

Dead Zone in the Bay of Bengal: Strategic Priorities for Bangladesh

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A dead zone, approximately half the size of Bangladesh, has been discovered by scientists in the Bay of Bengal, located at depths of 70 meters and below with minimum oxygen levels. Despite the controversy surrounding its existence, reports suggest that it has expanded to 60,000 square kilometers in the center of the Bay of Bengal. Dead zones are ocean areas where the water holds too little oxygen to support most life forms. They are formed when large amounts of nutrients from human activities, such as agriculture and sewage, enter the water and cause rapid algae growth. When the algae die and decompose, they consume all of the oxygen in the water, leaving none for other marine organisms.

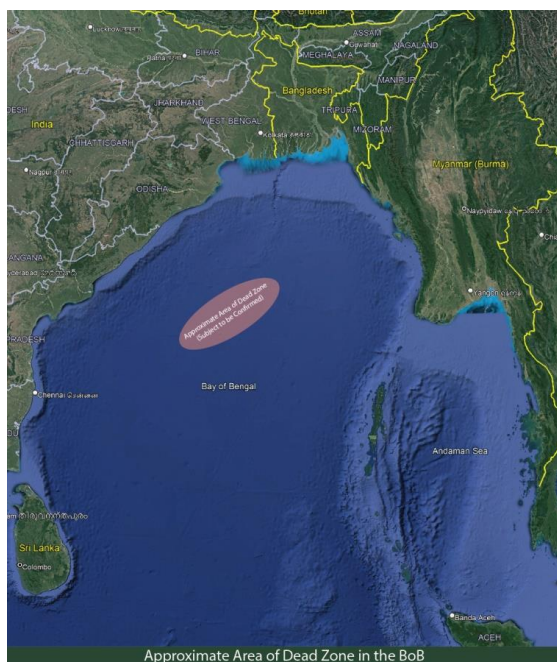
The presently discovered dead zone in the Bay of Bengal is expected to impact six countries east of India severely, northeast of Sri Lanka, south of Bangladesh, and west of Thailand, Indonesia, and

Myanmar. These countries rely heavily on their fisheries and tourism industries.

Naqvi's study indicates that the dead zone in the Bay of Bengal is not entirely devoid of oxygen but contains minute quantities. This small amount of oxygen is adequate to prevent the system from functioning entirely in anaerobic mode, despite the presence of a microbial population ready to do so. But, there is a high likelihood that the system will become utterly anoxic in the future as the systems are still uncontrolled.

The BoB is experiencing the formation of dead zones, and Bangladesh is believed to be one of the significant contributors. The country's intensive agriculture sector is responsible for most of the nutrient pollution in the Bay of Bengal. Fertilizers and other nutrients are washed into rivers and streams, eventually reaching the Bay of Bengal. Bangladesh's rapidly growing population and inadequate sewage and

wastewater treatment facilities are other major contributor to the dead zones. Untreated sewage releases high levels of nutrients into the rivers and streams, leading to the growth of dead zones. Bangladesh's industrial sector is also a source of water pollution, as factories release untreated waste into rivers and streams, contributing to dead zones' growth. The aforementioned arguments suggest that Bangladesh might play a vital role in developing the dead zone in the Bay of Bengal. Still, it's essential to remember that the problem is complicated and depends on several different elements. It would be inaccurate to solely blame Bangladesh for the dead zone's formation without considering the role of other factors and neighboring countries. The exact extent of Bangladesh's contribution to the dead zone would require further research and analysis.



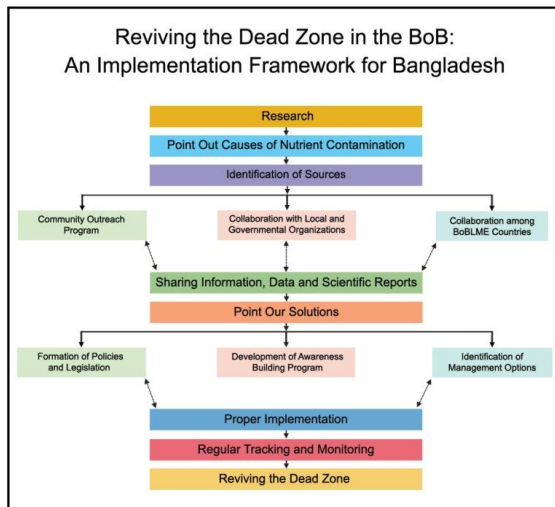
But it is for sure that the effects of dead zones in the Bay of Bengal will be far-reaching and may have severe consequences for the region's marine ecosystems and the people who depend on them, especially in Bangladesh. Dead zones can devastate the diversity and abundance of marine species, leading to declines in fish populations and other

