

Cultural Considerations for Post Disaster Reconstruction

Post-Tsunami Challenges

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Introduction

Developing countries are exposed to various natural hazards such as earthquakes and floods leading to disasters, which cause immense loss of life and property. The recent Indonesia Earthquake and Indian Ocean Tsunami (2004), Bam Earthquake (2003) and the Gujarat Earthquake (2001) are enough to substantiate this argument. Such an immense destruction requires massive schemes for post disaster reconstruction, requiring not only provision of shelters but also rehabilitating social and economic structures which are badly mutilated as a consequence of these disasters.

Cultural considerations are important to ensure sustainability of interventions undertaken as part of post disaster reconstruction. There are enough examples to show that lack of consideration given to cultural and social concerns serve to reinforce and sometimes-even increase the vulnerability of local communities.

We will primarily explore two cases, which demonstrate this important issue. The first case assesses the impact of relocation of 2 villages in Flores, Indonesia, following the 1992 earthquake. The second case investigates the impact of reconstruction following 1993 earthquake in Marathwada, India. In both these cases, the villages are revisited 8 years after the earthquake to study long term implications of these massive reconstruction schemes.

Relocation of 2 Villages in Flores, Indonesia, Following the 1992 Earthquake

Flores Island is a long, narrow Island extending from the east to the west with a width of 12-70 km and a length of 360 km. It is one of the Islands of the Indonesian Island Arc, the population of which is approximately 1.5 million.

The earthquake on 12 December 1992 off the North Coast of Flores Island caused extensive damage to governmental offices, churches or mosques, school buildings, factories, bridges as well as housing.

Approximately 30,000 buildings were damaged by the shaking, out of which half were totally or partially collapsed. Most of these were constructed of bricks or stone masonry. Also many buildings along the coastline were heavily damaged due to resulting liquefaction and Tsunami.



Fig- Tsunami destroyed Wuring following earthquake in December 1992

After the earthquake, the tsunami stricken areas such as Wuring village and a village on Babi Island were declared dangerous for habitation. Therefore on the advice of several “international experts” it was decided to relocate these villages to new areas, namely Nangahure and Nangahale. Subsequently in 1993, as part of their “public services”, the armed forces built 800 houses in Nangahure and 1000 houses in Nangahale for the earthquake victims after relocating people from Wuring village to Nangahure and those from Babi Island village to Nangahale. Around 300 families originally moved from Wuring to Nangahure and 400 families moved from the Babi Island village people to Nangahale.



Fig - Houses in Nangahure located far from the beach to “avoid” Tsunami, March 2001.

Eight years after the 1992 earthquake, many houses in Nangahure were abandoned because people moved back to their original village of Wuring. It is apparent that the population of Wuring village, which consisted of Bajo and Bugis ethnic groups originating from South Sulawesi, felt more at home in Wuring, which was established by their ancestors a few hundreds years ago. It is apparent that the decision to relocate them in 1993 to Nangahure did not take the social, cultural and economic factors into account. A preliminary survey in March 2001 reveals among others the following findings:



Fig Abandoned Houses in Nangahure, the occupants moved back to their original Wuring village, March 2001.

Nangahure was located inland approx 200 meters from the shoreline (far from the beach, because according to the experts advice it shall be relocated inland to avoid tsunami) and the types of houses built were similar to that in a military barrack. In Wuring, the houses were built on poles so that these do not get submerged in water during high tides. These were also in line with their ways of living as fishermen who consider sea as part of their life. By building on poles, the fishermen could tie their boats along their houses during high tides. However, they could not do so in Nangahure because the barrack like houses were built on land.

As mentioned earlier, the population of Nangahure was not entirely from Wuring village. Besides those families, which originated from Wuring, around 500 families came from Maumere. The people from around Maumere consisted of native Flores people and most of them worked in Maumere. Most of these people were devote Catholics, while the Bugis and Bajos were Moslems and their cultures also differed. For centuries they had lived in harmony in Flores since they had their own areas/villages. In Nangahure, the

government overlooked this problem and settled these two culturally and socially distinct groups in one village.

Therefore, the natives of Wuring did not feel at home when forced to move to Nangahure in 1992. For centuries, they had retained their culture, social environment etc and apparently had problems in totally changing their habits, environment etc.

