Effects of Climate Change on the Livelihoods of Coastal Areas of Bangladesh

Dr. Masudul Hoq Chowdhury, ADG (PRL), BARD
Abul Kalam Azad, Director (Project), BARD
Dr. Shishir Kumar Munshi, Joint Director, BARD
Dr. Jillur Rahman Paul, Assistant Professor
Kobi Kazi Nazrul Islam University

Abstract

The study was conducted to determine impact of climate changes over the years and to identify coping mechanism to adjust with the negative impact of climate change. Sample survey method was employed. Data were collected from the selected coastal areas of the country viz., Barguna, Pirojpur and Patuakhali. The impacts on the living communities such as crops, fisheries, livestock, and forestry were looked into. The number of the respondents was 600 taking 200 from each district. A semi-structured questionnaire was prepared and validated by pre-testing and was administered to collect information for the study. Study results showed that average family size is 4.34 which is below the national average family size (4.48) in Bangladesh. The majority respondents (30%) were found having education of class I-V, followed 28% who had education up to class VI-SSC. Most respondents (90%) belonged to small farmer's category having monthly income of BDT 50,000 Tk. In total, 50% respondents were found involved in different development organizations such as Grameen Bank, BRAC and ASA etc. A few respondents received various skill training (crops, fish, poultry rearing and forestry) provided by different GOs and NGOs. Patuakhali is more vulnerable to tidal surges, salinity intrusion and storm, Pirojpur is more vulnerable to storm and floods and Barguna is more vulnerable to floods, storm, tidal surges and salinity intrusion. The study findings clearly indicated that changes occurred in climatic variability over the decades and the affected people had to cope with different climatic problems as flood, storm, tidal surges and salinity intrusion in the future. Twelve causes of climate change were identified in the study areas. Among them, reduction of trees and forest resources ranked first in all locations. Other problems were related to river erosion, environmental pollution, and indiscriminate construction of mobile tower, carbon emission, unplanned and rapid growth of industry, sea level rise due to smelting and emission of smoke from increasing motor vehicle. All respondents faced shortage of pure drinking water due to occurrence of storm, tidal surge and flood. The survey revealed that houses of the respondents were affected by climatic disasters. The majority respondents suffered from cold fever/cough and diarrhea/dysentery during or after disaster. It was found that activities of educational institutions were suspended to some extent due to flood. Majority of the respondents (68%) mentioned 'damage of maximum houses and trees' followed by 'damage of roads, culverts' (63%) and 'inundation of cultivable land' (47%). Maximum damage incurred from crops sector compared to fish and livestock. Paddy was affected more by flood and storm but salinity caused moderate damage to paddy. Flood caused two and half times more loss in livestock compared to storm in all study areas. Most of the respondents identified six major steps to minimize impacts of climate change of which 'purchase of medicine for health problem' ranked first which was followed by 're-cultivation of crops after disaster'. The study results indicated that appropriate adaptation and mitigation measures should be taken through institution building and governance should be ensured to minimize the disaster problems. The study revealed that maximum help came from LGED, Union Parishad, Banks and Bangladesh Army to disaster prone people. The contribution of Upazila Parishad, Department of Relief and Disaster Management and Department of Forestry was found comparatively low amongst all

service providing agencies. The majority of the respondents received foods, cash money, loans and cloths from NGOs. The study suggested constructing more multistoried and multipurpose cyclone shelters in suitable places. The government should provide adequate credit, different inputs and livelihood training to the farmers after the major climatic disaster occurred. Green belt should be created and saline tolerant rice verities should be given to the affected people.