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Community based disaster risk management: Managing disaster in small steps

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Abstract
Despite the Growing scientific and technological information, it has been difficult to reduce the impact of natural disaster. Community Based Disaster Risk Management (CBDRM) is an integral part of Sustainable development, which places communities are at the heart of decision making vis-à-vis identification, assessment evaluation and management of disaster risks at the local level. Although Disasters affect large areas; the effects are severe at the local level. This paper deals with Concept on community based disaster Risk Management process after implementing the program in a part of Chamoli district, Uttarakhand. The methodology has basically proposed in two phases: Assessment of the community vulnerabilities, capacity of multiple hazards in selected village by Community Engagement and Community participant characterized by training and skills development for multi hazards and disaster Risk mitigation.

Keywords: community based disaster management, community based disaster risk analysis, community participation, pra tools, disaster.

1. Introduction
No part of the earth is free from natural hazards but these hazardous events become disasters when they strike on any built environment & affect population that is not made safe to these Hazards. Despite all the scientific innovations and technological development, it has been Difficult to reduce the impacts of these disasters (Prakash, 2010). Rather the frequency and intensity of disasters became increased due to rise in population density of hazardous areas, unplanned developments etc. Disasters are linked not only to hazardous events but also to the vulnerabilities of the exposed elements and capacities within the society to cope with them (Bhandari and Malakar, 2009). Thus, there are three major operating factors that influence the degree of disaster in any area i.e. hazard character (intensity, frequency & duration), vulnerability of different elements (Housing, population, Livestock, degree of exposure, resistance to impacts and proximity to hazardous sources) and the capacities (level of knowledge, techno-economic status & coping mechanisms, Patterson. Et. al., 2010, Holcombe. Et., al., 2012) . The Study focuses on probable methods for hazard identification and assessment by the local community, by virtue of their own natural experiences with the particular local disasters which occur in the past and present that affect their livelihood, lives, living shelters, livestock and environment.

A history of past disasters and their impacts on community and its resources are recorded through a community meeting and spatial assessment of all the hazards is depicted in a sketch called community based multi-hazard sketch of the village (Chen. Et. al., 2009). The sketch shows not only the hazards but also the natural & social resources, physiographic details, infrastructure and community facilities and. The second step in the approach is to collect of information and data on different elements (physical, human, livestock, environment etc.) in a table form, thus, providing an idea of degree of vulnerabilities of different elements to all the hazards. In the third step, capacities within the community in terms of skills person, resources, knowledge and information to face or cope with the disaster are evaluated (Prakash., 2013).

These three steps combine give a very good assessment of the potential risks of any hazards in any locality and a plan is then prepared to prevent, mitigate or manage these potential disasters so that losses are reduced to a minimum possible. The planning strategy again worked out on the basis of the a fore mentioned steps. The fourth step Makes an attempt towards hazard management i.e. to explore if the hazard can be avoided, prevented, mitigated, or monitored.

The community looks for various options that can be applied using the local skills, resources, knowledge and techniques. The fifth step attempts to strengthen the community through knowledge development, strength the existing elements in community or reduce vulnerabilities through the use of anti-disaster or disaster resistant technologies. The last step attempt to prepare a rescue plan so that despite all the efforts, if disaster hit in the society, community should prepared to face the residual risks in a planned way rather than being caught suddenly in a rash manner.

2. Why Community Based Disaster Management?

The urgency for community-based disaster risk management (CBDRM) is given below –

1. CBDRM is bottom-up approach and felling of belongingness and social inclusion is developed.
2. The CBDRM approach give access to sustainable management of resource and reduces risk from hazards at local level.
3. Local climatic and socio-cultural value get attention of the people in disaster management as well as development process.
4. This approach also give platform for exchanging the information, knowledge, skills and technique between the expert and local community.
5. As a result of self-belonging developed from CBDRM
6. Community can monitor and maintained the quality of works done for disaster risk reduction.

3. Procedure for Using the CBDRM Techniques:

Disaster risk reduction (DRR) is a set of activities Plasticized to minimise vulnerabilities and disaster risks in local community, and prevent or to mitigate and prepared for the adverse impact of hazards (Luna., 2010). Although several scientific and technological approach exist for hazard identification, assessment, and monitoring or control; yet the local community is hardly involved and benefited by application of the scientific community. Therefore, an attempt has been made to involve and use the local community's knowledge and experience in dealing with the issue of disaster risk assessment and management while applying the scientific principles of disaster management in a broader sense.

The procedure for community based disaster risk management has following steps. At the beginning of this process, some prominent actions are required to be taken by the local community to initiate the work in a systematic way (Salajegheh and Pirmoradi., 2013) The methods involve formation of task forces and encouraging the program, for disaster risk assessment and mitigation. After the formation of supporting group a brief orientation program should be conducted which addressed the objectives of the study, procedure to implement it and what are the expected outcomes. It is expecting that if the local community clearly understood the need of the study and what they could gain from the involvement, it would be much easier to recruit potential participants. After the orientation the process of CBDRM has been performed then the work should be conducted in two phases.

3.1. Phase I: Hazard, Vulnerability and Capacity Assessment:

These emphasized on collection, compiling and analysis of collected data or information, and maps for the planning of assessing the hazards, vulnerabilities and capacities in a locality. Information on past disaster events should must be collected from disaster experiences at local level. It is design to disclose disaster history of the community and acknowledge descriptions of emergency situation by reviewing past disaster events and individual experiences. Interchanging information with in participants could understand better about the natural hazards in their community (e.g., intensity and frequency of occurrence, areas likely to be mostly affected, spatial extent, seasonal pattern, duration and existing warning system). These past disaster experiences would be very useful to help participants in identifying the hazards which make threat their community.