In order to prevent the majority of the native Wuring population from leaving Nangahure, the Government built several mosques, a fish auction building and other public facilities etc. However, it seemed that all those efforts could not stop the strong instinct and determination of the native Wuring population to return to their native village in Wuring.

After 8 years, most of them had rebuilt their houses on poles and their mosque, and moved back to their old habitat in Wuring. Ironically, the situation in Wuring in 2001 practically returned to the pre 1992 earthquake condition.

Another interesting example is that of one village on Babi Island, which was wiped out by the tsunami. Subsequently, the government decided to relocate this village to Nangahale on Flores Island. The old village ground was declared as unsafe. Here also, the government prohibited the people from the old village to rebuild their houses in the same area, which was declared as restricted area.



Fig - Abandoned house in Nangahale and occupants moved back to Babi Island, March 2001

Interestingly, the problems encountered in Nangahale based on preliminary findings during a survey in March 2001 (8 years after the 1992 earthquake) were almost the same as those found in Nangahure.

Before 1992 earthquake, most of the villagers on Babi Island were mainly working as fishermen, while others were farmers and planting crops on the hillside. However, the fishermen and farmers used to live in the same village in houses built on poles, which used be in water during high tides. The sea was very much a part and parcel of their life. As was the case with Nangahure, the type of houses built in Nangahale were similar to those built on the ground and lined up in rows. Therefore, during the course of 8 years, most of the fishermen in Nangahale started rebuilding their houses on poles and moved closer to the sea, thereby creating a “new” fishermen village. They dried fish along the beach and made some salt farms on the beach.

Moreover, the native population from Babi Island, who were farmers used to plant corn, casave etc in the hills of Babi Island. In Nangahale, they were forced to change their farming habits and were directed to plant rice. The land provided to them for the purpose was located quite a distance from Nangahale. This caused the return of many farmers to Babi Island, where they rebuilt their houses at the site of the old village. Also, the farmers, who commuted from Nangahale to Babi Island to farm, built houses in the old village or in neighboring village (not affected by 1992 earthquake) and used these houses during harvest time only.

The natives from Babi Island were Moslems and consisted of approx 400 families, occupying less than half of the total number of houses in Nangahale. Apparently, the majority of the people residing in Nangahale came from Talibura and it's surroundings and were mostly Catholics. They moved to Nangahale because during post earthquake reconstruction, the armed forces built 1000 houses, which were more than those needed for the relocation of Babi Island village. Long after the earthquake, even those people who were not victims of the 1992 earthquake occupied many of the houses in Nangahale. They were rice farmers and others worked in Maumere. Even though the Government built mosques and other public facilities , most of the native Babi Island population did not stay in Nangahale.



Fig - "New Fishermen Village" on the beach of Nangahale built by Babi Island Fishermen, March 2001

Reconstruction Program Following Marathwada Earthquake of 1993

As a result of 1993 Earthquake that shook Marathwada region of Western India, traditional rural settlements in this area characterized by vernacular housing suffered enormous damage. This was primarily due to heavy roofs (mud) and thick stonewalls with weak bonding, especially at joints, which caused huge loss of life. On the basis of quick damage assessment immediately after the earthquake, the traditional techniques of vernacular housing were deemed to be the major cause of loss of life. All local construction practices were rejected by the 'official expert agencies'. Local people who saw their loved ones die under the heap of stone rubble also developed an acute fear. Modern technology was favored over traditional techniques, which were considered to be 'unsafe' for future habitation.

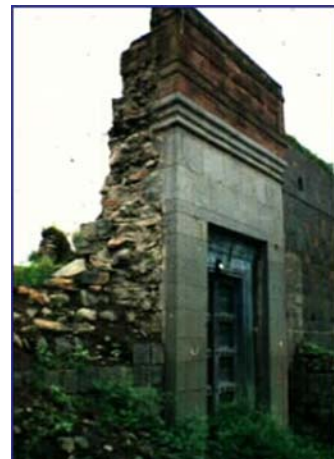


Fig – Increasing vulnerability of rural housing

Massive reconstruction programmed was initiated through millions of dollars promised by World Bank, as a result of which many villages were relocated using new designs and technology. However, eight after the reconstruction process began; many problems were being encountered in these relocated villages, most of which were the result of relocation itself.

