



## **GOOD GOVERNANCE IN EXPLORATION AND EXPLOITATION OF MARINE RESOURCES**

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### *Abstract*

Marine resources have been the key to many coastal countries for progress, prosperity, livelihoods and the blue economy, which in turn generates sustainable food security, trade and tourism enterprise at local, national and international levels. 72% of the Earth's surface is not subject to sovereign administration and remains an anarchic space. The exploration and exploitation of marine resources, both living and non-living, have many challenges like environmental, technical, legal, scientific, etc. New technologies pose serious challenges to the notion of High Seas Freedom. As a result, there are increased trends of competition at national, regional and international waters, which may strongly need an equilibrium on the importance of good governance at sea. Over the years, UNCLOS 1982 and other international maritime laws have been considered as pivotal instruments for all to ensure such governance, although, there are criticisms of the lack of trust, transparency and political assurance. We need to foster more informed stewardship and innovative use of the blue economy/marine resources, within the overarching context of sustainable development. There must be greater integration of efforts and information to promote the sustainable development of the ocean resources and it must be based on open and greater communication networks among all stakeholders. The challenge is to coordinate all such endeavours within a broad framework based on the best available information, including on the needs of the region and its future prospects with respect to the sustainable development of its ocean resources/blue economy.

**Keywords:** Blue Economy, Sustainable Food Security, Sustainable Development, Good Governance.

### **Blue Economy Management Framework for Bangladesh**

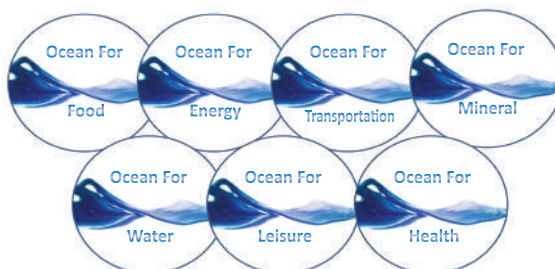
In 2012, the world formulated its Blue Economy strategy to harness the potential of oceans, seas and coasts for growth and jobs. With high unemployment levels in some coastal developing countries, and small island developing states formulated the strategy with the objective to promote smart, sustainable and inclusive growth and employment opportunities in maritime economy. The seas, coasts and maritime sectors and regions were considered to be drivers for the many maritime economy, with a potential of millions of jobs and a gross added value.



Strengthening the blue economy is a long-term approach to support sustainable economic development and ensuring the livelihood security of Bangladesh. Through proper strategies, it is possible to realize potential of the blue economy in practice to make the marine ecosystem as the main driver for the national economy of Bangladesh. However, to achieve a sustainable blue growth in Bangladesh a strategic planning and management framework is required. We strongly recommend to develop a blue economy management framework for Bangladesh focusing potential sectors, knowledge generation through research and ocean governance and required investment.

### Focusing Potential Sectors

Special focus to develop the sectors with high economic potentials (i.e. fisheries, coastal tourism, marine biotechnology, ocean energy, mangrove forest and other resources) could trigger smooth and sustainable blue growth in the country. Farming finfish, shellfish and aquatic plants in the maritime areas/coastal waters is one of the world's fastest growing food sectors; it already provides the planet with about half of all the fish we eat. To boost the fisheries sector, it is important to identify the priority areas through consultation with relevant stakeholders. In addition, identification of bottlenecks will also facilitate cooperation, coordination and exchange of best practices for sustainable fisheries management.



The extraordinary beauty and great diversity of coastal areas in Bangladesh have made them the preferred destination for many holidaymakers from the country and also from abroad, and making coastal and maritime tourism an important tourism sector. Therefore, as part of blue growth strategy, the coastal and maritime tourism sector is an aid to foster a smart, sustainable and inclusive economic development for Bangladesh. It is one of the most significant maritime sectors in terms of gross value added and employment. Therefore, to unlock the potential of this promising sector, coastal tourism sector must be paid a special attention.

Blue biotechnology is concerned with the exploration and exploitation of the resulting diverse marine organisms in order to develop new products. Research of the sea biodiversity could enable us to develop new pharmaceuticals or industrial enzymes that can withstand extreme conditions, and which consequently have high economic value. However, in the long term, this sector will offer high-skilled employment.

