RESILIENCE OF INDIGENOUS PEOPLES TO DISASTERS: AN EXPLORATION OF PRACTICES OF KONYAK COMMUNITY, NAGALAND

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Abstract

With an increase in the occurrences of disasters there is growing interest in the way indigenous communities living in developing nations deal with disasters. The states' disaster risk reduction programmes are in their nascent forms and struggle to reach rural and tribal areas. However, people have lived with disasters for centuries. This notion of resilience inherent in traditional communities depends on their belief systems and perceptions. While these perceptions may appear superstitious and irrational to the scientific community, it is worthwhile to examine how some of the cultural practices contribute to reducing disaster risks and building resilience of traditional communities. This paper explores the link between culture and tradition and its intersection with disaster management practices of the *Konyak* community in Nagaland. It builds on the idea that traditional communities demonstrate resilience to disasters because of their cultural beliefs, practices, and also of their understanding of the environment.

Keywords: Indigenous Knowledge, Resilience, Traditional communities, Culture, Disaster Risk Reduction

Introduction

The everyday lives of traditional communities are closely intertwined with nature and its elements. Their perceptions of disasters are based on a much deeper understanding of their natural environment, of life, death and destruction – an understanding which is based on a complex web of relations which have evolved over generations of lived experiences and observations. Some of this understanding is codified and is often reflected in cultural practices, traditions and ceremonies including those perceived by outsiders as religious. These practices and beliefs strengthen the resilience of a

community that lives in close proximity to any hazard. Tribal, cultural and religious traditions have defined the relationship between land and people as intimate and foundational (Edward & Dudek, 2008). Land and ecology not only provides space, food and basic resources that meet people's needs but also a foundation for social and economic activities of the tribals. In the tribal worldview, one cannot make a clear-cut distinction between the sacred and secular, between religious and non-religious, between the spiritual and material areas of life. There is a deep and fundamental belief in cosmic oneness, a worldview which modern science is still trying to grapple with (Edward & Dudek, 2008). Thus, from the perspective of tribal communities it is important to question the mainstream definition of disasters and its relevance in building resilience of the people who are vulnerable to disasters.

Defining Disasters

Models and interpretations of disaster are plentiful. However, the phenomenon is highly multi-faceted and a general theory with universal explanatory power is unlikely to be ever formulated. Moreover, changes in society and the economy continually alter the tenets and controlling parameters of disasters. For this reason, it is important to periodically re-examine the question "What is disaster?" in light of current concerns of a given society (Quarantelli, 2005).

The United Nations International Strategy for Disaster Reduction (UNISDR, 2009) defines disasters as, "A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources" (Disaster, para. 1). In India, the National Disaster Management Act (2005) defines disasters as "a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area" (p. 2). The two definitions outline the views of mainstream institutions and organizations, both national and international, focusing on disasters and reducing disaster risk. While these definitions are applicable in the larger context of global and national governance, these are often at variance with indigenous and tribal communities' perceptions of disasters. Their perception of disaster risks is intertwined with an understanding of the environment and the functioning of its elements. This can be described as a form of knowledge distinct to the communities.

Understanding 'community resilience' in disasters

The UNISDR (2007) defines resilience as, "The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions" (Resilience, para.1). Resilience, thus, involves the ability to "resile from" or "spring back from" a shock. A resilient community is ideally the safest disaster prone community that has the ability to cope with and overcome the damages brought about by disasters, either by maintaining their pre disaster social fabric or by accepting marginal or larger change in order to survive (Gaillard, 2007). The resilience of a community with respect to potential hazardous events is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need. It requires the community to be ready to face abnormal events in terms of its scale, form or timing; and ability and willingness to adapt to a changing and threatening environment by upholding a common cause and a shared set of values (McAslan, 2010). Social resilience is associated with the adaptation of individuals and society to environmental change and with enhancing the coping ability of a community to strengthen it (Andharia, 2010). It puts emphasis on the strengths of the community rather than concentrating on their needs during disasters. Safe and resilient communities understand the disaster risk they face and can accordingly, monitor and protect themselves, as well as minimize the losses and damage when a disaster strikes. These communities can sustain their basic function and structures regardless of the impact of disasters. They can build back better and in the process vulnerabilities are reduced for future disasters (IFRC, 2008). Human society faces internal threats and their vulnerability and resilience has external roots (Levine, Pain, Bailey & Fan, 2012). Hence, to understand resilience, one needs to embrace the notion of awareness, detection, communication, reaction and recovery within a community to retain its traditional strength in coping with or adapting to disasters.

