

The Challenges of the Blue Economy in Ghana and the way forward

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Abstract

This study paper gives highlighting to the major challenges of the blue economy in Ghana and proposes the way forward in curbing those challenges. The study gives emphasis on the fact that the full potential of the blue economy has not been well appreciated because of the major challenges that hinder the potentials of the natural resource. As valuable as it is, the blue economy is being muddled up in Ghana as the resource suffers major challenges spanning from pollution and degradation, terrorist attacks, lack of proper marine policy, over exploitation of the blue economy to climate change and these calls for the need for better ocean governance. This study intends to achieve the following objectives; first is to identify the major challenges of the blue economy in Ghana, to identify some benefits of the blue economy of Ghana and to determine and make effective commendations that would help in curbing the challenges faced by the blue economy. For the slated objectives to be achieved for this paper, review of secondary data from documented reports and the internet, publications, journals and articles were used. The primary data was a coordinated approach to major stakeholders and observation of events relating to the sea in Ghana. Valuable recommendations were presented to curtail the menace for the ordinary Ghanaian and Africa as a whole to derive the blessings of the blue economy.

Keywords: Blue Economy, threats/challenges, Marine, Ocean, solutions, Ghana.

Introduction

Ghana like many other nations in Africa has relied mainly on the blue economy for the provision of jobs, medicine and food, highlighting and bolding the crucial need to sustainably use and protect this natural resource for current and generations to come. The importance of the blue economy to Ghana or any other nation that is blessed to possess the resource cannot be underestimated. Being a major asset to a nation and a major investment in national development, the resource plays a special role in the productivity and growth of a nation. The Blue Economy has been considered as one of the important tools available for achieving some of the sustainable development goals especially in the sub Saharan Africa. The blue economy also brings about the importance of striking a balance between blue growth, ocean health, and sustainability. With all the above stated substantial contributions of the blue economy to Ghana and Africa at large, it is pathetic to state that the natural resource has not been preserved properly in Ghana and the African continent and as such has resulted in many of the challenges encountered by the ocean. The high tainted appreciation of the importance of the blue economy in Africa by African nations has been tipped to be one of the probable reasons why the resource has not been given a decent handling. Another reason why the blue economy is in shambles in Africa could be the altitude of ignorance of the people with respect to the mammoth benefits of the resource. The challenges of the blue economy in Ghana must be handled with iron hands before this great and important resource is destroyed rendering future generations hopeless. For this to be done all hands must be on deck whether small or big, male or female, traditional leaders or religious leaders, governmental agencies or non-governmental agencies, local organizational bodies or international organizational bodies and those living along the coast or those living in the savannah. If Ghana can look at these challenges, in a holistic way and handle them in the proper way, only then the great potentials of the blue economy can be tapped and explored and the sector will contribute meaningfully not only to the sustainable developmental goals but also to national development.

Blue economy defined

The main concepts in this research paper are the blue economy and its challenges in Ghana and as such, the conceptual amplifications would focus on the blue economy and challenges. After the blue economy was brought into prominence by Gunter Pauli's book "The Blue Economy: 10 years, 100 innovations, 100 million jobs" in 2010, a lot of individual scholars and organizations have made constant efforts to give the concept an acceptable definition. All these efforts have not been fruitful because the concept remains an evolving stage where there is yet to be any complete definition which would be appropriate from the operational point of view. The European Commission (2012) has defined the concept of blue economy as "all economic activities related to the oceans, seas and coasts". "The blue economy is an economy that aims at diminishing or eradicating of oceanic environmentally friendly dangers to encourage sustainable development of dependent communities or nations without mortifying the oceanic locality. It is an economy that supports the friendly interaction between living beings and the marine environment with the consequential benefit both to the people and to the marine environment". (Amarh, B.A 2017). The United Nations Conference on Sustainable Development (UNCSD) held in Rio de Janeiro in 2012, defined blue economy as an ocean economy that aims at the "improvement of human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". The World Bank defined the concept, as "The Blue Economy is sustainable use of ocean resources for economic growth, improved livelihoods and jobs, while preserving the health of the ocean". The entire above definitions describe the blue economy.

