

Post-Disaster: Social Cultural Impact in the Resettlements: In case of Giraunchaur, Sindhupalchowk

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Abstract

After Gorkha Earthquake 2015, Nepal faced rapid housing demand in urban and rural context. In consideration of ease of providing necessary services, integrated settlements have been prioritized for resettlements by Nepal Reconstruction Authority (NRA) and Department of Urban Development and Building Construction (DUDBC). In contrary to the popular belief of resettlement bringing well-being, issues of ignorance towards community identity, social-cultural and economical needs have been observed. The study focuses on two resettlements in close-proximity with similar social-cultural lifestyle in Giraunchour, Sindhupalchowk. Namuna Ekikrit Basti and Shree-Namadoling Ekikrit Basti has been built by Dhurmus-Suntali Foundation and joint effort of CG-Foundation and Nepal Reconstruction Authority (NRA) respectively. Field observation, key-informant interview, questionnaire survey has been done to understand the change in societal way of living in both areas. User-committee faces a challenge in addressing a demand of rapid building construction along with needs of individual people in the community together with the economical challenges. Furthermore, the acceptance of ideologies of donor agencies plays additional impact. Both Basti faced restriction of livestock and has made a serious impact in agricultural chain and financial portion through live-stock. Earlier common courtyard-based living has been turned towards compartment-based housing. The study focuses on modification and adaptation to address living, comparison of satisfaction in two resettlement areas.

Keywords

Resettlement, societal impact, adaptation, Satisfaction, Earthquake

1. Introduction

Global Disasters Statistics shows the disaster hazard raising exponentially in the last decade and larger number of people life losses can be seen by negligence [1]. Nepal is likewise prone to earthquakes, and there have been significant casualties and property losses there, such disaster turns out to be as a tipping point for the transition of the society with the introduction of new material, living style and are even influence by the donor agencies. Globalization and urbanization have impacted individual and is ever growing in rural context as well. The way of living has been influenced by technology, resources and tele-communication. Family income and access to information and resources are bringing the change. Gorkha earthquake 2015 have severely affected 14 districts and 7.5 lakh houses and building were destroyed. One of the worst-affected districts is Sindhupalchowk which lost 3075 people [2].

In Giraunchaur, Sindhupalchowk, Namuna Ekikrit Basti has been one of the promising resettlements in the early phase of resettlement after the earthquake, led by Comedy Couple Artist Dhurmus-Suntali and had been able to attract media attention. On a 5-minute walking distance another resettlement has been build, led with joined effort of local, CG-Foundation and NRA. Both Tamang community resettlement experienced different approach, material, housing typology and donor agencies which can help in understanding the factors affecting the social change and satisfaction of the resettlement.

Integrated settlement or community living has been prioritized by Department of Urban Development and Building division (DUDBC) along with Nepal Reconstruction Authority (NRA) after earthquake, considering the ease of providing the necessary infrastructure like drinking water and electricity along with proper transportation facility. People in resettled housing are contented with shelter issue however, the

threat of losing many social ways of living is already experience by individual in the community [3].The build houses are adopted with modern way of living, which were rare previously and are generating many changes in living ways by the functional planning based on cities housing of private and public spaces. The replacement of vernacular building with city influence way of living impacts social-culture on people’s sense of place and identity [4]. For a better living environment, designers and planners must have a thorough awareness of social ways of life and their long-term effects on society.

In case of disaster or hazards, the priority of the shelter dominates the people other requirement which may eradicate the identity of the place and community [5]. Previously in context of Bhaktapur where cultural identity had important value, the importance of societal architecture impact had been left in least priority in housing construction [6].According to [7],the mismatch between the built housing and the lifestyle and expectations of the users can partly be explained by the insistence to provide housing after disasters, which prevents the government agencies from perceiving the local culture.

2. Research Objective

The Objective of research are:

- To identify the societal impact on cultural and living through re-settlement.
- Examine the housing satisfaction of the two re-settlements.

