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Point of View

Environmental impact of the tsunami on marine ecosystems

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The long-term environmental impact on marine ecosystems has been identified in a post tsunami study. It is imperative that a multi-disciplinary team of physical and marine scientists from the various institutions including the universities be constituted in order to assess the damage caused to the near shore marine ecosystems.

At this preliminary stage it is not known what the direct impact of the tsunami has been on the near shore marine ecosystems.

The severe wave energy on coral reef ecosystems, sea grasses, and mangroves could be significant but such changes will also depend on the amount of wave energy these eco systems are normally exposed to. The impact of over fishing and tourism has already affected these eco systems to a certain degree.

It is known that areas normally exposed to high wave energy and large swells or tropical storms are less likely to be seriously affected. On the other hand shallow and closed bays typically protected from high wave action such as fisheries harbours are noted to have suffered extensive damage

A major indirect impact of the tsunami on near shore marine ecosystems includes sedimentation from extreme run off and churning up of coastal silt sand and organic matter.

The tsunami would have had a major impact on some habitats that are important as nurseries and shelters for fish and benthic organisms which are living on, the sediments of the ocean floor. Accordingly near shore fisheries could be impacted for the next few years.

Indirect impact

A major indirect impact of the tsunami on near shore marine ecosystems includes sedimentation from extreme run off and churning up of coastal silt sand and organic matter. It is possible that some ecosystems may be completely buried due to sediments flushed into shallow near shore areas. However if such areas are normally exposed to high-energy waves or strong currents these sediments are likely to get washed away soon depending on the degree of sedimentation. If such sedimentation has taken place in more protected areas not exposed to significant wave energy or currents it will take decades for the ecosystem to recover.

The other major indirect damage could have been caused by the very large amount of debris including buildings cars and buses, boats, etc that moved into the shallow marine environment with the strong near shore waves and currents would have caused severe damage to the corals and other benthic organisms.

Debris like lost fishing gear from sunken and damaged fishing boats could be a danger to marine mammals and turtles as they could get entangled in such debris and drown. Further since the fishing gear are made out of plastic and non-biodegradable materials it can last in the marine environment for decades.

Conclusion

A well-formulated project that could encompass some of the areas mentioned above will be a vital pre requisite for identifying specific modalities to restore the near shore marine ecosystem. To this end institutions such as NARA, GSMB and universities and experts from multi

lateral and bilateral donor agencies NGOs and civil society should work as a team to achieve these objectives.

It is also essential that a proper coordinating mechanism be constituted to implement projects related to this subject instead of ad-hoc attempts to map the coastline to ascertain the tsunami

damage as carried out by certain entities at present.

I would also suggest the government initiate action to contact the National Oceanographic and Atmospheric Agency (NOAA) in the United States to get their assistance to formulate the above-mentioned project.