

URBAN HOUSING RECOVERY POLICIES & STRATEGIES FOR POST-EARTHQUAKE NEPAL

(FOCUSING TO KATHMANDU VALLEY AND MARKET TOWNS)

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THE CONTEXT

In recent years Nepal has observed a quantum shift in urban population. In the decade of 2000-2010 Nepal witnessed 40.21% increase in urban population and the urban share reached to 17%. Due to several reasons including; the failure of rural economy, migrating youth workers to other countries and elongated political transition are majorly responsible for this push. This has added additional burden to already overwhelmed municipalities with limited management capacities. In the attempt to address the urban challenges, the Government of Nepal introduced National Urban Development Strategies in early 2015. The country also observed important political decisions on the establishment of new municipalities. From late 2014 to mid-2015, the government declared 159 new municipalities bringing the total number of municipalities to 217. Now the valley of Kathmandu embraces 22 municipalities including Kathmandu Metropolis, Lalitpur Sub-metropolis and three other older ones. With this more than one third of the population in Nepal is living in urban areas counting municipal population as urban. Nepal has one of the progressive acts in the region in terms of local governance.

In 1999 Nepal introduced Local Self-governance Act (1999). This has opened up opportunities for better governance in municipalities. However in the absence of elected government from 2002 not much could be achieved. At present municipalities are run through government nominated executive officers were local party representatives are involved in ad hoc arrangements.

Unplanned urban development in the Kathmandu Valley has led to rapid and uncontrolled sprawl; irregular, substandard, and inaccessible housing development; loss of open space, and decreased livability. It has also increased vulnerability to disasters, making Kathmandu one of the most earthquake-vulnerable cities in the world¹. Early in 2015 Kathmandu Valley Development Authority, the largest urban centre of the country came with newer set of Kathmandu Valley Strategic Plans (2015-35). While not much would have been initiated the April disaster hit the country.

The Gorkha Earthquake of 25 April, 2015 of 7.8 magnitude followed by May 12 aftershock of 6.8 magnitude has adversely affected 31 districts of Nepal. The government has declared 14 districts as severely affected including Kathmandu Valley.

¹ Urban Growth and Spatial Transition in Nepal: An Initial Assessment, World Bank, 2013

The damage was rampant both in rural and urban areas with the estimated loss of USD 5.2 billion. The Post Disaster Needs Assessment Report recorded damage of 138, 093 housing units (23% of the total housing units) in Kathmandu Valley alone. Being the capital city and the economic hub of the country, the impact of the damages will have multifold effects. Therefore, it is imperative to address urban challenges urgently to recover the country from the calamity suffered and move further.

Nepal was applauded for the successful donors' conference within the two months of the earthquake. The on-going political situation in the country took some time to bring National Reconstruction Authority on board to lead the reconstruction works. At this point of time rural housing and other activities has taken some speed particularly in the distribution of housing grants. In urban areas, particularly of Kathmandu Valley is yet to start the detail damage assessment

Therefore, it is important to scan the urban situation and seek the attention of the concerned authorities so that appropriate strategies and subsequent activities can be developed to meet the urban recovery needs.

THE URBAN RECOVERY IN QUESTION

After the declaration of new municipalities the 14 districts severely affected by the earthquake has 42 municipalities. The total number of people living in these municipalities is 3,059,928 (744,467 households)² which is 57% of the total population in the 14 districts.. There are eight more market towns that are not with in the municipalities. However, in large number of municipalities; particularly the new municipalities outside Kathmandu Valley are predominantly of rural nature. Among them except Kathmandu Valley and older municipalities³, most of them are market towns of the districts. As they are still in transition from VDCs to municipal outfit, they suffer lack of planning and capacity building would be obvious requirements of these municipalities. Kathmandu Valley covers 67% (2,042,770) of the total urban population of the 14 districts. With its deep rooted urban character, being capital city of the country and leading the country in several development fronts Kathmandu Valley demands different means and instruments to address the urban recovery.

DISINTEGRATING URBAN REALM

The different levels of urbanization, nature and characteristics of the urban centres of the earthquake affected areas demand different approaches and strategies to address their recovery works. Largely the urban centres may be divided into *Kathmandu Valley* and *towns outside Kathmandu Valley*.

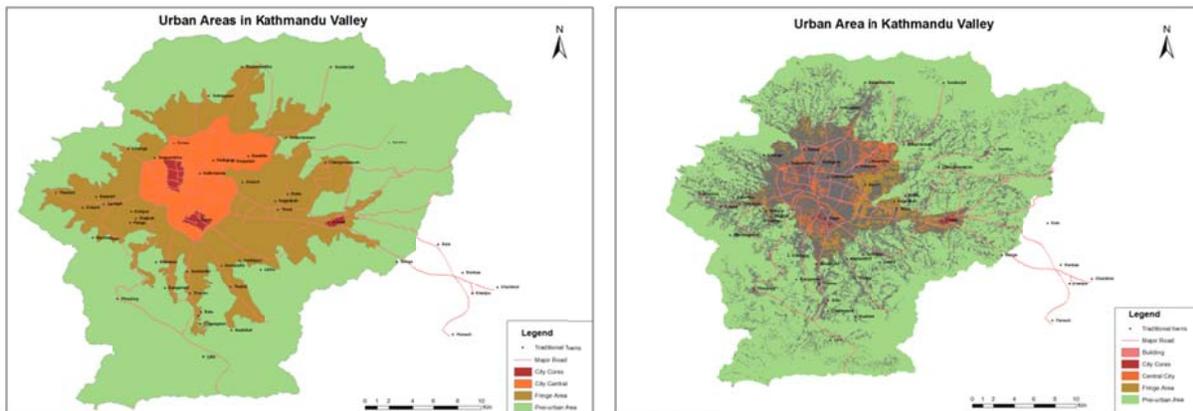
² National Population and Housing Census 2011, Village Development Committee/Municipality, Volume 06, NPHC2011. Central Bureau of Statistics, National Planning Commission, Government of Nepal, 2014

³ Municipalities like Banepa, Dhulikhel, Panauti, Gorkha, Nuwakot have traditional settlements that have higher level urban characteristics than the recently developed market towns like Melamchi, Panchkhal, and Thaha.

With its level of urbanization and functions urban areas of Kathmandu Valley may be further divided into five zones.

