

Observation of Women on Impacts of Climate Change and Its Adaptation in Coastal Areas of Bangladesh

Khalid Md. Bahauddin and Hamidul Haq

Institute of Disaster Management and Vulnerability Studies, Bangladesh

Abstract:

Bangladesh is one of the most vulnerable countries due to climate change and it is at the risk of frequent climatic disasters. Though natural disasters affect all segments of the population, this study found gender-specific exposure and effects of climatic disaster. More specifically, women and girls confront to social problems, sex identity and poverty that makes them more insecure and upset. Adaptation is crucial to coping with the distractions caused by climate change effects. Affected people in the study area adopt livelihood strategies using their indigenous knowledge and coping mechanism. Along with other statistical analyses, a Structural Equation Modeling (SEM) was used in order to understand any links between climate change perceptions and other associated variables. Based on the background literature materials used in this study, this SEM is a noble work as none of these studies addressed this issue in Bangladeshi context. Therefore, this study provides a proper guideline on using SEM for climate change studies in Bangladesh, particularly for coastal areas.

Introduction:

Bangladesh is at the risk of frequent climatic disasters. Though natural disasters affect all segments of the population, some researchers have found gender-specific exposure and effects of disaster. More specifically, women and girls confront to social problems, sex identity and poverty that makes them more insecure and upset (Azad et al., 2013). This study has been carried out to understand the perception and impact of climate change among women and find out local adaptation options, particularly in the highly vulnerable coastal areas.

Methodology:

Data were collected from interviews with key informants (15 individuals), a focus group discussion (with 10 individuals), and individual interviews (with 150 individuals). To perform a SEM in this study, one dependent variable- climate change is true; and three independent variables-adequate knowledge on climate change; reason of climate change; is it a long term problem; and role of the local government were used following a path model using SPSS software.

Study area:

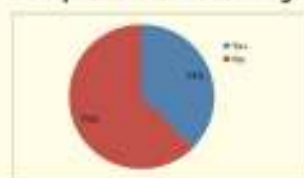
To meet the objectives of this study, Shyamnagar Upazila of Satkhira districts and under the Khulna division was selected as a case study. This region has an area of 1,968.24 km², located between 21°36' and 22°24' north latitudes and between 89°00' and 89°19' east longitudes. According to BBS (2006), the region has a total population of 313,781. It is considered to be one of the most disaster prone and climate-sensitive coastal regions of Bangladesh

Results and Discussions:

Socio-economic profiles

In this study, only female respondents were counted for the survey. The total respondents were aged between 20 and 60 years old. About 47% of the respondents' age was between 20 and 35 years. The second majority age group of the interviewees was 35 to 45 years old which was 41% of the total respondents. Only 25% of the respondents completed primary education. The majority of the interviewees (43.7%) did not finish their primary education while only 18.7% of the interviewees could sign their name only. The highest literacy rate was among 12.5% who completed secondary education. Thus, about 67% of women were mostly vulnerable due to lack of primary education. Only 8% of the respondents were engaged with tailoring at community level. 40% of the interviewees were landless, and 7% respondents live in khash land. About 34% of respondents had marginal households and 19% had small families.

Perceptions on climate change



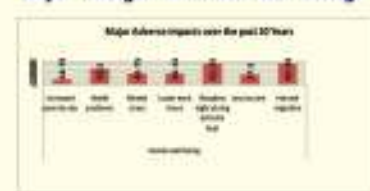
Major changes in climate over the past 30 years



Major changes on ecosystem and environment



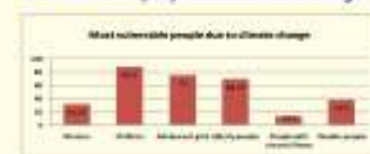
Major changes on human well-being



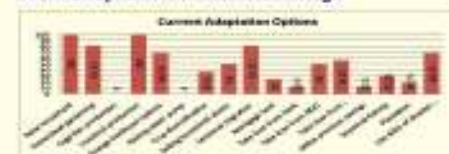
Major changes on Agriculture



Most vulnerable people due to climate change



Local adaptation to climate change



Investment for local adaptations

To apply local adaptation options to climate change, about 32% of the respondent spent 3500 BDT (\$45) or more, 18% spent 3000-3500 BDT (\$38-45), 27% spent 2500-3000 BDT (\$32-38), 16% spent 2000 to 2500 BDT (\$25-32) and 7% of the affected people spent 1500 to 2000 BDT (\$20-32) once in the study area. These costs include recovery actions after any climatic strike like flood, river bank erosion and drought condition. This expense also includes migration to other places due to impact of climate change.

The results of Structural Equation Modeling:

Table 1: Model outputs derived from the SEM

Dependent variable	Independent variables	Estimate	S.E.	C.R.	P ²
CC is True	CC_Knowledge	.651	.176	3.684	***
CC is True	Reasons of CC	.058	.216	.267	.789
CC is True	It is a problem	.523	.128	4.096	***
CC is True	Role of local Govt	-.349	.209	-1.675	.094

*Sig value P<0.001

Conclusion:

This study reveals that perception on climate change at participants' level is relatively low (63%) but they have been observing major changes in climatic parameters over the past 30 years. To tackle these changes and impacts, they are adapting some local indigenous methods in order to improve existing ecosystem and environment, agriculture, human well-being and overall socioeconomic developments. As a result, they had to invest to implement these adaptation processes ranging from \$20-45 at household level. From the SEM results, it is clearly evident that climate change is true and happening in this study area. Therefore, the roles of local government along with other development actors can incorporate the existing policies to any regional planning and developments in the study area.

Reference:

Azad, A. K., Hossain, K. M., and Nasreen, M. 2013. Flood-induced vulnerabilities and problems encountered by women in northern Bangladesh. International journal of disaster risk science, 4(4), 190-199.

Bangladesh Bureau of Statistics (BBS). 2006. Statistical Pocketbook of Bangladesh: 2004. Bangladesh Bureau of Statistics (BBS), Government of the People's Republic of Bangladesh (GOB), Dhaka, Bangladesh, 55-59.