

Rehabilitation of Squatter Settlement
A Case study of Manohara Squatter Settlement, Nepal

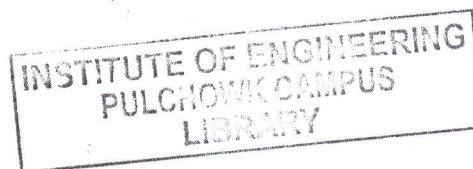
Masters Degree Thesis

A Thesis submitted in fulfillment of the requirements for the master degree

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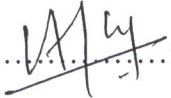
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March 2011

CERTIFICATE

This is to certify that this thesis entitled Rehabilitation of Squatter Settlement, A Case Study of Manohara Squatter Settlement submitted by Kanchana Nyaichyai has been examined and it has been declared successful for the fulfillment of the academic requirement of towards the completion of the Master of Science Course in Urban Planning.

.....



(Mr. Ajay Chandra Lal)

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DECLARATION

I declare that this dissertation has not been previously accepted in any substance for any degree and is not being concurrently submitted in candidature for any degree; I state that this dissertation is the result of my own independent work/investigation, except where otherwise stated. I hereby give consent for my dissertation, if accepted, to be available for photocopying and understand that any reference to or quotation from my thesis will receive an acknowledgement.



.....

(Kanchana Nyaichyai)

Date: 27th March 2011

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ABSTRACT

Growing of Population in urban areas is likely to continue and there is no sign of retardation of this process. Along with urbanization, urban areas are also experiencing growing incidence of poverty. Number of squatter settlements are increasing it is mainly due to push factor to migrate in Kathmandu valley. It does indicate the poverty level of the Nepal.

Cause of squatter settlement is not only due to lack of financial resources but also due to lack of proper policy.

The Manohara Squatter Settlement is the largest and newly formed settlement. This report would represent the life of squatter settlement and shows how residents are facing problems.

This report attempts at rehabilitation of squatter settlement in Manohara with appropriate models and view to also highlight the socio-economic life of urban squatter society. The study also shows the recent trend of squatter settlement and their concept to have a secure tenure on the land.

Primary Data collection was done through the questionnaire survey and secondary information and data were collected from related organization and documents. It is hoped that data and description included in this report will prove useful and overall scenario of conditions in squatters.

Review of policies for slum and squatter settlements are studied. Likewise review and recommendation of different model to rehabilitate the squatters are also presented here. By knowing the existing scenario and condition, the appropriate model has been adopted. Out of numerous issues and problems faced by the areas, lack of basic infrastructure, social recreation are one of them, resulting in degradation of all type environment, as a result of deterioration of living condition.

As the settlement is previously proposed for the Land Pooling and the policy to provide 10% land for the urban poor is under discussion, the possible intervention for the rehabilitation is to locate them in that area is one of the Model recommendations. On Site Upgradation through rearrangement of Housing Units is another model recommendation as this settlement is less vulnerable than other similar settlements so it

can be rehabilitated within that area by providing minimum land area. Land Sharing is one of the models recommended by sharing the land with private developer and develop the land with low rise high Density apartment.

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LIST OF ABBREVIATION

ADB	Asian Development Bank
BMA	Bangkok Metropolitan Authority
CPB	Crown Property Bureau
CBS	Central Bureau of Statistics
CIUD	Center for International Development
CEDA	Center for Economic Development Administration
DHUD	Department of Housing and Urban Development
DOB	Department of Building
DUDBC	Department of Urban development and Building Construction
ENPHO	Environment and Public Health Organization
Ha.	Hectare
INGO	International Non Government Organization
KHMC	Kritipur Housing Management Committee
KHP	Kritipur Housing Project
KMC	Kathmandu Metropolitan City
KPB	King's Property
NBBSS	Nepal Basobass Basti Samrakchhen Samaj
NGO	Non Government Organization
NHA	National Housing Authority
PAT	Port Authority of Thailand
ROW	Right of Way

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

The urban growth is attributed both natural population growth, and rural to urban migration. The push factor of migration is to find the better life in urban areas such as employment, education, economic activities and other reasons. Thus the numbers of people are migrating from village to town and from small towns to larger cities. Numbers of internally displaced people due to the political conflict have also come to the cities for safety and finally they are settled permanently in cities. Some of those migrants will benefit from the opportunities in urban areas, while others often those with low skill level left behind. For them the lives become challenging to fulfill their basic needs. The priority of those migrant populations is not about the hygiene and cleanliness but is about the basic need of Food, Shelter and Cloth. However many of those poor and unskilled migrants due to their inability to access to expensive urban land and housing has come to squat and build their shelter on public land and other environmentally sensitive areas like river banks or flood plains, steep slopes and vacant spaces which are very vulnerable.

A squatter settlement therefore, can be defined as a residential area which has developed without legal claims to the land and/or permission from the concerned authorities to build; as a result of their illegal or semi-legal status, infrastructure and services are usually inadequate. In general, it is considered as a residential area in an urban locality inhabited by the very poor who have no access to tenured land of their own, and hence "squat" on vacant land, either private or public such as idle lands, river bank often on the hazardous sites which is unsuitable for residential development for their habitation, which may refer as squatters".

The capital, Kathmandu, is the prime city attracting immigrants. In the most recent census in 2001, the population of Kathmandu Metropolitan City (KMC) was 671,846, compared to 421,258 in 1991. The projected population for 2011 is estimated to be 1,011,105. (KMC, 2001). Until the mid-1990s, the major reasons for migration from rural villages to urban areas were the classic "push" factors: soil erosion from natural disasters or deforestation, a shortage of inherited land and the lack of alternative

income sources. There were also several “pull” factors in urban areas, especially in Kathmandu, including health care facilities, schooling and employment opportunities in formal sectors. In addition to these conventional factors, an alarming level of insecurity in remote villages began to accelerate rural urban migration as villages became the battle fields in a decade long conflict between Maoist rebels and the monarchy-led government.