1. City cores
2. City centre
3. Fringe area
4. Traditional towns
5. Peri-urban area
6. Market towns

The historic settlements of Kathmandu Valley have three major towns- Kathmandu, Lalitpur and Bhaktapur. These capital cities of the three prosperous 'kingdoms' of the historic time have organic town settings along with built and intangible heritages. The central hub of the three **city cores** are Durbar squares, the palace squares of then rulers which are the World Heritage Sites enlisted by UNESCO. In the course of time much of the heritage value buildings are being replaced by out-of-proportioned RCC buildings particularly in Kathmandu and Lalitpur, while Bhaktapur is also following the path. Much damage was seen in these heritage settlements which were already threatened if not engulfed by the anarchical urban growth.



As the cities started expanding particularly in Kathmandu and Lalitpur in last half century surrounding the city cores and have formed the business districts, market centres and engulfed many smaller nodes to make larger densely populated down town- the **city centre**. More or less encircled within the existing ring road (Putali Sadak, Bag Bazaar, Baneshwor, Chabahil, Lazimpat, Kalimati, Sanepa and Koteswor, etc.) and even extended to Bauddha and Jorpati many parts of the city centre are densely populated (Ghatte Kulo, Samakhushi, Tahachal, etc.) In last three decades, particularly in the latter two decades, the settlements expanded beyond the ring road forming the **fringe areas** of the main town (like Bansbari, Basundhara, Sitapaila, Bhaisepati, Imadole and Mulpani, etc.) followed by still somewhat rural **peri-urban areas** (Budhanilkantha, Tokha, Bhimdhunga, Thankot, Daxinkali, Chhampi, Godawari and Lamatar areas).

The town planning concept of the Newars has limited the expansion of their main towns to the limit they can manage. When population expanded, they expanded smaller satellite towns surrounding the main town so that the agricultural possibilities can be expanded while the satellite towns serve also with their specializations in products and services. In recent times these satellite towns have become the nodal point for the growth of the surrounding areas. As the valley is expanding Kirtipur, Thimi, Sankhu, Bungamati, Khokana, Tokha, Satungal, Thecho, Thasi, Lubhoo and many more such **traditional towns** have become the central core for the new municipalities. They hold traditional values and are struggling to protect their identity in the ongoing urban expansion. Keeping these traditional towns at the centre we can see the replication of main towns of Kathmandu, Lalitpur and Bhaktapur where these towns resembles the city core with the expanding areas as central town followed by the fringes. These are very visible in most of the newly established municipalities in the valley.

Outside Kathmandu Valley, except the four traditional towns of Kabhre Valley⁴, the **market towns** may be categorized into two types: towns emerged as market centre in the trade route like Chautara, Gorkha or Dolkha, or recently developed towns when linked by road connections like Melamchi, Barhabise, Manthali, Dharding Besi, etc. Several of these towns also flourished as they became the administrative headquarters of the respective districts. Except the headquarters of the districts, and even some of them, the municipalities with the market towns are more of rural character. Total population of these 20 municipalities is 1,017,158 among which 13 are new municipalities.

⁴ Kabhre Valley, adjacent to Kathmandu Valley was one of the gateways to the east and to Tibet. They include four historic traditional towns. That includes Banepa, Dhulikhel, Panauti, and Nala.

INITIATIVES TO ADDRESS URBAN RECOVERY

THE GOVERNMENT

In last one year, and particularly in last nine months, some positive initiatives have been started in urban areas. Under its institutional structures and implementation concept paper, NRA aimed to implement the reconstruction in Kathmandu Valley using integrated urban development plan prepared through KVDA. Similarly, house pooling would be the approach for the city revitalization and settlement approach will be taken for the reconstruction encouraging community organizations to lead the reconstruction initiatives. Giving due importance to the urban agenda one of the executive member of NRA is being allocated for urban and heritage conservation. While NRA has established three Central Level Project Implementation Units (CLPIUs) in Ministry of Urban Development, Ministry of Federal Affairs and Local Development; and Ministry of Culture, Tourism and Civil Aviation along with District Level Project Implementation Units of MoUD, it is very recent technical supports to municipalities have been deputed. NRA has already completed the detail damage assessment and yet to start the urban part.

Giving due importance to urban sector, Honbl. Prime Minister Mr. K P Oli launched the reconstruction programme from Bungamati. In reference to the Post Disaster Needs Assessment, the government along with development partners prepared Post Disaster Recovery Framework in May 2016. This framework has given due importance to urban areas with separate chapter on urban. Prioritizing restoring of urban housing and settlements and enhancing urban resilience, the framework has come out with the estimated budget of NPR 90,059 million. Recently NRA has started its work by investing NPR 6 million in the public space improvement works in Bungamati along with the municipality and the community. However, the real works to lead the urban works is yet to be started.

THE MUNICIPALITIES

Municipality is the direct interface of the government to people. Trying to fulfill their regular developmental works and supporting the government mechanism to fulfill their instructions municipalities could not come in front with strong pro-activeness. In the case of Kathmandu, Kathmandu Valley Development Authority is yet to come in front to lead the overall earthquake recovery process. There is a strong need to link the recovery plans support the twenty-year Kathmandu Valley Development Strategies (2015-35) adopted by Kathmandu Valley Development Authorities.

Kathmandu Metropolitan City has come out with several programmes to address urban recovery. One of the recent announcement of the city on motivation grants to houses that conserve heritage is very attractive. Bhaktapur Municipality is also promoting heritage conservation through their on-going conservation programmes. In the absence of clear way forward, most of the municipalities are in need to clearer urban plans and programmes.

DEVELOPMENT PARTNERS

Among the development partners very few have shown their interest in urban sector. There were several agencies involved in the relief works but there are very few agencies interested in the recovery phase. Many of them are linked with urban in thematic support. For example agencies like OXFAM, World Vision, and British Red Cross are supporting urban areas in their respective areas of work- water and sanitation for OXFAM and World Vision, livelihood support from British Red Cross and Samaritans Purse; and Build Change came with some technical assistance. Architect without Borders is trying to support in local level planning and Save the Children from children's front. In this respect Lumanti, one of the pioneer NGOs in shelter support was perhaps the first in initiating community-driven settlement planning.

While the country was struggling hard to stand for the relief works after the earthquake disaster that has hit hard to very difficult terrain of the country in 31 districts UN-Habitat was already sparing it's time to look into the possible impacts and prepare for the recovery needs in urban areas. Already on May 25, 2015 just after a month of the disaster of April, *Early Observations and Policy Considerations for More Resilient Urbanization* was published and shared with the stakeholders. This document also contributed to ongoing preparation of Post-disaster Needs Assessment (PDNA) at that time. Recognizing the importance of urban sector, both in recovery of itself and henceforth contribute to the national recovery, urban assessment was proposed as upcoming important activity to Housing Recovery and Reconstruction Platform (HRRP)⁵. One of the important studies conducted by HRRP is urban assessment. The study "Impact of the 2015 Earthquake on Housing and Livelihoods in Urban Areas in Nepal" provided ample information on the challenges emerging in urban areas in recovery and long term development.

