

"Insights from the Latest Marine Fisheries Survey Report"

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We know that marine fisheries surveys and stock assessments are paramount for Bangladesh as they provide essential data to manage and sustainably exploit its marine resources. Accurate stock assessments enable a country to balance conservation efforts with economic interests, ensuring the long-term viability of its marine ecosystems and the livelihoods of its coastal communities. With support from the FAO, the Department of Fisheries (DoF) has undertaken the Bangladesh Marine Fisheries Capacity Building Project. This project aimed to conduct the initial stock assessments of marine fisheries for the first time in more than twenty years. So, let's discuss the findings.

The data sources used for the assessment include reported fisheries statistics from the Handbook of Statistics that span from 1983 to 2017. Survey data from the R/V Anushandhani (1983-1999) and the R/V Meen Sandhani (2017-2018) were also used. The assessment identified seven multispecies groups in the statistics. A large but variable proportion of catches classified as 'Other Fish' adds uncertainty to any analysis. The new research vessel R/V Meen Sandhani was deployed for two survey seasons, providing detailed species identification, size distribution, and biomass data.

Diverse trends were observed in stock assessments among finfish groups. Valuable larger species display signs of overfishing, while some by catch species follow a different trajectory. Alarmingly, data since 2011 reveals concerning signs of over exploitation in small pelagic species. Such destruction will threaten the food chain and, consequently, the survival of major commercially essential species reliant on them. The reports show that economically valuable species, such as Indian salmon, large croakers, and brown shrimp, all show alarming signs of

depletion and over exploitation.

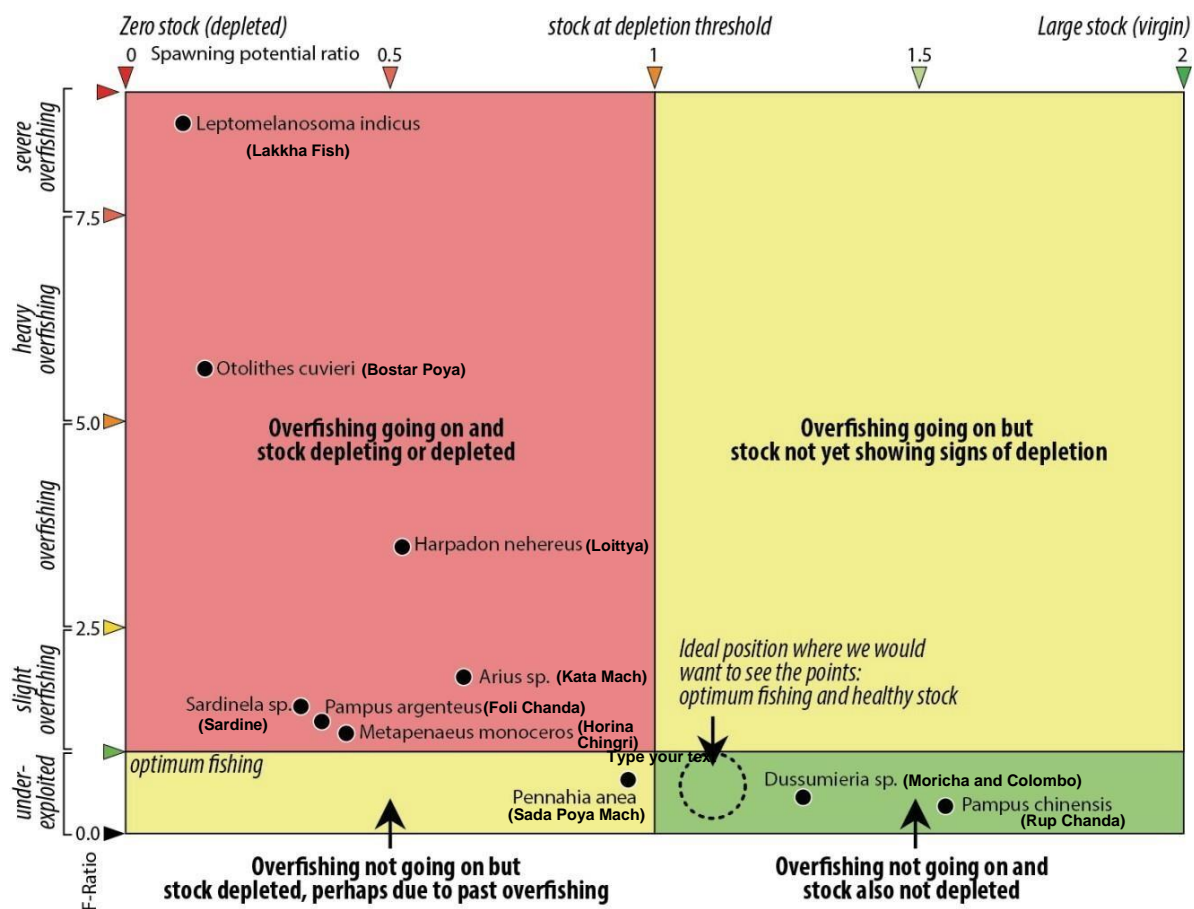


Fig: Summary Plot of 2019 Stock Assessment Working Group: Species Groups and Scenarios (Marine Fisheries Survey Reports And Stock Assessment 2019)

