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Designation :

Title : *Impact of Climate Change on Rural Livelihood: A Case Study*

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This study has been conducted to figure out the changes in salient climatic parameters and their impacts on rural livelihood as well as to develop a sustainable livelihood framework. Two villages, namely Chander chak and Mauli at Kalia Upazilla under the coastal district Narail were chosen as the study areas. Three livelihood groups; farmers, fishermen, wage labourers and women as vulnerable groups were selected for the study. The local climate change condition has been illustrated with observed data and the probable future scenario has been extracted from the Regional Climate Model (RCM) prediction. This prediction was conveyed to local people, so that they could express their observations according to their perceptions. People's information has been incorporated to the development of the livelihood framework which will provide them a sustainable livelihood in the climate change context.

In the study area, 73% of the rural people are farmers, 22% are farm laborers and 5% are fishermen whereas women are 50% of the total rural population. From the RCM prediction, it has been found that the temperature of the study area will rise 3-4°C and the monsoon rainfall will decrease by 12-15% of the annual rainfall whereas the total annual rainfall will increase by 17%. Following these circumstances, the probable impact on rural livelihood was worked out. According to the findings, the farmers' overall access to natural capital is 75% which will come down to 54% in climate change context.

The 76% access to the physical capital will be reduced to 63%, due to damages caused by frequent disasters. Due to less productive land and insecure public property, the financial capital will be affected by 30% of the present condition. The farm laborers will be similarly affected as the farmers as they mostly are engaged in farm activities. Annual work days will be 40% less and their financial capital will reduce from 58% to 44%. The fishermen's fishing activity will reduce to 25% in a year and the fish diversity in the water body will be affected as 40% of fish will be lost from their habitats in future. As fishermen are less in number in the village, their access to social capital will reduce from 65% to 45%.

The women have low access to natural capital and this will go down by 30% due to climate change. Their income generating activities will be reduced, and financial capital will come down from 50% to 40%. For all the livelihood groups, the increasing hot and dry weather will increase illness by 15%, causing more diarrhea, cholera and vector-borne diseases. Adaptive measures like effective use of agricultural lands and water bodies, infrastructure rehabilitation, better health care, natural resource conservation, afforestation, etc., are necessary to protect the livelihood capitals and provide people a sustainable future.