UN-Habitat is supporting community-driven approaches in Bungamati. Similarly UNESCO is supporting in Sankhu along with the monument conservation. One more agency providing support in Sankhu housing is Habitech, promoting the CSEB construction. Several chapters of Rotaries, volunteer organizations, NSET, CIUD and individual donors are also contributing to the urban recovery with their capacities.

⁵ HRRP is the common platform of partner organizations lead by UN-Habitat and IOM established in late Dec, 2015 to continue technical and information support to the government and partner agencies and facilitate housing recovery.

THE COMMUNITIES

The third, but very important group has emerged in urban areas, particularly in the traditional settlements where local communities are leading the rebuilding initiatives. Pilachhen of Patan, community groups in Harisiddhi, Machhegaun, Lalitpur, Thecho, Pigan Nani and Kilagal of Kathmandu, Jela of Bhaktapur and several others. Most of these self-initiated attempts are in need of support to make it comprehensive and integrated. Recognition of their work and mainstreaming their initiatives in larger municipal recovery programs will bring synergies in the efforts.

OBSERVATIONS IN URBAN AREAS AFTER THE EARTHQUAKE

DAMAGES OF TRADITIONAL BUILDINGS

PDNA estimates that 95% of the houses damaged during the earthquake are of low strength masonry. In urban areas these are primarily traditional buildings of the city core and the traditional towns of the valley. Large numbers of traditional houses are partially damaged. In the city cores of Kathmandu, Lalitpur, Bhaktapur and Thimi, the municipal records show the number of houses collapsed is 15, 120 while the partially damaged are 11,665⁶. The houses are standing with the support of rake posts (*teko*) that are hindering the mobility in the narrow lanes of these compact settlements. Several of such houses have serious damages inside but are not visible from outside posing more risks particularly with the continuing aftershocks. Large number of partially damaged houses has reduced one or two floors and attempted to save their belongings by placing CGI roofs on them. As there are as many as 52 traditional settlements are adversely affected by the earthquake, the sampling of four traditional towns- Sankhu, Panga, Bungamati and Khokana shows that 5,063 houses adversely damaged out of which 74% collapsed completely. There are several reasons for the damage with massive number of such houses.

LACK OF REPAIR AND MAINTENANCE:

Large number of these traditional houses are more than century old. Many of them survived the 1934 earthquake while large numbers were repaired after the earthquake. As the families are growing and the change in family structures from joint families to nuclear one, many families left the old house and moved to new places in the outskirts. Many have desire for modern houses and consider the traditional houses as burden. The old houses are normally left with the relatively poorer brother of the family. In many cases for the convenience to modern lifestyle the house owners have moved to new house renting these houses mostly to urban poor. Similar is the case when the property belongs to more than one brother. Therefore, these houses are not been repaired properly and are left in dilapidated condition.

ALTERATION OF TRADITIONAL BUILDINGS

As the locational value of the houses increased the traditional houses are divided into brothers as hereditary property. The vertical division of the houses was possible by adding additional walls and staircases. These changes have a) reduced the efficiency of the houses, and b) brought in structural incompatibility in the load path and structural

⁶ The Impact of the 2015 Earthquake on Housing and Livelihoods in Urban Areas in Nepal, HRRP, 2016

strengths. Moreover, when a part of the house is demolished by one brother to rebuild, the remaining structure became even weaker.

The other reason observed in most of these damaged houses is the addition of one or more floors in the existing building. In recent years there is a tendency of adding floors with RCC in these mud brick wall structures which apparently added heavy load at the top triggering the cause of collapse. Constructing leaky toilets on upper floors, the rise of street level and pounding of the newly built houses adjacent to the old; all had detrimental effects to these poor houses.

POOR CONSTRUCTION QUALITY

The vernacular architecture on Kathmandu Valley displays a well-developed engineering science with its proper use of burnt bricks, sun-dried bricks, timbers and traditional tiles. Today's engineers and architects are amazed with the knowledge and skills the artisans used in timber joints, wall connections and many other elements. There is a need of intensive research on these knowledge and practices. While so many houses and temples collapsed in the earthquake, there are several structures that stood next to it primarily because of its regular maintenance. However, the careful examination of collapsed houses postulates that most of these houses have not followed proper traditional construction procedures or have not used required elements. For example, in Bungamati it was found that several houses rebuilt after the 1934 earthquake have mud infill instead of proper bricks in the walls. This also tells the stories of compromise done with the poverty that was prevalent in these traditional settlements.

DAMAGES OF NEWLY BUILT BUILDINGS

Cement and concrete are relatively newer construction materials in Nepal. It has been five decades since people first started to use cement in house construction, more extensively in recent years. As large numbers of concrete houses (both RCC framed and cement masonry) were not affected by this earthquake it gave a misleading message to people that 'concrete is the solution' for earthquake reconstruction. However, if we comprehend the intensity and effect of the Gorkha Earthquake this will take us to different conclusion. Seismologists suggest, the intensity of the Gorkha Earthquake was rather high in the northwest part of Kathmandu Valley (VIII+) compared to others (VII+). Here we can observe massive damage of concrete buildings. Failure of columns, failure of walls, foundation failure in Gongabu and Sitapaila area are examples of behaviour of RCC structures in earthquake. In Gongabu alone 1,363 buildings were affected of which 150 collapsed completely. Similarly Chautara lost 1060 and Charikot lost 1671, most of the buildings collapsed in the market areas were newly built RCC framed buildings⁷. PDRF⁸ estimates the number of RCC buildings collapsed is 6,613 and that with cement masonry 9,107. Including the damaged ones the affected buildings were 22,584 and 42,037 houses respectively in the urban areas. There is a need of detail assessment of

⁷ The Impact of the 2015 Earthquake on Housing and Livelihoods in Urban Areas in Nepal, HRRP, 2016

⁸ Post Disaster Recovery Framework, NRA/GoN, 2016

the causes of these damages. The quick observations attributes to the poor design, poor quality of materials and poor workmanship. Moreover, the building have not considered safety measures and provisions of DRR.