Seas and oceans offer a vast renewable energy resource and technologies are currently being developed to exploit the potential of tides and waves as well as differences in temperature and salinity. Though the development of this emerging sector would not only help us to achieve our renewable energy, but also it could fuel economic growth through innovation and create new, high-quality jobs. The quantity of resources occupying the ocean is potentially massive. Resource extraction (i.e. mangrove, sea salt etc.) is concerned with the retrieval of these resources to ensure security of supply and fill a gap in the market.



Mangroves are the breeding, nursing and feeding grounds for many marine lives including many fishes, mollusc and crustacean population. Considering the role of mangrove, this plays vital support for recruiting of marine life which eventually enriches the sea resources. Our lack of knowledge of the marine resources demands a careful approach. Thus, engagement in a variety of studies and projects aimed at shedding light on the benefits, drawbacks and knowledge gaps associated with this type of resource extraction.

## **Knowledge Generation Through Research**

Research activities to generate knowledge are essential components for certainty and security of sustainable blue growth. Ocean literacy to improve the understanding the information about the sea, spatial planning for an efficient and sustainable management of activities in sea and maritime monitoring to have a better picture of what is happening in the sea can be achieved through proper research activities. Ocean literacy among the stakeholders will make more effective and sustainable economic use of ocean. Moreover, it will also improve the understanding of how the seas behave. For example, competition for space in sea, space for aquaculture and other uses, demands the management of ocean properly. Therefore, maritime spatial planning (MSP) works across borders and sectors will ensure human activities at sea take place in an efficient, safe and sustainable way. Maritime spatial planning reduces conflicts between sectors and creates synergies between different activities, encourages investment by creating predictability, transparency and explicit rules and protects the environment through early identification of impact and opportunities for multiple uses of space. Monitoring of the maritime area for border control, safety and security, fisheries control, customs, environment or defense will ensure a sustainable blue growth.

## **Ocean Governance**

Ocean governance is about managing and using the ocean and resources in a way that keeps the ocean healthy, productive, safe, secure and resilient. For a good ocean governance practice, it is crucial to adopt a holistic approach integrating all marine and maritime issues in Bangladesh. A robust set of mandatory environmental rules to ensure the use of marine resources sustainably, wherever they operate should put in place. Development of a local level strategy to boost sustainable blue economy is also required under ocean governance. Strategies to address common challenges and opportunities, collaborating closely with stakeholders from civil society and the private sector, marine research for improving cooperation and information-sharing, and making maritime data publicly accessible will be beneficial to achieve for sustainable blue growth. Finally, creating highly qualified and skilled professionals in the blue economy and engagement with international forums will foster the development of ocean economy.

## **Integrating Institutes for Implementation of Management Framework**

Existing institutions in Bangladesh related to marine sector include academic institutions (i.e. universities and research institutes), NGOs and other institutions i.e. think tank organizations. To implement the proposed framework, we need to

integrate all these institutions. The work should be integrated and multidisciplinary. Bangladesh has national oceanography research institute at the Cox's Bazar which is located on the south-eastern coast of Bangladesh. It is now important to establish coastal and marine research station in the central and south-western coastal zone of Bangladesh. Existing river research institute should also work on the estuarine area. Fisheries research institute and department of fisheries need to work for domestication of marine fishes which are not yet an aquaculture product. Academic institutions, i.e. universities need to collaborate with each other as well as other government organizations for marine and coastal research in Bangladesh. Proper regulations of economic activities need to monitor through government and NGOs for sustainable utilization of resources. Overall it is important a top-down approach for implement the proposed framework.

### **Investors and Investment**

An investor can be described as any person and/or group who commits capital with the expectation of financial returns. Investors utilize investments in order to grow their money and/or provide an income during retirement. Start-ups generally acquire capital from friends, family and angel investors normally termed as private investors. Venture capital support small sized companies with potential and some track record whereas private equity investor generally invest in more developed companies with a larger track record. Both venture capital and private equity investors can play a significant role in the management and operations of companies. Public investors include various governmental investors, or public investors. Typically, these investors do not aim for increased personal wealth but invest public money in corporate activities to realise societal objectives, such as job creation, renewable energy generation or infrastructure development. Public and private investments are not mutually exclusive. In reality companies can