Shrimp, a vital component of Bangladesh's marine fisheries, is experiencing a consistent downward trend in overall biomass over the last three decades. Indian salmon, locally known as lakkha (*Leptomelanosoma indicum*), holds substantial importance as a finfish species in Bangladesh. Regrettably, it has suffered severe overfishing and depletion. Another species under critical threat is the lesser tiger tooth croaker, locally known as booster poya (*Otoliths cuvier*), facing heavy overfishing. The loitya (*Harpadon nehereus*) also remains at risk due to ongoing overfishing. Additionally, Sardine, referred to as chapila (*Sardinela sp.*), foli chanda/silver chanda (*Pampus argenteus*), and brown shrimp, locally named harina chingri (*Metapenaeus monoceros*), exhibit signs of slight overfishing.

If we consider it in detail; actually, different data of survey reports for pomfrets seem inconsistent, which may distort results over time. Despite this, a clear downward trend in the combined model since 2009 suggests actual changes occurring, particularly in the case of silver pomfret (*Pampus argenteus*), which appears to be slightly overfished and significantly depleted. Similarly, Chinese pomfret (*Pampus chinensis*) is not overfished or depleted.

The Croakers group, encompassing more than 10 species, has continuously declined since around 2000. Lesser tiger tooth croaker (*Otoliths cuvier*) is severely

overfished and significantly depleted within this group. Overall, croakers are declining both in catch and biomass. Variable degrees of overfishing exist by species, with some showing severe depletion, significantly larger and more valuable ones, necessitating substantial reductions in fishing mortality for a potential slow recovery.

Similarly, the catfish group, comprising over 8 species, has notably declined since 2000. Although data reporting problems might influence the model, the overall downward trajectory will persist. Catfish (*Arius* sp.) are overfished and significantly depleted among these species. Like croakers, larger, more valuable species face severe depletion, demanding significant reductions in fishing mortality for a gradual recovery.

For Indian salmon, limited catch data prevents fitting a biomass dynamic model. Nonetheless, the Indian threadfin (*Leptomelanosoma indicum*), a substantial and valuable species, is severely overfished and depleted. This places the stock at significant risk of commercial extinction or extirpation, underscoring the urgent need for substantial efforts to reduce fishing pressure and ensure its survival.

Now a days, our local fishermen also express concerns that, in the past, they only needed a short journey to catch fish; however, now it takes up to 20 hours to find any. Their perception is that overfishing has exhausted fish populations near the shore. In light of this critical situation, immediate conservation measures are necessary to protect these valuable marine resources from commercial extinction and local eradication. Swift action is imperative to establish effective management and protection strategies, ensuring sustainable fisheries in Bangladesh's waters and maintaining a harmonious marine ecosystem.

The data sets present several challenges that severely limit the scope and accuracy of the results. The most crucial stock assessment information on catches and fishing efforts had to be derived from fisheries' statistical data. Unfortunately, the raw data for the last 38 years were unavailable, making it difficult to discern 'real' changes in stocks from changes in recording practices. However, improvements in data collection have been found in recent years, as industrial logbooks and artisanal catch monitoring providing more detailed information on species-wise catches and fishing efforts. Despite these developments, the time series remains too short to offer dependable stock assessment advice. However, we hope that the presently working Sustainable Coastal and Marine Fisheries project that aims to implement a national marine fisheries statistical system will provide a coherent, comprehensive, and accurate record of catches and corresponding efforts.

The United Nations' Sustainable Development Goals (SDGs) underscore the significance of fisheries management and marine resource preservation. SDG 14, in particular, focuses on reducing marine pollution and addressing the influence of climate change on fisheries (United Nations Department of Economic and Social Affairs, 2023). Furthermore, SDG 14.4 seeks to rectify this situation by implementing robust regulations to counteract overfishing and illicit practices (United Nations, 2022).

In the early 1900s, fisheries scientists addressed overfishing challenges in Bangladesh, highlighting its environmental and community impacts. However, presently sustainable fishing practices become essential for Bangladesh sustainably as the stock report 2019 highlighted many significant concerns to address immediately. By expanding fishing activities beyond the currently restricted zones and embracing responsible fishing methods, the nation can bolster fisheries production while safeguarding marine biodiversity.

The present regime permits excessive and increasing fishing efforts, necessitating fleet growth control and a reduction in total fleet size. Specific, targeted measures will also be required in the medium term. Additionally, management approaches must move away from the over-simplified Maximum Sustainable Yield (MSY) approach, as it has primarily failed worldwide. Instead, a more adaptive and process-oriented strategy is needed to sustain fisheries. Implementing the Sustainable Coastal and Marine Fisheries project is a step in the right direction. Still, the focus must be on starting as soon as possible to gain valuable insights for future management.

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