Kathmandu, the largest urban centre in the country has witnessed a proliferation of squatter settlements locally known as Sukumbasis. A Nepali term, *sukumbasi*, is important in this context. It is used interchangeably with the English word squatter, but has a more specific meaning in that it refers not to every person occupying unused buildings or land without a legal arrangement but, rather only to those who are quite literally landless (Tanaka,2009). Political instability, economic stagnation and growing inequality can be cited as reasons for a large number of people attracted to Kathmandu. The city had always been a welcoming safe haven for the migratory population in search of employment and better livelihood because of its strategic location and administrative and commercial importance. Growth of slums and squatters is neither an inevitable consequences of urbanization, nor can it be blamed only on the lack of financial resources. Slums and squatters are also the product of failed policies, bad governance, inappropriate legal and regulatory frame work, dysfunctional market, unresponsive financial system, and not least, a lack of political will(Tannerfeldt G, 2008)

Table 1

Population Growth in Kathmandu Valley	
Year	Population
1981	363,507
1991	598,528
2001	1,046,185
2011	1,442,762
source: CBS(1991, 2001)	

Source: U. Sengupta, S. Sharma / Habitat International 33 (2009) 34–44

Most of the informal settlements are on government land. Squatter settlements in Kathmandu started in the 1980s when rural migrants moved into cities looking for

employment. During the years, those that were too poor to afford accommodation add to the numbers. In 1988, it was estimated that there were only 17 squatter communities in Kathmandu and at present, the number of squatter settlement is estimated to be 63 in numbers with 14493 people residing in 2577 households (Lumanti 2003). Majority of the settlement are located on marginal public land along the river banks. A large proportion of the people living in these settlements is under absolute poverty, has serious housing affordability problems and is socially and economically deprived.

Table 2

Rise of squatter settlements in Kathmandu between 1985 and 2000			
Year	Number of settlements	Number of households	Population
1985	17		2134
1988	24	348	3665
1990	19	859	4295
1992	33	1271	6355
1996	47	1783	8927
1998	49	2021	10,323
2000	61	2031	11,862
2003	63	2600	15,000

Source: U. Sengupta, S. Sharma / Habitat International 33 (2009) 34–44

These settlement itself also remain vulnerable to incidence of disease and risk from natural and other man- made hazards. Those population residing in this settlement enhance to decline in the quality of urban life as well as urban environment. These settlements are characterized by limited access to basic services, inadequate housing, and vulnerability to natural disasters and low-income and affordability levels.

The 10th Five-Year Plan recognizes that tenure security affecting social, physical, economic as well as human development of squatter resident and includes both strategic as well as specific proposals for implementation in the plan period. Broad framework for promoting partnership with private sector (in sites and services and apartment and rental units' development) and regularization and upgrading of slums and squatter settlements with minimum demolition has been introduced. Under this strategic framework, squatter settlements in Shankhamul, Ramhiti, Subigaon, Dhumbrahi and Radhakrishna Chowk, etc. has been selected as pilot projects for upgrading.

Some squatter settlements in Kathmandu were established more than 50 years ago but they were few in comparison to the present. Lumanti (2008) has carried out a comprehensive survey of 45 squatter settlements including five of the *swabasi* (*indigenous settlement*) areas. Twenty-nine of these settlements are located along riverbanks, where they are vulnerable to floods and to the pollution.

1.2 RATIONALE OF THE STUDY

It can be claimed that issues of squatters and slums are back in the forefront with the adoption of Millennium Development Goals as National development framework in 10th five year plan. The United Nation's MDG 7 Target 11 aims to improve the living conditions of 100 million slum dwellers by 2020.

The trend of increase in number of squatter settlement is one of the major burning issues of uncontrolled urban growth. The largest settlement, Monohara, along the Hanumante River, has 589 households, which is 22% of the total household with a population of more than 2,400. The squatter settlements are heterogeneous not only in terms of the ethnicity or caste of their residents but also in terms of their places of origin, present occupation and income, family structure and reasons for squatting.

In addition, the Manohara Squatter Settlement covers a huge agricultural land. The settlement is the largest as well as the recent squatter settlement. It is one of the politically influenced squatter settlements. Although the settlement is the largest, there is limited access of urban infrastructure and the living condition in the settlement is deplorable.

Due to the newly formed settlement, the study on this settlement has not been carried out except the survey done by the Lumanti(2008).

The main objective is to ensure their housing right by providing safety.

1.3 PROBLEM STATEMENT

The ever-increasing squatter population increase causing tremendous pressure on urban basic service and infrastructure which causes the deterioration of urban environment and urban life. As we can see around us, the living conditions of squatters are not good.

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1.3.1 limited exposure to income and employment

At the core of the poverty, both rural and urban, is limited access to income and employment opportunities. The squatters face challenges of low skills, low wages, unemployment and under-employment, a lack of social insurance and unsatisfactory working conditions. The spatial locations of squatters, inadequate infrastructure, are also constraints to employment. _

The majority of the squatter work in the informal sector. While the informal sector provides employment for many that cannot enter the formal labor market. affects the poor who have relatively little savings.

1.3.2 Living Conditions and Security of Tenure

The living conditions of the squatter settlement are not good. The squatter face many of challenges in daily life, with the added burden of overcrowded and often unsanitary living conditions. Manohara, a squatter settlement has an inadequate basic service and houses (Lumanti, 2008) with substandard and prone to fire damage and collapse. The squatter are facing following four basic shelter deprivations:

- **Inadequate access to improved water supply;**
- **Poor sanitation;**
- **overcrowding (three or more persons per room);**
- **and dwellings made of non-durable material.**
- **Tenure ship**

a general characterization of squatter can be described as informal settlements with poor quality housing, limited access to services, and often on insecure land.

1.3.3 Risks

Living in cities, in high density squatter settlements, can also mean exposure to a number of disaster, health, and environmental risks which particularly affect the poor. They are typically at the highest risk in the event of natural disasters due to the location. These settlements are often in sites vulnerable to floods and landslides, infrastructure is weak or lacking, and housing is substandard and prone to fire damage or collapse. Beside the level of vulnerability in terms of natural calamities there is threat of the eviction. Due to the lack of legal land title documents the residents of

these squatters settlements not only face difficulties in getting access to basic services, but also subjected to eviction.

1.4 OBJECTIVE OF THE STUDY

- To study the existing living condition of the squatter settlements
- To explore different possible alternatives to improve the living environment/ condition of the squatter settlements depending upon their existing living conditions.
- To evolve suitable strategies and recommendation for rehabilitation of squatter settlement.