attract finance from both public and private investments, where availability of government venture capital can help to access private venture capital. A significant amount of investments comes from companies themselves who spend time and resources on research and development. This type of investment accounts for a large part of investment in resources with the aim of doing business in sectors such as aquaculture, seabed mining, ocean energy and/or marine biotechnology. A relatively new type of investment is crowdfunding. Donations to such initiatives can be driven by commercial motives but also by personal reasons. There are different ways in which investors are compensated for their investment, either financial, in company shares or in-kind. In the blue economy, various crowdfunding initiatives have popped up and although the total amount invested remains relatively small, crowdfunding can support small-scale initiatives and start-ups that have no access to the established financial institutions. Examples of crowdfunding in the marine realm include funding for various ocean clean-up initiatives, start-ups in aquaculture or in tourism.

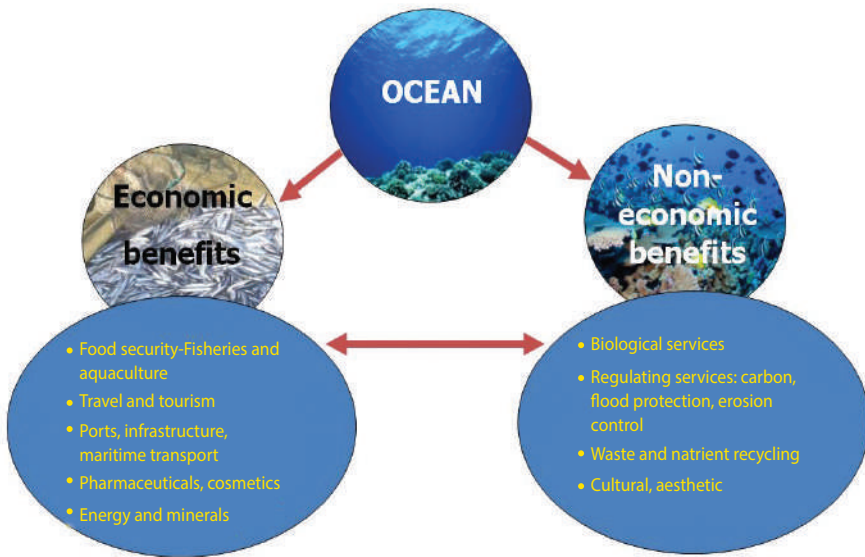
### **Drivers of Investment**

The first school of thought focusses on rationalized behaviour of investors to identify their motivations and considerations. The behaviour of investors is explained by focusing on rational considerations such as expected return of investment, risk reduction and portfolio management. Risks are crucial for understanding investors' decisions and to manage their portfolio of investments to reduce risks. A second school of research has emphasized that the rational approach to investor behaviour neglects the irrationality that investor sentiment are of pivotal importance in decision-making. A third approach to investor behaviour focusses on the rise of social responsible investment.

### **Targeting Investors in the Blue Economy**

Bangladesh after the first blue economy workshop in 2014 recognized that the need for capital-intensive infrastructure and the demand for risk financing are high in the blue economy. At the world level, about 95 trillion USD are expected to be invested in infrastructure (much of it on the coast), within the next 20 years. Global investment needs for offshore renewables have been estimated at 790 billion USD by 2040. Since then, there have been significant changes with regards to investments in the blue economy, particularly for offshore wind energy. Strong incentive schemes in the United Kingdom, Denmark, Germany, Belgium and the Netherlands have stimulated growth of capacity and rapid maturation of the sector. With this, the prices for offshore wind energy have declined rapidly up to a level where newly developed offshore wind farms will not require subsidies at all.





Conforming to the various strategies, different governments have focussed on the development of new technologies to boost the five high-potential maritime sectors (blue energy, aquaculture, coastal and maritime tourism, blue biotechnology and sea-bed mining). It should be argued that Blue Economy can be stimulated by putting the right ‘enablers’ in place. Enablers are seen as prerequisites that have to be in place to create an environment open to innovation and growth. This includes research and education (which can be seen as supportive enablers) but also maritime surveillance, spatial planning and environmental. Additionally, Bangladesh need to remove barriers to create better conditions for innovation and allow the maritime economy to develop. Existing funding instruments/mechanism are not good enough to support the development of Blue Economy. Lastly, we need to encourage partnerships between, public authorities and economic players, in order to foster scale effects and mutually reinforcing learning and investment and to explore market opportunities worldwide for the international dimension of the blue economy.