DAMAGES TO APARTMENT BUILDINGS

Apartment buildings are the new comers in the landscape of Kathmandu Valley. The ever increasing land price and peoples attraction to live closer to the down town has attracted new generations to apartment buildings. Out of the 71 permits taken for apartment from the government only 43 apartment buildings with +4000 units are completed in Kathmandu Valley. Many of these apartments are unoccupied⁹ and several of those were incomplete because of the financial crisis. Early 2015 this market was gradually recovering from the financial shock of 2011/12 with the government intervention to regulate the uncontrolled speculative growth of the real estate in the country.

The earthquake did not bring structural failures except two with severe damages. Ten apartments got yellow sticker with restriction to use while 32 got yellow with restricted use¹⁰. Remaining eight apartments got green sticker. Most of the apartment blocks have damages in their infill walls. Moreover, the panic created by this earthquake and its ongoing aftershocks has not still pulled the real estate market up for the apartments and still expected to take more time. During the earthquake it was noticed that these high rise buildings did not have adequate open spaces on the ground that could cater safer place for the apartment dwellers.

DAMAGES TO MARKET TOWNS

Apart from Kathmandu Valley, market towns like Chautara, Chrikot, Gorkha, Melamchi, Barhabise, and many smaller towns were also damaged by the earthquake. There are 19 such towns in the 14 districts that are affected by the earthquake. Chautara Bazaar suffered the most among these towns. This district headquarters lost 1671 houses, of which half of the buildings collapsed completely. These houses include large number of RCC buildings as well. Similarly Barhabise, the market emerged to cater the Sino-Nepalese trade through Khasa has completely collapsed and could not regain as the Chinese side has not opened the border perhaps for political reason. Gorkha Bazaar lost 1062 houses while Charikot lost 1060 houses.

The post-disaster situation has raised a serious concern on the stability of multistoried buildings particularly on the hill tops. Most of the market towns usually were located on the ridges of the hills that links the bigger cities with their rural hinterland. Obviously

⁹ Apartment buildings are targeted to middle-class families, and are being invested by people not for their own consumption but as speculative investments.

¹⁰ Some apartments have damages distributed in all over the building where the government restricted the use of such buildings while other have damages in limited parts where the permission was to use only the undamaged part, so the restricted use.

these locations have limited land for expansion and limit itself to the narrow strip on the both sides of the hill. The situation is further aggravated by people trying to encroach steep slopes by erecting stilts to catch the levels. With mediocre engineering knowledge and poor construction practices these are sure-to-fail structures during the earthquake with magnitude of April 2015. Therefore, a better building by-laws need to be introduced to address the housing construction in hill towns including the highway side houses.

The economic sides of the damage of these market towns are more serious. When the commercial activities came to stand still for several months, the population in business was adversely affected. Moreover, when the services provided by these towns were limited the relief works at the beginning and also the recovery works were also affected. Considering the market opportunities, some capable households have erected quick shelters and shops made of iron frames and CGI sheets but there are families who lost their business and investments along with the house. Special packages may be designed to address these sufferers who are not only service providers for the rural reconstruction, but also employment generator for their towns.

DAMAGES TO URBAN INFRASTRUCTURES

In cities very little impacts were observed in public infrastructures. Apart from some schools and health posts, there were nominal damages to transport and water related infrastructures except few. No major damage in telecommunication nor in power infrastructures. Chautara Bazaar had damages in water systems. In the city cores and traditional settlements, the raking provided to bending walls or the debris lying on the roads is creating traffic problems while threatening the passerby.

IMPACT TO URBAN POOR

From the housing perspectives urban poor may be divided into three major categories- the slum dwellers, the poor renters, and the indigenous poor.

THE SLUM DWELLERS

The shanty houses of slum settlements are perhaps much safer compared to the robust houses in terms of earthquake disaster. Their houses are light, flexible and ductile with predominantly single storied. Therefore, structurally very little damages were observed in the informal settlements. However, the impact of the earthquake was serious to their 'hand-to-mouth' economy where large number of them live with daily earnings.

THE POOR RENTERS

There are substantial numbers of poor renters in the valley. Involved primarily in informal business and services, most of them were residing in the old and dilapidated houses of the city core of Kathmandu and Lalitpur. Others selling their daily labor are residing in traditional settlements or the one-room apartments in the newly developed

areas. Near to their workplace, availability of public water sources and relatively cheaper rents are the main attractions for them to choose the old settlements. The NLSS III estimates in the five old municipalities of the valley 48.5% of the population are renters. The Urban Assessment of HRRP suggests 56% of the households living in core cities are renters¹¹. There are no studies of disaggregated data of poor renters in the valley but it can be assumed that more than 80% families¹² renting in the city core quarters are of poor category. They were one of the victims of the earthquake who lost their place but are not attended by the government, or by any other relief agencies apart from some primary supports during the first few months of the earthquake. PDNA estimates 43,009 rental units were lost in the earthquake including 35,059 from Kathmandu Valley¹³. The displaced renter families either moved to expensive renting place in the central city or to the fringes. Considerable number has gone back to the partially damaged houses of the city core taking risks as their place of residence is very much linked with their livelihood.

INDIGENOUS POOR

Newars are the indigenous people of Kathmandu Valley. There are people who are marginalized in the feudal caste system. Chyame, Pode, Khadgi and many other 'marginal' castes were primarily left out in the course of development. Utilizing the economic opportunities created by the recent urbanization many of them have jumped out from this vicious circle but still large numbers are left with their limited reach to education and social safety if not political deprivation.

This story is also true for the so called higher classes. Those families who lost their feudal economic means of earning along with urbanization by conversion of agricultural land for other purposes or its fragmentation among the hereditary shares, has made them economically poorer. Apart from their hereditary house, economically they are left with very limited options. Many of these families are living in dilapidated and yet divided very small spaces¹⁴. One of their sources of income is the rent that gives them some sort of assurance of regular earning. These families who are already living in the threshold of the poverty line are now one of the poorest in the urban economic landscape. They have dual challenges- rebuilding their collapsed house and loss of livelihood means due to loss of renting space. The situation of indigenous poor in traditional settlements of the valley is not different, but even worse compared to their rural folks.

¹¹ The Impact of the 2015 Earthquake on Housing and Livelihoods in Urban Areas in Nepal, HRRP, 2016

¹² Due to the living condition, scarcity of water, congestion, mobility, and narrow and old houses people who can afford normally prefers to live in newly built areas.

¹³ Nepal Earthquake Post Disaster Needs Assessment, Sector Reports, GoN, 2015

¹⁴ Refer p11 for the way houses have been divided and its condition.

CHALLENGES IN URBAN HOUSING RECOVERY

Recovery of the housing in urban areas demand different means and approaches than that for rural housing. These specialized needs have been recognized in the policy document of National Reconstruction Authority. However, until now not much has been planned to meet the special needs of urban areas. Following chapter discusses the challenges faced by urban dwellers and the local government in urban recovery.

