

Threatened to Cultural Heritage due to Urbanization

Traditional settlement around Kathmandu Valley



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1 Shelter Situation Analysis

1.1 Basic General Data

Geography and Administration

A landlocked country, an area having 140,800 Sq.Km. (**Land area:** 136,801 sq. km), lying between India and China. Climate varies from cool summers and severe winters in north to subtropical summers and mild winters in south.

Ecologically, Nepal has three regions: Mountain, Hill and Terai (plain).

There is 1 Metropolitan City, 4 Sub-metropolitan cities, 53 municipalities and nearly 4000 village Development Committees. Kathmandu is the Capital City.

Demography and Health

The population of the country is 29,519,114 (2008 est.) with an annual growth rate of 2.095%. Sex ratio is 1.06male(s)/female. Birth rate: 29.92/1000 population, death rate: 8.97 deaths/ 1,000 population, infant mortality rate is 62deaths/1000 live births and life expectancy is 60.75, Total fertility rate: 3.91 children born/woman (2008 est.)

Economy

Nepal is among the poorest and least developed countries in the world with 40% of its population living below the poverty line. GDP (Gross Domestic Product) is

\$29.04 billion (2007 est.). GDP per capita is \$1,200 (2007). Nepal spends only 0.05 percent of GDP in housing (NPC 2002 the Tenth plan: 427). Real growth rate is 2.5%. Unemployment rate is 42 % (2004). Exports: \$830 million f.o.b. (2006 est.), but does not include unrecorded border trade with India. Imports: \$2.398 billion f.o.b. (2006 est.)

1.2 Shelter Related Fact and Figures

Access to Shelter

Housing stock / Housing deficit (quantitative and qualitative)

In Nepal, (N.S.P. 1996), there are altogether 3,000,000 dwelling units at present. Out of that there are 2,700,000 dwelling units in rural areas and 300,000 dwelling units in urban areas. On the basis of the increasing growth rate of population, it is estimated that by 2006, 50000 number of dwelling units may be required in urban and similarly, 165000 new dwelling in the rural areas. Annual growth of household is 2.45.

Occupancy

The occupancy rate of dwelling units in the urban areas and rural areas are assumed to be approximately 6 person and 6.1 person per shelter respectively (N.S.P 1996).

Housing standard

50.5 % of dwelling units belongs to temporary type, 41.2 % belong to semi permanent type and 8.3 % belong to permanent type. Looking at the existing housing situation of Nepal, it can be assumed that about 7 % of dwelling units are more than 50 years old and out of that total dwelling units in rural areas about 34% are 10 years old and 46 % of the dwelling units of the urban areas are 10 years old or less than that . The physical condition of about 12 % of dwelling units is found to be very weak, about 8 % of the existing dwelling units in urban and rural areas need to be renovated (NSP, 1996)

The residential density indices indicate that 4 persons occupy a habitable room and the average space per person is 53.3sq.ft. (NSP, 1996)

Tenure of households, Rental and Ownership (formal and informal)

According the National Shelter Policy 1996, most of the families live in the houses of their own, but in the urban areas about 24 percent of the families use rental accommodation and about 7.3 percent live as squatters.

Table 2: Percentage of household by ownership and types of house for urban/rural, 2001.

House Ownership	National	Urban	Rural
Own	88.3	60.9	93.4
Rented	8.9	34.8	4.0
Institutes / other	2.8	4.4	2.5

Average Monthly /Capita income (Nrs) National= 432.9 Urban =747.5, Rural =390.5

Housing affordability ratio, House price to income ratio, Household income

Table 3: Monthly household incomen1991, Housing survey of Nepal

Income Range (Rs.)	0-1000	1000-2000	2000-3000	3000-5000	5,000 & above
Urban %	13.43	25.25	20.84	20.14	20.34
Rural %	40.28	31.25	13.16	8.87	6.44

With 8% inflation per annum

Income Range in 1998 (Rs.)	0-1,850	1,850-3700	3,700-5,550	5,550-9,250	9,250& above
Average Income %	925.00	2,775.00	4,625.00	7,400.00	-

Payment capacity with 20% saving

Per year	2,220.00	6,666.00	11,100.00	17,760.00	-
In 15 years	33,300.00	99,900.00	165,500.00	266,400.00	-

The minimum cost of a house, having three small sized rooms and a plinth area of 35 sq.m. is Rs. 140,000.00 for urban areas and Rs. 70,000.00 for rural areas from the above table it is clear that the first two groups or 38.68% of urban areas and 1st group or 40.28% of the rural areas cannot build even a modest shelter from their 15 years saving. If the saving is diverted for other social purposes as is generally done, the dream of building a shelter from the income saving will not be fulfilled even for the third group. The result is more and more families in Nepal will be homeless.