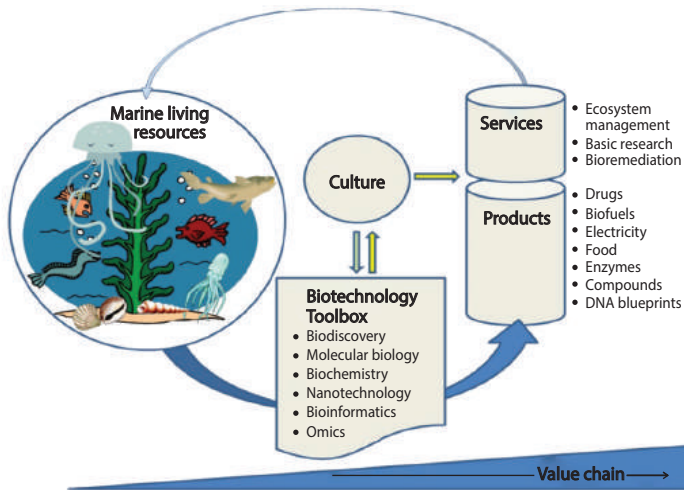
If we dig somewhat deeper into the role of government funding to support the development of Blue Economy sectors, we must make “concerted efforts to maximise the amount of funding for Blue Economy projects. The focus is on promoting innovation – new technologies, new products and new services and fostering investment, especially where financial markets are reluctant to lend to or provide capital for unfamiliar or first-of-a-kind activities. This has led to the development of various governmental strategies to make funding available for

Blue Economy projects. It is now widely recognized that regulation to increase access-to-finance for Blue Economy sectors are needed to facilitate the desired developments. This particularly concerns the development of a risk-sharing financial instrument – thought to ease private investment. The World Bank has published a number of reports on the blue economy. Although a number of these focus particularly of the Caribbean islands, the World Bank recognizes the wider potential of blue economy to benefit underdeveloped coastal countries. A blue economy is seen as low-carbon, efficient, and clean (UN DESA). It is also an economy that is based on sharing, circularity, collaboration, solidarity, resilience, opportunity, and interdependence (UNEP 2015). Its growth is driven by investments that reduce carbon emissions and pollution, enhance energy efficiency, harness the power of natural capital—such as the oceans—and halt the loss of biodiversity and the benefits that ecosystems provide (UNEP 2013).

According to the World Bank, the blue economy comprises the range of economic sectors and related policies that together determine whether the use of oceanic resources is sustainable. It is explicitly stated that the blue economy includes established ocean industries, such as fisheries, tourism and marine transport, as well as new and emerging activities such as offshore renewable energy, aquaculture, seabed extractive activities and marine biotechnology and bioprospecting. The world Bank has also invested millions in the blue economy sectors of Bangladesh. The World Bank argues that the potential to develop a blue economy is limited by three main challenges. Current economic activities and trends that exploit the ocean unsustainably need to be replaced by altered or even new economic practices and behaviour. For this, resistance of established interest must be overcome and – the second challenge – is necessary to invest in human capital. Individuals need to be trained to be able to work in the blue economy, thereby harnessing the employment and development benefits of investing in innovative blue economy sectors. The third set of challenges relates to strengthening the concept and overcoming inadequate valuation of marine resources and ecosystem services provided by the oceans; isolated sectoral management of activities in the oceans, which makes it difficult to address cumulative impacts; inadequate human, institutional, and technical capacity; underdeveloped and often inadequate planning tools; and lack of full implementation of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and relevant conventions and instruments.

The World Bank's discourse on investment is founded on a belief that investments are beneficial to reach the objectives of a blue economy, arguing for example that “the private sector can play a key role in the blue economy, especially in small islands and developing states. Business is the engine for trade, economic growth, and jobs, which are critical to poverty reduction”. However, it is also





