

### 3. Central Marine Fisheries Research Institute (CMFRI)

#### Why in News?

- Recently, Central Marine Fisheries Research Institute (CMFRI), India's marine fisheries produced 1.32 tonnes of carbon dioxide (CO<sub>2</sub>) to produce one kilogram of fish in 2016 during entire value chain (from the construction of boats to retail) lower than the global average of 2 tonnes.

#### Highlights

- The findings were discussed at a review meeting of the fisheries component of the National Innovations in Climate Resilient Agriculture (NICRA), a research project launched in 2011.
- Active fishing consumes more than 90% of the fuel used in the sector, contributing 4,934 million kilograms of CO<sub>2</sub> emissions annually.
- The country's carbon emissions from the marine mechanized fisheries sector is 16.3%, lower than the global level.
- While the use of fossil fuels has increased the availability of fish to fisheries, the dependence of the fishing sector on fossil fuels raises concerns related to climate change.
- The carbon footprint from Indian marine fisheries is smaller because they depend largely on human force.
- Large mechanised fishing boats were introduced in India in the late 1950s, but the fleet size is growing. Their number increased to 72,559 in 2010 from 6,708 in 1961.
- When carbon dioxide dissolves in seawater, it forms carbonic acid, which lowers the pH of the water.
- This can make it difficult for many marine organisms to build and maintain their shells and skeletons, which can have serious consequences for their survival
- Increasing carbon footprint can lead to changes in the distribution and abundance of plankton, which form the base of the marine food web.
- This can affect the growth and survival of fish, marine mammals, and other species
- Coral reefs are highly sensitive to changes in water temperature and chemistry, and increasing carbon footprint can cause widespread coral bleaching.
- Marine ecosystems are changing due to an increase in the intensity of cyclones, sea-level rise and the warming of the Indian Ocean.
- The diversity of species is changing. For example, during coral bleaching, reef-associated fish deplete.