control, nuclear deterrence, ballistic missile defence, maritime power projection, exclusive good order at the sea, and competitive gunboat diplomacy.

Modern navies do not see ocean sustainability as their priority, unless it is a concern of the State, however, in these cases, the State is

contradicting itself because to have ocean sustainability it is essential to have international cooperation. Thereby, modern navies are focused more on guaranteeing the security of their development process through the exploration of natural resources and safeguarding their trade. International cooperation must be inserted into a country's legal system. Henceforth, the aim to collaborate on ocean sustainability issues is in second place, because it requires essential conditions that modern navies are not willing to adopt; collaborative cooperation with different navies, and transition from a conservative navy to a more active and participative one acting in a globalized world.

POSTMODERNISM

Postmodern navies are in developed countries or countries with their economies in transition, such as Canada, The Netherlands, or Portugal. One of their key structures is their interest in maintaining the liberal order at sea, since their country does not rely on the extraction and exploration of the ocean, but rather has a more international cooperation approach which involves a different new methodology in comparison to what has been the historical perspective of military navies. According to Till, there are also five missions attributed to a postmodern navy, which are: sea control, expeditionary operations, stability operations/ humanitarian assistance, inclusive good order at the sea, and cooperative naval diplomacy (Till, 2013: 35).

The first mission of the postmodern navy is sea control. Postmodern navies tend to see the ocean through a very liberal tradition of the freedom of the seas, in which nations have autonomy of passage and access to all parts of it. Globalization demands trade and interaction; therefore, sea control is more about defence from the enemies of the system than from a hostile nation. Ultimately, they want to gradually change the concept of 'controlling' to 'supervising', since for them the most fundamental concept is the freedom of the seas and the guarantee of the trade order (Till, 2013: 35):

In expeditionary operations, Till is convinced that problems at sea come from the land, because of political instability. Recent examples of this include the millions of migrants trying to cross the Mediterranean Sea, the piracy problems in the Gulf of Aden off the coast of Somalia, and inaccuracy in checks and controls of harmful and hazardous products

and substances carried by ships. Thus, navies are not faced with the source of the problem but rather with the symptoms. A postmodern navy tries to tackle the problem occurring on the sea rather than dealing with its symptoms. Postmodern navies are closer to the shore this helps their ability to act quickly, far from their country of origin and as part of coalitions. In this capacity they contribute to restoring international order and supporting development action:

> Here, also, they are defending the system indirectly by what they do from the sea rather than at the sea. They are defending conditions for trade rather than trade itself (Till, 2013: 37).

Third, stability operations/humanitarian assistance is what defines the character of postmodern navies in comparison to the modern ones in its vanguard strategy. Stability operations/humanitarian assistance concern the hearth of philanthropic actions carried out by military navies and they demonstrate a navy's capacity to act in cooperation with civilian government agencies or with non-governmental agencies in case of natural disasters. In these types of operations, the navy works at a fast pace to restore the conditions for development, working on the circumstances for resuming the natural flow of interactions at sea (Till, 2013: 38).

For good order at sea, postmodern navies assume different roles from those normally attributed to military navies. For this, modern navies tend to have a similar function as coast guards. Human, animal, drug, illegal material, sanitary and ecological illegalities are immediately traced down by the postmodern navy and captured in the same way as they would in a police operation. The maintenance of a constant good order at sea facilitates the work of the postmodern navy's activities. In case of any disruption, it also gives some space for the navy to focus on new areas of society that historically were not part of the navy's responsibilities, such as participating in policies that will promote and improve the development of a country, and sustainability and ecological concerns. Since postmodern navies are part of post-industrialized societies, they search above all for new methods to stay ashore and revalidate themselves in public opinion, according to which military interventions have low value as compared to the promotion of humanitarian assistance and the maintenance of the oceanic environment (Till, 2013: 38-39).

