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BLUE ACCOUNTING: FIRST INSIGHTS

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ABSTRACT

This article explores the framework of the marine knowledge, in general, and the blue accounting, in particular. For one side, the seabed, the ocean floor and the subsoil allow to promote several activities to explore these resources. For the other side, the pollution of the marine environment due to intervention of man which damage and the harm marine life produces strong risks and threats to this environment. In the context, marine resources are a public good which is available to everybody, at all time, but without payment or compensations to this collective pressure of human activity. In order to reinforce the marine knowledge, the blue accounting will provide valuable information to the citizen, to the organization and to the society based on accounting standards that identify, measure, value and report this blue growth that is the ocean strategy with new opportunities for marine and maritime sustainability. The fast evolution of the marine knowledge demands profound accounting researches that will study the increasing impact on the use, the management, the associated costs and the new report opportunities of these resources and its value. This article will reduce the negative effect of politics and Governments that forget the blue accounting as essential to support the blue economy and ocean strategy, because sciences are interdepend and scarcity of marine resources demands knowledge to emerge these first insights and then mitigate uncertainties and risks.

Subject/Topic: IC = Interdisciplinary/Critical
Methodology/Perspective: CD = Conceptual Development
Keyword: blue accounting, marine knowledge, maritime resources

INTRODUCTION

Dacin et al. (2007) states that legitimacy is the central concept of organizational institutionalism, i.e., Higher Education Institutions as part of the education system need not only for promote the technical studies and information about their environment, but

also to increase the credibility and acceptance of knowledge on the society. So, researchers are indispensable to transfer knowledge to the society and to organizations, to consolidate the teaching-learning process and thereby to justify to the society, in general, and to the organizations, in particular, new areas of researches, such as: Blue Accounting.

This article explores the framework of the marine knowledge, in general, and the blue accounting, in particular. This first publication aims to promote the new accounting research that starts, in 2015, with this main idea born in a Conference promoted by the Global Business and Technology Association based *Escola Superior de Turismo e Tecnologia do Mar*. Indeed, the main objective of this conference was to explore possibilities for sustainable future growth in Business and Technology Management. For this reason, the papers and discussions had been around the sea and, in order, to prepare for the future development of the global economy.

Since 2015, this research has been discussing new opportunities in order to find other sources related with maritime field to provide a positive contribution to Europe Economic Future (EU, 2012b). Moreover, these new insights in education and research for marine and maritime resources will led to increase the sustainable development and will meet successfully the demands of unique marine environment that will satisfied the dynamic and competitive management for future generations.

The European Commission (EC, 2012a) publishes the "Blue growth. Opportunities for marine and maritime sustainable growth" as a communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions to stimulate the long-term growth and jobs in the blue economy, such as:

- blue energy has the potential to enhance the efficiency of harvesting the European energy resource, minimize land-use requirements of the power sector and reduce the European greenhouse gas emissions (EC, 2012a: 6);
- aquaculture has the potential to impacts on wild fish stocks and water quality due to the Lack of available maritime space for aquaculture activities, competition in the global market and administrative constraints in particular concerning licensing procedures (EC, 2012a: 9);
- Maritime, coastal and cruise tourism has the potential due to the extraordinary beauty and diversity of Portugal, Europe and World's coasts, as well as, the wide range of facilities and activities (EC, 2012a: 9);

- Marine mineral resources has the potential to exploitation and mining of minerals, other than sand and gravel, because it is financial and economically feasible to extract minerals (EC, 2012a: 10);
- Blue biotechnology has the potential to underwater world and sea biodiversity (EC, 2012a: 11)

The European Commission (EC, 2012b) announces the "Marine Knowledge 2020 - From seabed mapping to ocean forecasting" as a communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Later, the European Commission (EC, 2013) promotes the "action plan for a Marine Strategy in the Atlantic Area" .

The Marine Knowledge 2020 (EU, 2016) brings together marine data from different sources with the aim to

- Help organization, public authorities and researchers to find data and make more effective use of them to develop new products and services;
- Improve the understanding of how the seas behave;

and, also, the authors found essential to promote the knowledge to blue accounting.