Components of the blue economy in Ghana

Related Industry (Sectors)	Types of Activities
Fishing	Capture fishery, Aquaculture, seafood processing
Marine Biotechnology	Pharmaceuticals, chemicals, seaweed harvesting, seaweed products, marine derived bio-products.
Marine Mining	Oil and gas, deep-sea mining (exploration of rare earth metals, hydrocarbon)
Marine Renewable Energy	Offshore wind energy production, wave energy production, tidal energy production
Marine manufacturing	Boat manufacturing, sail making, net manufacturing, boat and ship manufacturing and repairing, marine instrumentation, aquaculture technology, water construction, marine industrial engineering.
Shipping, Port & Maritime logistics	Port operations, Ship building and repairing, ship owners and operators, shipping agents and brokers, ship management, liner and port agents, port companies, ship suppliers, container shipping services, stevedores, roll-on roll-off operators, custom clearance, freight forwarders, safety and training.
Marine Tourism	Sea angling from boats, sea angling from the shore, sailing at sea, boating at sea, jet skiing, surfing, sail boarding, diving, swimming in the sea, bird watching in coastal areas, visiting coastal natural reserves, trips to the beach, seaside and islands,
Marine Commerce	Marine financial services, marine legal services, marine insurance, ship finance & related services, charterers, fishing gears trading, media & publishing.
Marine ICT	Marine engineering consultancy, meteorological consultancy, environmental consultancy, hydro-survey consultancy, project management consultancy, ICT solutions, geo-informatics services, yacht design, submarine telecom.

Education and research	Education and training, Research & Development.
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[Sources: Compiled from World Bank Document (2017), the potentials of the blue economy]

Challenges to the blue economy in Ghana

The potential to cultivate the blue economy in Ghana and for that matter Africa is constrained by a series of challenges. The focus of this study is to gaze at the challenges of the blue economy in Ghana, which when curbed would help the blue economy to be a catalyst for Ghana's fortune. Identified and discussed below are some of the challenges of the blue economy in Ghana.

Pollution and degradation of the ocean

Pollution and degradation of the blue economy occurs when harmful, or potentially harmful, effects result from the entry into the ocean of chemicals, particles, industrial, agricultural, and residential waste, noise, or the spread of invasive organisms. It is assumed that eighty percent of marine pollution comes from land and one of its biggest sources is known as non-point source pollution, which occurs as a result of runoff. Non-point source pollution includes many small sources, like trucks, septic tanks, cars and boats, plus larger sources, such as farms, ranches, and forest areas. Air pollution is also a contributing factor by carrying off dirt into the ocean. Some water pollution actually starts as air pollution, which settles into waterways and oceans. Both land and air pollution have proven to be detrimental to oceanic life. In Ghana, one other way the blue economy is polluted is the use and washing of mining chemicals by small-scale gold miners into major rivers and lagoons that flows into the oceans. Because these activities are undertaken mostly at the mining areas in the savannah zone of the country, they more often escape being identified as indirect pollutants of the ocean. Even though the current government of Ghana is trying to stop illegal mining, the motive was not because of ocean pollution but to preserve farmlands that are being destroyed. Again, there are legal miners who still contaminate many rivers that streams into the ocean. One of the direct ways the blue economy is polluted and degraded is the use of chemicals like dichloride diphenyl trichloroethane (DDT) and lighting in fishing. These do not only pollute and degrade the ocean but also brings about poisonous ocean foods for human consumption and therefore are regarded as threats to both ocean life and human life.

Over exploitation of the blue- resources

The blue resource has been subjugated for ages with little or no regard to sustainability and prudent management. The irrational exploitation of fisheries and other blue resources has generated unevenness in the ecosystem resulting in the degradation of the marine environment and the waning of many important fish and animals to the point of extermination. Harvesting traditions, methods and technologies were geared towards profitability without a recourse of the fact that it is causing serious damage to the marine environment and fisheries resources. According to the food and agriculture organization (FAO) of the United Nations, fish stocks are mostly exploited by illegal, unreported, and unregulated fishing methods, which is responsible for roughly 11 to 26 million tons of fish catch annually, or US\$10 to 22 billion in unlawful or undocumented revenue. For instance, it is now prevalent that almost 90% of anglers in Ghana are fishing using light emission just to always have bumper catch. Some fishing folks in their desperation to have a bumper catch are using fishing nets that catches all ages of fishes without discrimination. Fishing trawlers have been left to unreasonably abuse the God-given resource and end up destroying many marine lives in the process. In addition, a chunk number of Ghana's population lives along the coast thereby putting pressure on the blue economy as majority relies on it for survival. All the above-described methods of fishing and issues raised form part of the overexploitation activities of the blue economy. If Ghana does put proper measures in place as a matter of urgency, Ghana would be deprived of many marine blessings in the very near future.