important species. The decline in fish populations can have severe consequences for the livelihoods of fishing communities and the region's overall economy. Furthermore, releasing toxic substances from the breakdown of dead algae can also threaten human health, especially in areas where saline water is consumed directly. Addressing this issue is crucial to protecting the health and welfare of the people who reside near the Bay of Bengal.

However, dead zones can expand when the number of nutrients entering a body of water increases in an uncontrolled manner. Climate change can also worsen dead zones by increasing water temperatures and causing extreme weather events that lead to more nutrient runoff. One example of an expanded dead zone is the Gulf of Mexico's dead zone. The Gulf of Mexico is one of the world's largest dead zones, covering an area of about 8,000 square miles. The dead zone in the Gulf of Mexico is caused by nutrient runoff from agricultural lands in the Mississippi River basin, which drains into the Gulf of Mexico. The size of the Gulf of Mexico's dead zone varies yearly, depending on rainfall and agricultural practices. In recent years, the dead zone has expanded due to increased nutrient runoff from agricultural lands and more extreme weather events caused by climate change.

So, it is high time for Bangladesh to adopt a thorough strategy addressing the underlying causes of nutrient contamination to address the problem of dead zones in the Bay of Bengal. This can be achieved through various measures, including improving agricultural practices, upgrading sewage and wastewater treatment facilities, and enforcing regulations on industrial waste. For example, farmers in Bangladesh can be encouraged to use fertilizer more efficiently and adopt sustainable agricultural practices that reduce the amount of runoff entering the Bay. Similarly, upgrading sewage and

wastewater treatment facilities can help to reduce the number of nutrients entering the Bay from human waste.



In addition to these measures, there is also a need for greater awareness and education about the issue of dead zones in the Bay of Bengal. The public, particularly those living near the coast, needs to understand the causes and consequences of dead zones and the steps that can be taken to prevent their development. Many activities, such as public education campaigns, community outreach programs, and collaboration with local organizations and governments, can help achieve this.

It is also essential to recognize that addressing the issue of dead zones in the Bay of Bengal will require international cooperation and support. Several countries share the Bay of Bengal, and all of these countries must work together to address the problem. This can include sharing best practices, developing and implementing regional action plans, and working together to monitor and reduce nutrient pollution in the Bay.

Marine pollution control in Bangladesh is plagued by numerous gaps and challenges, ranging from information/data gaps to policy and implementation issues. Scientific information on pollution hotspots and pollution attenuation still needs to be improved, and there is only fragmentary primary data. Most BOBLME

countries, including Bangladesh, do not know the allowable limit of toxic discharge, and there are no standard policies for data collection. BOBLME countries do not regularly share proper data, and the available data needs to be updated.

Policies and legislation also need to be improved in several areas. There needs to be vital networking among policymakers and a wide gap in collaboration between government and non-governmental organizations. Laws and management systems are deteriorating, and there is a blindness to laws and legislation among the people.

Implementation issues also contribute to the problem, with a lack of trained manpower and awareness, financial problems, and proper instruments at key institutions like BUET, IMSF, and BSTI.

Finally, there needs to be more reporting and publicity of pollution status to the public. There needs to be proper reporting, a remarkable report card of pollution status, and a lack of publicity through TV channels. These gaps in information, policy, implementation, and reporting are significant challenges that must be addressed to control marine pollution in Bangladesh effectively.

In conclusion, the formation and expansion of dead zones in the Bay of Bengal is a severe issue that requires immediate attention. The country must address the root causes of nutrient pollution and reduce the impact of dead zones on the region's marine ecosystems and the people who depend on them. By working together and taking a comprehensive approach, it is possible to protect the Bay of Bengal and ensure a sustainable future for the region.

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