The homeless families in Nepal

S.N.	Year	Homeless	Basis
1	1987	7.00%	Basic Need Survey of NPC
2	1998	15.60%	Nepal National Housing Survey
3	1998(KMC)	47.5%	Kathmandu Metropolitan City

Land (formal/informal)

Housing construction and Building materials

Unmanaged and earthquake prone buildings are constructed in the densely populated urban and rural areas. Old buildings are found to be constructed in load bearing where as all the new buildings are constructed frame structure.

According, to the ecological region, we find distinct difference in the building material used for dwellings. Like stone, wood and mud used in Himalayan regions, brick, stones, wood, mud, and lime used in the hilly region and bamboo, unburned bricks, mud, wood and thatch are used in the Terai region. With the globalization, we can find all the modern technology and materials in all the 3 regions. Modern materials like cement, sand, steel, brick, glass, aluminium, tiles, etc are used in construction.

Access to and cost of Basic Services/Infrastructure

According to Central Bureau of Statistics (CBS), 2003, 43.8% of households are facilitated with toilet and 53.2% use open space for toileting. 66.2 % of household uses firewood as cooking fuel, 13.7% uses Kerosene, 7.7% uses LPG gas and 12.5% uses bio gas and other fuel for cooking. Only 39.8% of household have electricity facility. For drinking water 53% household is connected to piped line. 599800 telephone lines are in use (2006), 1.042 million people uses mobile cellular. Radio broadcast stations: ARE 6, FM 5, shortwave 1 (Jan. 2000). Television broadcast stations: 1 (plus 9 repeaters) (1998). Internet Service Providers (ISPs): 18,733 (2007).

Access to and cost of Education

Only 54.1% of the total population is literate (Statistical Year Book, 2005). The government has free-education programme for up to primary level.

1.3 Housing Policy

Shelter Policy 1996, Nepal made a two phased effort(1996-2001, 2001-2006) to cater to the housing needs of Nepal by 2006.its policies were to increase the availability of dwelling units and repair and maintain the existing stock by

- Increasing the supply of serviced lands.
- Increasing the necessary basic infrastructural services
- Improving the use of building materials and construction technology.
- Promote effective mobilization and allocation of financial resources
- Organizational improvement

The tenth plan had objectives, firstly providing with safe and cost effective houses by promoting systematic settlements and secondly to construct and develop safe and cost effective houses by promoting systematic settlements and thirdly to construct and develop safe, cost effective, environment friendly buildings that can display indigenous architecture. The strategy was to use private sector for this purpose.

1.4 Actors in Shelter Delivery and their Roles

Both the public and private sectors are the main actors in the Shelter Delivery to citizens.

- The role of Government as promoter at both central and local levels in each component of the national shelter strategy.
- The role of local authorities like district development committee, municipalities, Village Development Committee is to promote land and housing development work.
- The role of NGOs and INGOs and Community-based organizations involvement in finding funds for the shelter and basic infrastructure for poor, and low cost technology along with facilitating for empowerment of communities.
- The role of the financial institute is to provide dwelling units to the classes of people with limited income subject to payment of loans in instalment.
- The role of private sector is to focuses on creating a sound living environment (in terms of material, space, services and environment).

- Researcher role is to research and evaluation on sectors related to the development of dwelling units.

1.5 Shelter Design

Physical Planning, Shelter Quality, Function, Safety and comfort

Most towns and urban areas in Nepal do not have adequate infrastructure and services. Integrated Action planning, Land pooling, GLD, etc are the popular planning tools applied in Nepal. 16.07% of land is used as arable land, 0.85% for permanent crops and 83.08% for other use (2005). Population Density is 547 per sq mile.