It should be noted that community resilience as a concept has its limitations. It is very relative and one has to understand what individuals, communities and systems are vulnerable or resilient to and also to what extent. It also requires descriptions of the basic standards of living or minimal acceptable conditions under which the people grow and flourish, when discussing resilience or the adaptive capacities of a community or a household. This idea of community or social resilience may focus on responsibilities of a community that is already experiencing poverty, deprivation and marginalization to absorb the impacts of decisions and actions of others, over which it has little or no control. In other words,

normalizing poverty, marginalization and struggle of risk and uncertainty is a fundamental problem in the dialogue around resilience (Andharia, 2010). This could promote the governments' negligence of its responsibilities, thereby creating or maintaining existing vulnerabilities and disasters. Finally, it should be understood that no community can be completely normal and safe from natural hazards and disasters.

Indigenous knowledge and its role in disaster management

Indigenous knowledge is defined as a body of knowledge possessed by a group of people living in close contact with nature over generations (UNEP, 2008). It refers to the knowledge retained by the original inhabitants of an area and reflects many generations of experience and problem solving by ethnic groups at local level (Langill, 1999 as cited in UNEP, 2007). Indigenous knowledge systems were developed in traditional societies as they recognized the fact that for them, to be living and surviving with what is experienced as natural disasters, would require them to monitor the environmental conditions, including the weather, be able to make meaningful predictions and take actions to mitigate disasters and hazards associated with it (UNEP, 2007). This tends to be comprehensive knowledge system, unlike what modern policy makers and administrators label as "disaster management" activities. It is perhaps this comprehensiveness that makes for resilience in traditional communities.

Since disasters are not unknown, many indigenous knowledge, traditions and practices include disaster management systems which has helped people adjust their lives and livelihoods to adapt to changing contexts for over centuries (Dekens, 2007). Indigenous knowledge systems have particularly been studied in flood disasters, due to the likely increase of flood events resulting from anthropogenic climate change through heavy precipitation, increased catchment wetness and sea level rise (Wilby & Keenan, 2012). More frequently, indigenous knowledge systems are among the elements implicated in "disaster resilience thinking", as reflected in sub-texts of the Hyogo Framework for Action of 2005 as part of its call for "building the resilience of nations and communities to disasters" (UNISDR, 2005). The case of flood management in Bangladesh can illustrate this shift in thinking from a technical and developmental approach to a more local and indigenous method of mitigating floods. The ineffectiveness of flood management in Bangladesh has been attributed to the focus on large-scale technological solutions which tend to emphasize short-term, sectorial approaches. A growing literature has been promoting the importance of building upon local knowledge and local adaptive strategies for improved flood management in Bangladesh (Paul, 1984; Rasid & Paul, 1987; Haque 1988; Zaman, 1991 as cited in Denkens, 2007). Indigenous people in

Bangladesh have been able to understand the adversities of nature and have accordingly, developed ways of forecasting and preparing themselves for disasters. Their knowledge of disasters goes far beyond just knowing or predicting disasters. Also, knowledge on how to deal with them is perceptible in their traditional way of living (Ifranullah & Molateb, 2011).

Indigenous knowledge could potentially constitute a precious national resource in dealing with disasters as a blend of scientific and traditional approaches and methods that opens avenues towards better disaster prevention, preparedness, response and mitigation (Rosemary, 2008). It can fill up the gap that where the so-called scientific approaches have completely failed. The faith in sea walls is one example. Literature indicates that indigenous knowledge helped the residents of Surin Islands, Thailand, survive the great Indian Ocean Tsunami of 2004. The *Moken* culture which talks about the *Laboon* or 'god of waves', passed down to the younger generations through folk stories, helped save not only the community but also the tourists that were in the area (Stevens, 2009). Examples of indigenous knowledge of climate change and disaster prediction has helped tribal communities cope with drought and flood situations in Rajasthan. This knowledge includes the understanding of cloud patterns, wind direction, behaviour of reptiles, birds, and insects to name but a few examples. Based on the understanding of the hazards there, the communities have built houses that are flood and strong wind resistant (Pareek & Trivedi, 2011). It is important to recognize that this indigenous knowledge of disasters and the ways tribals cope with them are a powerful asset for communities faced with multiple hazards.

