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Fisheries and the Plastic Threat in Bay of Bengal

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The 2016 Food and Agriculture Organisation (FAO) of the United Nations report on *State of World Fisheries and Aquaculture: Contributing to Food Security and Nutrition for All*notes that the world per capita fish supply reached a new high of 20 kilograms. Further, the global fish production for human consumption has grown from 93.4 million tons in 2014 to more than 146 million tonnes in 2016 which corresponds to 87 per cent of the world fish production utilized for direct human consumption, up from 85 percent or 136 million tonnes in 2014.

Amid these promising trends in the fisheries sector, there are disturbing reports about the ever increasing trash and flotsam at sea,bulk of which isplastic. The global production and consumption of plastics has continued to rise and it is estimated that nearly 269,000 tons of plastic corresponding to 5.25 trillion plastic particles is floating in the world's oceans. The leakage of plastics into the ocean is a consequence of inadequate and inefficient wastewater and solid waste collection and disposal techniques.

There are five gyresor slow rotating whirlpools located in the Indian Ocean, North and South Atlantic, and North and South Pacific. These experience high concentrations of floating micro-plastics and the Great Pacific Garbage Patch in the North Pacific (bound by coasts of China, Korea, Japan, Russia, Alaska and California)

holds the highest concentration of plastic debris. Although sunlight and waves cause floating plastics to break into smaller particles, but they never completely disappear or biodegrade; instead, these small plastic disintegrate as micro-plastic (less than 4.75 mm), meso-plastic (4.75-200 mm) and macro-plastic (above 200 mm) and act as sponges for waterborne contaminants such as pesticides.

Perhaps what is most disturbing is the fact that plastic has been found inside fish and large mammals. For instance, in January 2016, 29 whales were found strandedon shores around the North Sea, an area that is too shallow for the marine wildlife. The internal examination of the whales revealed that their stomachs were full of plastic debris - a 13-meter-long fishing net; a 70 cm piece of plastic from a car; and other pieces of plastic of various sizes. Large size fish and other mammals inadvertently consume plastic as if they are eating fish and the digestive system does not permit excretion of the plastic. Consequently, the debris remains inside the body causing 'full stomachs' resulting in starvation.

The FAO report acknowledges the importance of fisheries as an important source of food and nutrition but it is also a source of contamination. The disintegrated plastic debris can potentially be ingestedby the humans when they eat seafoodresulting in a number of ailments including cancer.According to a study, nearly 80 percent of Japanese anchovy caught in the Tokyo Bay had micro plastic waste inside their digestive systems. Similar waste has been found in the digestive systems of marine species - sea turtles, whales, clams and seabirds- in the US, Britain and Indonesia. Another study suggests that nearly 90 percent of seabirds have ingested small plastic pieces.

The Bay of Bengal is rich in marine living resources and produces 6 million tons of fish which corresponds to nearly 4 per cent of the value of the global catch. It is an important source of food for nearly 400 million people in the region. The fishing industry employs 2.2 million fishers, 460,000 fishing trawlers, and offers livelihood for 4.5 million people.

Like any other large water body, the Bay of Bengal is littered with plastic and huge amount of plastic waste is found on the shorelines, on the seabed, and suspended in the water column. The Bay of Bengal and the South China Sea are the new plastic hotspots in Asia and the Bay of Bengal is more polluted than the Indian Ocean gyre. This is due to population pressure, poor waste management practices followed by the regional countries and above all poorly designed products.

The dangers of excessive plastic use and its dumping into the sea is high on the agenda of several countries. The Bay of Bengal countries individually and collectively would have to address this problem. For instance, in Bangladesh, since 2013, under Project Aware and its 'Fighting Marine debris' programme, divers and volunteers engage in survey and removal of marine debris off the Saint Martin's Island. In February 2016, the divers removed 1048 objects and of these, 90.31 per cent were of plastic. It is useful to mention that at least four of the 17 Sustainable Development Goals are closely associated with marine litter and Target 14.1 addresses prevention and reduction of marine pollution, in particular from land-based activities, including marine debris.

It is now widely acknowledged that marine littering is a 'common concern of humankind' and the key to reducing future dumping of plastic into the sea can be achieved by raising awareness amongst the international community, fishermen and coastal communities. In this context, the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is an appropriate regional organisation which should take the lead and give priority to plastic litter pollution.At the national level, Bay of Bengal littoral states would have to institute measures to collect plastic litter from waterfronts, promote recycling and encourage use of biodegradable packaging.

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