acknowledged that private capital investments need to be levered by public policies and support. Many public and private economic activities that could serve to restore ocean health will carry higher upfront costs and returns that will not immediately accrue to investors. This suggests the need for new and innovative financing mechanisms, more capital than is currently being deployed, and a greater degree of collaboration between the public and private sectors. The World Bank and United Nations (2017), in their study on the potential of the blue economy have outlined what is needed to reap the benefits of the blue economy. As a general recommendation, it is argued that investment in science, data and technology, and making use of the best available science, data, and technology, is critical to underpinning governance reforms and shaping management decisions to enact long-term change. The effective implementation of the United Nations Convention on the Law of the Sea is a necessary aspect of promoting the blue economy concept worldwide. That convention sets out the legal framework within which all activities in the oceans and seas must be carried out, including the conservation and sustainable use of the oceans and their resources. The effective implementation of the Convention, its implementing agreements and other relevant instruments is essential to build robust legal and institutional frameworks, including for investment and business innovation. These frameworks will help achieve SDG commitments, especially economic diversification, job creation, food security, poverty reduction, and economic development (World Bank and United Nations Department of Economic and Social Affairs, 2017). Given the fact that these recommendations are applicable to a large number of countries, in different regions and with vastly different economies, it is stressed that each country should weigh the relative importance of each sector of the blue economy and decide, based on its own priorities and circumstances, which ones to prioritize.

## **Risks and Barriers to Investment**

The most important barriers to investment, according to some experts, are the lack of confidence in technology and difficulties to access finance. The most important risks according to the investors consulted here are operational and financial risks. The Investors in Blue Economy are not dealing with mature technologies or low risk markets. These sectors face uncertainty and risk in the commercialization of the products, regulatory problems and technologies are still under development. Offshore technologies are still very expensive: new technology is not getting obviously cheaper. In some cases, prices are actually increasing. For the various Blue Economy sectors, the question is how to move towards a low-risk, mature technology sector and become more attractive for investors. Subsequently, we need to identify what motivates investor to invest – or not to invest – in sectors and project through interviews of the stakeholders. The survey results show that the rational motivation ‘return on investment’ is important to the investors, while ‘diversification of portfolio’ – a strategy to reduce risk – is rated as less important. The interest of investors lies in the potential impact of technologies; they are interested in finding the game-changer, i.e. technology that changes an industry. They do not get involved for a quick or big return but have a long-term view on the developments in sectors – and society as a whole – based on a combination of idealism and realism. The technology is already there, it is about investing in the right companies to continue marketing and thereby change the marine fishing and aquaculture industry in a positive way. Access to finance is a recognized critical issue in the development of the Blue Economy sectors. In the case of offshore renewable energy, public support is required as “the economic viability is still not there”. The most preferred governmental support schemes are tax breaks, loans, bonds and guarantees, although differences are small and all are relatively important. The four most favoured support schemes all relate to financing of companies and help to increase “access to finance” through stable, long-term support schemes. Direct financial support – whether through a subsidy of government participation – is to be assured in the initial stage. However, poor-designed government support schemes are a risk to the development of Blue Economy sectors.

## **Government Regulatory Frameworks**

Regulations and frameworks are seen as a more supportive of investing in Blue Economy and provide subsidies or other means of support such as test cases. It is desired that regulatory framework and support-scheme should be predictable, has a long time-span and will not erratically change. Transcending the comparison of

specific policy instruments, many concluded that the policy support should take a two-sided approach with a focus on technology-push policies and stimulating the market by market-pull policies. It can be said that the financial sector ultimately have to assume a greater role in realizing social objectives, including the development of a blue economy. The follow-up question then is how to engage them, what can the linkages between this sector and others – including government – be strengthened? To target the right investor, it is crucial to acknowledge that there are multiple types of investors. Stereotypical images of investors or investors as very wealthy individuals but the corporate, public and private investments are all part of the picture. Even if one zooms in private investors, there is a broad variety of investors. Whilst some invest in start-ups and highly innovative – but uncertain – technologies, others focus on safe assets to minimise the risks. Government investment can be an important addition to these instruments; by lending money – on commercial rates – government show confidence in newly developing sectors and this lowers threshold for other investors to step into new sector. Financial projections are only part of the story; there is a personal component, including issues of trust, expected capabilities of the entrepreneur and a ‘feeling’ for particular sectors.