1.5 METHODOLOGY OF THE STUDY

The process of this research is qualitative. The method of the research is descriptive method. As the main goal of this type of research is to describe the data and characteristics about what is being studied. Descriptive method is adopted to gain the better understanding of the topic so the research based on this method in order to get the better understanding about the settlement. descriptive method is used to identify and obtain the information on the particular issue The logic of this research is Inductive logic as it will based on the facts from observation which lead to the conclusion. It is the case study based research which has only one case of Manohara squatter settlement. Along with this approach, it includes various literature review which are related to the upgradation program of squatter. Primary data collection along with observation, questionnaire survey, interviews with key informants and the people or group which are working on this squatter settlement, focus group discussion and study the secondary data which are already been collected from different agencies like the NGOs Lumanti, the government of Nepal etc.

1.5.1 Literature Review

The study of related articles, books, documents etc are help for the research work. As related case guided to overcome the problems. The document includes past studies done, researches conducted, project implemented for rehabilitation, upgradation, improvements of slums and squatters are reviewed. Studied of these documents are

help for understanding the real situation of the squatters and to find out the needed solution of the .

1.5.2 Data collection

Methods for generating primary data

- Interviews - informants, general overview, key informants
- Conversation
- Household survey
- Focused group discussion
- Direct observation
- Questionnaire

The questionnaire method with household survey has carried out to know situation of specific variables related to physical and socio economic condition.

Interview method and focused group discussion was carried out to collect the some data which are not be collected through the questionnaire survey. This help to know especially behavioural aspects squatters and behavioural aspect of concern authority.

Observation made to know the physical status of the squatter settlement.

Secondary data collection:

The various form of published data, record, report etc from different sources were collected..

Methods for generating secondary data

- Census data
- Aerial photographs and maps
- Newspaper clipping

1.5.3 Data analysis

The data obtained from questionnaire was analyzed using statistical software packages such as Statistical Programming for Social Science (SPSS), Excel, Auto CAD, GIS etc. to see association between variables and interview will be interpreted to explain the phenomena.

1.5.4 Preparation of Report

After analyzing the data and conduction the problem of the settlement, and the report is prepared.

1.6 EXPECTED OUTPUTS

The expected outputs are directly associated with the problem analysis. As the squatter settlements is also a part of urban area and urban planning. It can't be neglected. The detail study of Manohara squatter settlement will done and will find the different possible alternatives to improve the living environment in terms of physical and social of the squatter settlements depending upon their existing living conditions. Finally will draw some suitable strategies and recommendation for rehabilitation of the settlement through the possible intervention and model.

1.7 LIMITATION

The study area is confined Monahara squatter settlement only which is situated 400 m northeast of the Araniko Highway .

For the study the sample household survey has been conducted which may not represented whole in true sense. The survey has been conducted only 10% of the total household.

The outcomes may be replicated to only similar kind of settlement.

CHAPTER 2: LITERATURE REVIEW

2.1 URBANIZATION AND URBAN POVERTY IN NEPAL

Population of urban area of Nepal is growing at an ever-increasing rate. Therefore, the country is facing more challenges in case of urban development. Rapid urbanization is mainly due to rural to urban migration. Urban population growth is very high which 7% per annum is whereas the national population growth rate is only 2.3% per annum. Urban population of Nepal shows substantial increment in the last two decades. It increased to around 14 % in 2001 from about 9.2 % in 1991 and 6.4 % in 1981. About 14%-20% of the total population is lived in the urban areas. Of the total urban population of the country, about 30% are living in the Kathmandu Valley.

Poverty alleviation was one of the major objectives of the Eighth Plan (1992-97), which targeted the reduction of population below the poverty line from 49 percent to 42 percent at the end of the plan period. In fact, reduction has not achieved and the poverty level remained at 45 percent at the beginning of the Ninth Plan (1997-2002). The Ninth Plan (1997-2002) also aimed to reduce the poverty level from 45 percent in 1997 to 32.5 percent by the end of plan. Poverty alleviation was one of the major goals of Tenth Plan (2002-2007). The Nepal Living Standard Survey (NLSS) has shown that there has been a remarkable decline in the level of poverty in the country. According to this survey report, the poverty level in the country was 31 percent (Nepal, HMG, CBS 2005). It was hoped that the poverty level in the country would brought down to less than 10 percent by the end of Twelfth Plan (2012-17).

According to Nepal's 10th national five-year plan, 38% of the population in Nepal lives at below the poverty line in which 23% are at urban area where as 44% at rural area. The World Bank describes Nepal as one of the least developed countries in the world an annual per capita income of US \$227 that is below the extreme poverty line of US \$ 275 per annum. However , over last decade the country has made considerable progress reducing poverty. Poverty rates declined across all of Nepal's development regions and ecological belts:

Headcount poverty rate declined from 42% to 31% between FY95/96 and FY03/04

Source: Background and case study of settlement and slum Improvements in Nepal: the role of the urban poor in Katmandu

2.2 SQUATTER SETTLEMENT

In the context of Nepal squatter settlements are defined as the informal settlement of urban poor, marginalized and immigrants on non claimed land(joshi and Bojonness, 1987) and inhabitants are known as 'Squatters' and 'Sukumbasi'. The term Sukumbasi is literally landless. The origin of these settlement in Kathmandu valley can be traced back to the 1950s when the rural migrants began to move into the capital, in search of better livelihood(Lumanti, 2002).

According to the Literature available in Website www.gdrc.org/uem/squatters/define-squatter.htm, *Urban Squatters and Slums* there are essentially three defining characteristics that helps us understand squatter settlement: the Physical, the Social and the legal with the reasons behind them being interrelated.

a. *Physical Characteristics:*

A squatter settlement, due to its inherent "non-legal" status, has services and infrastructure below the "adequate" or minimum levels. Such services are both network and social infrastructure, like water supply, sanitation, electricity, roads and drainage; schools, health centres, market places etc. Water supply, for example, to individual households may be absent, or a few public or community stand pipes may have been provided, using either the city networks, or a hand pump itself. Informal networks for the supply of water may also be in place. Similar arrangements may be made for electricity, drainage, toilet facilities etc. with little dependence on public authorities or formal channels.

b. *Social Characteristics:*

Most squatter settlement households belong to the lower income group, either working as wage labor or in various informal sector enterprises. On an average, most earn wages at or near the minimum wage level. But household income levels can also be high due to may income earners and part-time jobs. Squatters are predominantly migrants, either rural-urban or urban-urban.

c. *Legal Characteristics:*

The key characteristic that delineates a squatter settlement is its lack of ownership of the land parcel on which they have built their house. These could be vacant government or public land, or marginal land parcels like "undesirable" marshy land. Thus when the land is not under "productive" use by the owner, it is appropriated by a squatter for building a house. It has to be noted here that in many parts of Asia, a land owner may "rent" out his land for a nominal fee to a family or families, with an informal or quasi-legal arrangement, which is not however valid under law.