Lastly, cooperative naval diplomacy involves teamwork among navies to maintain sea stability, and the deployment of coalition fleets to tackle the common hostility to their interests. In a more socio-economic approach, the postmodern navy would seek cooperation to secure a larger area of the ocean for their environmental policies to assure that the perspective of a postmodern society applies to navies. Its capacity can only be fully employed through cooperation. Cooperative naval diplomacy provides constructive engagement in the maritime domain that enables the development of a complaisant environment, an essential prerequisite for the joint work of the navies in maintaining maritime stability and good order at sea. (Till, 2013: 39-40).

Overall, it can be concluded that postmodern navies are very aware of their place in a globalized world and the aims and aspirations of their societies. For postmodern navies, their ability to adopt different approaches to security is key to their success in transforming pure military strategy into a broader concept such as sustainable ocean development. Therefore, part of the new tactics of postmodern navies is to establish guidelines to maintain their relevance in a global world.

Postmodern navies are not interested in engaging in all fronts of international hostilities, they rely above all on the support of each other in a globalized net to confront global problems in an ocean without demarcation.

The 21st century brought a new concept of security, designated as *soft security* in opposition to *hard security*. The concept of *hard security* is well known for involving direct threats through armed conflicts. *Soft security* can be viewed as a more silent approach, but still represents a threat to common security. For *soft security* Till observes the risk to the environment that can cause the total annihilation of some of the island nations around the world and the destruction of urban centres situated at coastlines. The effects to common security can also come from environmental damage through the deterioration of water quality, extinguishing the natural fauna and flora as well as causing damage to the seabed. (Till, 2013: 301-302).

Today, navies must use their capabilities to assist in the protection and development of ocean affairs. This idea was developed by the Advisory Committee on the Protection of the Seas at a meeting held in Stockholm in 1998. The plan is that in the first instance military navies would assess their own environmental impact and reduce it, secondly, they would start

to collaborate with other civilian government agencies and in the third stage aim at global cooperation (Till, 2013: 302).

The theory behind postmodernism accepts that military navies can assume a new role in promoting sustainable practices. Subsequently, the study of oceanography in navy schools and bodies will focus more on researching, evaluating, fighting the threat of *soft security*, and creating solutions to overcome it in a sustainable way.

Nonetheless, the theoretical framework of postmodern navies links to the now well-established concept of SDG's. Therefore, postmodern navies are in a strategic position to implement and participate in the change that the world is living. In other words, postmodern military navies would not only guarantee the continuation of liberal trade, stability, and peace, nonetheless, they would be foundational institutions for the implementation and reviving of the ocean as a new space of society, while fighting with innovative means the challenges of global warming within the sustainability juridical agenda. Where the ocean is within the outline of sustainable development with pioneering ways to explore and protect it.

In practical terms postmodern navies would create more interaction with civil society, bringing together a refreshed view of the ocean through the SDG's. Especially to those whose professions are in direct contact with the ocean. These can be done through courses for civilians and military personnel in naval academia, partnership with the industrial and commercial chambers for best practices in the sea as well as for market research or innovation at sea, shipbuilding, mineral excavation, tourism, clean and renewable energies, facilitation on how to interpret open-source oceanographic studies for business activities, access to fair State institutions at sea, law enforcement and any other entrepreneurial activity related to the ocean. In that way, the postmodern navies would be fulling the fundamental pillars of ocean development, sustainability, and legal directives, while being a military structure fit for defence but also in the context of contemporary threats and pressures.

CONCLUSION

The framework of ocean sustainability in the 21st century is multidisciplinary. Understanding the diversity by which ocean threats manifest themselves through an integrative approach can bring new methodologies and solutions. In this manner authors such as Steinberg, or Daly articulate principles for ocean sustainability. The main characteristics can be identified as recognition and delimitation of the ocean sustainability scope; juridical thinking and relevance of the law of the sea for strategic actions; and, defining measures in which the subject will be approached.

