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INTRODUCTION

Member States of the United Nations in 2015 adopted the 2030 Agenda for Sustainable Development. There are 17 Sustainable Development Goals (SDGs) that were adopted which recognizes that putting an end to poverty and other deprivations must go hand-in-hand. SDC 14 has the objective of to Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

DATA AVAILABILITY

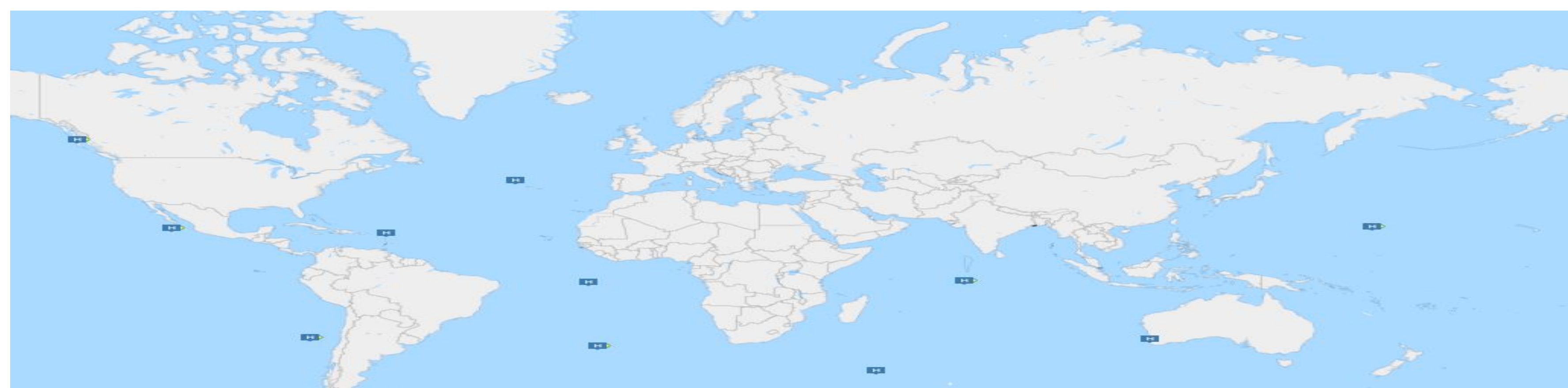


Fig 1: IMS hydroacoustic stations

The CTBT provides for 11 hydroacoustic stations (Fig 1) – 6 hydrophones and 5 T phase stations - to cover the oceans of the world for monitoring compliance of the treaty. As at 2016, 10 of these hydroacoustic stations have been installed and certified.

IMPORTANCE OF SEAFOOD

Seafood consumption has been shown to promote a healthy diet. In most coastal communities' seafood are the only readily available sources of protein and income. According to worldfish "Globally, more than 250 million people depend directly on fisheries and aquaculture for their livelihoods and millions are employed in fisheries and aquaculture value chains in roles such as processing or marketing". The trends in protein consumption per capita between 1961 and 2011 for developed and developing countries are as shown in Fig 2. Sampels (2014) noted that sea foods (fish) have a high protein content compared to terrestrial animal meat. Sampels (2014) further noted that consumption of seafood has several reported health effects including decreased risk of heart diseases, inflammation and arthritis. The health benefits of fish are mainly linked to the presence of long chain omega 3 (n-3) polyunsaturated fatty acids. In spite of these perceived advantages of seafood there is the food safety risks such as heavy metal contamination from pollutants.