There are a number of names by which squatter settlement are described These are:

- Informal settlements
- Low-income settlements
- Semi-permanent settlements
- Shanty towns
- Spontaneous settlements
- Unauthorized settlements
- Unplanned settlements
- Uncontrolled settlements

Generally the reasons why do people live as a squatter can be generalized in following main reasons

Internal reasons -include, lack of collateral assets; lack of savings and other financial assets; daily wage/low-income jobs (which in many cases are semi-permanent or temporary).

External reasons- include, high cost of land and other housing services; apathy on the part of the government to assist them; high "acceptable" building standards and rules and regulations; lopsided planning and zoning legislation.

Slum & squatter settlements represent a series of trade-offs between -		
poor living quality	<i>and</i>	close proximity to jobs and markets
poor quality of houses	<i>and</i>	low affordable investment in housing
no housing	<i>and</i>	tenure insecurity
no access to infrastructure	<i>and</i>	informal and intermittent supply of urban services

Source: www.gdrc.org/uem/squatters/define-squatter.html

In the context of Nepal, the main problem on the squatter settlement are basically of

- Services and facilities
- Housing condition which is very unhygienic and poor
- Water supply and sanitation(toilet), drainage
- Electricity. (Upgradation of Squatter settlement in Kathmandu, Kishor Thapa)

Many of squatters are engaged in informal income sectors. There is lack of public authorities, lack of policies towards squatter. Unaffordable rent, high land price etc are the major reason for the squatting in Kathmandu valley. So basically it should be dealt with the upgradation of squatter through the public participation. The upgradation of existing squatter settlement are tenure ship, standards for physical development and scale of the upgradation project.(Thapa, Kishor " upgradation of Squatter settlement in Kathmandu, Master thesis, Department of Housing, SPA New Delhi)

2.2.1 Characteristic of Slum and Squatter communities in Nepal

Table 3: characteristic of slums and squatters

Slum communities	Squatter communities
Inadequate basic infrastructure	Inadequate basic infrastructure
Inadequate services	Inadequate or non existence services(due to lack of legal documents)
Permanent housing but ruined and deteriorated houses which are very vulnerable to natural disaster.	Permanent and temporary housing with brick, block with CGI sheet and even with Khar, Bamboo, plastic etc
Poor sanitation condition	Poor sanitation condition
Legal ownership	No legal land ownership, however some have permission from ward to stay there.
Low status occupation such as sweeper, butcher etc	Mixture of occupation, mainly labors

Source: Lumati data and 2000 household survey

2.2.2 Causes of squatting

There are too many reasons behind the squatting the land. Basically it is found that there the squatting causes are

- Highly urbanization process
- Political exploration
- Lack of government policies
- Escalating prices of land and housing
- Poverty
- Wrongly understood and misinterpretation of Democracy. Etc

2.2.3 Socio-economical Indicator of squatters

The indicator of the squatter settlement are

- High population density
- High household density
- Population growth
- High proportion of economically active population
- High heterogeneous community

2.2.5 The Development Process of a Squatter Settlement

There are two reasons for this: one is internal to the squatter, and the other is external. Internal reasons include, lack of collateral assets; lack of savings and other financial assets; daily wage/low-income jobs (which in many cases are semi-permanent or temporary). External reasons include, high cost of land and other housing services; apathy and anti-pathy on the part of the government to assist them; high "acceptable" building standards and rules and regulations; lopsided planning and zoning legislation.

These reasons leave no option for the low-income householder to squat on a vacant piece of land. The actual squatting is done either by a "slum lord" or simply a initial small group of core squatters. The slum lord appropriates a piece of vacant land, subdivides it and "sells" it to various households for the purpose of building a house. Services like water-supply or electricity may be provided either by this person or by the organization of the squatters, usually at the community level. The core group squatters are a small number of families who, almost overnight, occupy a piece of land and build a rudimentary and temporary shelter. Later, depending on the degree of threat of eviction, this may be upgraded to a permanent and more families may join this group.

There are two distinct processes involved in the formation of a settlement. One is the organic and induced processes. The organic process refers to the forces and pressures which are initiated from within the settlement and squatter. They evolve naturally, without any outside intervention and using internal resources of the family or settlement for development, such as labor, locally available materials etc. The induced process refers to the "inducement" set up by agencies and organizations which are

external to the settlement. Operating with objectives and goals on a larger, city-wide scale, they initiate program and projects for the overall development of the settlement. Both these put together act on the growth of a squatter settlement, through a series of consolidative stages of development. These stages are conclusive in their outcome, in the sense that they represent a continuum with one stage or process overlapping and even running parallel to each other. They are also cumulative in their effects and not exclusive.

2.2.6 Future Role of Squatter Settlements in Urban Housing.

Squatter settlements in urban areas are inevitable phenomena. As long as urban areas offer economies of scale and agglomeration economies, large cities will always continue to grow attracting migrants from rural and smaller urban areas, leading to more squatting. There is no universal "quick-fix" solution that can solve all the problems of squatting in all parts of the developing world. Considering the inevitability of squatting, the need is primarily for a change in attitude towards squatting, squatters and squatter settlements. One such approach that has been receiving considerable attention from various government and public authorities has been the "enabling" approach, where instead of taking a confrontationist attitude, governments have strived to create an enabling environment, under which people, using and generating their own resources, could find unique local solutions for their housing and shelter problems.

2.3 APPROACHES TOWARDS A SQUATTER SETTLEMENT

2.3.1 Approaches towards a Squatter Settlement

Considering the magnitude and scale of the housing deficit and the lack of concerted action or inadequate response of government agencies, there is no doubt of the positive role that squatter housing plays in housing the millions of poor families. The main question of land ownership and over utilized infrastructure and services will, however, always remain unanswered. Successive generations of governments have recognized this and a number of approaches have been viewed in finding a solution to the dilemma of squatting. The two popular approaches widely used by the public authorities in other places of world have been settlement up-gradation and sites-and-services. Settlement up-gradation has been an option where a compromise has been reached by the land owner and on a sharing basis, the squatter has been allowed to continue on the land parcel, but with a significant up-gradation of the settlement's infrastructure and services, including, in some cases, land leases or ownerships. Where such land compromises or sharing has not been possible, the squatters have been relocated to another location, where varying levels of "sites"-and-"services" have been provided, with, again land lease or ownership. Land sharing is an approach which has brought about considerable settlement improvement by the initiative of the people themselves. The squatter, after having organized themselves into a viable organization, have initiated negotiations with the land owner and have "shared" the land, giving the prime locations of the land (for example, the side facing a road) to the owner and using the remaining for their housing, but in a more organized and improved manner. The role of non-governmental and voluntary organizations has to be emphasized in this respect, in mobilization of the people into an organization, in training and educating them, in forming a link with the authorities, and in various other catalytic ways. As a complement to this, the participation of the community of squatters, in improving the quality of their settlement is also an important resource that has to be tapped for improvement. Commonly, community credit program, for example, are used as a rallying point for bringing the squatters not only because money itself is important, but also because of the externalities that it can generate.