3. Understanding Societal Relations

3.1 Resettlement

Resettlement is process of planning, relocating and providing the necessary amenities as based upon the affected population by human action or natural disasters. Such population have consideration for the safety and proper shelter demand over any other aspect. Similar incident has higher tendency to lose the ethnic social-cultural aspects[8]. Even though the resettlement project has better standard of living in rural context, resettlement project fails to meet the expectation of the affected people in socio-cultural needs [9].

3.2 Tamang and its festivals

Tamang are the indigenous people found living from Trishuli river hilly region at west towards Bhutan in east. Ta means “horse” and Mak means “warrior” in Tibetan [10]. They have their own language, culture, dress and social structure and over 100-sub-clans are found. Majority of Tamang follows Buddhist religion. Sonam Losar and Buddha Jayanti are the major festival celebrated by Tamang where Sonam Losar follows Chinese zodiac calendar.

Festival	Purpose, Participants and Setting	Agricultural Stage
Losar	Village-wide celebration of New Year, Households erect flags and entertain Kinsmen.	Manuring of fields, preparation of soil.
Kurim	Households have shamans and lamas perform protective ceremonies	
Ke-lha	Lamas perform Palten Lhamo ceremony, shamans perform clan god worship. Every Household sponsor own ceremony.	Planting of potatoes, maize, etc. Begins.
Yul-lha	Tribal priest performs worship of village god to obtain good harvest.	Woodcutting, weeding of maize
Saune-Sankranti	On eve of Nepali month of Shrawan Households prepare special foods, make offerings to local demons.	Planting of Millet.

Figure 1: Festival Celebration by Tamang

4. Research Methodology

The research is carried out based on objective fulfillment where key-personnel interview, field-based observation and literature review on Tamang has been done for societal understand. Mixed method of residential satisfaction of the both resettled communities is done with scale value range from 1-Strongly Dissatisfied to 5- Strongly Satisfied to test the perception of household of Namuna Ekikrit Basti

and Shree Namadoling Ekikrit Basti using Google Form where sample is taken with 15 percent of number of occupied houses with 10 and 8 respectively. The result obtained is classified based on various social events and observation on changes seen in living lifestyle.

5. Study Area: Giraunchaur

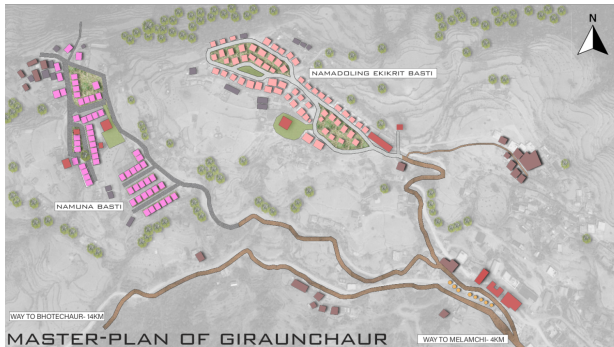


Figure 2: Master-Plan of Giraunchaur

Two Resettlement of Giraunchaur, Sindhupalchowk, known as Shree-Namadoling Ekikrit Basti and Namuna Basti are the study area, located 4km and 14km from Melamchi town and Bhotechaur away respectively. The 2015 Gorkha Earthquake had a significant impact on both settlements. Before the earthquake, the houses were made up of stone and mud with 3 storied, and scattered clusters in hillside.



Figure 3: Choten at Road Junction and Community Health Post

Shree Namadoling Ekikrit Basti has 62 houses where 8 Buildings are still not inhabited due to in-completion whereas Namuna Basti have 67 number of houses completed in time span of 6 month. All the houses belong to Tamang, in the integrated both resettlements, where majority of the households are involved in agriculture followed by building raw-material oriented employment and few on business and Government employments. Both the settlement has a site area varying from 5-7 ana of land based on understanding or lottery procedure.