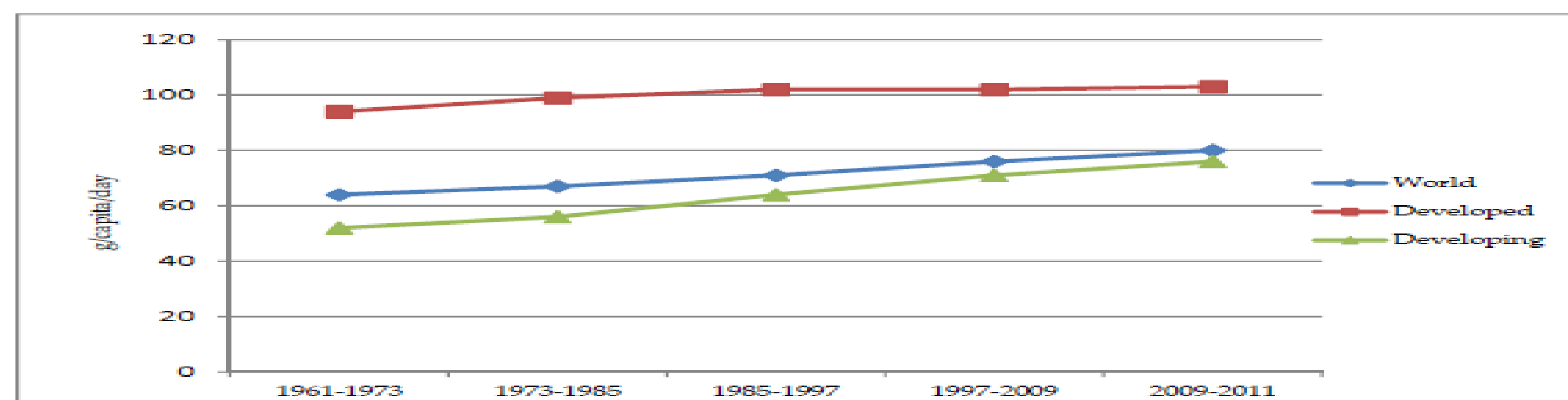


Fig 2: Trends in protein consumption per capita between 1961 and 2011. Source :Henchion *et al.*, 2017

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THE STORY SO FAR

The cost of seafood in the global market is on the increase due to the following major factors that affect marine life:

➤ Pollution

Pollution is the greatest factor that affects marine life. Pollution comes from several sources such as radioactive material, oil, excess nutrients and sediments (Fig 3).

➤ Climatic changes

The ocean temperature is raising due to changes in general climate resulting from global warming. Rising sea temperatures cause a bleaching effect to corals, forcing its marine population to find new homes and food sources.

➤ Chemical Balance

Saline and carbon dioxide (CO₂) levels are two of the components in the sea's chemical balance that greatly affect marine life. Increase in saline levels do not favour marine species that are more salt intolerant. Also increases CO₂ absorbed into the ocean lowers the pH balance of the water, causing it to be more acidic.



Fig 3: Dead fishes Source: Metro.co.uk

THE ROLE OF CTBT HYDROACOUSTIC STATIONS IN SDG 14

- Literature on ocean habitats indicates that there has been a consistent measurement of the populations of many marine species. Marine species that survive the major factors affecting their lives naturally migrate in response to the perceived changes. Marine species are mobile, and move more easily from one location to another location than species on land because they face fewer physical barriers. Marine species also most times do not have a fixed place for nesting.
- Data collected from the CTBT hydroacoustic stations can be used to map marine life behaviour, distribution and movements.
- CTBT hydroacoustic data will reduce the cost associated in conducting annual surveys for marine life by different national oceanic agencies.

CONCLUSION

Hydroacoustic methods which are non-invasive provide data which can be applied in various ways for monitoring and studying the dynamically changing aquatic ecosystems exuberated by climatic changes. The volume of data available from the IMS hydroacoustic stations from the first certified station (HA01) in 2001 to the last one (HA11) in 2007 is so enormous to be ignored.

References

- Sampels, S. (2014). Towards a more sustainable production of fish as an important source for human nutrition. *J. Fish. Livest. Prod.*, 2, 119.
- Henchion, M., Hayes, M., Mullen, A.N., Fenelon, M., and Tiwari, B. (2017). Future Protein Supply and Demand: Strategies and Factors Influencing a Sustainable Equilibrium. *Foods*, 6, 53