In order to reinforce the marine knowledge, the blue accounting will provide valuable information to the citizen, to the organization and to the society based on accounting standards that identify, measure, value and report this blue growth that is the ocean strategy with new opportunities for marine and maritime sustainability.

The EMODnet data infrastructure is developed through a stepwise approach in three major phases which are:

- Phase I was the development, from year 2009 to the year 2013, of the prototype called ur-EMODnet with coverage of a limited selection of sea-basins, parameters and data products at low resolution;
- Phase II was the development, from the year 2013 to the year 2016, of the prototype to an operational service with full coverage of all European sea-basins, a wider selection of parameters and medium resolution data products;
- Phase III will be from the year 2016 to the year 2020 which works towards providing a seamless multi-resolution digital map of the entire seabed of European waters providing highest resolution possible in areas that have been surveyed, including topography, geology, habitats and ecosystems; accompanied by timely information on physical, chemical and biological state of the overlying water column as well as oceanographic forecasts.

Since the United Nations Conferences on the Law of the Sea held at Geneva in 1958 (UN, 1958a, 1958b, 1958c, 1958d)) and 1960 (UN, 1961) have accentuated the need for a new and generally acceptable Convention on the law of the sea. In 1992, the United Nations conclude the Law of the Sea, but only 1994 has been put inforce. This law (UN, 1994) focus on the territorial sea and contiguous zone, straits used for international navigation , archipelagic states, exclusive economic zone, continental shelf, high seas, regime of islands, protection and preservation of the marine environment, marine scientific research, development and transfer of marine technology, settlement of disputes, final provisions.

There is a long way of research, because the maritime policy promotes growth and development strategies that exploit the strengths and address the weaknesses of each large sea region in the European Union, from the Arctic's climate change to the Atlantic's renewable energy potential, to problems of sea and ocean pollution, to maritime safety. This new insights has been called Ocean 2030: Sustainable Development Goals and the Ocean Business Community, because of the adoption of the "2030 Sustainable Development Agenda, a specific goal #14 for oceans and seas, and the European initiative on international ocean governance provide a strong framework for improving ocean health, protecting the marine environment and encouraging the sustainable development of the blue economy".

As resume of the paper, this first section introduces the literature review about marine knowledge over the time and shows the expectations of the society, in general, and the citizen, in particular. The second section discusses the concepts of the blue accounting based on the international accounting and valuation standards The third section presents the insights of the blue accounting that influence the legitimacy in the business and political context that it is responsible for developing the process of microbiology accreditation methods, in response to growing market demands. On the last section, it will be present the discussion and conclusion.

BLUE ACCOUNTING: CONCEPTS

From the literature, Hopwood (1992) defends that accounting is used from the active construction and transformation of organizational and social truths, associated economic truths, and, consequently, political truths. Indeed, the marine knowledge depends on the marine policy to be efficient and effective, but the data need to be publicly available, interoperable and reliable. Further than this and to promote the explanation of the blue accounting, the main objective is to refocus attention on social accounting which involves

the communication of information concerning the impact of the maritime asset and its activities on the society (Gray et al., 1996). In this multiple function, the blue accounting is based on the creation of marine knowledge that starts with the sea and oceans as an asset with blue economy behind. Consequently, this knowledge can be applied to deliver smart sustainable growth and to assess the health of the marine ecosystem due to the need to protect coastal communities (EU, 2012b).

The scientific understanding of the blue accounting will reduce the uncertainty of the marine knowledge. The recognition of the past, present and future forecast on the marine resources generate the strengths and weaknesses of the accounting. Knowing that capital is certainly not unlimited and there is an opportunity from maritime resources to explore with human intelligence and with energy can generate progress with properly rules and standards promoted by Institutions (Crowley, 2013).