5.1 Shree Namadoling Ekikrit Basti



Figure 4: Shree Namadoling Ekikrit Basti

Shree Namadoling ekikrit basti has been built with the joint effort of Locals, NRA and CG foundation. Technical assistance has been provided by CG foundation with collaboration with Build-up Nepal for interlocking blocks. The modality of the re-building houses conceptualize with skill providing perception. People in the locality were trained to produce the interlocking blocks and the blocks produced were used in the building of the infrastructure.

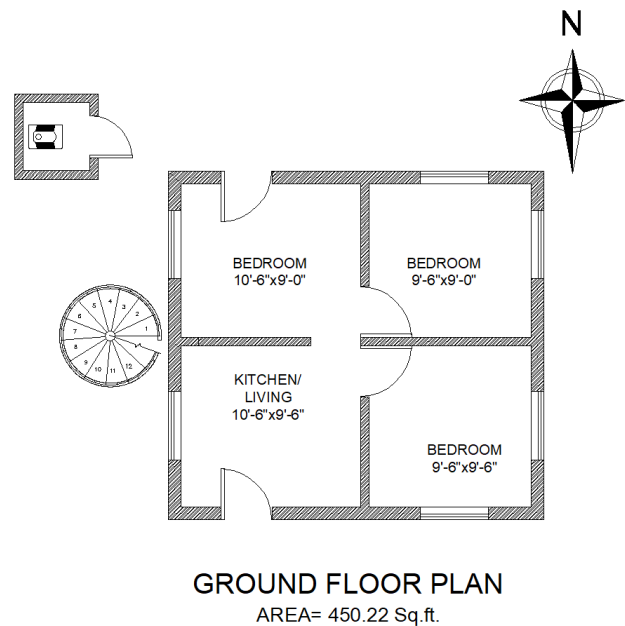


Figure 5: Ground Floor Plan

Cement, transportation of Sand and Aggregate along with exterior paint has been provided by CG Foundation, whereas NRs 4 Lakh has been provided by NRA for buying rebar and building materials and house owner has been responsible for the other expenses which were required. A house with four room (Kitchen-Living and 3 Bedrooms) has been planned and designed which were initially having a

single floor-slope roof later added with flat RCC floor for the future vertical extension. Toilet has been made detached in compound of the property. Lack of addressing of the storage and domestic animal space, the additional temporary shelter has been seen in the site.

5.2 Namuna Ekikrit Basti



Figure 6: Namuna Ekikrit Basti Integrated Settlement

Namuna Ekikrit Basti has been built with joined effort of Locals and Dhurmus-Suntali Foundation, Comedy actor has been able to grab media attention for the integrated resettlement and had received ample amount of fund and support from Government and Nepali peoples.

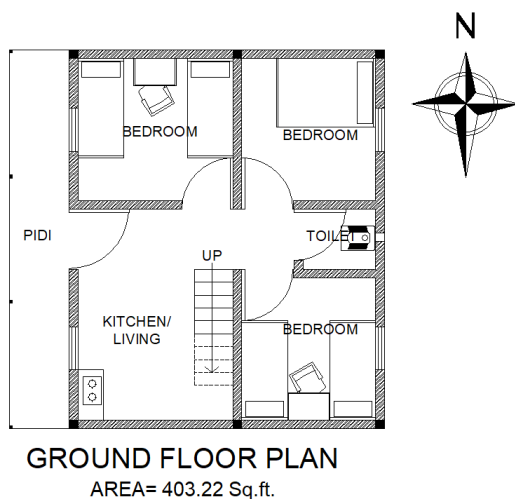


Figure 7: Ground Floor Plan

It has been made with Aarmaha Parmaha approach in time frame of 6 months. House design are based on adopted vernacular forms with 4 rooms and one internal toilet in Ground floor which had not been seen earlier before. Whereas first floor is used as storage. Buildings are made with hollow concrete blocks with 6 RCC columns in corner and mid exterior wall.



Figure 8: Attic used as Store

Facility of store has been provided in Namuna Ekikrit Basti houses in attic. It has been one of the important design adaptations from previous vernacular housing. Because of which there are no need of temporary shelter for storage. Migration based community has been observed in Giraunchaur, therefore, the additional extension might not be a greater concern in future.

