

Fishing as an economic activity

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Manifest Pedagogy

Questions on marine ecosystem and threats to it is emerging as an important area for both prelims and mains. Impact of climate change on ocean environment is important dimension of preparation. Issues of increasing sea surface temperature, ocean acidification, marine pollution and destruction, coral bleaching etc are some probable topics of preparation.

And the best way to prepare fishing as a topic would be to study it under two heads

1. Geography
2. Agriculture and Economy

In news

Ghost fishing

Placing it in syllabus

Distribution of resources

Threats to marine ecosystem

Static dimensions

1. What is fishing
2. Geographic distribution of fishing areas

Current dimensions

1. Threats to fishing

2. Ghost fishing

Content

What is fishing?

The science of producing fish and other aquatic resources for the purpose of providing human food, although other aims are possible (such as sport or recreational fishing), or obtaining ornamental fish or fish products such as fish oil.

Fisheries are harvested for their value either commercial, recreational, or self-consumption.

Geographic distribution of fishing areas

There are five major fishing grounds of world. These are:

(a) The North West Pacific Region.

1. Extends southward from the outer Aleutian Islands in the north to the central Pacific, north of the Philippine Islands.

(b) The North East Atlantic and adjacent waters of the Arctic

1. Extending from Iceland to Mediterranean shores including the European countries especially Norway, Denmark, Spain Iceland and the United Kingdom.
2. Shallow waters of the North Sea especially the most exploited Dogger bank are important areas where fishing is carried out all round the year.

(c) The North West Atlantic

1. It includes Grand Bank and the Georges Bank area of the Northwest Atlantic.
2. The convergence of the Gulf Stream and the Labrador Current in that region enhances productivity.

(d) The North – East Pacific

1. Extending from Alaska to California along the western shores of North America form the fourth large fishing area of the world.
2. This fishing ground comprises the world's best cod fishing ground along with herring and haddock.

(e) The South East Pacific

1. The northward flowing Peru Current provides an ideal environment for the anchovy culture because it is associated with a coastal upwelling of nutrient rich colder water laden with plankton on which the anchovy feeds.

(f) The West Central Pacific

1. Extends from the Philippines and Indonesia southward to the Australian coast.
2. This area, together with the Indian Ocean, comprises a major marine environment not being fished at a maximum level.

What is Upwelling and how impacts Fishing:

- Upwelling is an oceanographic phenomenon that involves wind-driven motion of dense, cooler, and usually nutrient-rich water towards the ocean surface, replacing the warmer, usually nutrient-depleted surface water.
- The nutrient-rich upwelled water stimulates the growth and reproduction of primary producers such as phytoplankton. Due to the biomass of phytoplankton and presence of cool water in these regions, upwelling zones can be identified by cool sea surface temperatures (SST) and high concentrations of chlorophyll-a.
- The increased availability of nutrients in upwelling regions results in high levels of primary production and thus fishery

Threats to fishing

1. Climate Change
2. Runoff Pollution
3. Shoreline Development
4. Urban waste (plastic)
5. In-Stream Gravel Mining
6. Altered Flows In Rivers And Streams
7. Factory Farms
8. Disease
9. Invasive Fish And Other Aquatic Species
10. Pollution from Outboard Motors / chemical released from boats.
11. Mechanized fishing (using trawlers)
12. Overfishing

Ghost fishing

Ghostfishing is a term that describes what happens when derelict fishing gear 'continues to fish'.

Derelict fishing gear, sometimes referred to as "ghost gear," is any discarded, lost, or abandoned, fishing gear in the marine environment. This gear continues to fish and trap animals, entangle and potentially kill marine life, smother habitat, and act as a hazard to navigation. Derelict fishing gear, such as nets or traps and pots, is one of the main types of debris impacting the marine environment today.

The issue of "ghost fishing" was first brought to the attention of world at the 16th Session of the FAO Committee on Fisheries in April 1985.

The main impacts of abandoned or lost fishing gear are:

- Continued catches of fish – known as "ghost fishing" – and other animals such as turtles, seabirds, and marine mammals, who are trapped and die;
- Alterations of the sea-floor environment; and

- The creation of navigation hazards that can cause accidents at sea and damage boats.

Solutions

The FAO/UNEP report makes a number of recommendations for tackling the problem of ghost nets:

- 1. Financial incentives.** Economic incentives could encourage fishers to report lost gear or bring to port old and damaged gear, as well as any ghost nets they might recover accidentally while fishing.
- 2. Marking gear.** Not all trash gear is deliberately dumped, so marking should not be used to “identify offenders” but rather better understand the reasons for gear loss and identify appropriate, fishery-specific preventative measures.
- 3. New technologies.** New technologies offer new possibilities for reducing the probability of ghost fishing. Sea-bed imaging can be used to avoid undersea snags and obstacles. Using GPS, vessels can mark locations where gear has been lost, facilitating retrieval, and transponders can be fitted to gear in order to do the same.
- 4. Improving collection, disposal and recycling schemes.** It is necessary to facilitate proper disposal of all old, damaged and retrieved fishing gears, according to the report.
- 5. Better reporting of lost gear.** A key recommendation of the report is that vessels should be required to log gear losses as a matter of course. However a “no-blame” approach should be followed with respect to liability for losses, their impacts, and any recovery efforts, it says.

Test yourself- Mould your thought

Assessing the major threats and shortcomings, discuss how

fishing can be made sustainable in India.