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Title	:	*Water Induced Livelihood Impact and Adaption Strategy of Farming Households in Manohara River*

Background

This research intends to understand the dynamics of flood and flood induced land degradation and the resulting consequences to the livelihood and the livelihood adaptation strategies of the people in Manohara River. The genesis of the study lies in the fact that though there have been studies carried out in the past on flood induced disasters in Nepal and in other parts of the world, these studies have been largely focused on technical issues, involving analysis of river hydrology, morphology and hydraulics and that the focus on the social, institutional and livelihood issues were either missing or these issues did not appear as the main agenda of the research. Therefore, this study adds value in expanding our understanding on livelihood consequences resulting from flood and land degradation. This study uses interdisciplinary framework in analysis thus extending the discourse of flood and flood induced livelihood in terms of consequences faced by the people and their responses.

Research Objectives

This study has been framed with following objectives:

i. To understand and analyze the changes in the river morphology of Manohara River, especially the shift in the river channel that has occurred over a period of time, and the damages caused to the land and land based resources along the river course.

ii. To relate the pattern of river channel shifting and resulting degradation of the land and land based resources, to the livelihood of the people living in the flood plain of Manohara River.

iii. To document and analyze the livelihood adaptation strategies of the people in response to the degradation of the resources as a result of the changes in the river morphology and the degradation caused to the land and land based resources.

iv. To analyze the changes brought in the livelihood adaptation strategies of the people as a result of increasing urbanization and market forces in the flood plains of Manohara River.

Research Methodology

- Delineation of the Research Area
- Study Design
- Map Analysis
- Collection and Interpretation of Primary Data
- Interview Schedule for Household Survey
- Focus Group Discussion (FGDs)
- Key Informants' Survey (KIS)
- Applying Analytical Techniques and Presentation of Results

Findings and Conclusions

Frequency of shift in the alignment of the river channel has reduced since 1998, the intensity of damages caused to land and land based resources from the recurrent events of flooding have increased .

ii. The damages were in the forms of increased incidences of stream bank erosion and bank sloughing due to deepening of the river as a result of sand mining in the past.

iii. Sand mining in the river terraces if allowed to continue on accelerates rates, as is the case at present, will bring irreversible changes to the river ecology. This requires urgent action of the government and environmental agencies in controlling rampant sand mining in the area.

iv. Diversification of livelihoods was noted to be the most important adaptive strategy of the people to minimize the consequences resulting from flooding and flood induced damages to land resources.

v. HHs solely based on land and land based resources for their livelihood was considered more vulnerable to the flood and flood induced damages. The strategy of livelihood diversification of the people living in the flood plains of the rivers would be an important measure in reducing their vulnerability to flood and flood induced damages.

vi. People's concern of land degradation in the context of the study area is emerging not because of the livelihood loss resulting from the damages caused to crop or land going out of cultivation after the passage of the damaging event, but because the loss in the land value has been a major concern to the people.

vii. The area has been undergoing rapid conversion of land from agricultural to residential uses which has resulted in significant aspiration in the monetary value of land. This is the reason that people in the area are demanding investment from the government in river training and building embankment along both the banks of the river so that precious land that has now higher value for urban uses can be protected.

viii. Cadastral maps for the study area were developed as early as in 1964, which have necessitated the new initiative to undertake survey and mapping of the area to prepare new set of maps that are relevant to the present context to accommodate significance changes of attributes of map.

Recommendations

i. Keeping some land under cultivation would be important not only from the point of view of local level food security but also to maintain the ecological balance of the study area. Therefore, urban land use policy for greater Kathmandu is the need of the hour.

ii. Urgent action on controlling, or at least regulating the sand mining in the area, is the need of the hour. If sand mining continues, it will make the area more vulnerable to the damages.

iii. The area is fast getting urbanized; the strategy of adaptation and mitigation would be much different from the existing strategy in the context of agricultural use of the land.

iv. Considering the fact that the river is a natural entity and poses its own specific flow characteristics, morphology and defined boundary, the safe and free passage for river flow should ensure that it is not defined by the meandering and channel shifting ofrecent years.