

Local Knowledge on Disaster Preparedness: A Framework for Data Collection and Analysis

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Part of the ICIMOD research process was to record and document local songs and proverbs relating to disaster, letting the people hear their own recording. Local songs and proverbs can be used in preparing communities for disaster (photo from Shreepur VDC, Sharlahi district, Nepal).

How do we document local knowledge on disaster preparedness? Case studies on local knowledge exist in several fields of study, but usually the links between local knowledge and disaster preparedness are not explicitly made. An assessment of the available literature reveals the absence of a framework through which they may be linked.

This paper attempts to fill in this gap by presenting a general framework for data collection and analysis on local knowledge related to disaster preparedness. The framework addresses the needs of development and research organisations working in the field of disaster management.

Since April 2006, ICIMOD and partners in four South Asian countries – Bangladesh, India, Nepal, and Pakistan – have been working on the project, ‘**Living with Risk. Sharing Knowledge on Disaster Preparedness in the Himalayan Region**’, supported by the European Commission through its Humanitarian Aid department Disaster Preparedness European Commission for Humanitarian Aid Office (DIPECHO).

As part of the project, ICIMOD is compiling secondary information related to local knowledge on disaster preparedness. Additional primary information has also been collected through case studies in Nepal and Pakistan. The need to understand better and integrate local knowledge into disaster preparedness is in the focus of this article.

Why local knowledge?

Local knowledge and practices have rarely been explored in disaster and hazard literature

Since the 1970s, the importance of accounting for and integrating local knowledge into poverty reduction projects including decision-making processes gained recognition within academia, international

development and funding agencies, NGOs, and with policy makers. The interaction between western conventional science and local knowledge is not new and the history of the sciences demonstrates that those two knowledge systems have often been more intertwined than separated (Agrawal 1995). What is new is that local knowledge including indigenous knowledge and practices and knowledge systems are now more widely acknowledged.

Much of the literature on local and indigenous knowledge is dispersed in various fields including anthropology, geography, natural resources management, rural sociology, urban planning, and engineering. However, local knowledge and practices have been barely explored in disaster literature in general – and even less in literature on disaster preparedness. Until recently much focus was directed towards relief aid, but this is now slowly changing. An example comes from the impact of the 2004 tsunami in South Asia. Following the disaster, the media especially reported how some communities managed to save their lives and property using local knowledge through the ability to identify early warning signals of the tsunami from local songs and observed changes in animal behaviour patterns. The failure of relief aid following the 2004 tsunami is now largely attributed to a general misunderstanding of people's needs and practices. However, even if implementing organisations acknowledge the existence and importance of local knowledge and practices related to disaster preparedness, there is little documented evidence of their inclusion in disaster preparedness planning.

A better understanding of local knowledge can help implementing organisations to empower communities for improved disasters preparedness

Accounting for local knowledge, practices, and contexts can help implementing organisations, to better plan for disaster preparedness. It can contribute to project performance in the local area; that is, build project acceptance, ownership, and sustainability. Many implementing organisations do not have a clear understanding of (1) the value of local knowledge for their projects' success and sustainability, (2) the meaning of local knowledge on disaster preparedness, and (3) the methods to identify and collect information related to it.

Understanding, accounting for, and respecting local knowledge can contribute to project cost-effectiveness in the long-term, both from a financial and from a social

point of view. As Berkes (2002) puts it: "instead of looking for the one 'correct' scale for analytical purposes, it may be useful to start with the assumption that a given resource management system is multiscale, and that it should be managed at different scales simultaneously." Solutions in the context of resources management need to go beyond the dichotomy between local versus state management levels and to integrate cross-scale institutions. As the rate of change (institutional, economic, and cultural) related to globalisation processes is increasing, new and innovative forms of governance are required to address the complexities and uncertainties associated with it. A better understanding of local knowledge and practices can help to identify what is important and can be promoted at the local level. Building upon local knowledge and practices that is capitalising on local strengths whenever relevant can decrease dependencies on external aid.

