GENDERED DISAGGREGATED HUMAN DEVELOPMENT OF FISH-FARMER HOUSEHOLDS IN THE EAST KOLKATA WETLANDS

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The East Kolkata Wetlands, designated as a Ramsar site, exemplifies sustainable resource recovery and livelihood generation through integrated sewage-fed aquaculture and agriculture. However, fish-farming communities in this region face significant socioeconomic challenges, necessitating a thorough examination of their human development. Traditional fishponds that use wastewater for aquaculture in the East Kolkata Wetlands are known as *bheries*. This study assesses the human development of fish farmers across three different management regimes— private, cooperative, and government—using the macro-level Human Development Index (HDI) framework developed by the UNDP, which focuses on education, health, and standard of living, while also considering gender dimensions in health indicators. Data were collected from 172 fish-farming households, purposively selected based on operational size and the population engaged in each management regime, through a pre-tested structured interview schedule during a survey conducted from January to July 2024. Household-specific data on maternal and child health were collected to reflect aspects of women and children's well-being within fish-farmer families. The HDI values indicated significant differences among the management types, with government-managed *bheries* exhibiting the highest HDI (0.67), significantly surpassing both private and cooperative regimes (each at 0.53). These differences were statistically validated by one-way ANOVA (p < 0.001), and Duncan's post-hoc test confirmed that government-managed *bheries* had significantly higher HDI scores than the other two regimes. Households under government management showed better access to education and healthcare services, resulting in an improved standard of living, particularly for women and children. The average HDI score across all management types was 0.55, falling below the averages for West Bengal (0.624) and India (0.644). The analysis further revealed strong correlations between maternal health and the overall health index (r = 0.72), and between maternal health and HDI (r = 0.52). Child health also showed significant associations with maternal health (r = 0.38) and the overall health index (r = 0.62), with the government-managed regime showing the strongest correlation (r = 0.79). The average maternal health index varied across the three regimes, being highest in government-managed *bheries*, reflecting how institutional arrangements and governance structures influence women's health outcomes. These findings underscore the critical role of gender-sensitive health interventions— particularly for women and children—in advancing human development in wetland-based livelihoods. They highlight the need for gender-responsive, inclusive governance aligned with SDGs 3, 5, and 10. Overall, the research stresses the importance of equity-driven policies to address development disparities and sustain the livelihoods of those—especially women— dependent on this unique ecosystem.