

Navigating the Future: A Clarion Call for Ocean and Climate Literacy



Currently, the sea area of Bangladesh is roughly 1,18,813 sq. km., nearly the same as the landmass of Bangladesh. Within a 710 km long coastline, a 12 NM territorial sea, and a 200 NM exclusive economic zone, we possess the sovereign right to responsibly explore and harvest biotic and abiotic resources from the water column, seafloor and subsoil. Bangladesh is the largest delta in the world, blessed with fertile land, crisscrossed rivers and the world's largest Bay in the south. The compact mangrove forest and the mysterious canyon "Swatch of no Ground" are unique features at our land-sea transition area.

It's very unfortunate that very few people in our country from are familiar with the ocean resources and the ways of sustainable exploration and conservation processes of it. The reason behind this is the lack of Ocean Literacy. According to the Intergovernmental Oceanographic Commission, Ocean Literacy is defined as "an understanding of the ocean's influence on you and your influence on the ocean." Similarly, Climate literacy is the understanding of your influence on climate and climate's impact on you and society. An ocean-literate person comprehends the essential principles and fundamental concepts about the functioning of the ocean; can communicate about the ocean in a meaningful way; and is able to make informed and responsible decisions regarding the ocean and its resources.

But it's very unfortunate that there is not a single chapter on the Bay of Bengal from grade I to grade XII of our national curriculum. Hence, The author shares a personal experience, when she got admitted in the Department of Oceanography, University of Dhaka, in her first class, she was asked, "What is Swatch of No Ground?", but she couldn't answer the question.

Bangladesh's low-lying terrain, dense population, and reliance on natural resources make it one of the most susceptible nations to climate change. Agriculture and drinking water supplies are already at risk due to saltwater intrusion into freshwater aquifers brought on by rising sea levels. Communities are being uprooted and arable land is being lost due to coastal erosion. Storm frequency and intensity are rising and causing catastrophic losses in terms of infrastructure, property, and human life.

Again, the effect of climate change is being exaggerated due to a lack of Climate Literacy. Due to the knowledge gap, people can't adopt timely adaptive approaches to ameliorate the effects of climate change. In our education system from primary to higher-secondary the issue of climate and climate change is limited to the topic of Green House effect and the definition of global warming.

Experts fear that resources on the land are going to be exhausted within a few decades. Due to climate change and frequent natural hazards, agriculture is facing various challenges. Despite producing only 0.56% of the global emissions responsible for changing the climate, Bangladesh ranks seventh on the list of countries most vulnerable to climate devastation, according to Germanwatch's 2021 Global Climate Risk Index (CRI). A 2018 U.S. government report found that around 90 million Bangladeshis (56 percent of the population) live in "high climate exposure areas," with 53 million subject to "very high" exposure. According to the Climate Reality Project, from 2000 to 2019, Bangladesh suffered economic losses worth \$3.72 billion and witnessed 185 extreme weather events due to climate change. It has been estimated that by 2050, one in every seven people in Bangladesh will be displaced by climate change. Specifically, with a projected 19.6 inch (50 cm) rise in sea level, Bangladesh may lose approximately 11% of its land by then, and up to 18 million people may have to migrate because of sea-level rise alone.

In this situation, the short-term approaches like disaster preparedness, response and recovery and top-down approaches like research and development may not produce enough accomplishment rather, climate literacy, that is to say, the inclusion of basic to intermediate levels of knowledge on climate can help as a bottom-up approach. Ocean and climate literacy are complementary to each other as the ocean systems largely regulate the earth's climate as well as climate change induced by global warming impacts ocean circulation and its ecosystem as a domino effect.

The knowledge of the ocean and climate in our country is limited to a few small groups. Some students and teachers at the university level study Oceanography and Climate Science. A few of them conduct discrete researches which rarely get the attention of the concerned authorities. We have only one research institute (Bangladesh Oceanographic Research Institute, BORI in short) dedicated to the scientific exploration of the maritime realm. Similarly, Bangladesh Space Research and Remote Sensing Organization (SPARSO), Bangladesh Centre for Advanced Studies (BCAS) and many other non-government entities are working separately on climate change but very few benefit reaches to the end user. So, there is no alternative to climate literacy to ensure inclusive climate mitigation and adaptation capability.

As the previous contradictory national curriculum has been deferred, it's the time to think deeply to include ocean and climate education in the curriculum of primary to intermediate level. In this process, we can follow the 7 principles of ocean literacy proposed by National Oceanic and Atmospheric Administration (NOAA) and the frameworks developed by National Marine Educators Association (NMEA). Relevant departments in the universities must emphasize on realistic syllabuses rather than only teaching the theoretical concepts. Besides, to raise concern among the senior people seminar, symposium, webinar, knowledge sharing among the researchers and stakeholders, hands-on training and publicity of marine and climate products etc., may help comprehensively.

Although, lack of expert human resources in ocean and climate management is apparent, however, very few jobs are found in this fields under government framework. When an Oceanography graduate works in a bank, there remains little use of his/her knowledge in oceanography. Government, teachers and policymakers must think about creating chairs from where oceanographers and climate experts can use their knowledge in the relevant field.

Although, Ministry of Environment, Forest and Climate Resilience deals with the climate change related stuffs however there is no dedicated ministry for the exploration, conservation and management of our maritime realm which covers nearly equal area of our landmass. The author believes an ocean dedicated ministry can accelerate Governments' initiatives towards blue growth of Bangladesh and this will also generate opportunities for the oceanography experts to use their knowledge. Besides, many relevant organizations, for example Bangladesh Institute of Maritime Research and Development (BIMRAD) is working relentlessly to explore the issues of collaborative exploration and management of marine resources as well as sharing the knowledge among the stakeholders, can be accounted in the relevant ministry under the government. Such patronization will surely enhance their research arena and enthusiasm.

Overall, it's time that the teachers, students, researchers, business entities and policymakers think unitedly about oceanography and climate science regarding both in literacy and employment to achieve a sustainable Bangladesh for future generations.

Author: Marhaba Matluba, Research Officer, Bangladesh Institute of Maritime Research and Organization (BIMRAD).

The article was published in The [Daily Observer](#) newspaper on 23 August 2024