



If one prefers to talk about the indigenous coping mechanisms of a tribal society in dealing with a devastating tremor in a difficult terrain as the Himalayan range, Thendup Lachungpa (65) would love to say something genuine. Thendup, the *Pipon* (headman) of Lachung Dzumsa, the indigenous autonomous council at a height of 8000 ft. in North Sikkim district, 118 km off Gangtok, the capital city of Sikkim, and belonging to the Bhutia tribe, would rather say, "Be wise, and learn from our indigenous housing pattern to address issues like how to develop earthquake resistant houses for Sikkim."

His arguments indeed carry meaning, especially in the backdrop of the recent 6.9 Richter scale earthquake that rocked the State on September 18, 2011 – claiming 77 lives. As North Sikkim district became the worst hit by the tremor, where most of the houses either collapsed, or were damaged to a certain extent, in Lachung (8,000 ft.) and Lachen (9,200 ft), the pristine land of the Bhutia people and tourists hotspots, the indigenous wooden houses, even the multi-storied ones, could resist the havoc of the tremor to a large extent.

While many modern structures could not resist the violent shaking lasting about 40 seconds and either collapsed, or were severely damaged, a four-storied structure, indigenous in style and architecture and occasionally used for commercial purpose as a tourist lodge during the tourist season, stood solidly, telling an anxious world how Thendup Lachungpa and their tribesmen have been coping with such natural disasters with the help of their traditional knowledge.

"Even if any section of such indigenous Bhutia houses developed damage to a certain extent, people were not required to abandon their houses to live in makeshift relief camps. The living space of these houses remained safe, and only the lower portion got damaged. A few such indigenous houses, however, collapsed, not because of the quake, but due to the massive landslides that took place simultaneously with the tremors", says the *Pipon*. The Dzumsa institutions, kept alive for centuries, are very active and played a significant role in the process of rebuilding life after the September devastation.

Normally, a *Khim* – the indigenous Bhutia house representing fine woodcraft – is a rectangular wooden structure and the main frame, which is a raised platform placed about seven feet high from the ground, is positioned on large, strong stone pieces. The four sides of the platform on the lower portion is then filled up with boulders, to give the shape of walls, but often not cemented. Tribal people use this lower space as storage. The main house is built on the raised platform.

During tremors, these houses shook violently but finally settled in their original positions, as the thick wall of boulders provided protection to the main structure. Thus, a portion of boulders moved out from the original structure, damaging the lower portion but leaving the main structure safe and secure.

Secrets of survival

Ratna Bharali Talukdar

explores how indigenous architecture has helped the villagers of North Sikkim escape major devastation during earthquakes.

Thus, these traditional structures could resist the tremor, whereas some 53,172 houses, almost half of the entire households of the State, either collapsed, were damaged or developed cracks due to the tremor, according to official statistics. In the North district, with a very small population of 43,354, against its geographical area of 4,226 sq.km; 7,120 houses have been identified by the district administration as having either collapsed or damaged.

Narrating what happened to her house during the September 18, 2011 earthquake, Pepu Lachungpa, a villager of Singaphu, a village with 20 families in the Bicchu area of Singhik revenue circle and a mother of three, says they suddenly experienced massive shaking of the house over the boulders, that lasted for several seconds, resulting in removal of portions of boulders from the main plinth. Thus, although the boulders moved away – causing huge damage to the lower part – the upper parts of the house remained safe for habitation.

"We now have to set the boulders accordingly and properly. The upper part that we live in is however safe," says Pepu. Like other victims, the family too, received Rs. 25,000/- as rehabilitation grant from the government.

"If our indigenous architecture of housing pattern can enlighten us in understanding the adoption of a new technology suitable for the mountainous state, we should definitely go for it", says TW Lepcha, member of the Lachen-Mangan legislative assembly constituency. Lepcha has also asked the Department of Mines and Geology to conduct a "Vulnerability and Stability Mapping" of his constituency to help in identifying the safest places, which are ideal for human

habitation. Stating that as certain indigenous architecture have proven to be successful in minimising the impact on human lives in certain localities, modern buildings and most unfortunately, the government buildings in his constituency have been severely damaged during the tremor.

Replicating the Lachung experience, in Lachen too, another Bhutia hamlet at 9,200 ft, houses were not damaged or did not collapse during the tremor. Significantly, Lachung and Lachen, two high altitude tourist hotspots bordering China, are identified as most protected and restricted areas and one needs special permission to visit them.

When indigenous architecture has proven to be useful in providing material relief to overcome trauma, a strong community bond to help each other during the devastation, too, was equally instrumental in healing the pain of the affected people. Community people joined hands not only in the process of rebuilding, but the psychological support has worked as a magnificent tool to start a new life.

Showcasing rare examples of such community bond, N Neema Lepcha, the Panchayat Secretary of Passingdang, has provided shelter to 19 earthquake affected families of his community living in Bay village in Dzongu, the pristine land of the Lepchas, the original inhabitants of the State, in his own house. Bay, a Lepcha village, was seriously affected during the tremor, leading to the death of seven people. The Panchayat Secretary has shown his generosity by providing not only living space for these families, but also made the arrangements for the performance of *Swegu*, the community death rite ceremony, for all the seven who died during the tremor on November 5, to mark the 49th day of the death. Thousands of people from the surrounding Lepcha villages thronged to his house to console the families of the victims.

"It was such an unprecedented and horrifying experience. We were just relaxing at the end of the day. All on a sudden, a portion of the hill-top fell down on us and washed away half of the village in front of our eyes, killing my elder brother's wife and children with seven others. ...The Panchayat Secretary has been so kind to provide us some space to live in, otherwise we would have had to live under tents like refugees," says Richden Lepcha, a member of one of the affected families, who is staying in the Panchayat Secretary's house.

While modern and complex societies in transition often have to encounter difficulties in searching for indigenous coping mechanisms to overcome trauma in the aftermath of a devastating situation; successful examples of such tribal societies may help in understanding such situations. There is also room for institutionalisation of such efforts of addressing psychological trauma in the modern world.

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