2.3.2 Land Sharing in Bangkok

Rapid urbanization are intensifying the competition for land between different needs and uses, such as infrastructure, housing, industries, commercial use and recreation. In particular , land for low cost housing development in suitable locations, in suitable locations, near employment opportunities is becoming increasingly scarcer. As many slums have developed prime-location sites, land sharing can provide situation. Indeed it " has become a realistic compromise between landlords slum dwellers". It has proved to be a good way of avoiding forced eviction.

In short land sharing requires an agreement between land owner and land occupants(tenants or squatters). Under this agreement the land owner develops the most economically attractive part of the plot and the dwellers built houses on the other part with full or limited land ownership. The system is based on the principle of densification, whereby the existing parcel of land is used more intensively .For land sharing to be successful, cross subsidies must be maximized

Land sharing was one of the strategies adopted in the "Partners in Development" program in Naga city, the Philippines. Other strategies included various modes of land acquisition such as direct purchase, land swapping, community mortgage and resettlement. The program brought the number of benefits : it institutionalized of fictional mechanism for resolving land owner occupants dispute; living condition were improved through in situ upgrading ; and victims of eviction and demolition were relocated to appropriate site. Livelihood opportunities are also provided. The program thus developed innovative strategies to mitigate the adverse impacts of urbanization

Land sharing has already been use successfully to improved security of tenure in Bangkok Thailand. Between 1982 and 1994, seven land sharing project benefited 6800 household

The projects aimed to attract private development on lands occupied by slum dwellers, and to move the slum dwellers into new housing on site using cross-subsidies from commercial development. Seven land sharing agreements were concluded that were universally praised as models for urban redevelopment, given that they managed to accommodate commercial development without displacing resident slum dwellers.

The Land Sharing Schemes in Bangkok (1977-1997)

The original Bangkok land sharing cases succeeded in resolving seven long-simmering land disputes between land occupants and landowners in central areas of Bangkok by re-housing almost 10,000 low income families on the same sites they were occupying. While the seven settlements and their land sharing arrangements were diverse, they shared a number of key characteristics. First, all but one of the original settlements was located on public land. Second, the land sharing arrangements were concluded with the intermediation of local and international housing professionals, a wide range of civil society actors, as well as public authorities, including (in five cases) the National Housing Authority and (in two cases) high-ranking military officials. Third, in all cases, slum dwellers had financed a portion of the cost of their new land and housing themselves, through loan schemes.

Table 5.1 Overview of the seven cases in Bangkok and their land sharing outcomes.

No. of Families	Total Area In hector	Landowner before leased	Negotiation period	Intermediary organization
1250	8.5	CPB lease to developer	1977-1981	NHA, Treasury
500	1.6	Treasury Department lease to developer Private land-owners lease to developer PAT	1979-1982	Non

Summary of outcome for slum dwellers

2.4 ha. reserved to re-house residents; 850 high-rise units leased to community by CPB on 20-year leases 0.87 ha. leased to 198 remaining families

No. of Families	Total Area In hector	Landowner leased before	Negotiation period	Intermediary organization
63	1.6		1978-1983	NHA, Treasury
7,500	69		1982-1985	NHA, BMA, Military
143	1.1	KPB	1984-1987	NHA
30+	0.95	CPB	1982-1989	NHA
350	N/A	CPB	1989-1997	None

0.32 ha. sold to 67 remaining families 11.5 ha. sub-leased to 1200 families for 20 years, via NHA

Housing co-operative purchased 0.60 ha for all families, with loans from KPB

0.65 ha. sub-leased to 200 families (including newcomers), via NHA All families relocated to two high-rise buildings owned by CPB

Abbreviations: BMA = Bangkok Metropolitan Authority; CPB = Crown Property Bureau; KPB = King's Property

Bureau; NHA = National Housing Authority; PAT = Port Authority of Thailand; ha. = Hectare

2.3.3 "The Baan Mankong Program" (Scaling Up Slums And Squatter Settlements Upgrading in Thailand)

These are generally government funded programmes that provide support for some physical improvements in infrastructure or housing. The inhabitants of the settlements to be upgraded are mainly recipients or beneficiaries to the projects decided by government and implemented mainly by contractors. This program is basically to the urban poor community organizations in large scale to have ownership and be the main actors in implementing upgrading process which integrates management of all related

physical, land-tenure, economic and social activities through flexible financial support. The upgrading should also bring significant change and strengthening of the social system and the internal relationship of people in the same community. Upgrading must also seek to work at the scale of the city, finding solutions for all urban poor groups, including those with very low incomes and very limited capacities to pay. If reconceived in this way, 'upgrading' can be a powerful interventions to rebuild strong social collective unit among poor people communities and to become basic safety net for poor members in the community, to reduce poverty and support decentralization and 'good' local governance. "The Baan Mankong Program" launched by the Thai government in 2003 and implemented through the Community Organizations Development Institute (CODI). The Thai Government have approved total grant of about 270 US\$ million which accounts for about 25-28% of total Arusha Conference, "New Frontiers of Social Policy" – December 12-15, 2005 investment. The programme is unusual both for its scale and for the way it is structured – with support provided to community-organizations formed by urban poor groups to develop their own comprehensive upgrading and land development programmes. This support is provided through funding for infrastructure and housing loans to community organizations. This support for community organizations to develop their own programmes also supports their capacity to develop collective responses to many of the other problems they face.

