

Contribution by *Prof. R. Ramesh* (Chair, GPNM & Director, National Centre for Sustainable Coastal Management, Ministry of Environment, Forest & Climate Change, Government of India)

Decades of over exploitation and excessive ocean pollution have led to the discovery of Dead zone in the centre of Bay of Bengal. It covers over 60,000 sq.km and is 100 to 400m depth Oxygen depletion in the oceans occurs both due to natural causes and human activities. Lack of oxygen makes the ecosystem shift to anaerobic metabolism. This pushes microorganism living within these oxygen minimum zones (OMZ) to get energy by degrading organic matter in a process that removes vast amounts of nitrogen from the oceans. This upsets the nitrogen balance.

As O₂ levels drop and Nitrogen is stripped from water, marine life is slowly disappearing in the dead zones leaving behind massive algal blooms. Time will tell, but the Bay of Bengal is at a 'tipping point', and we currently need models to illuminate how human activities will impact the nitrogen cycle in the Bay of Bengal, and also globally. Economically, this will severely deplete fisheries and damage the tourism sectors in countries surrounding the Bay of Bengal – South Asia, while bringing about drastic changes to the food chain of these ecosystems. Countries across the Bay of Bengal region need to engage in more sustainable waste management.