First and foremost, it is important to understand that agricultural lands surrounds traditional villages, and the whole rural ecology is sustained on this delicate relationship of people to the natural resources around them. Unfortunately, relocation was done on agricultural land acquired from other villages. As a result, some of the relocated villages, either lost their land to relocation for other villages (thus becoming landless forever, even though some financial compensation was offered to them), or were themselves located far off from their own agricultural lands, sometimes more than 5 kilometers.

Besides this, the spatial plans for the relocated villages were totally incompatible with 'way of life' of the villagers. Traditional settlements were characterized by narrow streets, a hierarchy of public and private open spaces used for religious as well as other activities, clusters of housing with distinct typologies characterized by traditional occupation pattern etc. What was designed for them was a complete 'city-like' plan with wide streets forming grid a pattern, and row housing. The 'designers' sitting in the town planning office perceived that 'city-like' planning would ensure 'development' of 'backward' rural areas.

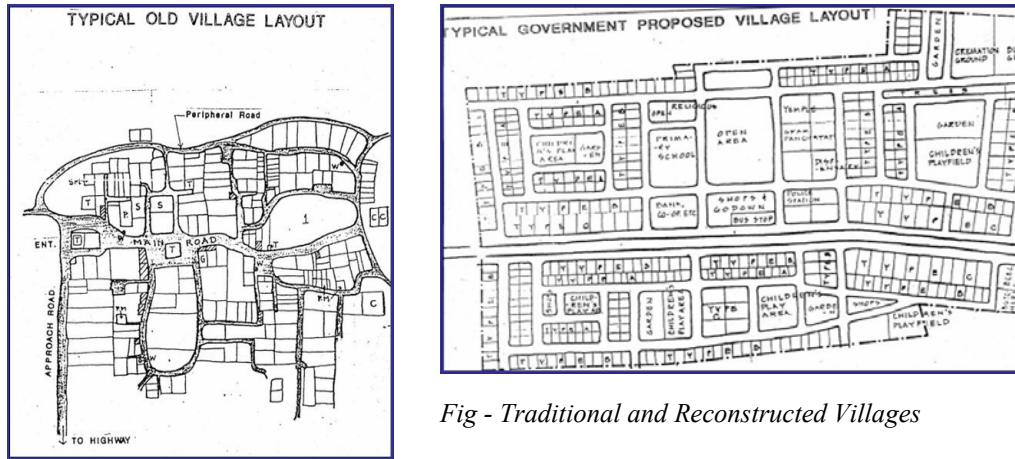


Fig - Traditional and Reconstructed Villages

In the new designs, there were no spaces for several traditional activities, especially those of service sector people like artisans. Moreover, the new villages were many-fold larger in area than the old ones (up to 10 times larger). This meant expensive infrastructure, which was again 'provided' by the Government. The lack of village committees' financial resources to maintain this huge infrastructure in the future was not thought through. Also criteria of house allocation on the basis of size of land-holdings has created new 'economic disparities' and completely destroyed the traditional social system based on 'neighborhood units' and 'dependencies that ensured mutual sustainability'. In some cases, people vacated their allotted houses and moved back to their family members / neighbors by initiating house-extensions. As a result of house allotment criteria, traditional artisans suffered the most. Since the house allotment criteria was based on total landholding, and traditionally the artisans are believed to act as a support system for the village and not supposed to cultivate their land, they remain landless or as marginalized farmers. As a result, the houses occupied by artisans are smallest. So there is no space for them to carry out their activities.



Fig – Additions to reconstructed villages by local people

The house designs were also very urban, with no link to people's traditional life-style. An interesting example of this is the provision of attached toilets in houses. Traditionally, these people are not even used to having toilets (they use the fields). Now we find these toilets being used to store grain. The appreciable efforts of some agencies/individuals such as HUDCO (Housing and Urban Development Corporation) towards incorporating traditional patterns in the new village-plan do need to be mentioned. However, in all these efforts there was little or no involvement of the locals in the process. The attitude was that of 'adoption and provision' rather than 'facilitation'. This made villagers dependent and raised their expectations.