Conditions of houses 20.6% of houses are in good condition, 67.61% are in average condition and the rest 11.8% are in bad condition. According to 1996 NSP, Buildings used are predominantly commercial, predominantly residential, industrial, institutional and conservation. Nepal lies in the seismic Zone, so the buildings, infrastructures and services are to be built accordingly. Landslide and flooding are also major problem faced by the country.

Social Inclusion and Gender Issues

Social inclusion has guided to develop the infrastructures, so it's the settlement which shows the civilization of the country.

The share of women in the income is 30 percent and in administrative services only 12.7 percent.

Sustainable Development

According to tenth plan

- Guide urban development through the protection of historical and cultural heritages and the support of urban infrastructure in a sustainable manner.
- Develop Kathmandu valley as the capital city and touristic and cultural centre of the Kingdom of Nepal, and develop the satellite towns around Kathmandu Valley.
- Mobilise the means and resources of private sector and local elected bodies for the construction, operation and management of urban infrastructure.
- Carry out the necessary regulating functions to systematize urban development.

- Promote village-town partnership programme.
- Develop urban housing with the participation and involvement of private sector.
- Update and implement the building construction codes and standards.

Norms and Codes

For the safe and comfort of the citizen, norms and codes are developed.

2 Organisation

Tuladhar and Associates is one of the few existing FULL-TIME Consulting Engineering Firm duly registered under Nepal Government company act. The philosophy behind the formation of this organization is to mobilize the best available engineering skills to provide complete professional services for the development of natural resources in the country.

The company thus disposes of wide ranges of experiences and the services of which it will be glad to avail to its clients. Some of the recent projects

- Land acquisition, Planning, Design and Construction of Churchill Shopping Complex at Bagh Durbar. Now known as “China Town” having an area of 1,00,000sq. ft., constructed in 9ropanies of land.
- Development of Conservation Plan of Ikha Pokhari, Chhetrapati.
- Design, estimate and construction apartment building and residences
- Design, Estimate and Construction Supervision of Swoyambhu Maha Chaitya in Nepal Bihar of Lumbini. The size of Chaitya is being the same as of the existing Swoyambhu Maha Chaitya of Swoyambhu, Kathmandu.

3 A Case of Putuwar village, Inchangu VDC.

Background

Nepal being a land of topographical and climatic extremes characterized by ethnic diversity, there is wide variation not only in the house type and construction materials used but also size of the house, number of rooms in the house and their use.

Putuwar village is one of the satellite village supporting the capital city Kathmandu. Different satellite towns and villages have been developed around the city. Like Putuwar village, which supports city by supplying the red mud (was used daily to clean the floors) and the flowers (for the worshipping of the goddess).

It can be one of the tourist place, as people are living in the traditional way, they have not lost the culture heritage they have and because of its location. Bhairab temple is within this village, which is important to be conserved. Goddess and the related dance are main part of the festival called Indraajatra (festival of living goddess in the centre of the Kathmandu.)



View of the Putuwar Village

Nepal is also known for the living goddess, Kumari. This village has to be conserved in order to save the cultural heritage of the country.

Facts and Figures

It lies in the Ichougu village ward no. 3 of Kathmandu Valley. It is just 1.5 k.m. away from the main road. It is small settlement up in the hill with the view of whole Kathmandu valley.



View of the Putuwar Village

It has a population of 462 (male = 236, female= 226). Ethnic group Putuwar and Tamang live here.

Economically they are very poor so they can't afford new dwelling, per capita income data is not available. Most of them work at stone mild and earn maximum Nrs.75/day - i.e. almost 1\$/day. Some work as a skilled and unskilled worker in the building construction sites. Very few of them are taxi drivers. None of them have a formal job.

There are altogether 99 dwellings. We can find one households in one house, but there in very few we find two household. (VDC data).

The occupancy rate of dwelling units in the village is approximately 4.08 person per shelter. (Report Petter Fanden and Tobias Sjogren for there Bachelor Thesis, Putuwar Village, An upgrading project in Nepal,)

Except few dwellings, all others are of semi permanent type. All the families live in their own houses, and no one is living in rent. In the name of public building they have one secondary school, one sub health post and the VDC office.