Lack of proper policy infrastructure and implementation

In Ghana, there is no proper marine policy infrastructure and implementation strategies from the central government and the authorized institutions to regulate and shape the development of the blue economy. The adequacy, efficiency, equity, and reliability of any blue economy policy infrastructure would largely depend of the solemnity and commitment of the central government, the appropriate institutions as well as coastal dwellers towards the sector. It is extremely appalling that a nation like Ghana having been regarded as the gateway to Africa because of the immense blessings and potentials of the blue economy is yet to take the resource seriously. The blue economy has been left to the mercy of its users because there is no proper policy or law that would streamline, regulate and see to it that the resource is not taken advantage of. The lack of regulations and conventions that apply specifically to maritime activities especially fishing and to other maritime policy areas has indeed influence and heighten the challenges faced by the blue economy.

Terrorist attacks and piracy

One of the many challenges of the blue economy in Ghana and the African state is terrorism and piracy. In recent times, it appears that both the pirate and the terrorist groups are augmenting and using each other to get money, people, and weapons either to hold territory, deprive crews or to hijack ships. Terrorism occurs beyond national borders and is a major global issue that directly affects not only Ghana and other developing countries, but also the entire international community including developed countries. This is evident in the recent terrorist attack that took place in the Ghanaian waters. This makes the threat of international terrorism to remains serious. Piracy is the activity of criminal organizations and is becoming more extensive and more violent. Some pirate activities include attacks on a merchant, fishing, container, auxiliary and other ships for the purpose of robbing the crew, seizing goods and abducting ships with cargo for their subsequent sale, and crewmembers for ransom (Eshchenko & Novikov, 2014). The geography of pirate attacks is quite extensive, of which it includes the waters of West Africa, the Caribbean, the South China Sea and the coastal area of Hindustan. Even though the problem of piracy as a component part of the maritime crime is global in geographical terms, the menace is rampant in some waters like the West Africa waters. Certainly, this is not the good news and sign for the Ghanaian economy.

Climate change

Climate change is a change in the statistical distribution of weather patterns when that change lasts for an extended period of time. This phenomenon concerns itself with a change in long-term average weather conditions. Biotic processes, as well as variation in solar radiation, plate tectonics and volcanic eruptions are the main causes of climate change. Industrial human activities have also been identified as the primary cause of climate change. The term climate change is often used to refer specifically to anthropogenic climate change caused by human activity as opposed to changes in climate that may have resulted as part of earth's natural processes. Climate change is a global issue and needs a concerted effort by all nations (Amuakwa-Mensah, 2014). The impact of climate change for example in the form of both slow-onset events like sea-level rise and more intense and frequent weather events cannot be overemphasized. Indiscriminate human activities along our coastal belt have in a long way contributed to climate change in Ghana, leading to a rise in sea level, which pollutes other water bodies, destroying aquatic life. The long-term climate Challenges to the Blue Economy change impacts on ocean systems are not yet fully understood, but it is clear that changes in sea temperature, acidity, and major oceanic currents, among others, already threaten marine life, habitats, and the communities that depend on them. Unfortunately, Ghana, as well as the developing countries have not shown clear evidence of committed response to climate change.

Other challenges

Aside the challenges deliberated above, there are other salient challenges that when dealt with would go a long way in sustaining the blue economy in Ghana. Among such challenges are insufficient concerns from the central government, resistance to change in marine activities by some stakeholders of the blue economy,

bribery and corruption, unhealthy competition among local fishing folks and superstition. For instance, most local fishing folks believe that the marine living resources are infinite and indestructible and so should be left alone to fish, use and abuse them at will. The Navy and some officers from the ministry of fisheries tasked to monitor and arrest illegal anglers and marine operators end up condoning and conniving with the perpetrators for a ransom. In addition, some anglers are unwilling to change their methods of fishing using other illegal method that are being used the trawlers without interference from the authorized institutions and are therefore reluctant to change because of profitability and also the quest to own the bragging right of the best fisherman for a year.

