Urban participatory risk assessment tools: A review from Bangladesh

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Today, almost a billion people live in slums or marginal and informal settlements without access to basic services and often on high-risk areas. In addition, failed infrastructure, environmental degradation and challenges posed by climate change - including sea level rise and salinity intrusion - make many urban dwellers more vulnerable to natural hazards.

The challenge now is to discover innovative approaches that can bring positive change to diversified groups living in cities.

CAFOD has been using particpatory tools with over 500 rural communities worldwide to help them assess their own risk and design strategies to reduce this risk now and in the future. The tools we use are based on Participatory Rural Appraisal (PRA) an approach originally designed for rural agricultural work. It was anticipated that these tools may prove less effective in urban areas due to the non-homogeneity of urban 'communities' and transient nature of the population. Therefore given the need to examine urban risk CAFOD asked the question:

Can these tools be directly applied to urban areas as well or do we need to tailor our approach to community-based DRR?

In answer to this, researchers from the Bangladesh University of Engineering and Technology (IWFM-BUET) tested several participatory tools during stakeholder workshops and community meetings in two coastal cities, Khulna and Bagerhat, in southwest Bangladesh.

The following PRA tools were tested in the field:

1. Hazard mapping
2. Hazard and vulnerability ranking
3. Hazards timeline/trend analysis
4. Cause-and-effect diagramming
5. Seasonality analysis
6. Livelihood resource assessment
7. Key informant interview
8. Community consultation/meeting
9. Stakeholder workshop

Based on field experiences and community responses, the following tools appear to be efficient in rapidly assessing the urban hazards, community vulnerabilities and adaptive capacity:

1. Stakeholder workshop
2. Hazard mapping
3. Hazard and vulnerability ranking
4. Cause-and-effect diagramming
5. Community meeting
6. Key informant interview

An urban community group in Bagerhat city with their community hazard map (Photo: Rashed Jalal).

SUCCESSFUL TOOLS IN URBAN AREAS:

Hazard Mapping, Hazard and Vulnerability Ranking

Although this participatory mapping exercise takes a relatively long time, at least half a day, the map and the consultation provide detailed and useful information regarding urban vulnerability, vulnerable groups (urban poor and marginal groups) and vulnerability

hotspots. The hazard map also helps understand the biophysical and socioeconomic settings of the community. In addition participants enjoy the process and spontaneously participate in the activities.

Cause-and-effect Diagramming

This tool was also successfully applied in the field. The exercise started with a general discussion on a specific vulnerability issue and the elements at risk. The participants then gradually built the causes and effects of the problem or issue. Important information regarding adaptive practices and possible mitigation measures could be also extracted during this exercise. The 'problem tree' or the final product of the exercise could be reversed to discuss possible solutions to the problem. The exercise took approximately 3 hours.

Community Consultation and Interview

Semi-structured open-ended interviews with individuals and group meetings/consultations were very effective in collecting information on urban hazards, their impacts, and their biophysical and socioeconomic relevance.

Stakeholder Workshops

Stakeholder workshops were very effective in compiling regional or city level information. A wide range of stakeholders were invited to these workshops including community representatives and service providers. Efficient facilitation is very important in these workshops to keep the participants motivated and to ensure active participation of the marginalized groups.

Urban community DRR workshop in Khulna City, Bangladesh (Photo: Uthpal Kumar).

CHALLENGING TOOLS IN URBAN AREAS

Seasonality Analysis

This method could provide useful information regarding seasonality of hazards and vulnerabilities, and to understand the differential vulnerability issues of the urban poor communities during different seasons of the year. In some cases it was difficult to arrive at a consensus on the seasonal variations among the group participants.

Hazards Timeline/Trend Analysis

Timeline/trend analysis is a useful method to identify long-term trend and variability in hazard in the local context. However, during this research, it was difficult to locate individuals who recollect the events 20-30 years ago in the urban location. Many respondents were relatively young or recent migrants from other areas, and were not very conversant with the hazard trends in the city. The information gathered through interviews of the few elderly individuals also varied widely, indicating a large variation in perception of the hazard trends. In general, the responses regarding hazard trends and timeline were not very useful.

Livelihood Resource Assessment

This method uses the five key resources or capitals (natural physical, financial, human and social) to assess the livelihood vulnerability of the poor urban communities. Our field experience in Khulna and Bagerhat indicates that this method is difficult to apply in an urban setting, particularly in informal settlements or urban slum areas.

In summary, certain PRA tools require a historical knowledge and rely on a context changing slowly over time. Cities however are dynamic, rapidly changing social and physical environments where the notion of community and their collective knowledge is challenged. This paper is one of three short reports from this research; Adaptive Capacity for Urban DRR and Urban Risk: *Hazards and Vulnerability in Khulna and Bagerhat cities, Bangladesh.*