Proper black top road is found inside Namuna Basti with the width of 20 feet whereas the connecting road to the location from both Melamchi and Bhotechour is still earthen roads. We can conclude with the community approach its effective on bringing the development. On contrary to the development, youth attraction towards two-wheeler is rising, even the mode of transport is being used for the transportation of agricultural products. Black-top Bituminous roads has caused heat-island effect in Namuna Basti, population in the area has mentioned the rise of the temperature.

6. Discussion and Findings

6.1 Societal Impact

Community have linkage with individuals and its values and norms are bound on one another in intangible ways. Often in designing the understanding of norms and values are difficult to be understood and its impact in any intervention is difficult to predict. Understanding of the space with relation to inhabitant position, respect and limitation with one another, are important in proper understanding [7]. Behavior analysis on individual working style can be one of the ways to know the various space relation with the people living.

Social Value and norms are intangible aspect with

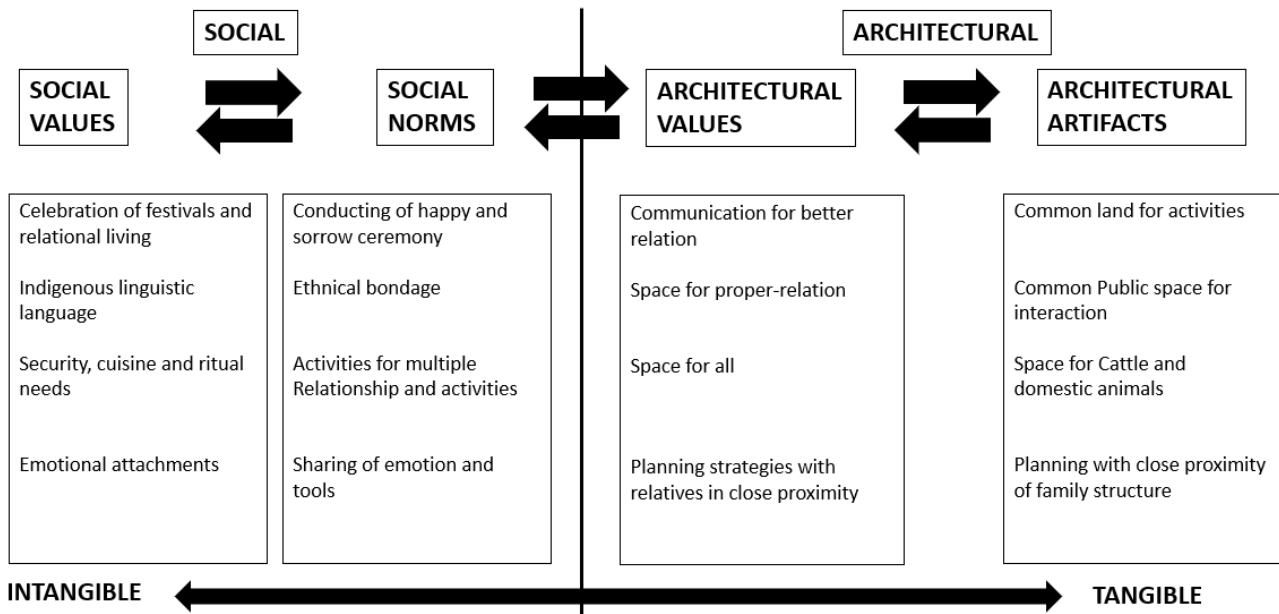


Figure 9: Socio-physical model showing relation for Tamang House

tangible artifacts in architecture. Architecture values understanding the intangible aspects results in accepted physical structure [11]. Linkage of the social values can be done with the help of flow chart initiated by Sanjoy Mazumdar and Shampa Mazumdar. Societal Values, Societal norms, Architectural Values and Architectural Artifacts, linkage is drawn for better understanding of the spaces.