2.3.4 The Kampung improvement program in Indonesia (KIP)

Kampung Improvement Program (KIP) in 1969 was a substantial upgrading program in Indonesia, which deals with the on-site upgrading of existing low-income settlements referred to as Kampung through provision of basic infrastructures. KIP is an attempt to meet minimum infrastructure needs of large numbers of urban poor at low cost. The program features at upgrading and adding community infrastructures while retaining most of the existing housing stocks concentrating on the provision of paved roads, walkways, drainage canals, water pipes and communal water taps, sanitary latrines, garbage collection and disposal facilities. Provision of social facilities including primary schools and health centers were also part of the program components, which most residents find difficult to attain by themselves. One of the features of KIP is that it never attempted to deal with the issue of land registration and

the granting of land titles to for Kampung residents.(Anzorena,S.J., 1993 and Taylor, 1987)

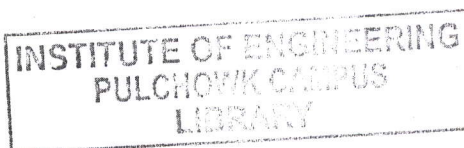
The program made significant impacts on the residents as they made larger expenditure on home improvement by expanding dwelling units and incremental utility improvements by ensuring security of tenure if not legally but in the long run with improvement and consolidated housing conditions. This has contributed to increased house values benefiting homeowners; however renters tend to be affected by higher rental value thus occupying less space. The evaluation study of KIP also suggests that there is little mobility in improved settlements than unimproved settlements, in fact in-migration in unimproved Kampung are higher than in improved Kampung.

Though KIP is a significant program for the upgrading on Kampung, it lacks components of direct socio-economic benefits, such as skill training, technical assistance for management or the provision of local credit for Kampung business, which might have possibly, generated rapid and substantial economic impacts. Therefore upgrading programs are also suggested to focus on social aspects directly affecting the health and social needs of people, though the limiting program's scopes to basic and modest infrastructures would simplify the implementation procedures. Sustainability of the programs also depends on the degree of impacts due to socio-economic interventions

2.3.5 European continent

Though developed, European countries also suffer from the problem of the slum dwellers. Here, the problem is not only related to poverty and homeless, but also in regards with social movement and search of alternative culture as well.

Slums are illegal in Germany, yet they are found in big cities as Frankfurt and Hamburg. In Italy, vacant lands are encroached for the establishment of social centers whereas in Spain during 1960 and 1970, increase of migrants from rural to urban areas resulted in slums due to homelessness. In mid 1980s, thousands of slums were legalized but Urban Regeneration followed by 1992's Barcelona Olympic revived the slums' problem again.



In 2003, there were around 15,000 slums in England and Wales. With different view apart from other countries, England and Wales took slums as civil not criminal; according to which by fulfilling few needful, slums can occupy other's vacant house and even landlords need to take necessary legal process to evict them. There was a policy to pertain for legal ownership, if anybody stays in other's vacant land for continuous 10 years without any legal compliance but proposed act in 2002 has made provision to take consent of landlord for legal ownership of such vacant lands.

But in Netherlands, if any building is vacant for 12 months and if the landlord has not made any contract for rent, those buildings can be occupied legally. Those who own such buildings inform the real landlord or the police.

2.3.6 Indian Practice

2.3.6.1 Dharavi Redevelopment Scheme

Dharavi was once an isolated settlement on the outskirts of Mumbai. It was unwanted land, rendered useless (due to the difficulty in traversing its swamps and marshes). Except for its wildlife and the fishing village located near it. Since then, Dharavi has developed into crowd collection of over 80 neighborhoods. These neighborhood house an approximate 500,000 to 1000000 residents.

Back in 1971 the Indian government enacted the Maharashtra Slum Area (Improvement, Clearance and Redevelopment) Act which drew an operational framework for preparing and submitting proposals for the modification of the development plan to the Greater Mumbai and also create the Slum Rehabilitation Authority(SRA). According to Act SRA "Declared as a planning Authority, to function as a local Authority for the area under its jurisdiction.

In 2004 the Maharashtra state government accepted a \$3-billion proposal of Mukesh Mehta for the redevelopment of Dharavi.

Firstly the actual slum dwellers are identified through the Voter's list. According to the list there are 12000 are actual occupants of hutment and they are subjected to eligible for rehabilitation. Each family are allotted a self contained house of 225 sq.ft carpet area free of cost. Eligible slum dwellers will be given rehabilitation tenants in Dharavi.

Dharavi is one of the largest and highly populated slum in Asia. The Dharavi redevelopment is implemented through the slum Rehabilitation Authority (SRA) according to the norms of Slum rehabilitation Act 1971. In 1980s the state of Maharashtra, India introduces the redevelopment strategy. In contrast to the traditional housing improvement strategies that focus primarily on the legalizing the land tenure of residents, slum redevelopment is more complex strategy. It involved the demolition of slums and redevelopment of new and higher density, medium rise apartment blocks, including entire cross subsidized housing for the original slums dwellers. Mumbai experience illustrates that contrary to the conventional focused only on private right. Furthermore, policy must be based on a differential view of property right the physical attribute of the real property and the interplay among property right, property value and physical attribute. Second there is a consistency among slums dwellers for complex initiatives, like redevelopment.

Under the slum redevelopment schemes, 900000 huts spread over 2335 slums were replaced with the apartments proving 225sq.ft per family. During the implementation of this project, the resident were provided with transit tenements, in close proximity of Dharavi. The development plan for the Dharavi has many amenities such as wider roads, electricity, ample water supply, playground, schools, socio- culture centers etc. slum dwellers have started forming housing societies for the general welfare of dweller.

The state provided administrative support and private builders erected free housing for slum dwellers in exchange for being allowed to build flats on the newly created surplus land, which they could sell at market rates. Slum dwellers have started forming housing societies, for the general welfare of dwellers.

Then there is the problem of how to prevent the slum dwellers from selling their new flats and starting new slums somewhere else.

The plan also include improvements to infrastructure such as wider roads, electricity, ample water supply, playgrounds, schools, colleges, medical centers, socio-cultural centers etc. for proper implementation Dharavi has been divided into 10 sectors and sectors will developed by different developers.

Changes to to plan

Greater participation of civil society and community based groups in the planning process has given rise to a number of amendments to the project framework. In 2000, the DRP authorities adopted into the projects a set of urban design guidelines suggested by the advisory group. The most important guideline adopted was that rehabilitation structure should not exceed a height of 8 storey, or 10 in exceptional cases where the building abuts an open space measuring 25 meter or more. Under the original DRP, rehabilitation-structures went as high as 20 -30 storey. Lower heights will increase light and ventilation; decrease maintenance cost and reduce densities. Based on the Advisory group's recommendation, the DRP authorities have also increased the minimum open spaces between rehabilitation structures from 6m to 12m, as road of passages, with roads comprising a 2.5m wide footpath.