They don't own land except small Kitchen Garden. They have sold all the flat agricultural land, which is the dark side of urbanization. Fertile agriculture lands turn into concrete jungle, leaving the people jobless.

Housing construction and Building materials

Almost all buildings are of 2 storied, except 5-6 dwellings which are 3 storied. Size of the plots varies from 4 x 5 sq.m. to 5 x 10 sq.m. Load bearing construction, built with stone, brick in mud mortar. Wood is used for doors and windows. Wood and bamboo act as a secondary pillars, beam and slab.

Floor finishing is soil painted with cow dung and red soil. Roofing is done with rice straw or clay tiles but at present GI sheets are used for roofing. None of the houses have indoor toilet, 75% of the household have outdoor toilet and 25% households uses open spaces for toileting. 2 public toilets have which are not in use due to lack of maintenance and lack of water supply. They use wood as cooking fuel except 5 -6 household (uses LPG gas). Due to economical condition 3-4 houses can't offer electricity; otherwise every house is connected to electricity, and has television in individual houses.



Residential Building

There are 5 public taps as the source of water, among them 3 taps lack of water during rainy season. As the source of the water from high hill gets blocked, and reservoir gets little water.

Telephone lines in used are 17 but each household have at least one mobile cellular.

Till date, there is no public transportation; they have to walk 1.5 km on gravelled road from the main road. Roads in the settlement are muddy and few meter roads are rocky roads.

No sewage lines.

Literacy rate is very low in age group above 25 years but comparatively the rate is high among the age group 16- 25 years. Now a days most of children's goes to school.

4 Shelter Problem

- Lack of urban development policies and necessary infrastructures in settled unmanaged dwelling in urban areas.
- Historical, cultural and touristic heritage found in urban areas are in danger due to encroachment.
- Town Development Fund has not been effectively utilised.
- No strengthened linkages of urban areas with the rural areas leads to the migration in seek out employment has resulted in population pressure in the urban areas. So existences of small satellite towns are in danger.
- All the facilities are centralizes with in the Capital, decentralization.
- Most of the buildings are owner built.
- Change of agricultural activities to non-agricultural activities.
- Change in occupational structure from agricultural to industry and services.
- Change in behaviours, values and institution structure.



Bhairab Temple

The village settlement is linear developed, two row of houses arranged with narrow muddy road in front and in between. Housing condition is very bad, except few new once. The environment inside is unpleasing, smoky kitchen in ground floor, small window with little light in, small unsafe staircase leading 1st floor used as bed room.

- No sewage, no drainage, no roads.
- Lack of public spaces.
- Lack of income, uneducated.
- They can neither afford to improve the existing vulnerable houses nor build new ones.
- With time, technology and the life style of the Kathmandu changed, which lead Putuwars to leave their traditional job and forced them to seek the new job.
- No job, No education, so they have finished there land by selling them, now its houses which are being victims of urbanizations. They are turning to slums within their ancestors' habitat.



Open Drainage

Government has neglected the village so till date no infrastructures have been reached there, it is just 1.5km. far from the Swayambhu stupa (one of the world heritage site).

They couldn't pace with the changing time, urbanization started in Nepal since 1950's. It was in transit period, although income through the traditional job was decreasing, it was sufficient for servible, as they had agricultural land. Slowly they saw easy money, i.e. selling land. Very few were able to use the money, like buying taxi. Others turn into labour in the construction sites of the city swallowing their agricultural land.

Due to its location, people are offering to sale the houses, once they get convinced and moved out from the village, they will be of no where and turn into slums. The cultural heritage that they have been carrying for many 100s' of year will be lost.

5 Proposal for Change and Improvement

The first thing that we have to do is to make the local people aware of the treasure that is the cultural heritage, which they have carried out till date.

1. The cultural heritage is an unrenewable limited resources and that, besides being a cultural and social resource, it must also be recognised as an economic resource for the benefit of residents of historic areas.

2. Heritage protection in urban environments is an asset for urban development and poverty alleviation.
3. Making arrangement for the paying guest so they can generate income and tourist can enjoy the life style of the villagers.

