

**THESIS**

**RISK PERCEPTION TOWARDS FLOODING AND ENVIRONMENT IN LOW  
INCOME URBAN COMMUNITIES:  
A CASE STUDY IN LAHORE, PAKISTAN**

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## SUMMARY

This study aimed to investigate individual and group perceptions of, and adaptations to flooding as an environmental risk and mode of sickness before, during and after flooding. The study was conducted during monsoon in mid of Jun up to end of September 1998, and based on low income community in Lahore walled city.

The research carried out using qualitative methods. Case studies of individuals and families living in the study area were undertaken. This case study were built up using in-depth interviews with 34 residents (17 men & 17 women of different age, education, ethnic etc.) and 17 shop owners with key informants and also by observation of adaptations made in the private and public environments. 11 focus group discussions also were conducted. Pictures of local newspaper reporting of flooding was collected during the study period. Visiting clinics and dispensaries as well as Hakims during this time was part of the job.

All interviews and focus groups were conducted in an informal environment and were guided by an interview checklist developed and piloted after translation by the author. This includes the advantages and disadvantages of living in the area, definitions of flooding, effects of flooding on their lives and environments and the importance of flooding in relation to other problems. The research was conducted during monsoon season, constant visiting were done before, during and after flood events in the community.

From the analysis of data and information collected, it is concluded that:

A range of descriptive terms has developed to interpret the hazard flooding. "Sailab" or "flooding" is used to describe inundation in large. Other terms such as "water fills up" and "water collects" are used to describe the inundation experiences of nullah dwellers. In the community studied, flooding is primary perceived as a gift of almighty Allah and natural event necessary for all alive creatures, agriculture and is tolerated even though it may have problematic effects. Flooding was ranked low in comparison to other risks and problems, such as improvements in job opportunities, provision of housing, control of mosquitoes and smell in the area studied.

The risks of flooding during monsoon season are borne as part a "trade-off" of the risks and benefits both social and economic, of living in a flood-prone area, these benefits include centrality in the city, access to sources of employment, low land costs, access to services, all major markets and whole sale areas are with in one's access, well developed social support networks and safety for children. A "hazards culture" has therefore developed with coping mechanisms seen as part of usual activities. Man-made interventions, which are perceived to disturb natural flood patterns adversely, are not well tolerated.

The social and economic risks of flooding and inundation are not evenly distributed across the city or across susceptible communities. Poorer households and those which are poorly adapted to flooding appear to be most affected. Businesses are also differentially affected depending on the type of product sold and the nature of service provided.

The health risks of flooding and inundation, as understood by respondents, relate to classification of water "types" according to measures of quality such as composition

and clarity. Flood water is used in different depending on its perceived quality. Residents feel that the after effects of flooding and inundation, such as standing water, contaminated mud and noxious odours are more important than the immediate effects, which may include water entering homes and, loss of possessions in nullah bank areas.

Drainage system is established in the community is not well designed to convey sewage as well as storm water. Positive perceptions of the interventions towards the short term benefits has seen are coating inundation with kerosine oil and smoke in the area for personal and community environments, to ameliorating the after-effects of flood water.

Householders in studied area have made both permanent and temporary adaptations to flooding and inundation in their home environment. These include raising plinth levels, building houses out of materials which resist flooding and ensuring that shelving and wiring are above expected to flood conditions.

The predictability of changes in water levels and the rate of rise of water levels are seen by residents as more important than the actual duration or depth of the flood. Residents have developed sophisticated flood prediction and protection system and contingency plans for evacuating person and possessions. Short term predictability can be reduced or vanishes by engineering interventions or maintenance. The community is able to use and manage the documents to receive funds while the residents of flood community are to reduce the effects of flooding on their household and family.

Within flood-prone areas a differentiation is made between "public" and "private" spaces and this in turn affects residents perceptions of the distribution of responsibility for the maintenance of these spaces. This differentiation varies between the different

areas studied and to an extent between individuals. Concerning the health 90 percent of community suffer from fever during monsoon. Bacteria, viruses and diseases are activated and growing rapidly and transferring from one area to another through water and/or air.

The print media within Lahore appears to be an important player in creating, filtering and disturbing perceived risk. Most of the media concern the walled city as a critical.

In the context of policy making on flood interventions, it is certain that local perceptions of and adaptations to the environment are understood. Despite living in this area experience flooding during the monsoon season, the study showed that residents did not see flooding or inundation as a major problem in relation to the benefit of the area and in relation to other issues. However, residents are not equally affected by flooding which emphasizes the need to understand the differential impact of risk before developing policy. Issues such as the predictability of flood events, the after effects of inundations and local understanding of the risks of contaminated water all reinforce the need to tailor interventions, coping strategies and to support these where possible. The impact of flooding can also be seen to spread outward from the individual to local institutions. Strategies to minimize the impact of flooding therefore need to attempt to incorporate low-income settlements in to broader city structures with any qualitative study, however, caution should be taken in generalizing from the results of the present study.