The way forward for the blue economy in Ghana

Successive political regimes come and go without attaching special sentiments on the blue economy, they normally do not go beyond the pittance they make from their seaports probably because they lack the holistic vision needed to see and access the full potential of resource. This is because, the blue economy, in the life of a nation, provides great advantage than the mere stipend or commission government takes from oil drilling companies and other taxes collected from the seaport users. The blue economy plays important role in nation building and as such, it must be controlled with all the care needed to be able to reap the intended benefits. Some of the benefits of the blue economy is the fact that the resource is used by nations as the force and wall of their national defense, it plays major role in trade facilitation, food and medicinal benefits, employment creation, tourism, sub marine mining, oil and gas minerals, maritime education and research, marine renewable energy, salt production, shipping and transport etc. The discussion above shows some of the challenges or dangers that has submerged the blue economy in Ghana. Some of the challenges centers on over-exploitation of marine living resources, government's neglect of stringent marine policies, mistreatment, climate change and resistance to change. To address the perennial crises that has bedeviled the blue economy in Ghana, the following were suggested.

Proper and adequate policy regulation and implementation

There must be an adequate marine policy that would regulate everything marine in Ghana. For example, the number of industrial trawlers operating in the Ghanaian fisheries water and other liners who are engaged in deep sea fishing mainly to catch categorized fish and they end up catching and destroying other species must be known, monitored and brought to book. Already, there is a terrific increase in the artisanal fleet of canoes because of the marginal increase in population every year in Ghana of which majority depends on the blessings of the blue economy. This has therefore brought about tremendous pressure on the resources. There is the need for a comprehensive marine policy that will aid in the thorough review of the blue economy sectors in particular fisheries from management and conservation point of view and be attaining sustainability of the resources. The fishing capacity has to reviewed and the fishing effort controlled to rehabilitate commercial ocean species and fish. The implementation of the policy is as important as the policy formation itself. Therefore, the government must not end at the formation of a marine policy but must take the necessary pain to implement it successfully. Severe punishment should be meted out to fishing folks who violate the rules and regulations of fishing the proper way as well as those security agencies who takes bribe in exchange of convicting pollutants of the marine life.

Proper and regular stakeholder engagements, marine training and education

Education of all stakeholders is very important in this regard and should be taken seriously, as a majority of our fishing community are not well informed about the dangers of their fishing practices to the blue economy. With my interaction with most of the fishing folks, it clear that they are not aware of the possible dangers of polluting and degrading the resource as well as over-fishing. Educated, skilled and well-trained human resources are catalysts of national development. The sustainable development of any economy, who can participate and contribute in the globalization of business and the accompanying technological revolution, is largely dependent on the level of education and skills acquired by the citizenry of that nation. Having assessed the need of world market and local industry, appropriate programs and courses on ocean

and coastal engineering, fisheries management, marine science and oceanography, maritime education and trade are essential to be introduced at the tertiary education system of Ghana. The government must engage all stakeholders of the sector without discrimination. This should be done in such a way that the local fishermen who plight the ocean at all times are not underestimated and overlooked. Ministry officials should desist from sitting in the comfort of their office and flashy hotels in the name of organizing stakeholder meetings and go to the shores where it is very easy to have the right people with the technical expertise and knowledge to contribute meaningfully. By this, it would be extremely easier for them to comply with any government policy on maritime. An impetus in the growth of the blue economy especially in Ghana and the sub-saharan Africa may come from a large army of skilled seaside and offshore engineers, commercial coastal traders, navigators, mariners, fisheries management experts, biotechnologists, fishmongers and other vocations and businesses.

Elimination/Minimization of marine pollution

Marine pollution as described above can take many forms, which is rarely monitored and can be detrimental to the survival of the blue resource. Therefore, the growing threat of pollution to the blue economy needs an urgent attention by the central government and all stakeholders of the blue economy as well. The operations of the Environmental Protection Agency (EPA) of Ghana must give exclusive attention to the sector to help in eliminating or minimizing of marine pollution. Activities of gold mining company and other individuals at the savannah Ares must be monitored in order to prevent the disposing of household and industrial chemicals into our rivers and lagoons that streams into the ocean. Both local and foreign anglers must desist from using chemicals, illegal fishing nets and other unapproved gadgets from fishing. These must be done holistically with strict regulations and sanctions to offenders.