## Conclusion

In comparison to other natural resources systems, the potential of coastal and marine ecosystem of Bangladesh, as a driver of economic growth, has long been overlooked by the policy makers. Only recent years, the Bangladesh government has provided priority on exploitation and management of marine resources. The



vast potentialities of Bay of Bengal for the national economic development are still not fully realized. However, considering the overexploited and weakly governed marine fisheries, there should be a check and balanced through an appropriate policy and legal framework. Illegal fishing, climate change, and marine pollution are already at the alarming stage for the Bay of Bengal marine ecosystem. To make the blue economy concept fully functional for Bangladesh, it is an urgent need to foster research activities to generate knowledge and skilled manpower and then formulate the national plan and policies. Looking at the scientific literature, it must be easily said that the marine science community has given little attention to the role of the financial community in exploiting and managing the world's oceans. Within the marine business community, investors have obviously been of great importance but systemic attention to their role in responsible ocean management is little. In recent years, the financial sector is increasingly seen as key actor that needs to be involved in working towards realising societal objectives. Policy makers at national and international levels look to the financial sector seeking to involve them in a range of topics, ranging from nature protection and social welfare to social entrepreneurship. This development is also witnessed in the maritime domain where international organizations have emphasized the importance of investment in realizing the potential of the Blue Economy.

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**About Author:** Mr. Mohammad Khurshed Alam, (Born 1953) Secretary, Maritime Affairs Unit of the Ministry of Foreign Affairs of Bangladesh has a dynamic and long career. Mr. Alam performed the duties of the Deputy Agent of the “Dispute concerning delimitation of the maritime boundary between Bangladesh and Myanmar in the Bay of Bengal” in the International Tribunal on the Law of the Sea (ITLOS) in Hamburg, Germany and the “Bay of Bengal Maritime Boundary Arbitration between Bangladesh and India” under Annex VII to the United Nations Convention on the Law of the Sea in the Permanent Court of Arbitration in the Hague respectively. He was also the head of the Bangladesh Continental shelf technical team entrusted with the preparation, documentation, carrying out seismic survey of the Bay of Bengal and submission and finally making presentation of Bangladesh’s claim on extended continental shelf to the 21 member UN Commission on the Limits of the Continental Shelf.

He has also been actively involved in drafting international rules and regulations on the exploitation of polymetallic nodules, ferro manganese crust and polymetallic sulphides in the International seabed Authority in Kingston, Jamaica. He was elected the President of the Assembly of the Authority at its 22nd Annual Session in 2016. As the head of the Maritime Affairs Unit of the Bangladesh Government, he has been performing his duties as the National Focal Point for the Indian Ocean Rim Association (IORA).

While studying engineering, he joined the Bangladesh Navy and was commissioned in 1973 and retired as Rear Admiral in 2008 prior joining the Ministry of Foreign Affairs. He received “Master’s degree” on Oceanography from the National Oceanographic Centre, UK and “M.Phil. degree” from the Madras University with a first class. On completion of his graduation and Law of the Sea Course from the Royal Naval Staff College, Greenwich, UK, he was awarded with a “Commendation letter” for meritorious works. He also received the Indian Presidents Gold Medal from the Indian Naval Academy in 1974. While serving in Bangladesh Navy, he was appointed as the Defense Adviser in the Bangladesh High Commission, Malaysia In 1991.

He successfully led Bangladesh to many national and international negotiations such as Bangladesh maritime boundary delimitation talks with India and Myanmar, UNCLOS 1982 signing ceremony in Montego Bay, the sessions for drafting the International legally binding instrument under UNCLOS on conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) in the United Nations etc. He also attended and presented papers on several International seminars. He has also been attending in



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the Annual Meetings of the State Parties to the UNCLOS since 2006. His publications include-Morale and Motivation in the Services, Management in Service Perspectives and Integration of Individuals in the Navy, ASEAN Regional Cooperation, United Nations Convention on the Law of the Sea, 1982, Regional Maritime cooperation under the SAARC, Law of the Sea and its Implications for Bangladesh, Human Security and Piracy, Problems in the Ports, Impacts of cyclone and warning system, Delimitation of maritime boundary with India and Myanmar and management of marine affairs etc. He has also written a book named-“Bangladesh’s Maritime Challenges in the 21st Century” published in 2004- dealing with Ports, Inland Water, Shipping, Labour laws, Pollution, Multimodal transport and Custom problems and the Law of the Sea including all the other maritime problems and prospects of Bangladesh. In 2017, he published another article extensively written on the challenges & opportunities of Blue Economy for Bangladesh and Blue Bio-technology.

He is married to Ms. Zabeen Alam and has two sons.