2.3.6.2 Slum upgradation scheme(Surat Municipality corporation)

Slums are an integral part of urban areas and contribute significantly to their economy through their labor market contributions and informal production activities. The density of slum shelters is substantially high, making slum areas highly congested and without having facilities of drinking water, roads, street lights and drainage.

Unhygienic and dismal dirty environment prevailing in the slums is not only the source of spreading diseases in the city, but also it is a disgrace for those who live in it. It is also disgrace for the authority and road passers, even though slum dwellers are contributors to the city's growth and prosperity.

The poor represent an extremely important element of the urban labor force and contribute substantially to total productivity and labor market competitiveness. Surat Municipal Corporation has recognized the contribution of the urban poor in helping to build city prosperity and decided to make sufficient provision for them to have access to affordable land, house site and services.

Looking to the physical condition and life of slum dwellers, it is quite essential to upgrade the slums by providing site and service schemes and ready built housing schemes.

Though slum shelters are being upgraded with all basic infrastructure facilities, the ultimate environment remains typical slum environment.

City without slums is the goal and objective of Surat Municipal Corporation, for which the Slum Upgradation Cell is its special purpose vehicle. Therefore, to reach this goal, it has been decided to rehabilitate the slums in the EWS housing colonies, which can definitely provide the hygienic environment and help to get rid of typical slum environment. The slums so upgraded will definitely provide a hygienic and aesthetics importance to the city.

The functions of the Slum Upgradation Cell can be broadly classified into two categories as below :

Slum Upgradation

Surat Municipal Corporation is providing basic infrastructure facilities like water supply, drainage, roads, street light, nursery schools etc. since many years. 10% of municipal budget is allocated every year under section 63 / 2 for providing the basic infra-structure in slum area. Till March 2006, about 70-80% of slums have been provided all the basic services. It is estimated that about 125 crores of rupees has been spent for this mission. However this activity is mainly carried out by zones of Surat Municipal Corporation.

Slum Rehabilitation

As per this category the slum dwellers and the citizens falling in the EWS category can avail ready built houses on a different plot of land then the existing slums in a total new hygienic environment.

Site & Service Scheme:

Surat Municipal Corporation had started the site & service scheme on large scale from the year 1994. The slum pockets located on important public roads as well as on important public lands required for city development was vacated by shifting the hutments. The effected hutments were shifted to other SMC land by providing them individual open plot of 3.0m x 5.0m size with all basic infrastructure facilities. The cost of land and infrastructure is borne by SMC. About 12,200 households have been rehabilitated upto May 2006 on 22 various sites with the total expenditure of Rs. 58.60 crores.

Built House Approach:

Surat Municipal Corporation has implemented several housing projects under Government's housing schemes for urban poor. Also, slum dwellers on road alignment and other such inappropriate location have been shifted to the houses built under these housing schemes. The built house approach for the rehabilitation of slum dwellers and urban poor is carried out under the following three categories.

- i. EWS Housing (Economically weak)
- ii. VAMBAY Housing(Valmike Ambedkar Awas)
- iii. LIG Housing (Low Income Group Housing)

2.3.6.3 Slum improvement program of Calcutta Metropolitan Development Authority(CMDA)

It took the massive program of Bustee Improvement through upgradation of infrastructure and civil facilities in the bustees. According to the act "Slum clearance and Rehabilitation of Slum Dweller Act". The slum dwellers were rehabilitated elsewhere in better houses, they were rehabilitating at same location in three to four storeyed block. Another program was "Bustee Improvement Program"

This Bustee(Squatter colonies) improvement program had the following components:

- Conversion of existing latrine to sanitary latrines with septic tank or chlorination chamber discharging into surface drain. one latrine was for 25 persons.
- Potable water through tap connection or community stand for each 100 person at rate of 90 liters per capita.
- Surface drainage through underground conduits connected to underground sewer system or open surface drain discharged into nearest open drainage channels
- Paving of roads, streets and pathways within bustees. Along the environment improvement program the social development health and education program was launched with integrated manner.

- In this project the plot size was given 30 - 40 sq.m

2.3.6.4 Slum rehabilitation/upgradation in Kanpur

Slum pockets in Kanpur are called "Ahatas. 89 Ahatas comprising about 20,000 households. And it was selected 28 of these of Ahatas. For the upgradation of the slum the land was acquired under the upgradation components and was proposed to be provided with water supply, sewerage, roads, drainage, street lighting, parks and community halls.

Loan facilities were connecting to water and sewerage networks or houses improvements loans were provided according to their affordability. Small business center and common facility center were provided in some of the slum pockets to assist small business activities by the Dwellers.

The silent feature of these components is providing land tenure to the present occupier on the leasehold basis. Improved design package was offered to about 90% of slum household.

About 99% of the components cost is for directly chargeable items(land, onsite infrastructure and funds for home improvement) Which would be fully recovered through improvement charges and load repayments. The remaining 1% of components cost is for common facility center. which would be partly recovered through charges levied for the use of center. Off site infrastructure for slum upgradation is included in environmental sanitation components and would be partly recovered through the user charges.

The different pricing mechanism would provide beneficiaries with choice for adjustment of plot sizes, exchange within the ahats and further sub division. Plot of 15 sq.m would be affordable up to the 10% of the slum income distribution. Beneficiaries on plots less than 50 sq.m will be free to construct or improve the housed without requirement of building permits subject to only minimum setbacks. Land tenure would be provided to the beneficiaries through 90 years leasehold titles.

2.3.7 Upgradation program for squatters settlement in Nepal

In Nepal the upgradation program has been carried out by the NGOs with the local people participation. There are few upgradation work have been carried out in the context of Nepal such as

2.3.7.1 Balaju Program (1990-1991)

This program was carried out by the a local NGO called Women in Environment. The main objective was to upgrade the living standard of the squatter community. And to promote the environment awareness to each household. To achieve these objective various activities were carried out such as Community motivation, river bank stability, solid waste disposal, greenery development , literacy classes for the awareness, plantation along the river bank, construction of community halls etc. pavement and surface drainage was overlooked in this program.

2.3.7.2 Ramhiti program (1990-91)

This program was initiated by the local NGO. The main objective of this program was to achieve the good environment with the awareness of health, sanitation, drinking water. In this program the various activities were carried out such as literacy classes, construction of toilets, plantation, primary health care, knitting, social activities , and provision of drinking water. From this program the noticeable improvement was the construction of toilet which improved the sanitation problems.