A robust blue economy monitoring and control system (MCS)

The ministry in charge and all the government institutions empowered to protect the blue economy must establish a robust monitoring and control system to help in the implementation, management and conservation of marine fisheries resources. Currently, there are officers from the ministry of fisheries that are put on boats of some fishing boats in particular trawlers to monitor and control their activities but this has not been able to solve any issue because of the immoral behaviors of most of the officers. The innumerable number of mechanized and non-mechanized fishing boats engaged in marine and coastal waters must be compel to adhere to measure put in place with every local chief fisherman playing supervisory roles. In addition, the ministry must provide sufficient infrastructure such as, fishing ports, patrol vessel, handheld VHF, vessel traffic management and information systems (VTMS) and other facilities needed to effectively implement an MCS system for management and conservation of Marine Fisheries. A very robust MCS system is needed to achieve the sustainability of the blue economy.

Central government/ private commitment to the sector

The blue economy should be a very serious concern and responsibility of the government of Ghana at the same time, the private sector should be made to participate fully in its preservation. This will be successful if government on its part shows its seriousness and commitment to preserve the natural but great economic force of the nation. Over the years, governments have only taken a section of the blue economy (Port operations, oil and gas sector etc.) serious, leaving other equally important sectors like fisheries and aquaculture. As soon as all and sundry sees the governments' commitment to the whole sector, no stakeholder would want to abuse the resource because of the accompanying implications. The government should also allow private stakeholders to contribute and participate in the monitoring and preservation of the blue economy.

Improvement of maritime security to combat terrorism and piracy

Maritime security in simplest meaning is concerned with the prevention of intentional damage through sabotage, subversion, or terrorism. Terrorism, piracy and other related maritime crime threatens maritime

wellbeing on a global scale, and countering this threat is a shared global responsibility. Ghana must as a matter of urgency, take prompt actions at both national and regional levels, with support of the international community, to develop and implement national maritime security strategies, including the establishment of a legal framework to curb insecurities on the Ghanaian waters and the Gulf of Guinea as a whole. The types of terrorists and their methods are diversifying, making it even more necessary to enhance international cooperation for counter-terrorism activities. The navy's effort must be supplemented by a private sector participation in terms of providing the needed security for the ocean. The government must therefore invest substantially into the security of our shores to make it safe for trade and commerce. The frequent occurrence of terrorism has a major impact on the economic activity of the affected country on tourism, foreign direct investment, trade, and other areas. For this reason, enhancing counter-terrorism measures and preventing terrorism and piracy is an important prerequisite for the national development in Ghana.

Addressing climate change and managing carbon emission

Climate change is one of the most complex issues facing the world today and there is the urgency in tackling it by employing mitigation and adaptive measures on the impacts of climate change. Climate change scenarios need to be taken with great importance if Ghana is serious about the subject. The government of Ghana must ensure that leading companies are taking action both inside and outside their fence lines to reduce their own emissions and become more resilient to inevitable climate impacts. Addressing climate change and managing carbon emission, maintaining sea level rise and change in ecosystem, addressing ocean acidification and blue carbon etc. will go a long way to aid in curbing the effects of climate change as a challenge to the blue economy.

Conclusion

The blue economy has not been treated fairly not only in Ghana but also in Africa and this explains the reason why as Africans, we are yet to appreciate the importance and impact of the blue economy on the continent. There exist remarkable opportunities for Ghana to strengthen her ocean-based economy if we can address the major challenges confronting the blue economy. It is unfortunate that we have still not seen that the blue economy is an economic force on its own with greater benefits to the continent. The blue economy is a leading economic force in present times as it is the means for international trade and commerce, and a significant source of food, unmatched revenue from port operations as well as oil and gas resources, hence the need for proper governance. The authorized agencies must endeavor to work together to monitor, assess, and limit the various sources of pollution that may result naturally and by human actions. The government of Ghana must provide among other things the legal, policy, governance and institutional frameworks that will mitigate against the challenges of the blue economy to be able to improve the benefits accruing from the God-given resource. If the marine-based resources are managed through proper planning and inter-sectoral coordination of public-private partnership and investment, it will certainly generate strong foundation for earnings and economic benefits with the assurance of sustainability. Indeed, for the blue economy to be sustained, it requires effective multi-sectoral coordination and integration mechanism, and collaboration across the public-private sectors and on a scale that has not been achieved in the past.