As a consequence of the above, many people decided to vacate these relocated villages and move back to their old site. In fact, people cleared the old site of vegetation and debris, and started to re-construct their old houses employing traditional techniques in their entirety. Unfortunately, they have not employed any 'earthquake-resistant' features in their new 'traditional' constructions. So again, all the efforts of the Government and various NGOs towards 'information dissemination' and 'technology transfer' were wasted.

It is important to note here that in spite of the failure of Marathwada reconstruction programme on many fronts, the same mistakes were repeated in many reconstruction programmes that were initiated following Gujarat Earthquake of 2001.

Other Examples of Post-disaster Reconstruction

The above-mentioned examples from Indonesia and India are not the only cases where issues of cultural insensitivity in reconstruction are being encountered. There have been many instances in the past where reconstruction has failed to produce desired results because of lack of consideration for cultural aspects in reconstruction. Some of these are briefly explained below: -

Vladimir Ladinski (1995) in his study analyses the impact of internationally led 1963 earthquake reconstruction of Skopje. His study also reveals that the immediate housing, which was provided by building on agricultural land away from the city center, has caused many problems. Also the acceptance of 'modern' ideas for the city center redevelopment led to transformation of the city and departure from traditional organic approach to planning. The decision to protect buildings with technology solely based on earthquake engineering principles led to damage of integrity, identity and the originality of the built heritage.

Similarly, Robert Geipel (1991) had done an interesting study on long-term consequences (1976-1988) of reconstruction of Friuli, Italy after 1976 earthquake. In his detailed analysis of three settlements, Geipel points out that 'modern' layout and architecture has more or less satisfied the basic needs of inhabitants. However, he cited problems like "less communication", "more anonymity" and "worse neighborhood relationships" due to lack of cultural considerations in reconstruction.

Another study on earthquake housing reconstruction following 1976 earthquake in Guatemala (Miculax and Schramm 1989) revealed that improper use of technology e.g. use of tile roofs, for new appearance, comfort and status, compared to traditional straw roofs led to poorer housing, which was unsuitable for local climatic conditions.

Richard Hughes (1987) studied the impact of rehabilitation, three years after a devastating earthquake hit eastern Turkey in 1983 the impact was studied in three villages, where relocation and total reconstruction was adopted as the main rehabilitation strategy. His findings show that after they were relocated villagers still place high cultural and functional value on their old village sites. This is in spite of the fact that no new uses were found for these sites. Hughes was also confronted with several issues in the relocated villages where new government-designed contractor built houses were provided but set aside from the village site. These included inappropriateness of land for relocation. Also he was critical to the design and layout of reconstructed houses, which were no longer in clusters and were relatively high structures, as a result of which inhabitants complained of winter dampness and cold strong winds. He observed that local people had initiated changes to the new settlements to suit their traditional way of life. Traditional structures and temporary storage sheds were attached to the reconstructed fabric. Interestingly, people reverted back to traditional techniques. These self-help structures were built with stone and timber recovered from the destroyed buildings with fresh soil roofs derived from the immediate surrounding ground.

Sultan Barahkat (1993) has done another interesting study on long-term impact of the contractor built reconstruction in Yemen following the 1982 Dhamar earthquake. Here, Government gave more emphasis to the tender (contractor built approach) by relocating villages, rather than the self-help or repair approaches. Barahkat feels that the cultural dimension of reconstruction was overlooked, which in many case led to total rejection of the new settlements by the local people.

Besides, he discovered that in some cases, new settlements within an acceptable distance were actually competing with the old ones since they were neither close enough to merge with the original village, nor far enough away to establish a new center. Another physical factor that was observed to have had a marked effect on the acceptance of the new settlement was their distance from the agricultural land.

Moreover, the relocation of villages closer to main roads and the provision of services and infrastructure have had a detectable impact on the economic and social structure of settlements.

All the above cases have shown that the reconstruction issues have basically remained the same since 1962. The same mistakes are repeated over and over again and all these point to lack of understanding of local knowledge and capacity while undertaking post earthquake rehabilitation. This issue needs careful consideration in each cultural context.