THE ISSUE OF LAND

Land is one of the complex issues that need to be addressed in post-disaster situation. However, this can also be taken as an opportunity to address the problem that has been postponed from a long time. This is important as there will be apatite among all sides to solve this long awaited problem. There are three major issues in terms of land in urban recovery:

THE ISSUE OF UNREGISTERED LAND:

In Nepal land may be categorized in a) registered land, b) unregistered land, c) trust land, d) government land, e) public land, f) wasted land. Unregistered land is the land that has been utilized by a family from long time but has not been registered in the government cadaster. There may be several reasons for not registering, but the qualifying nature of this type is the continued use of the land, particularly for housing from more than one generation. This issue is primarily seen in city core of the valley and traditional settlements. There are attempts from the government to register such plots in the name of the user by paying revenue taxes from the day of first survey of that area. In the case of recovery, the recent guidelines approved by the Cabinet have provisions to open such opportunities to the earthquake affected families. Pragmatically this is very time consuming bureaucratic process. Special service desks may help expedite the process.

THE ISSUE OF INFORMAL SETTLEMENTS:

The urban assessment study¹⁵ shows that there is minor damage to the housing of the informal settlers from the earthquake. However, from the vulnerability and social justice viewpoint the issue of informal settlements needs to addressed while addressing the recovery issues. One of the reasons for addressing this issue is to prevent the growth informal settlements further. There are symptoms of expansion of such settlements because of the failure of government as well as private sector to address the housing issues of urban poor, particularly the poor renters. With the limited number of informal settlers, less than 4,000 families in the valley, this problem may be solved through consultations and common agreements.

¹⁵ The Impact of the 2015 Earthquake on Housing and Livelihoods in Urban Areas in Nepal, HRRP, 2016

PROTECTION OF PUBLIC LAND

In several settlements, people were living in camps and temporary shelters just after the earthquake. Most of the camps have already been closed except few. Several families have occupied public land to construct their temporary shelters. While recognizing the need for humanitarian support, there should be deliberate action plan to resettle the families and keep the public space for its original use.

RECONSTRUCTION OF TRADITIONAL HOUSES:

One of the biggest losses the country suffered in the Gorkha Earthquake would be the loss of houses with heritage values. There are very few attempts to prepare inventory of it, evaluate it and record it. If proper strategies are not adopted, these houses and their settlements can be lost completely from the valley. There are several reasons why these settlements and their heritage houses are endangered, particularly after the earthquake.

ABSENCE OF ATTENTION TO HERITAGE SETTLEMENTS IN BUILDING BY-LAWS

Prevailing building norms is a general by-law which has categories the use of land as residential, semi-residential and commercial, etc. For World Heritage Sites, the by-laws of Archeology Department will be superseding. For other settlements with heritage values, the by-laws are silent. This implies that one can tear down the traditional houses and replace it with modern buildings, thereby losing the heritage values. Existing building norms are not friendly to traditional construction materials and techniques. The Building Codes consider the traditional construction materials as inferior. A separate strategy and approaches will be required for the recovery of traditional settlements where demarcation of the settlements, special provisions in building layouts to follow the traditional systems and construction techniques will be required to conserve these settlements after the massive loss of traditional buildings.

FRAGMENTATION OF THE PROPERTY

According to prevailing law on hereditary properties, the properties are equally shared among the right-holders. Considering the locational opportunity values most of these properties are vertically divided making the plots ever smaller. There are provisions where plots cannot be divided less than 2.5 *ana* (i.e. 856 sq.ft.). But in real practice these plots are divided through manipulations. Due to this practice in many traditional settlements, the land parcels have reduced to average size of less than one *ana* (i.e. 342 sq ft).

To address this problem, a new approach is mentioned in the policy document of NRA- house pooling. House pooling is considered as one of the tools that the house

owners come together voluntarily and pool their properties where the redeveloped building will be shared with their equivalent floor space so that the small plot owners can optimize the use by coming together. However, there are mainly two challenges in implementing this policy- a) in the absence of legal framework to implement this approach few professionals are attempting to use the Apartment Act. Since the objectives and target groups of the act is very different it is not of much help, but demands separate act; b) chances of completely losing the heritage value is equally possible as some developers are looking into it as real estate project undermining the heritage values. Some agencies promoting house pooling are attempting to re-do the whole settlement (or quarter of the settlement) irrespective of their historic footprint of the buildings. If this approach is followed there is a good chance that the tangible and intangible heritages that are linked to the locations- be it the small deity residing in the street corner, or the *Pati* (rest house) in the narrow lane; will be 'pooled' to bring so called efficiency. This is very likely as people with commercial interests will be motivated against the heritage values. Therefore, it is prudent to address this issue very carefully.

ADOPTING THE TRADITIONAL TECHNOLOGIES:

As large number of traditional houses collapsed in the earthquake there is a perception with local communities that traditional buildings did not perform well in the last earthquake. The main reasons for the damages of traditional houses has been discussed in page 11 . As most of the RCC structures are standing after the earthquake there is a fallacy among the people that RCC is the best option for the reconstruction. This has been nurtured by some engineers as most of them do not have either knowledge on traditional technologies; or have not learned how to analyze the traditional structures or do not give adequate attention to traditional knowledge and skills. There are also professionals who are trying to find easy solutions. Therefore, many think that some cosmetics of traditional red bricks and wooden windows may be sufficient to keep the traditional look. A team of structural experts led by Prof. P N Maskey¹⁶ worked on the traditional construction system and are convinced with the technology to be adopted with given height and size. As the society has changed their lifestyle there are challenges where one needed to be adapted with the new requirements. For example mud floor or the floor height of seven feet may not be appropriate while they would prefer to have toilets in each floor or modern kitchen. Considering limited land available they may also prefer to reduce the wall thickness to increase usable space. Hybrids systems called confined masonry have been developed where the load bearing walls are strengthen by adding RCC tie beams and columns.

Two additional challenges are there for people to go for traditional building system: a) availability of construction materials and b) artisans skilled to do the job.

¹⁶ Prof. Maskey led a team of structural engineers to analyze the traditional buildings with its forms and scale. It was found that for the the technology is robust to keep the buildings safe when properly constructed.