3.1. a. Vulnerabilities Assessment

Assessing vulnerability involving in identified Village boundaries/territory and physiography (e.g., slopes, drainages, ground cracks, etc.), areas with high risk and putting these areas on a map. Secondly, the map prepared by participants should must highlight on a detail map called as a community sketch. The sketch includes the location of past disaster, their impact and potentially hazardous areas. Therefore, sketch should also pinpoint the locations of vulnerable buildings and identifying the area where community should be most concerned.

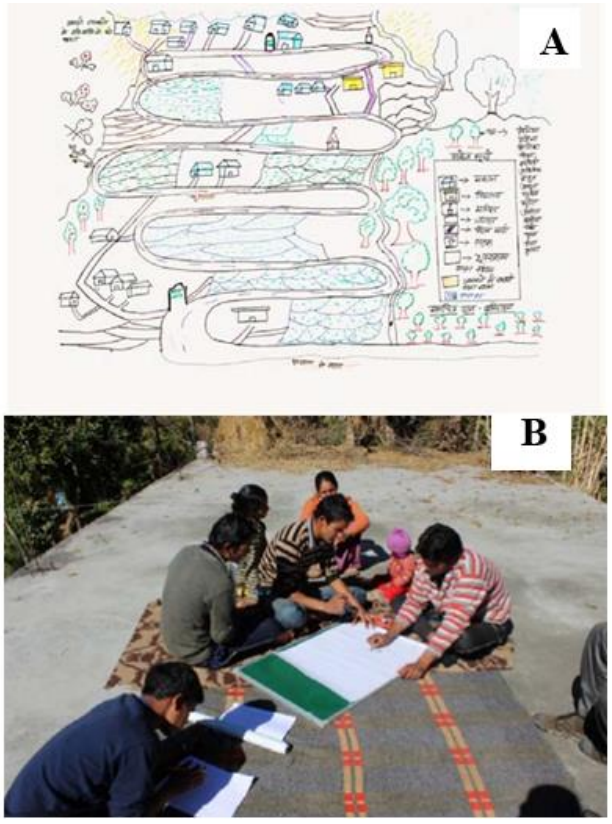

Fig 1: (A). An example of Multi Hazard sketch map prepared by local participants at Baimyala Village, Uttarakhand, (B). Participation of local people for preparing multi Hazards Sketch Map.

Capacity Assessment

In phase one the third step is assessing capacities within the community in terms of knowledge, technology, resource, Experience, skills and information to cope up with the disaster situation are evaluated. These three steps Hazard, Vulnerability and Capacity (HVC) give a very good assessment of the possible risk due to probable disaster in a certain locality. The assessed risk are categorized, ranked and prioritized by the local participants based on the certain parameters and perceptions at local levels. Therefore, an

action plan is prepared to avoid, prevent and mitigate or manage these potential disasters for reducing the risk and losses within the locality.

3.2. Phase 2: Preparedness & Management Plan

In second Phase of the CBDRM methodology involves application of the obtained information and data collected through the exercises in phase one for management and planning of disasters in the locality in a systematic way so that impacts of the disaster could be minimized. In phase two first step is –

3.2. a. Hazard Prevention Plan

Hazard prevention should include the Zonation of hazard prone area, promoting Disaster Resistant Technologies, creation of awareness and diffusion of Safety Guidelines, Structural and Non-structural mitigation or Regulatory Measures.

3.2. b. Hazard Mitigation & Vulnerability Reduction Plan

This step involving certain Activities which aim to reduce the impact of a disaster on vulnerable communities. Disaster mitigation planning involve in diversification in source of incomes, alternatives livelihoods, food security, training of local community for disaster planning and management, disaster resistant infrastructure programs. On the other hand, vulnerability reduction includes activities referring to strengthening of elements and reducing their weakness to a certain hazard.

3.2. c. Disaster Preparedness Plan:

In last stage of second phase a disaster preparedness plan should be framed. The aims of disaster preparedness plan is to;

- Ensure that appropriate arrangement is in place to provide effective response during and post disaster.
- Local community should be prepared in such a way that the community would handle the disaster in the first 24 hours or so until outside help has not reached (Islam., 2007).
- Setup an emergency Resources and Operations Centre with functions and facilities such as list of skilled and trained human resources at local level, Information & data on past, existing and potential hazard, availability of emergency rescue equipment, a disaster management plan, its schedules of maintenance and update with time; training materials for locals to disaster management, creation of disaster funds with the help of local community etc. It should also conduct activities like celebration of disaster risk reduction day and organizing mock drills or exercises.

Fig 2: (A). Prepare community Rescue team during Disaster. (B) Women empowerment and awareness creation for Disaster Risk Reduction.

4. Conclusion

The successful application of this methodology implies that the method is suitable for use and accepted by the Community.

Broadly, six steps were identified - three of which involve assessment of hazards, vulnerability and

Capacity within a community and the other three steps deal With action planning for modification or management of the first three issues.

The results of this test were quite encouraging and hence, it was planned to extend the methodology to the community in other villages for disaster management. Technical and financial support from outsiders will further boost the efforts of these villagers in fully implementing their strategies for disaster risk management in their communities.

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