The second thing that has to be done is the development of the infrastructures, like road, sewage lines, drinking water facility, public spaces, and public transportation. It has to be done by the government and the local government with the involvement of the villagers.

1. The roads are narrow and muddy. Narrow roads can't be widened but the muddy roads can be improved. They have a stone query near by, which can be used in other to pave the road network. Paving the road with stone with well planned drainage system. Community management possible with technical assistance.
2. Drinking water problem can be solved with the provision of overhead water tank. They can lay down the pipe line from the nearer hill water spring and collected in tank, and distribute. Connecting water pipes to individual houses will be costly right now, so it can at least be supplied to the public taps which are out of use right now. Rainwater harvesting can be another solution.
3. Sanitation Community construction and management of individual and shared pit latrines is possible, with technical assistance. Householders must be taught how to use and maintain the installations, and make them understand that the health improvements of sanitation depend upon the users as well as the installation.
4. Sewage lines are to be laid.
5. Drainage the Construction of open, lined drains, culverts and channels is possible, with technical assistance. Maintenance of drains is more important than construction, and community can organize this.
6. Public open spaces to be developed with sitting places, greenery, play ground for the children's.
7. School area to be removed from the village, and shifted to some nearer flat land. There is no enough space for playground, and extra activities. Up in the hill without fencing, which may lead to the serious accident.

8. Fencing along the edge of the hill.
9. Plantation in the slope of the hills, where there is no habitation and vegetation.
10. Public transportation facility to be placed through the village so the city centre is easily reached.

It's good to know that the government has budget of Rs. 500,000.00 (\$6500) and in addition to that one of the Korean donor agency has given \$28,000.00 for the development of the village, for the development of infrastructure in the village. Pavement of roads and the drainage has already started, under the Kathmandu division of Housing Department of Nepal.

The third thing is to introduce the villagers about self help housing.

1. Form a self-help housing group, with the help of micro finance facility, work together in groups to build and maintain each others homes, and the infrastructures and surrounding environment. Approximately 65% of the construction labour is provided by the group under the direction of the construction coordinator. The remaining labour is sub contracted out.
2. Condition of self-help and in situ upgrading, facilitating and rights based policies are more likely to give a sustainable upgrading.
3. Provide technical advice to improve the dwellings, infrastructures and surrounding environment.
4. Introduce low cost materials to improve the housing conditions.
5. Help in the internal layout of their house, finishing materials so they have healthy environment within the house.

According to B.L.Shrestha (Engineer, practicing low cost technology), we can reduce 50% in cost by proper planning of land, 15% in cost by efficient planning and design of individual building, 30% in cost by the use of alternative building materials and construction technologies and so on and this way the cumulative cost reduction will be quit considerable. The following are the various factors for approaching to the low cost housing or cost effective housing:

1. Planning of land and land development

If we see the traditional planning system, i.e. row housing system or the courtyard system with vertical arrangement of rooms, so density of houses is high and the agricultural land is saved.

Putuwar village is also developed in row housing system with vertical arrangement of room. So,

- a) the infrastructure services provided in the small area will serve many housing unit, there will be a considerable economy in the per unit service cost as less quality of service lines like pipes electric cables etc, will be required.
- b) Maintenance of service lines will be reduced considerably.