Moreover, this will add more cost in the construction. From the conservation point of view there is a genuine demand from the people that if the government would like to conserve these national heritage, they should come with their support package to encourage people to go for such constructions. Support would be needed to bring in skilled human resource, quality construction materials- particularly bricks and timber, and facilitation to the house owners adapting traditional system through ease in building permits and subsidized loan facilities. There is already merchandized of traditional arts and artifacts, particularly carved windows and building elements. Urgent interventions from concerned authorities are needed to protect such heritage elements. Moreover, conservation of public space and infrastructures in such settlements could be another encouragement to preserve the traditional settlements while that encourages local communities to step up for conservation of their buildings.

PROPERTY DISPUTES OF THE FAMILIES

One of the hindrances observed in the reconstruction of traditional houses is the ongoing property disputes of the property holders. With the socio-cultural practices predominantly among the Newars, they try to postpone property division to the extent possible. Without formal separation normally one of the brothers (in most cases economically weaker one) continues in the traditional house where as others migrate to their new houses. When the earthquake has damaged the hereditary house there is a question of investing for the reconstruction. While this is taken as opportunity to claim their equal share by the brothers who are not living there, they are definitely not interested to invest on the rebuilding of the house which is not enjoyed by them. Even for those who are living together, this is an opportunity to convince their parents for the division and claiming their share. There are also property disputes among the neighbours on property demarcation, on common wall, or of similar nature. These are another hindrance that is not allowing many families to start their reconstruction.

DEBRIS REMOVAL AND RECONSTRUCTION OF THE DAMAGED HOUSES

Large numbers of houses are still left out without dismantling. There are equally big numbers of houses which are partially damaged with or without possibilities to live in such houses. Although several municipalities and agencies have helped in removing debris from these houses; there is still considerable number of collapsed houses that demands removal of debris. In the case of partially damaged houses people in the core areas are still living there in the absence of other alternatives. In the city core and traditional settlements, equally large numbers of houses are still standing that need to be demolished to go for reconstruction. However, there is threat of collapsing of the houses of the neighbors when they attempt to do so. Therefore, many families are indecisive to remove the debris. These issues of public interest are not yet been addressed by any of the government agencies.

CONSERVATION OF HERITAGE

With the failure in reconstruction of the houses, it is expected that large number of families will be migrating out from their original house mostly to rented apartments that are closer to their jobs and services. This will limit in reconstruction of tangible heritage in the traditional settlements but also lose people who sustain the intangible heritage of the areas.

BUILDING REGULATIONS

In the municipalities of Nepal, building permit is a pre-requisite to go for any construction. These permits are provided by municipalities under established legal procedures. Existing building by-laws are designed primarily to regulate new developments. In the case of traditional settlements, these by-laws are relatively silent on several aspects of its heritage values, the traditional systems of living and cultural practices. Moreover, building codes are biased towards RCC constructions. For low strength masonry, normally Mandatory Rule of Thumb (MRT) is considered which has not adequately reflected the conservation aspects of traditional buildings. Although, the norms permit buildings with engineered designs, in real practice most of the municipal engineers go for MRT to keep themselves in 'safer' side.

After the earthquake a bigger lobby of the engineering practitioners is in favour of more stringent requirements to safeguard from future disaster. However, experiences of other countries showed that stringent by-laws also invite more defaulters. In the case of Nepal, with limited capacity of municipalities, this could be rather true. Therefore, more balanced approach needs to be taken. Moreover, the strict by-laws also retard reconstruction pace, bringing in less housing stocks thereby pushing the threshold population to informal settlements. One of the issues raised after the earthquake is having the soil test done by new builders. It may be advisable to prepare soil suitability maps of the municipalities instead of adding this responsibility to the beneficiaries in the case of residential buildings.

Ministry of Federal Affairs and Local Development promulgated basic guidelines for building construction after the earthquake. Incorporating the guidelines Ministry of Urban Development announced a new set of by-laws to regulate the construction of houses. These quick revisions trying to respond the earthquake seem to address the gaps in prevailing by-laws. However in the absence of municipalities (and also VDCs) prepared to take this charge not much can be achieved through these policy interventions. The other major limitation of these laws is failing to understand and incorporate issues of traditional settlements. Making these norms overarching to all areas of municipalities (and also to VDCs) the norms could not respond to different needs as per the type of the settlements. For example, most of the municipalities, particularly those declared very recently; have more rural characters than urban except

the market centres. On the other end these policies could not distinguish the special need of traditional settlements which were designed for pedestrians, for example. Therefore, a separate building by-laws is needed to address the traditional settlements, which is also enunciated in the PDRF.

The discussion in page 12 explains considerable number of houses constructed with RCC or cement masonry collapsed. One of the reasons for this failure is to do with its non-engineered construction, quality of construction materials and its improper handling and curing. Provisions should be brought in to address these factors in the building permit systems, in its monitoring mechanism and the accountability. Moreover precondition of trained masons to be involved in the reconstruction is yet to be practiced in urban areas.

The density issue of central city and city core of Kathmandu is posing different challenge than that from the new areas. Building by-laws may consider provisions to decongest these settlements and provide necessary infrastructures (like open spaces) to make the settlements more prepared for future calamities. Therefore, building by-laws need to have DRR in-built provisions.

HIGH-RISE APARTMENTS

After the earthquake, because of fear psychology many apartments were empty for several months. Now gradually people are occupying the apartments, but the real estate market of apartments has not yet picked up and will probably remain low for quite a sometime. After the earthquake the question on the rational to go for high rise buildings in Kathmandu Valley emerged again. The soil conditions of Kathmandu Valley, the service infrastructures, particularly road size and the management capacity were raised against going for high rise buildings. Existing building by-laws are based on individual houses but has not given due attention to population density. Due to this apartment buildings which will be helpful in increasing the population density will compromise with public infrastructures and environmental requirements. Therefore, there are arguments that low-rise high density could be the answer to most of the Asian cities¹⁷ including Nepal.

FINANCING RECOVERY OF PRIVATE HOUSES

With the repeatedly raised hope from the government, praise of successful donor conference and the publicity of various modes of financial supports to reconstruct their houses, people are very much hopeful to get financial assistance from the government. Many families are waiting for government grants to start reconstruction. Three types of financial assistances are offered by the government- grant of NPR 200,000; soft loan at

¹⁷ Articles of Prof. Dr. Arif Hasan

2% interest with community guarantee of NPR 300,000 or soft loan (of 2% interest) up to NPR 2,500,000 with necessary guarantees. Considering the investments required for house construction in urban areas many families who can afford are intending to go for the third option. However, there is still ambiguity within NRA on operational matters regarding the loan and financial institutions have also not come forward for such support.

