

Climate Change and Fisheries in Bangladesh: Impact and Adaptation

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Climate change is emerging as a major threat to both natural ecosystems and human livelihoods in Bangladesh, one of the most vulnerable countries to climate change in the world. Among the economic sectors that are most susceptible to climate change is fisheries and aquaculture on which millions of fishermen livelihoods depend, creating challenges to the sustainability of fisheries and the fish farming sector in the country. This paper provides an overview of the impact of climate change on fisheries and fish farming systems and the adaptations taken by fishermen in the Northern and Northwestern districts of Bangladesh. Climate change has increased the fluctuation of temperature and rainfall, prolonged drought, delayed the winter and summer seasons, increased the occurrence and intensity of storms, changed physical properties of the water bodies, and deteriorated the quality and availability of water and the ecosystems as a whole. It also has increased the disease prevalence in most of the cultural and natural fish species, henceforth fish mortality increased and decreased the production which makes the traditional fishermen livelihood vulnerable. Similarly, in hatchery operation, fish do not respond in breeding in time, leading to lower ovulation, small number of eggs produced per individual, lower rate of egg fertilization, poor hatching and low survival rate that reduces total fry and fingerling production in the region. Adaptations by fishermen include fishing day and night, switching over to other jobs or migrating to the town. In addition, hatchery owners and fish farmers increase the depth of their fish ponds, provide shade over the ponds, and add more water to the ponds to alleviate the impact of climate change. Besides fostering a better understanding of climate change impact and adaptation, this paper also provides substantial input and useful suggestions for setting future research directions on improving the sustainability of fisheries and the fish farming sector in the country.

Key words: climate change, Bangladesh, fisheries and aquaculture, fishermen, livelihoods