

**ORL-ED&C-22****Declining Fish Species Diversity in The Major River Basins in Bangladesh: Strategies for Restoration of Inland Capture Fisheries Production**

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Since ancient times, fish has been a vital source of protein for the people of Bangladesh, playing a crucial role in their diet and culture, primarily sourced from inland capture fisheries. Over the past 50 years, aquaculture production has skyrocketed by 40 times, while inland capture fisheries production has merely doubled. This indicates that inland capture fisheries have not grown but remained steady due to indiscriminate exploitation of fish, depletion of water resources, climate change, and a decline in fish diversity. To assess fish species diversity in three major river basins of Bangladesh such as Barak-Meghna, Brahmaputra-Jamuna, and Ganges-Padma, fishes were sampled from 12 major district-level retail markets during monsoon. The Shannon-Weiner diversity index, along with measures of relative abundance, richness, and evenness, were applied to unpack species diversity. Additionally, focus group discussions (FGDs), key informant interviews (KIIs), literature and database reviews, and personal observations were conducted to explore the causes of declining fish diversity and strategies for restoring the diversity.

The fish species diversity index was found highest in of Barak-Meghna (Chandpur- 2.52) basin followed by Ganges-Padma (Pabna – 2.30) and Brahmaputra-Jamuna (Tangail-2.23) river basins. The Chandpur district in southern Bangladesh under the Barak-Meghna basin had the highest number of fish species abundance, with a maximum of 22 species, compared to other river basin districts. This resulted in a higher relative abundance of fish species in Chandpur, where Chikra (*Macrornathus pancalus*), Bujuri Tengra (*Mystus tengara*), and Tengra (*Mystus vittatus*) were the most abundant species. The richness was high in Chandpur and Pabna compared to other districts. Fish species in the rivers of Barak-Meghna basin also showed greatest length and gradual slope of the line indicating greater species evenness than the other basins.

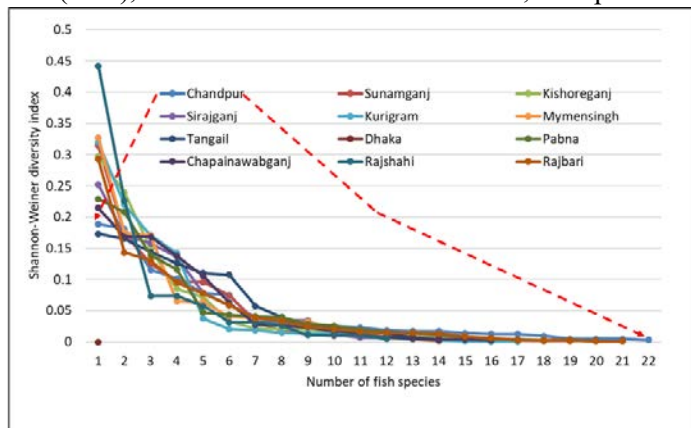


Figure 1: Shannon-Weiner diversity index of fish species sampled from different locations of three river basins.

This study reveals that while the southern rivers of Bangladesh still have a relatively high diversity of fish species (22), it is significantly lower than the historical diversity of 260 species across the freshwater river systems of Bangladesh, indicating an alarming decline in fish species diversity. These declines are mainly due to the depletion of the river ecosystem caused by massive silting in the riverbed, the use of illegal fishing gear, and severe environmental pollution. Collaborative dredging program of river basins by the Ministry of Water Resources, Shipping, and Fisheries and Livestock, along with strict regulations to control illegal fishing gear use and reduce water pollution by city dwellers and industries, is essential to restoring the aquatic ecosystem for fish habitat, fish breeding, fish species diversity and inland capture fisheries production.