The ocean as an area for sustainability is highly relevant for today's world. The delimitation and the accurate cartographical measures of ocean spaces point out key aspects of the recognition of sustainability. This includes the involvement of society. With rightful geographical delimitation, society can identify the ocean through a new perspective, fostering new thinking and entrepreneurial ways of sustainable development. Thereby, conceptualizing the ocean from a clear oceanic perspective, encouraging moral thinking concerning the ocean while supporting societal participation in the process.

UNCLOS is a document in which the freedom of the seas is acknowledged after centuries of debate. UNCLOS, in turn, supports scientific and sustainable development by encouraging nations to cooperate in the exchange of scientific data as well as their engagement in joint actions for the implementation of ocean policies.

Therefore, cooperation is a key aspect of the establishment of international support on ocean sustainability issues. This is because the ocean as a natural phenomenon, is not steady, going beyond the geographically delimitated areas formulated by the law and by cartography. Therefore, environmental problems are global problems, which represents a challenge for globalization, because to settle ecological issues, cooperation is mandatory.

The process to reach sustainability through the military navy of a country should be seen in its different categories and stages. As discussed, the pre-modern navy and the modern navy only contribute marginally to the implementation and cooperation of the SDG's. This is due to the inexistence of a concrete navy structure in the pre-modern navy and the lack of strategic interest in the modern navy, the latter being a more state-

centric navy not willing to cooperate in a globalized world, still moulded by the tactical thinking of navies in the 19th century.

However, in postmodern navies, approaches to the SDG's are an essential condition for a new formula of sea power. Postmodern navies have different conceptions of security and threats. Globalization is acknowledged as the 21st century's reality. Above all, postmodern navies' new concept is assuring that major threats to the world today are addressed, and these threats, are not the invasions by a foreign armada, but instead, the obstruction of today's global liberal order. Postmodern navies understand that the new threats to security are a consequence of globalization, such as the fast environmental degradation that the sea has been enduring since the industrial revolution.

Therefore, the key relation between ocean sustainability, law, and naval strategy is that these three major concepts can be integrated and formulated as one humanistic object of study to comprehend and tackle a contemporary problem. Overall, the observation method of this project is an approach to the implementation of ocean sustainability from the standpoint of a postmodern navy. This is a multidisciplinary approach that considers the capacity to witness a change from pure combative purposes in the military navy to the implementation of renewable and sustainable best practices on the sea.

Ocean sustainability, therefore, integrates into a diverse spectrum of academic approaches. In this framework, the multidisciplinary methodology encompasses an economic, historical, political, juridical, oceanographic, business, and military point of view, which is necessary to understand the complex challenges faced today. Ocean sustainability is, henceforth, the integration of better water quality management, fisheries control, new methods of energy generation, ships' waste management, resource management, and control of the sea level, amongst others. Understanding sustainable development also means being able to comprehend its social implications and with that, the unique and different approaches of institutions for which sustainability has not been a priority in the past and gradually sees the shift in incorporating its concept for the future.

UMA FORMULAÇÃO DE DESENVOLVIMENTO OCEANICO: A EVOLUÇÃO DA LEI E ESTRATÉGIA NAVAL PARA SUSTENTABILIDADE

RESUMO

Levando em consideração as mudanças radicais em relação ao desenvolvimento no século passado, este trabalho foi formulado de forma a ver uma nova perspectiva, onde o oceano pode ser considerado um elemento fundamental para o crescimento e desenvolvimento sustentável hoje. Estruturado em três secções, este artigo reflete a visão de alguns geógrafos onde o oceano se insere como um espaço original a ser redescoberto pela sociedade. Seguido pelo pensamento histórico jurídico e sua aplicação à gestão da governança internacional dos mares. Assim, culminando na capacidade em organizar sistematicamente os diferentes aspectos das marinhas militares e como a marinha pode se reestruturar para adequar-se a uma realidade de sustentabilidade dos oceanos.

Palavras-chave: Desenvolvimento Sustentável. Marinha. Oceano. Governança. Cooperação Internacional.

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Recebido em: 24/05/2021
Aceito em: 12/04/2022