References

- [1]. Ahmed N, Troell M, Allison EH, Muir JF (2010). Prawn postlarvae fishing in coastal Bangladesh: Challenges for sustainable livelihoods. *Marine Policy* 34:218-227.
- [2]. Alam M. Khurshed, MoFA 2015, "Ocean/ Blue Economy for Bangladesh".
- [3]. Alhassan M.J (2018), climate change in Ghana, its effects; Department of Agriculture extension, University of Ghana, legon. Retrieved from: <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Climate-Change-in-Ghana-its-effects-634377> (Retrieved on 14th June, 2018)
- [4]. Amarh, B. A. (2017). The Role of the Blue Economy in National Development: A Case of Ghana. *TEXILA INTERNATIONAL JOURNAL OF MANAGEMENT*, 3(1), 14-19. doi:10.21522/tijmg.2015.03.01.art003.

- [5]. Asante, Felix & Amuakwa-Mensah, Franklin. (2015). Climate Change and Variability in Ghana: Stocktaking. *Climate*. 3. 78-99.
- [6]. Christian Bueger (2015), Forthcoming in *Marine Policy*. Cardiff University Department of Politics and International Relations, School of Law and Politics, Cardiff University, Park Place 65-68, Cardiff CF103AS, Wales UK Retrieved from <http://bueger.info/wp-content/uploads/2014/12/Bueger-2014-What-is-Maritime-Security-final.pdf> (Retrieved 14th June 2018)
- [7]. EC, 2012. European Commission. Communication from the Commission to the European Parliament, the Council, the European Economic and social Committee and the Committee of the Regions: Blue Growth—opportunities from the marine and maritime sustainable growth. COM (2012) 494. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0494:FIN:EN:PDF> (Retrieved 15th May, 2018).
- [8]. European Commission (2017), Staff working document on blue growth 2013-2016, Report on the blue growth Strategy towards more sustainable growth and jobs in the blue economy. Available at https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/swd-2017-128_en.pdf (Retrieved on 16th May, 2018)
- [9]. FAO (2016). *The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all*. Rome. 200 pp.
- [10]. Hossain D. M. H et al, 2015 OPPORTUNITIES AND STRATEGIES FOR OCEAN AND RIVER RESOURCES MANAGEMENT, Background paper for preparation of the 7th Five Year Plan. Retrieved from http://www.plancomm.gov.bd/wp-content/uploads/2015/02/23_FINAL-Nutrition-Background-Paper-for-7th-Five-Year-Plan--23-Feb-2015.pdf on 14th June 2018.
- [11]. https://en.wikipedia.org/wiki/Marine_pollution (Retrieved 30th May 2018)
- [12]. [https://en.wikipedia.org/wiki/Maritime_security_\(USCG\)](https://en.wikipedia.org/wiki/Maritime_security_(USCG)) (Retrieved 14th June 2018)
- [13]. <http://www.mfe.govt.nz/sites/default/files/media/Green%20Party%2004732.pdf> (Retrieved 14th June 2018)
- [14]. http://sp.mdot.ms.gov/Maintenance/thinkgreen/Documents/Awareness/Runoff_Pollution.pdf (Retrieved 30th May 2018)
- [15]. <http://www.verstehen.sayrid.org/blue-economy-and-economic-security/> (Retrieved on 15th May, 2018)
- [16]. <http://www.worldbank.org/en/news/infographic/2017/06/06/blue-economy> (Retrieved on 15th May, 2018)
- [17]. Hussain M.G. and Rahman M.J. 2009 “Marine fisheries resources of Bangladesh: Stock states and management issues.” Presented in the First workshop on the Assessment of Fishery stock status in the south and Southeast Asia. Organized by FAO, APFC & SEAFDEC. 16-19 June 2009 Bangkok. Thailand.
- [18]. Knyazeva, N.A. & Knyazeva, E.A. (2014). The Application of International Law Standards as a Means to Counteract Maritime Terrorism and Piracy. *Criminological magazine*, 4, 175-187.
- [19]. Pauli D. Gunter, 2010, *Blue Economy- 10 Years, 100 Innovations, 100 Million Jobs*
- [20]. World Bank and United Nations Department of Economic and Social Affairs. 2017. *The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries*. World Bank, Washington DC. Available at <https://openknowledge.worldbank.org/bitstream/handle/10986/26843/115545.pdf?sequence=1&isAllowed=y> (Retrieved on 15th May, 2018).