2. Design of individual house

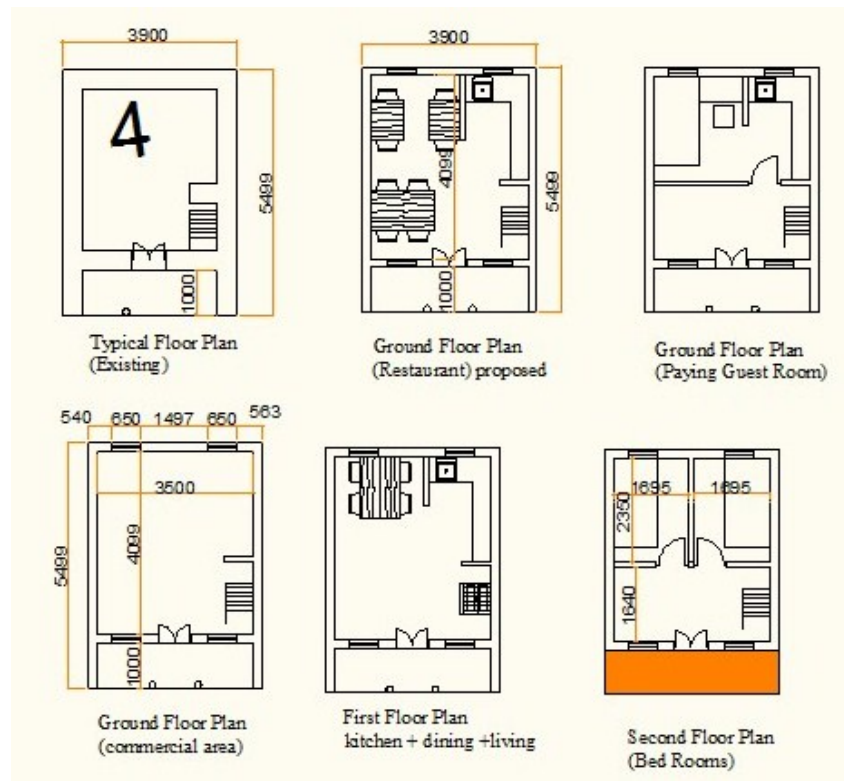
Building plan's are simple i.e. Square or rectangular plan. By standardization in design will save construction time, wastage, save no. of labour, particularly skilled manpower, cheap production of building components. We just have to add opening so the rooms are more lighted and give pleasant environment with in the building.

I propose for the three storied building so they can use ground floor for the commercial and the recreational activity which can improve their livelihood. First floor will be for the kitchen, dinning and living room. 2nd floor can be used for the bed rooms. It is necessary to keep in mind that the plot size varies from 4 x 5 sq.m. to 4 x 10 sq.m.

3. Building material and construction technology

To those buildings that needed maintenance and the change in the internals and outdoor environment will be suggested

- Intervention of windows
- Improvement in the flooring, dry paving.
- Functional rearranging the internal layout according to the need of the house owner.



To those houses that needed to be rebuilt will be proposed for the use of a low cost technology, like hollow bricks stabilized soil blocks, semi precast beams and slabs, precast window and door frames.

Locally available materials will be recommended as long as possible.

Swot analysis

Strength:

1. Young community is aware of the development of the village.
2. Problem is identified and the villager's are aware of it.
3. Government has budget for the village
4. There is high possibility of both internal and international tourist due to its location and importance of the Bhairab temple. Cultural tourism is becoming an increasingly important part of the global tourism industry
5. Community participation, programs based on respect for the people living on the spot and their cultural priorities which will enhances quality of life and supports sustainable regeneration.

Weakness:

1. Settlement is on the rocky hill, its difficult and high budget needed to provide infrastructure.
2. High rate of illiteracy.
3. No formal job and low income.
4. People are coming to buy their houses; it will be difficult if they sell it seeing easy money. They won't get more money as there is no infrastructure and houses are in bad condition.
5. No open spaces and the plot size of the houses are small.

Opportunities:

1. Heritage industry contributes considerably to economic growth and has a great potential to create new jobs in related sectors. There is need for better transport, accommodation, restaurants, etc. The heritage tourist is a good consumer.
2. They can get loan to upgrade their living standards and to improve their houses.
3. Easy accessibility to basic need of life. Saving of time and energy, from carrying water, walking in the muddy road, transportation, etc.
4. Good house lead to long life expectancy

Threats:

1. "Tourism has a tendency to turn city into museums, often compromising authenticity and either expelling the inhabitants or turning them into exotic exhibition objects for the tourists as if they were in a zoo."said by urban heritage expert Sylvio Mutal. (Urban Assets, Cultural Heritage as a Tool for Development, page 6, urban development division, SIDA)

Conclusion

It is more important to stop people from selling there houses to outsiders in order to conserver the culture and the social infrastructure that they have been carrying till date.

By providing the infrastructure and improving the housing condition of the Putuwar village, what I believe is that the value of the place can be increased, can be developed into touristic area at the same time conserve the cultural heritage.

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