6.1.1 Building Modification and Site Plan

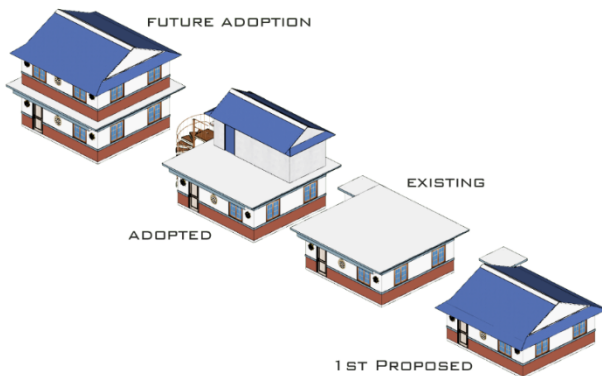


Figure 10: Namadoling Housing Morphology

Namadoling Housing Morphology experienced various prototypes often revising on previous design due to lack of space in the building. The building initial proposed design had slope roof with coverage of only ground floor. Where as later with the demand of community, the first floor reinforced-concrete slab has been introduced with the aim of future addition of

space in case of demand by the family structure. Housing morphology can vary upon the house owner wishes in Namadoling Ekikrit Basti. Since initial project is limited with only ground floor with flat RCC slab, it may take years to see its complete phase.

6.1.2 Storage Space and Additional space



Figure 11: Temporary Shelter for Storage

Due to lack of storage space in Namadoling Ekikrit Basti, Temporary shelter has been made in close proximity. The Shelter are used for storage as well as cooking with the use of fire-wood. Such Temporary shelters ruins the aesthetic of the resettlement. The lack of understanding of the demand of the space in rural way of living is its result. Site areas are occupied by such structure.



Figure 12: Fermenting Alcohol

Tamang community are familiar with the consumption of alcohol, buying of alcohol is often expensive and family prepare alcohol on their own. Preparation of alcohol demand higher energy therefore, cost effective alternative of fire-woods are used in preparation of it. In availability of space, it is fermented on back side of the building otherwise is done in front open-space. Earlier, its preferred to be done in private space not often visible directly by-passing people.

6.1.3 Festival Celebration

Celebration of the festival is important even in the community, Losar, Ke-lha, Yul-lha and Saune-Sankranti are celebrated in community with offering of foods, performing cultural ritual and dances. Earlier common ground of family inherited were used for celebration where as now a every people form the whole basti gather in Gumba, limiting the offerings and privacy of individual families.

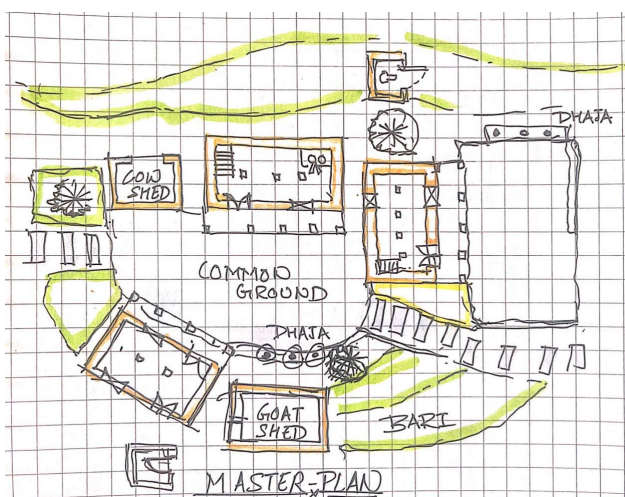


Figure 13: Master-plan of Pre-disaster Cluster

Family members from the distance gathers in such occasion and used to be treated specially earlier, which is not practical in present scenario.

6.1.4 Agricultural and Animal Husbandry



Figure 14: Rice-Grinding Machine

After the restriction of animal in the resettlement, People sell or gifted their livestock, resulting in breakage in agriculture chain. Family relying on imported rice and other foods is ever increasing due to lack of cattle for agriculture and fertilizer. Chemical fertilizer demand has been in high rise after limiting the livestock. Many local-cuisines recipes and authentic taste are found to be missing based on imported products.