Valuing Indigenous knowledge as separate knowledge system

This paper recognizes that a focus on indigenous knowledge can be problematic. Questions such as what constitutes indigenous knowledge, what is its validity and what methods must be used to relate indigenous knowledge to a process of scientific inquiry are indeed complex ones. There are debates in the western and modernist scientific community about the promotion of indigenous knowledge which is often dubbed as pseudoscience or even anti-science as many of its beliefs defy scientific rationality (Semali & Kincheloe, 1999; Nakashima & Roue, 2002). It is regarded as backward, static and a hindrance to modernization. However, unlike pseudoscience, indigenous knowledge neither attempts to masquerade as science nor sets itself in opposition to science (Battiste & Henderson, 2000). Most of the critique to indigenous knowledge is based on its comparison with Eurocentric and scientific foundations of science (Horton, 1993; Semali & Kincheloe, 1999; Horsthemke, 2004). However, in this debate on the validity of indigenous knowledge, one should not disregard the importance of such traditional

knowledge systems to communities who practice them. These knowledge systems embedded in the culture of traditional communities could potentially contribute to DRR and sustainable development. The more knowledgeable a community is, the less vulnerable and more resilient it is to disasters. It is important to explore, document and share this knowledge beyond a specific community in order to examine its applicability to other contexts which indeed may not be quite linear.

This paper is based on a qualitative study on the *Konyak* community in Mon district, Nagaland, which was conducted over a period of one year using ethnographic methods. The researcher focused on the *Konyak* tribe's beliefs around disaster and hazard events and their traditional ways of prevention, response and coping mechanisms. Men and women of different age groups who could share practices and knowledge related to disaster prevention and response were interviewed in two villages namely *Chui* and *Goching*. The respondents were respected members in the community and also well-versed in the cultural practices of the tribe. Several group discussions were also held.

In addition, officials from the Nagaland State Disaster Management - namely the UNDP State Project Officer, Kohima District Project Officer, State Coordinator for disaster management, Capacity Building Officer and other officials from the National School Safety Programme were interviewed. The Extra Assistant Commissioner in charge of overlooking the Mon District Disaster Management was also interviewed to understand district officials' approach and preparedness for disasters.

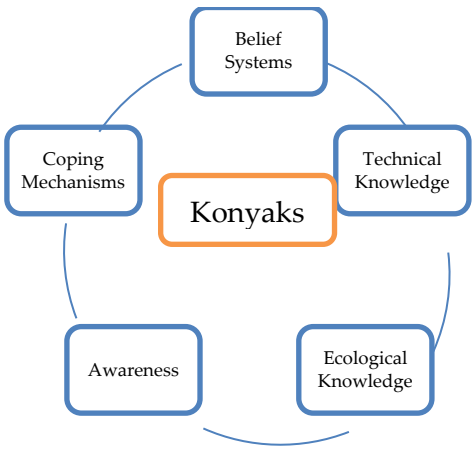
Nagaland as a state is very vulnerable to disasters (NSDMA, 2013) such as forest fires, lightning storms, landslides and flash floods. These hazards have affected the state frequently causing damage to property and sometimes loss of lives. Over the years, there has been mounting evidence that certain social and demographic groups are more vulnerable to disasters than others, due to marginalization based on various factors such as class, gender, race and ethnicity, age, income and geographical area. Vulnerability experienced locally, is very context specific and exists in inter-related ways at individual, household and community level (McAslan, 2010). Dependency on help and special support which covers an important dimension of vulnerability is influenced by existing socio-economic and cultural and religious disparities, the lack of resources and the inability existing level of technology to prevent exposure (Andharia, 2009). The concept of resilience talks of a shift to self-reliance at the time of disasters as counter to vulnerability (Manyena, 2006). This idea of resilience is important in a state like Nagaland as most of the communities in the interior part of the state have lived with risk of several disasters and may also be viewed as being marginalized by development programmes (Nagaland State Human

Development Report, 2008). Since they mostly depend on their own available resources and capacities during adverse times, it would be useful to explore what constitutes their resilience in order to enhance it and reduce vulnerability.

Prior to the data collection, a number of frameworks exploring indigenous knowledge and disasters were examined. Accordingly, information on traditional beliefs and practices were identified, segregated and classified. Deken's (2007) framework provided a broad idea on what to look for during data collection and thereby draw the linkages between traditional knowledge and its relevance to disasters. Pareek and Trived's (2011) method of classification was used to explore the traditional coping mechanisms of indigenous communities.

Practices of the *Konyak* Community

Most of the traditional knowledge is influenced by a community's belief, lifestyle and behaviour. Practices account for their understanding of the adverse conditions they live in, in order to survive especially in the toughest of conditions. Examining and understanding the knowledge systems of traditional or indigenous communities requires an appreciation of people's ways of knowing as much as their practices and beliefs, perceptions and values. The qualitative data obtained through interviews and discussions on practices was grouped under 5 categories.