Lack of Cultural Continuity & Compatibility – A Key Issue

It becomes clearly evident from the above cases that lack of cultural continuity and compatibility is certainly a key issue resulting in increasing disaster vulnerability after post disaster reconstruction. As discussed before, the existing notions of development of decision makers as well as local people consider ‘modernity’ and ‘urbanization’ as panacea for development. However, these ‘images of development’ are seldom comprehended in reality because of the four main reasons: -

1. Ignorance of the local people on what ‘modernity’ implies in reality.
2. While the images are created, culturally deep-rooted thinking processes may remain unchanged, thereby creating a mutually contradictory dichotomy.

3. Lack of education, because of which local people may not be conscious and confident to be aware of their assets (resources), rights and duties.
4. Inability of the local people to afford and sustain whatever is perceived as ‘modern’.

Essentially ‘development’ has no fixed frame of reference and is very much dependent on local cultural context. The definition of culture is well articulated by Rapoport (1984; 50-51), who highlights three important aspects of culture

1. “Culture as a way of life typical of a group, a particular way of doing things...”
2. “...As container of symbols, meanings and cognitive schemata transmitted through symbolic order...”
3. “...As a set of adaptive strategies for survival related to the ecological setting and its resources.”

The above definition demonstrates the all-encompassing nature of culture, in terms of what it implies for the rural communities. One of the main challenges is to reinforcing cultural continuity through development opportunities that are afforded through post disaster rehabilitation, so that one does not end up with cultural incompatible solutions, which prove unsustainable in the long run.

Moreover cultural continuity and compatibility needs to be considered in the vital aspects of ‘earthquake safe’ technology transfer during post earthquake reconstruction. There exists critical relationship between technological knowledge, and the qualitative aspects related to community relevance, social acceptance etc. besides economic viability and long term sustainability.

Relocation – Is It Sustainable?

From histories of ancient cities, towns etc, it is obvious that it was not a matter of mere coincidence that populations, families, groups and communities were physically located in certain neighborhoods and places. Such physical placements were the result of very complex and historically rooted natural and social forces.

As mentioned earlier, relocation needs very careful planning, thorough analysis because it concerns setting up a new community. Relocation involves movement of communities and not only families and people. In short, we are dealing with a principle matter, namely ‘moving a way of life’. It implies moving the place where people live, the place where they work, the place where the children play, and many others integrated social functions that are part of the social life of a given community. This is more so in developing countries, where the “network” of social life at the village or community level is very complex and there are a number of highly interrelated physical and social elements. Viewed from this sense it is clear that relocation involves far more than moving individual persons or particular physical entities. It implies relocating a collective way of life.

Therefore, before undertaking relocation as part of post disaster rehabilitation, it is suggested to analyze the characteristics of the population targeted for relocation. From this analysis it will be possible to assess the real needs of the people, to ensure long-term sustainability. Moreover, localized means suiting the local socio cultural settings should be used. Developing countries, in particular, should avoid using social technologies universally known but inappropriate for their own socio-cultural settings.

Lessons for Reconstruction Initiatives Following 2004 Indian Ocean Tsunamis

We are confronted with similar challenges in the aftermath of devastating Sumatra Earthquake and Indian Ocean Tsunami that struck on 26th December 2004 causing unprecedented loss of life and property and virtually wiped out hundreds of traditional fishing settlements along the coasts of Indonesia, Thailand, Myanmar, India, Sri Lanka and Maldives.

Massive relief and recovery operations are underway following this tragedy thanks to the generous support in cash and kind that has flowed in from everywhere. However many of these measures are, in fact posing a great risk to the vernacular traditions of these fishing settlements. Already, we are getting news of many well-intending donors, who are 'adopting' the villages along the coastline and making hurried designs for 'match box type' housing and 'city-like' plans for these settlements, without any regard to the 'way of life of people'. Moreover, most of these settlements are getting relocated without consideration to the traditional livelihoods and ecological relationships.

It is important that as responsible professionals we raise our voice against destruction of harmonious relationships that have been developed by the local communities over generations and address the issues of recovery and development with a cultural perspective. It is about time that we influence the decision makers to be culturally sensitive, so that past mistakes are not repeated, rather reconstruction initiatives help in reinstating the way of life of the local people, which truly represents the culture than merely a few historic buildings.

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