

論文 / 著書情報
Article / Book Information

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Title(English)	Households ' Risk and Responses to Flood Disaster: Case of Teesta River, Bangladesh
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Category(English)	Doctoral Thesis
種別(和文)	論文要旨
Type(English)	Summary

論文要旨

THESIS SUMMARY

系・コース : Global Engineering for
Department of, Graduate major in Development, Environment
and Society

系
コース

申請学位 (専攻分野) : 博士
Academic Degree Requested Doctor of (Philosophy)

学生氏名 : Md Sanaul Haque Mondal
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要旨 (和文 2000 字程度)

Thesis Summary (approx.2000 Japanese Characters)

Floods are one of the greatest hazards in Bangladesh. It is assumed that people who reside in a riverine area have adapted to flood pulses. Although recurrent floods cause detrimental impact for the people living in riverine floodplains, households are taking up various risks management measures to deal with them. However, in most cases, household-level risk-reduction strategies are inadequate for ensuring a livelihood resilient to floods. This is because riverine people are exposed to recurrent floods, which increases their vulnerability to floods. In order to formulate effective risk-reduction policies and programs for riverine areas, it is crucial to measure flood risk at the local level.

The overall objective of this study is to assess household-level riverine flood disaster risk and to identify corrective risk measures. To achieve this objective, both qualitative and quantitative techniques were used. Using a systematic random sampling technique, 377 households from the right bank of the Teesta River in Bangladesh were interviewed after severe flood in 2017 to characterize flood hazards, exposure to floods, and their vulnerability and capacity to absorb flood risk. The qualitative techniques include documents reviews, focus group discussions and key informant interviews. The collected data from the questionnaire survey were aggregated using a composite index, while comparing the components of flood risk. Descriptive and analytical statistics were also computed. Multivariate techniques (principal component analysis and logistic regression) were also used in order to identify the determinants of households' response to flood disaster and perceived preparedness.

The results showed that riverine households from the upstream, midstream, and downstream segments of the right bank of the Teesta River had similar capacity levels, although there were significant differences in their levels of hazard, exposure, and vulnerability. The flood risk was higher in downstream areas, followed by upstream areas and the midstream segments of the Teesta River. The degree of flood risk in these three study locations was significantly different. A significant negative correlation was observed between vulnerability and capacity. No significant associations were found between the exposure and vulnerability components.

The surveyed households adapted different strategies to respond to recurrent flood disasters.

備考 : 論文要旨は、和文 2000 字と英文 300 語を 1 部ずつ提出するか、もしくは英文 800 語を 1 部提出してください。

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(博士課程)
Doctoral Program

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要旨 (英文 300 語程度)

Thesis Summary (approx.300 English Words)

The findings revealed that households adopted different post-disaster coping measures which were grouped into five categories: borrowing money, assets disposal, consumption reduction, temporary migration, and grants from external sources. Results from binary logistic regression models suggested that increasing severity of flood reduced households' consumption. Exposed households were more likely to borrow money. Consumption reduction and temporary migration were mostly adopted by agricultural landless households. Income from nonfarm sources was found to be an important factor influencing household's decisions on coping.

On the other hand, riverine people adapted different risk mitigation measures to reduce risk. These included plinth raise of the house, build homestead on raised earthen mound, modify house with strong materials, precautionary cash saving, precautionary food save, store valuables in a safe place, and collect emergency items. Empirically, it was found that risk perception, perceived preparedness, flooding experience, proximity to river, household's head sex, landownership, income sources and membership in social organization significantly influenced households to implement mitigation measures to reduce flood risk.

Furthermore, households that recovered from the last flood disaster seek insurance through their own savings and available physical assets, highlighting the role of disaster preparedness in resilient recovery. Furthermore, the multivariate analysis also suggested that households' perceived preparedness was influenced by their ability to respond to floods.

This study calls for the policy intervention at the household-level to enhance the adaptive capacity of riverine households so that people at risk can cope better and recover from flood disaster using their resources. Overall, this study suggests that exposure reduction is the big contributing factor of riverine flood risk reduction in the study area. At the same time capacity development-related interventions (e.g. training) will foster household's adaptive capacity to riverine flood disaster. The empirical approach presented in this study could be used to assess household-level flood risk and responses in other regions, especially where data is scarce.

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