Beliefs, Values and Worldviews

Belief systems shape people's understanding, perceptions and responses to natural hazards. These perceptions bound to a specific time and place are arbitrated by cultural interpretations in combination with a number of factors relevant to each community or household. They influence people's preparedness to disasters. The *Konyaks* are very firm in their cultural beliefs. Though many of these beliefs seem superstitious, they form a large part of

their perceptions of risks and disasters. These beliefs and perceptions provide insight into the rationale, the perspective and meaning behind their actions. Some of these cultural beliefs have been captured in sayings or proverbs within the community which reflect traditional wisdom. For example there is a saying that roughly translates as:

> *"The natural drainage should be left alone as nature has intended it to be like this. Changing the natural system would change the soil and in the process damage the natural system as a whole".*

In contemporary scientific discourse environmental scientists would endorse this practice. In fact the haphazard growth of small towns and large cities reflect that planners and construction engineers are quite unmindful of these fundamental principles.

Similarly on natural weather phenomenon the *Konyaks* believe that

> *"Lightnings are acts of heaven. There is no protection against it. No place is safe from this phenomenon".*

Religious beliefs have played an integral part in shaping the cultural beliefs of the *Konyak* community. With the coming of Christianity, many of the ancient traditions were considered pagan and mystical and ceased to be practiced within the community. These practices defy the understanding of what people consider 'normal' and are regarded as supernatural. Though traditional rituals were practiced by the community over generations, today only a handful in the community, especially the village elders, remember these practices. One such practice is called *O-gok-pu* - when literally translated it means 'Chicken burn practice'. It involves making predictions of natural disasters, harvest results, rains etc. with the use of an egg.

Technical knowledge: Layouts and house designs

While there are innumerable technical elements that need to be studied, within the limited time the researcher focused on the physical layout of the village and the housing design.

Village Planning: A visit to the village reveals that there is a systematic village planning process wherein the grain store houses are located far away from the residences. They are located in a particular area and all the villagers had grain houses of their own. One of the reasons for this practice is that in case of an eventuality within houses like fire accidents or attacks, the grains remain safe.

Similarly, drainage is given importance. The village elders are consulted based on their knowledge on comprehensive traditional understanding of the hills, the topography, the geographical history, the ecology and so on. The Konyaks make sure that the natural passage through the village is preserved and undisturbed. Bamboo plants growing or planted on the roadsides or river banks are preserved as it helps bind the soil tighter

and prevents soil erosion and landslides. This is in sharp contrast with the way roads were built in Uttarakhand by GREF and Border Roads Organisation (BRO) which is now known to be one of the factors underlying the devastating disaster in 2013. Most of the *Konyak* villages are surrounded by large trees. They are centuries old and also serve as posts during wars or conflicts. The village is prone to high speed winds and these trees act as wind barriers and slow down the velocity of the winds.

Housing design: A traditional house is designed according to the topography of the village and also takes into account the natural events that are frequent in the area. The house is designed in such a way that it causes least resistance to high velocity winds. The roof comes down very low, almost touching the ground. The design is a good mechanism of directing the winds towards the top and then away from the house. There are 1-4 poles that are attached to the central frame of the house that provide extra support during the windy season. During the construction of a house, the logs' wider ends are placed underground, while the cylindrically smaller ends point to the top. This design also helps against heavy rains during the monsoon season as there is lesser area given for the entry of water. During winter season, the temperatures drop to around 4^0C. To protect themselves from the cold wind and the freezing temperature outside, the bamboo walls are double matted. This is helpful even during the rainy seasons as they prevent water from entering the house. The roofs have a small opening for natural light to come inside the house. Storehouses for paddy, roots and vegetables are located at an elevated place. The whole structure is supported by stones or silts. This is to prevent damage of the grains from rats and other pests and also to keep the floor dry. The adaptation of these designs by the government and creation of appropriate structures may be viewed as a logical mainstream DRR activity. However, thus far, governmental bodies follow Public Works Department (PWD) norms which have no understanding or appreciation of traditional wisdom.

Ecological Knowledge

Land use: The traditional system of land use in the villages has helped the villagers use their natural resources sustainably. Lands are allotted for various activities like agriculture, housing, building roads etc. The lands in the two villages belong to the Great Chief *Angh* who ruled over 37 villages in the area. Use of forest products are regulated by the village chief or the village elders. They are responsible for the wellbeing of their community and their people. There is a seasonal calendar for various forest-based activities like hunting, timber and firewood cutting and collection of various forests products like leaves for making house roofs. This is

systematically adhered to by everyone and again practices are embedded in cultural beliefs of 'the right thing to do'.