The objective of the blue accounting standard is to prescribe the accounting treatment and disclosures related with maritime activity. This standard will answer:

1. What is a blue asset?
2. How is the blue asset to be recognized?
3. How is the blue asset to be measured?
4. Which entity develop a maritime activity?
5. How is maritime activity disclosed on the entity's financial statements?

The insights based on the accounting supported on the International Accounting Standards (EU, 2014), the most important definitions are:

1. A gain or loss arising on initial recognition of a blue asset at fair value less costs to sell and from a change in fair value less costs to sell of a blue asset shall be included in profit or loss for the period in which it arise (IAS 41, § 26)
2. An unconditional government grant related to a blue asset measured at its fair value less costs to sell shall be recognized in profit or loss when, and only when, the government grant becomes receivable. (IAS 41, § 34).
3. Understanding the data on the marine environment, because it is a valuable asset and observations cannot be repeated can facilitate the accuracy of the measurement. Also, long-term trends can only be distinguished from seasonal changes.

In the recognition and measurement of the blue asset, the main difficulty is due to need of the entity controls the asset as a result of past events. Indeed, there are a strong

uncertainty in knowledge of the oceans and the seas which could be reduced in order for managing future changes. In this context, the marine asset is only possible to provide future economic benefits associated with the asset will flow to the entity; and the fair value or cost of the asset can be measured reliably.

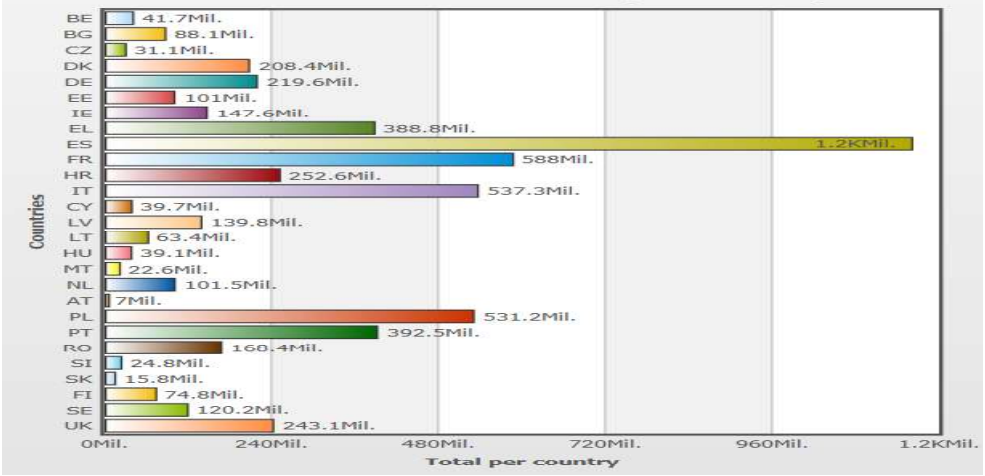
In the insights based on the valuation supported on the European Valuation Standards (TEGOVA, 2016) the most important definitions are

1. Basis of value that the fundamental assumptions for assessing a maritime valuation to help fish farmers and fisheries product processors and other organizations, public authorities, professional bodies and consumers
2. Valuation approach is the fundamental way in which, considerable marine and maritime resources are available, the valuer considers how to determine the value of the sea, ocean, water, and all the blue economy;
3. Valuation method based one several approaches uses the valuer to assess the value of the sea (Baltic, Black, Mediterranean and North) and the ocean (the Atlantic and Artic Ocean) and other marine resources.

The area of the marine and maritime resources are complex and there will be much data not in the scope of Marine

The blue accounting must rely on the European Maritime and Fisheries Fund (EMFF), 2014-2020 as it presents the Figure 1. Indeed, EMFF will helps fishermen in the transition to sustainable fishing, supports coastal communities in diversifying their economies, finances projects that create new jobs and improve quality of life along European coasts and makes it easier for applicants to access financing (EMFF, 2016).