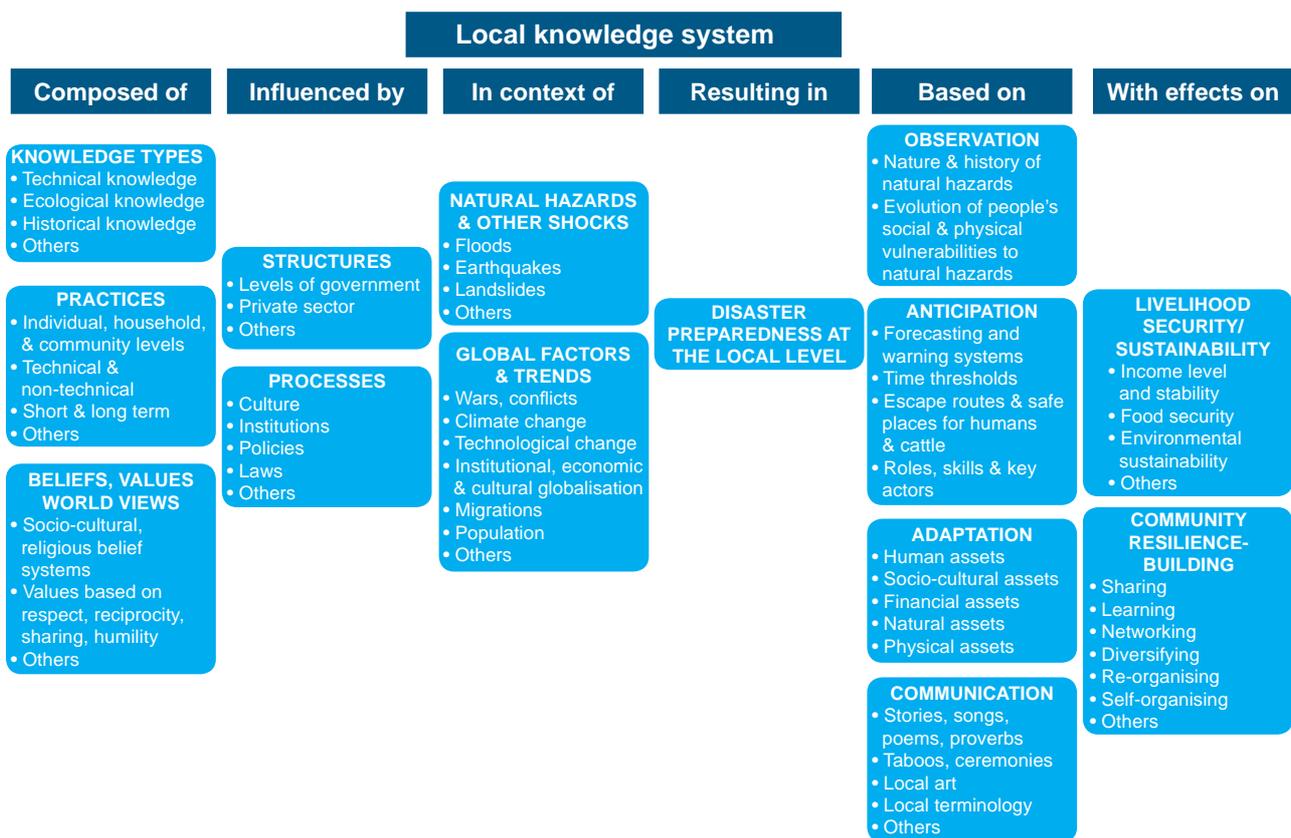
In the 2004 tsunami in Asia, some communities were reportedly saved through their ability to identify early warning signals through local songs and observed changes in animal behaviour patterns.

On the other hand and from a social point of view, accounting for local knowledge and practices can contribute to a build up of mutual trust, acceptability, common understanding, and community sense of ownership and self-confidence. Understanding and accounting for local knowledge, practices, and contexts can help community-based organisations tailor their project activities and communication strategies. They can also act as intermediary organisations able to translate messages from governmental levels to communities in a way that is understandable and trusted by the communities.

