Impact of Climate Change on Indian Marine Fisheries

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Abstract–*In 2014, the all India marine fish landings were estimated at 3.59 million tones with economic evaluation of 52360 cores at the retail market level. Indian marine fish landing is subjected to stagnant in last five year. The world's oceans and resources (fisheries) are likely to be effected by sea level rise, warming sea temperatures. Inter-governmental Panel on Climate Change has projected that the global annual seawater temperature and sea level would rise by 0.8 to 2.50C and 8 to 25 cm, respectively by 2050 (IPCC, 2007). Fishes, being a poikilotherms hampered their distribution, life processes, physiology (basic metabolism, oxygen transport to tissues, maturation, fecundity, spawning etc.) and availability of food organisms even a difference of 10C in seawater. Until 1985, almost the entire catch of oil sardine (Sardinella longiceps) was from the Malabar upwelling zone (80N and 140N and longitude 750E and 770E with the annual average sea surface temperature (SST) (27 to 290C)). But last two decades, the catches from latitude 140N - 200N are increasing, contributing about 15% to the all India oil sardine catch during 2006. During 1985-89, bottom trawlers contributed about 2% of Indian mackerel (Rastrelliger kanagurta) catch rest catch was contributed by pelagic gear. But 15% of mackerel catch is contributed by bottom trawlers along the Indian coast with the operating depth ranging from 20 to 80 m in 2003-2007. About 36.3% of the spawners of Nemipterus japonicus occurred in warm months (April-September; mean SST: 29.00C-29.50C) during 1981-1985 but the number of spawners gradually reduced and only 5.0%, of the spawners occurred in the warm season in 2000 – 2004. A similar trend occurred in Nemipterus mesoprion. Correlation between maturity percentage and length at maturity of three pelagic species viz., Bombayduck (Harpadon nehereus), Indian mackerel (Rastrelliger kanagurta) and ribbonfish (Trichiurus lepturus) showed that the variability in temperature negatively influences the length at maturity of Bombayduck and ribbonfish. In recent times, effect of climate change are most difficult to deal.*

Keyword*: Climate Change, Poikilotherms, Sardinella longiceps, Rastrelliger kanagurta, Nemipterus japonicas, Nemipterus mesoprion, Harpadon nehereus, Trichiurus lepturus.*