Figure 1 – Total European Union allocation of the European Maritime and Fisheries Fund (EMFF), 2014-2020



Source: EMFF (2016)

The European Maritime and Fisheries Fund (EMFF, 2016) in European Union for 2014-2020 aims at achieving key national development priorities along with the EU's "Europe 2020" objectives. The 6 main priorities are sustainable fisheries (26.9% of the Budget), sustainable aquaculture (21% of the Budget), implementing the CFP with improvement of the data collection, scientific knowledge, control and enforcement of fisheries legislation (19,1% of the Budget), marketing and processing (17.6% of the Budget) to improve market organization, market intelligence and consumer information in the world's largest seafood market, Employment and territorial cohesion (9% of the Budget) and integrated maritime policy (1,2% of the Budget). At the end, there are the possibility that “scientists and researchers receive funding for studies of immediate interest to the industry, in fisheries management, ocean management, marine environment, climate change, coastal protection, social science and maritime economy.” Indeed, this is the starting point to promote the research of the blue accounting.

BLUE ACCOUNTING: FIRST INSIGHTS

The first insight of this research lends support for the argument that blue accounting must use public disclosure through accountability as a legitimizing tool. The importance of this new area of research will ensure accounting and financial stability to the overall objectives of the marine knowledge. Furthermore, the authors defend that the blue accounting is very helpful and it is essential to all the stakeholders that must be always informed and on an ongoing basis that it will allow each one to take an early recognition, timely involvement and carefully judgment of each investment decision.

The second insight of this research promotes the sustainability of this marine resources, especially, the database systems, such as: PERSEUS, which helps to detect and monitor illegal and suspicious activities at the sea and oceans. This insight gives additional consistence that enhanced the innovative capabilities for the information sharing, assessment of resources and assets valuation (vessels, fishes and other resources) as response to accounting pressures to improve its common understanding and public image across countries. This research will develop the accounting, in general, and the measurement issues based on Maritime and Marine issues, in particular. So, despite the strong limitation of literature, the authors defend that the blue accounting will be very helpful, to all the stakeholders that must be always informed and on an ongoing basis that it will allow each one to take an early recognition, timely involvement and carefully judgment of each investment decision. Then, transparency is strongly encouraged by the authors which will promote more blue governance to reduce the gaps and risks aggravated by the new challenges.

The third insight of this research concerns with the financial report that gives explanations to stakeholders. The authors defend that it does not exists one solution as it appears insufficient for the level of activities involved, then public authorities have to play a more prominent role and demand for the payment of the use of the maritime and marine resources will became inevitable (sea surface, sea water use, waves, salinity, gravel extraction, aquaculture, between other). At least, an objective is the understanding of the marine and maritime resources to all the society, in general, and the citizen, in particular, because, the promotion of the accountability will impact on the CSR principles of transparency, accountability, sustainability and social contract based on the Annual Report (Crowther and Rayman-Bacchus, 2004). The Marine Knowledge 2020 will demand a new paradigm.

Despite these insights, the first limitation is critically examined in this research and it is related with role played by several stakeholders, such as: Portuguese Government, Politicians, Society and each citizen. This is result of the role of basic skills of accounting illiteracy and innumeracy has become ubiquitous. So, it is important to widespread accounting literacy to the health of a modern society.

The second limitation is the existence of an enormous body of laws, regulations and codes that have emerged and been enforced reform that are necessary, but the challenge is to devise a true regulatory framework that enables the blue accounting to be more resilient

absorber of shocks. Probably for the Portuguese government and European Union is now time to control the financial system, more than create more legislation.

Finally, the third limitation is the lack of empirical evidence in this subject, because it does not exists any similar research. So, it is better to have less evidence that could be improved the marine knowledge than not knowing at all of the reality. But as Riley et al. (2001: 20) defends "facts, research methods and research data do not speak for themselves; they are interpreted by researchers and others".

The authors have a future development that is the strong commitment with the effectiveness and efficiency of the blue strategy that must respond quickly to the needs of the society and successfully to risks involve with the maritime resources. The use of this blue strategy demand the blue accounting as fundamental tool to develop the blue revolution that will bring a new world order.

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