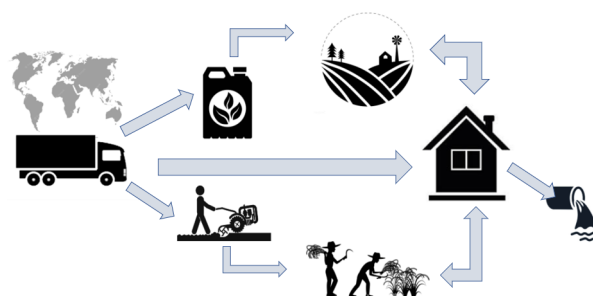


Figure 15: Food Chain Linkage

Livestock removal of food chain has introduced chemical fertilizer, agricultural tools and the waste generated are generally not used for domestic fertilizer. The whole chain cycle is interrupted and linear flow can be observed, increasing the expenses of individual. Animal breeding-based earning for family has been interrupted.

6.1.5 Cooking Gas and Cooking Space

One of the major changes has been noticed in cooking. Since the access of fire-wood for cooking is easily available, people are rigid on shifting towards more expensive option of cooking gas. Elderly people have even mentioned that cooking in fire-wood is tastier than cooking in LPG-gas. Adopted portable cooking range are made with modification which uses fire-wood for cooking. Due to the smoke, its not used



Figure 16: Adopted Cooking Range

inside the house, previously, improvised cooking range were used with limited smoke inside and helped in warming space in winter.

6.2 Housing Satisfaction

Social factor, cultural factor, environmental factor, and financial factor are basis of classification for the questionnaire survey. Continuation of Cultural acceptance by youth is major threat mentioned by elder people.

	NAMUNA EKIKRIT BASTI		NAMADOLING EKIKRIT BASTI
HOUSE SIZE	★★		★
INVESTMENT	★		★★★
TIME FRAME	★		★★★
PEOPLE ACCEPTANCE	★★★		★★★
DONATION AND FUNDING	★★★		★
MATERIAL AND TECHNOLOGY	★★★		★★★

Figure 17: Comparative of Cases

Based on questionnaire survey, People in Namuna Basti found more satisfied with new building compare to Namadoling even with the small size of house. The major factor might be the less amount of investment made by Namuna Basti and limiting the building for

further construction. Namadoling people have experience the construction period more than 6 years and still under construction with few buildings still in phase of completion. Burden of completing future extension of the building might be one of the reasons of least satisfaction.

In case of building material used, both the settlement is confident and satisfied. Some of the few people from Namuna Basti preferred RCC slab however admits that their houses are more thermal comfortable than Namadoling Flat slab building. Attic store performs as thermal mass in Namuna Basti Building.

All in all, both resettlements are satisfied with houses that has been build with donor. The level of investment, time-frame, role of donor agencies is some of the factor influencing on satisfaction.

7. Conclusion

Shelter demand after the earthquake has been in major priority for the victims and consideration of social and culture aspect felt on shadow. Tamang community, social needs have been addressed through the urbanized way of living style. The changing way of living have higher dependency towards the market products and people major portion of income are spend on cooking gas and food products. Restriction of livestock has hampered in production of agriculture and one of the major sources of earning based through animal has also been stopped. Even-though with the restriction, way of living is unavoidable without livestock so, the rearing of livestock near farmland has been started and is challenging to look after due to its distance from the resettlement. Lack of consideration of rural social and cultural ways of living is observed in planning of both the settlement.

Based on survey of two re-settlements, the time-frame and amount of investment had the higher impact on the residential satisfaction. Even with larger building space, level of investment and time frame of construction has made Shree Namadoling Ekikrit Basti people least satisfied compared to Namuna Basti. The burden of completing first floor might be another factor in it. The role of donor agency on Namadoling is surficial with providing of resources and infrastructure where as majority responsibility is taken by the foundation in Namuna Basti.

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