

HIMALAYAN FISHERIES AND AQUACULTURE IN THE ERA OF CLIMATE CHANGE : SOME INSIGHT TO ENDEAVOR OUR FUTURE RESEARCH

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ABSTRACT : Fish is known as one of the most efficient converters of feed into high quality food and its carbon footprint is lower compared to any other animal production systems. Through fisheries and aquaculture there is substantial contribution to the income and food security in the Himalayan region. So far technological and institutional support ensured combined production of fish through fisheries and aquaculture in the Himalayan region. Now climate change on fish and fisheries will result into changes in biological and abiotic components and anthropogenic changes. The vulnerability of Himalayan fisheries and aquaculture to climate change and anthropogenic stresses bring up potential responses to work out mitigation requirements. Ecosystem-based adaptation (EbA) is an increasingly popular strategy being adopted for addressing the linked challenges of climate change and poverty in Himalayan ecosystem, where dependence on natural resources for lives and livelihoods is high. Some of the climate-driven shifts and changes are discussed for endeavoring scientific solutions and sustaining the Himalayan fisheries and aquaculture. Scientific data on genetic diversity, ecological processes such as primary productivity, population recovery from disturbances, interspecific competition, community structure, and fluxes of energy and nutrients are important areas for managing our resources effectively. It is proposed that knowledge and understanding of the dynamics of the food, water, and energy and the possible areas of trade-offs and synergies should be broadened through support integrated modeling research for sustainable development.

Key words : *Climate, Species distribution, Sex ratio, Gonadal disruption, Molecular biomarkers.*