The deep understanding of their environment has helped the people living in the villages cope with various hazards. For instance, the village is prone to dense fog but this does not affect the activities of the people as they are very acquainted with the surrounding they live in. One of the villagers told the researcher that even at night when they have no light and there is dense fog, he would still make it to his home safe as he has been walking the same path his whole life. The villagers have taken the same route to their fields or for food gathering and hunting for centuries. Not many new roads have been constructed and landowners themselves do not allow it unless the consent of the elders is obtained. They make sure they conserve their environment as they believe that it will affect their life. "Roads may be widened but we will not build new roads," said a villager when the researcher asked if the need for new road arises. They value their ecological base and do not believe in changing their environment drastically.

Spreading awareness in the community about impending disasters

Traditional communities have their indigenous methods of spreading awareness among the community members about impending disasters. These practices help the community to prepare for natural or human made disasters and emergencies and thereby reduce their vulnerability to specific hazards. In the *Konyak* community, prior to the season when fires occur, the villagers gathered in front of chief *Angh*'s palace and water was given to them in bamboo cups by the chief himself. The idea behind this ceremony was to spread awareness about possible fires during the season. While taking the bamboo from the chief, the villagers had to walk over tender shoots of banana plants that were chopped and spread on the ground. This practice was to signify that fire can also be trampled upon, crushed and cooled down like the crushed banana shoot.

Another similar practice performed by the menfolk of the village was to crush the banana shoot and collect the water oozing out in a bamboo. This cup was placed along the hardest and strongest wooden frame called *Shongzu* i.e. the mainframe post. This practice was symbolic and asked the heavens or the forces that be, not to let fire harm the household.

Coping mechanisms of the community to disaster risks

Traditional communities have resilient mechanisms to counter the risks posed by nature by taking advantage of knowledge about their immediate environment. These mechanisms are based on the ability to perceive the signals given by nature prior to any impending disaster. One such coping mechanism is food security. When the community observes

shortage in rainfall or drying up of mountain springs signalling droughts in the next season, food grains are stored in earthen pots to suffice their need in case there is a shortage of food. Maize, garlic, yam (*Colocasia*) and other seeds like pumpkin seeds are dried and stored up in the kitchen as fall back mechanism in case of a crop failure. One of the main reasons for storage in kitchens is to protect them from getting damaged by moisture. These seeds are also kept in dried conditions so that they can be used again when there is proper rainfall the subsequent year. Red meat is smoked over the fireplace as method to increase its shelf life.

Conclusion

The above findings show how traditional beliefs and practices have helped the *Konyak* community of *Chui* and *Goching* village cope and adapt to disasters. Similar practices are seen in indigenous communities all over the world (UNEP, 2008; Stevens, 2009; Ifranullah & Molateb, 2011; Pareek & Trivedi, 2011). They serve as potential resources that help strengthen the resilience of the traditional communities to disasters. As the global community moves towards building societies resilient to disasters, there is a need to understand such knowledge systems which govern risk management practices in indigenous communities. The state machinery should recognise the importance of such knowledge systems and integrate them into disaster risk management plans and programmes. It also needs to ensure the implementation of such policies on the ground. This process however, is a lengthy one and requires a great amount of research and engagement with the community. The first step would be to develop a framework for data collection and analysis of indigenous knowledge related to disaster preparedness (Dekens, 2007). This would help identify the linkages and relationships between indigenous knowledge and practices and its influence on DRR. Secondly, it would be to identify how indigenous knowledge of a particular community can be combined with other knowledge bases such as scientific knowledge systems to reduce their vulnerability to environmental hazards (Mercer, Kelman, Taranis & Pearson, 2010). Thirdly, processes for effective implementation of the framework need to be identified. This would mean empowering and involving the existing customary and religious institutions. Members of this institutions can be trained both in traditional and formal skills so that the implementation of the integrated framework can be more effective on ground. However, before doing this, indigenous communities need to understand the importance of traditional practices in the field of disaster risk reduction. In conclusion, policymakers need to recognise and understand each community's perception of risk during the process of policy formulation. They should consider the fact that no two communities will have the same risk perception of a particular hazard. What

one community in Rajasthan perceives as risk may not be of much threat to another community living in Nagaland.

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