How to understand local knowledge?

Pieces of the puzzle: identifying linkages between local knowledge and disaster preparedness and what influences them

An analytical framework provides a simplified grid with which to think about and analyse a specific topic. It is an analytical map that lays out the key aspects related to a topic and shows how those aspects are related and influence each other. The framework we propose (see next page) can help to identify the linkages and relationships between local knowledge



Framework for Local Knowledge on Disaster Preparedness

Adapted from DFID (1999) and Ellis (2001) livelihood framework, and Gardner and Dekens (2007)

and practices and disaster management and what influence them. The framework can be used as a checklist of key issues to be taken into account. These can be summarised around the following key areas:

the impacts of globalisation, road construction, and natural resources policies. From a local knowledge perspective, and as suggested by Battista and Baas (2004), it is more interesting to “look at shocks that are recurrent and chronic and that contribute to gradually

The framework can help identify the linkages and relationships between local knowledge and practices and disaster management.

First, with respect to understanding local knowledge (A in the Framework figure). What people know is influenced by (and influences) what people believe in and what they do and do not do. To understand local knowledge one has to understand and account for people's various ways of knowing (i.e., different knowledge types such as technological and ecological knowledge) as much as people's practices and beliefs, perceptions, and values.

Second, with respect to understanding the vulnerability context and contextualising local knowledge/practices and disasters (B and C). Local knowledge is influenced by the type, frequency, and intensity of past and present natural hazards as well as by other shocks and global trends – for instance,

increasing the vulnerability of the community instead of exceptional natural event which require emergency operations from outside”.

Third, with respect to the key dimensions of local knowledge related to disaster preparedness (E). Local knowledge on disaster preparedness relates to four major dimensions of people's knowledge: (1) their observations of natural hazards through daily experiences of their local surroundings; (2) their anticipation of natural hazards through identifying and monitoring local indicators such as early warning/environmental signs of eminent hazards, time thresholds, escape routes, safe places for humans and cattle, and key skills and actors; (3) communication strategies on natural hazards among community

members and between generations; and (4) adaptation strategies – i.e., how people adjust, experiment, and innovate in the face of natural hazards and learn from it.

Fourth, with respect to livelihood security and community resilience-building (F). Ultimately, a better understanding of the linkages between local knowledge and disaster preparedness can help implementing organisations promote livelihoods security and resilient communities.

How to make use of local knowledge?

The wider picture: linking local knowledge, disaster preparedness, and sustainable livelihoods for poverty reduction

The lack of an explicit connection between local knowledge and disaster management in the literature echoes the lack of linkages between poverty reduction and disaster management and, more generally, the dominance of a sectorial approach to disaster management. Did we forget that disaster management is poverty reduction? In order to provide a more holistic view of disaster management, the framework builds upon the livelihood framework. As such it aims at situating the issues of local knowledge on disaster

preparedness into the wider issues of sustainable livelihoods and poverty reduction. Within this framework, local knowledge can be used as a key entry point.

The proposed framework aims to contribute towards a greater sensitivity to and a better understanding of local knowledge on disaster preparedness. The assumption here is that local knowledge and practices, whether they are relevant or not in a specific context for a specific project, should not be ignored. Local knowledge always needs to be taken into account. However, and importantly, this does not mean that all local knowledge and practices are appropriate or sustainable. Therefore, the next important step in order to provide further policy recommendations includes: assessing how to integrate local knowledge into your activities; which local knowledge you can support within your timeframe; for whom and for which objectives; how it can be combined with other knowledge for disaster preparedness; and under which contexts local knowledge and practices contribute to improving your disaster preparedness activities.

The framework presented in this paper continues to be developed. Readers are encouraged to send comments and contributions to: www.disasterpreparedness.icimod.org

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Circular mud repository 'chachkha', with unique pigeon holes to keep valuable belongings during floods in Katarait VDC, Dhanusha district, a flood-prone Terai region of Nepal