The grant sum of NPR 200,000 was designed considering poor families in rural areas. In urban areas, with the shortage of space, people construct several stories. Even if the house owner constructed just a single story now, he will need adequate foundation and walls to support additional floors later. There are several additional costs the urban beneficiary need to borne-including the cost of preparing municipal drawings as mandated by municipal laws and the building permit fee. Therefore, NPR 200,000 with three installments does not encourage much to the urban denizens to reconstruct their houses, neither the NPR 300,000 loan which will limit them to go for the bigger loan.

For the loan of NPR 2.5 million, the main hurdles are a) mortgage for loan; and b) payback capacity. The proposed soft loan of 2% is going to be more than 4% for the borrower families as they need to pay 1% bank service charge, loan insurance fee, property mortgage fee, and valuation fee of the property. In many cases they may not be able to provide bankable mortgage as there are provisions of the banks to have at least vehicular access to the mortgaged land. This is particularly true for the properties in the traditional quarters or the agricultural land. The most difficult part of the loan is the payback capacity of the lenders. The limit proposed by the government to pay back the loan in ten years has raised the Equal Monthly Installments (EMIs) that need to be paid by the lenders to at least NPR 23,000 to be paid by the families per month from their savings. This may not be possible for large number of households particularly to the low-income families. Alternatively, either the payback period may be elongated or support the families to be bankable by linking them with better earnings.

DEALING WITH DENSELY POPULATED CITY CENTRE

It was observed that most of the areas in the central city have nominal damage to the houses. However, much panic was created for several months to live in the houses where they do not have place to escape in the time of such mishaps. The situation is alarming in the core commercial quarters where the traditional houses are replaced by RCC buildings with seven to nine stories in very small plots. The fact that these shopping areas were closed during the first earthquake as it happened on Saturday; helped to save many casualties and possible stampede. It should be noted that similar situation will be created in the fringe areas in very short time if appropriate steps are not taken to curtail haphazard urbanization. Two important strategies may be considered to overcome the situation- a) provision for open space in ratio to the expected density of the area; and b) reducing prevailing densities by curtailing the illegal floors of the

houses. These initiatives may be carried out through preparatory works for the disaster risk reduction preparedness planning.

ADDRESSING NEEDS OF URBAN POOR AND VULNERABLES

Urban poor are the silent sufferer of the last disaster. Apart from some relief service rendered to them in the temporary camps, they have not received any other support. As a result poor families either migrated back to their village or have ended up in costly rentals as their cheaper places have collapsed. Even if there is willingness to provide support to the urban poor, there is a challenge to the government and the support agencies to identify them and provide sustainable options. On the other hand, if this community is not served, it will have negative impact to the economy of the cities, and are the most possible candidates to add new slums in the cities. Therefore, it is imperative to look into the possibilities of catering their housing needs.

One of the alternatives would be the model demonstrated by Lumanti in their pilot project in Dhobighat where low income rental housing apartments for 24 families were constructed in 2014. This investment intensive solution may be considered by the government. However, besides cost, another limitation of this alternative is the availability of land near to the work place of the poor renters. Alternatively, there are families with weaker economic base who are not able to rebuild their houses which otherwise can be rented for the poor. A compromised solution may be sought where the pre-financing is done by the government with condition of controlled rentals.

One more alternative may be activate the policy approved by the government on housing through cooperatives. UN-Habitat and the Government of Nepal worked out an alternative way of financing urban poor through cooperatives¹⁸ targeting to low-income groups in urban areas as guided by the National Shelter Policy 2012. Looking into the comprehensive recovery and development, this is an opportunity to address the slum issues of the valley. Alternatives developed by the government with the support of UN-Habitat in 2013 may be utilized to address housing issues of people living in informal settlements¹⁹. This will help to secure the tenure or informal settlers while the government will be able to solve the issue that is waiting from decades.

Most vulnerable population including single women, women headed households, elderly, disables and marginalized population need a 'welfare state' approach. Separate programmes may be designed through municipalities to address their needs.

¹⁸ Final Report on Preparation of Housing Programme for Low Income Urban Communities, GON/UN-Habitat, 20-14 unpublished report.

¹⁹ Operational Frameworks to Address the Shelter Needs of Urban Poor; GoN/UN-Habitat, 2013, unpublished report

POLICIES AND STRATEGIES TO ADDRESS URBAN RECOVERY

Recognizing the complexities of urban recovery an urban assessment of earthquake affected urban areas was conducted through HRRP early 2016. Based on the findings of the assessment, the initiative of National Reconstruction Authority to address the urban challenges, and the preparedness and proactiveness emerging in many urban settlements has demanded overarching urban strategies for systemic respond to urban recovery. Bedded in Post Disaster Needs Assessment (PDNA) report and underscored in the Post Disaster Recovery Frameworks (PDRF) this part of the document proposes policies, guidelines, approaches and the strategies to respond these needs.

KEY PRINCIPLES FOR RESILIENT URBANIZATION

1. Urban interventions will have settlements focus that recognizes the inter-dependence of access to livelihoods, access to decent and safe housing and access to services;
2. Building back better- adopting resilience considering multi-hazards, multi-stakeholders in spatial, functional and organizational components.
3. Urban recovery works will be guided and continued by the urban development strategies of the government.
4. Recovery works will follow a human centric approach and give due priority to urban poor and vulnerable groups in urban society.
5. Recovery works will give due attention to conservation of local heritage and environmental protection.

POLICY GUIDELINES

1. Strengthening urban resilience, by developing policy frameworks and implementation strategies for comprehensive risk reduction and enforcing the safeguarding of public and open spaces for evacuation.
2. Supporting people rendered homeless by the earthquake to restore their housing, with special attention to the needs of urban poor and renters.
3. Restoring urban heritage settlements, unsafe neighbourhoods and affected market towns by improving access to planning and building skills and by supporting and maximizing local initiatives;
4. Engaging communities, small and medium-sized businesses and cooperatives to increase investments in the revival of historic settlements and market towns;

5. Strengthening the capacity and effectiveness of municipalities and other stakeholders to plan and enforce safe and resilient rebuilding and expansion of settlements;
6. Monitoring and protecting the urban poor who became homeless or will be at risk thereof during recovery and reconstruction, in collaboration with social and cultural stakeholder networks;

APPROACHES:

1. Integrated settlement level approach will be adopted for the recovery activities.
2. Recovery and reconstruction interventions will be community-driven wherever possible, particularly in city core and traditional settlements and local initiatives will be supported.
3. Local governments need to be brought to forefront in the recovery process with the support from NRA-CLPIU-DLPIU and external partners
4. Recovery and development works will go hand in hand for sustainability and to cater future needs of people.
5. Recovery initiatives will explore partnership with all stakeholders including private sector wherever possible.
6. Phase wise recovery may also be employed considering the capacity of local communities.
7. Innovations in products and processes will be encouraged
8. Policies and programmes support self-recovery and collective initiatives of communities.
9. Recovery initiatives will help to adapt more greener and sustainable practices to protect environment and address climate change.

OBJECTIVES:

1. Recover traditional settlements and revitalize by enhancing living condition in such settlements.
2. Recover other urban areas from its loss and enhance to make it more resilient and prosperous
3. Support recovery of market centres that help to rebuild local economy
4. Establish more resilient governance system for building back better.
5. Address housing needs of urban poor

STRATEGIES:

01. Recover traditional settlements and revitalize them by enhancing living condition in such settlements- by
 - 1.1. Preparing and promulgating special building by-laws and policies to conserve traditional houses and settlements
 - 1.2. Developing overall settlement recovery plan for the identified settlements together with the community groups
 - 1.2.1.1. Land management plan
 - 1.2.1.2. Housing support plan
 - 1.2.1.3. Public utilities and service plan
 - 1.2.1.4. Public spaces and infrastructure plan
 - 1.2.1.5. Cultural conservation plan
 - 1.2.1.6. Financial support plan
 - 1.2.1.7. DRR plan
 - 1.2.1.8. Socio-economic development plan
 - 1.2.1.9. Prepare priority list of programmes and activities
 - 1.3. Supporting reconstruction of traditional settlements that are damaged by the earthquake
 - 1.3.1. Organize local communities (if not already organized) to participate and lead the recovery activities along with municipalities. Involve local CBOs like *Guthis*, women groups, youth groups, etc.
 - 1.3.2. Assess the settlements that are damaged by the earthquake and their present status in terms of land, housing, public utilities and services, finance and livelihood. Prepare overall inventory of the settlements including public spaces, buildings of heritage value, intangible heritage and specialties of the settlements.
 - 1.3.3. Prepare alternative house models for traditional settlements that helps to conserve heritage values and share with the communities
 - 1.3.3.1.
 - 1.3.4. Establish Technical Resource Centres in each settlements and provide technical and administrative support for the implementation of the identified activities
 - 1.3.4.1. Support in land management and dispute resolution
 - 1.3.4.2. Support in technical design and supervision of the reconstruction of the houses including retrofitting where applicable
 - 1.3.4.3. Support in market survey, quality assurance and collective bargain
 - 1.3.4.4. Support in mobilizing communities for community works
 - 1.3.4.5. Support in preparing Citizen's Charter for the settlement that establishes community rules
 - 1.3.4.6. Support in facilitating financial assistance including grants, soft loans, micro-finance and other forms of financing (if any).

1.3.4.7. Support in livelihood related activities

1.3.4.8. Support in DRR plan implementation

O2. Recover other urban areas of Kathmandu Valley from its loss and enhance to make it more resilient and prosperous- by-

2.1. Revisiting existing building by-laws and incorporating urban resilience in the planning norms and its efficient implementation in other than traditional settlements

2.1.1. Revise building by-laws to incorporate provisions of DRR at neighbourhood level

2.1.2. Introduce mandatory DRR plan for each neighbourhood and initiate regulating existing buildings that do not meet building by-laws

2.2. Supporting reconstruction of houses that are damaged by the earthquake

2.2.1. Establish Technical Resource Centre in each municipality to facilitate efficient reconstruction of damaged houses

2.2.1.1. Provide technical guidance including possibilities of retrofitting where possible

2.2.1.2. Facilitate financing support

2.2.1.3. Provide mediation service to the properties with disputes

2.3. Preparing DRR plan with the community for future preparedness

2.3.1. Prepare guidelines for the households to follow in their houses

2.3.2. Prepare guidelines for the community provisions for DRR preparedness

2.3.3. Implement DRR plan

3.

O3 Supporting recovery of market centres that help to rebuild local economy – by-

3.1. Providing support to concern municipalities in preparing overall planning of their urbanized area

3.1.1. Preparing land use plan of the market centre with potential future expansion

3.1.2. Prepare special by-laws for hill-side or river-bank settlements reducing the disaster risks and response plan

3.2. Implement recovery plan of market towns

3.2.1. Implement DRR plan incorporating facilities and services for the settlement and services to hinterland

3.2.2. Propose special packages to encourage speedy recovery of the market services that generate jobs locally and ease hinterland reconstruction

O4 Build capacity of local governments and community groups in addressing recovery works and beyond – by-

4.1. Strengthening technical capacity of municipalities to address recovery efficiently

- 4.1.1. Strengthen institutional mechanism to address urban recovery
 - 4.1.1.1. Establish Kathmandu Valley Coordination Mechanism involving KVDA and DLPIUs
 - 4.1.1.2. Municipal governments
 - 4.1.1.3. Community groups
 - 4.1.2. Build capacity of municipalities in technical, community mobilization, grievance handling and local mediation fields.
 - 4.1.3. Support municipalities to implement building permit system particularly in new municipalities.
 - 4.1.4. Strengthen municipalities outside Kathmandu Valley
 - 4.1.4.1. Demarcation of urbanized and none-urbanized areas
 - 4.1.4.2. Develop separate norms for building permit in the two areas
 - 4.2. Revising existing building by-laws to serve the DRR needs
 - 4.2.1. Introduce special provisions for city cores and traditional settlements
 - 4.2.2. Introduce regulations to discourage vertical division of traditional houses
 - 4.2.3. Introduce special provisions for towns expanding on hill slopes, including along highways.
 - 4.2.4. Introduce provisions for DRR
 - 4.2.4.1. Land suitability map of each municipality linked to Land Use Plan
 - 4.2.4.2. Provision for open spaces and conservation of public spaces
 - 4.3. Building capacity of local communities
 - 4.3.1. Support in organizing local communities and involve in the reconstruction
 - 4.3.2. Build the capacity of local groups including women and youth groups
- O4. Address housing needs of urban poor – by -
- 5.1. Introducing urban poor housing schemes
 - 5.1.1. Rental apartments
 - 5.1.2. Cooperative financing of low income groups
 - 5.1.3. Facilitating house owners for urban poor rental space
 - 5.1.4. Informal settlement housing schemes
 - 5.2. Introducing policies to promote quality rental provisions targeting to urban poor
 - 5.3. Introducing policies and programmes to evacuate temporary shelters once the permanent houses are completed.
 - 5.4. Initiating managing existing informal settlements in participatory approach