2.3.7.3 Relocation of Squatters (Kritipur Housing)

In 2002, five squatter communities were affected by the Vishnumati Link Road (VLR) project carried out on the bank of Vishnumati river in Kathmandu. After a series of dialogue with the local government and the communities, a fund 'Urban Community Support Fund' was created to address poverty, infrastructure and housing issues of urban poor. The first project of the UCSF was to house the VLR affected families.

The Urban Community Support Fund (UCSF) is a pool of resources which the urban poor can draw on to assist them with the development of their communities. The money will be available on low-interest loan basis and support initiatives such as housing, income generation, education, water and sanitations etc. Because the people themselves can apply for loans they are empowered to identify their own needs and devise solutions, which will be appropriate to their situation and sustainable in the long term. UCSF is established with the financial contribution of Kathmandu

Metropolitan City (KMC), Asian Coalition of Housing Rights, Slum Dwellers International, Action Aid Nepal and Water Aid Nepal. While the role of government is to look after the needs of its citizens, the scope of their responsibilities is often such that certain sectors are overlooked. This has been the case with the squatter communities in Kathmandu. The UCSF facilitated a way for KMC to convert their good intention into action. Through this fund, Nepal's first housing project for the urban poor is being launched at Kirtipur municipality. The beginning of the housing project brings to a close the long process to resettle squatter families who were evicted and made homeless by the constructor of the Vishnumati Link Road over two years ago.

2.4 Policies

2.4.1 National Shelter Policy (1996)

The National Shelter Policy was drafted in 1996 under the DHUD (Department of Housing and Urban Development) is the only document related to shelter issued in the whole country. The main objective are

- To facilitate in the task of constructing the dwellings, repairing, maintaining the existing dwelling units and improving the standard of shelter by adopting land and physical infrastructure and facilities.
- To orient the housing sectors to financial self reliance mobilizes financial resources effectively and promotes the utilization process.
- To clarify the role of the government, non government and private sector, in the fulfillment of the shelter needs and improved the organizational structure by creating the legal institution.
- To adopt the ways of reducing the adverse impact on the environment from the residential dwellings, improve public health health facilities and minimize the impact of natural calamities on dwellings units.

According to the National Housing Survey(1991), by the end of 2006 a total of 2500000 new dwellings units had to be constructed and about 732000 dwellings had to be renovated.

2.4.2 Ninth Five Year Plan (1997-2002)

The main objective of the Ninth Five year Plan has been identified as poverty alleviation. Raising the living standard of the people in the sustainable manner has been recognized as the biggest challenge currently faced by the Nation. In response ,long term ,multi-disciplinary approach to poverty alleviation has been devised with the aim of reducing poverty line from 42% to 32%. The objectives of the Ninth Plan for poverty alleviation include:

- Gradually raising the living standard of the people below the poverty line by reducing the pressure of poverty

- Launching special programme aimed at uplifting the living standards of the ultra poor (those without any means of production and income)
- Socially and economically empowering the backward, deprived and weak communities
- Reducing the concentration of existing poverty by developing physical, social and economic infrastructure

2.4.3 Millennium Development Goal

Following the adoption of the Millennium Declaration by the United Nations General Assembly in 2000, a road map was established identifying the millennium development goals and targets for combating *poverty, hunger, disease, illiteracy, environmental degradation, discrimination against women and for improving lives of slums dwellers* living in the poor settlements. Since Nepal has also signed up for meeting the Millennium development goals (MDGs), efforts are being made for improving the lives of slums dwellers living in the poor settlements.

The Interim Constitution of Nepal 2063 reserves the right of the people to the health, shelter, education, and food security and job opportunity. In addition, it has adopted the policy to ensure the squatters and urban poor with the land and socio-economic security. It is stated that to adopt a policy of providing economic and social security including lands to economically and socially backward classes including the landless, bonded laborers, tillers and shepherds.” It also states that “...the State shall pursue a policy of making special provision based on positive discrimination to the minorities, landless, squatters, bonded laborers, the disabled, backward communities and sections, and the victims of conflict including women, *Dalits*, indigenous tribes, Madhesis and Muslims.

2.4.4 Urban National Policy (2007)

National Urban policy 2063 was formulated with the concept of directing the urbanization process, protecting the urban environment and defining the role of the national and local bodies working in the urban development regions. The main objectives are

- To contribute towards sustainable development and poverty alleviation through achievement of balanced national urban structure by making every development region self reliant via proper distribution of investment.
- **To improve quality of life of urban residents through creation of clean, safe and developed urban environment.**
- To make urban management effective by making local authority legally authoritative and institutionally capable and making effective coordination between different institutions actively involved in urban development.

To achieve that objective the strategies are

- To develop easy supply system of housing and land in such a way that economically backward group can also have access to it.

Policy is

- Inclusion and implementation of programs like housing facilities to landless or low income groups and other income generating activities within poverty alleviation program.
- Provision of easy loan through government or other medium for providing housing facilities to low income groups.

2.4.5 Proposed Act 2064 for management of slums and unmanaged shelter

This proposed act has fulfilled the purpose in a descriptive form. It has described how to define slums or unmanaged shelters. It has made legal provision that any slum family member or depending upon the income of those members should be referred to as slum. To solve this problem, priority is given to set up committees in district level. In these types of committees, the inclusion of the stakeholders makes it helpful in participatory development. The strong side of this act is to collect data/description of slums and unmanaged shelters. There are no any proper data in the context of Nepal. After regulating the law, the slum dwellers acquire land on free or by paying as per the recommendations. The land ownership cannot be transferred in any case. This helps in solving out the long-term problems of the slums. Other strong part of this act is that

providing lands where they find infrastructures such as job opportunities, good environment, less or no flood-prone areas, facility of irrigation, etc.

2.3.6 International recognition

World Bank

World Bank is an old development partner of Nepal and mainly active in the sector of poverty alleviation. World Bank defines urban poverty in 5 dimensions. Those dimensions are: Income/Consumption, Health, Education, Security and Empowerment. Slum problem is one important picture of urban poverty, which is seen more as related to tenure insecurity due to which it becomes hard for urban slums to escape from vicious cycle of poverty.

As shown in figure tenure insecurity discourages investment in housing. In absence of house ownership, it becomes difficult to obtain infrastructures such as drinking water and electricity. It directly affects lifestyle as well as health condition. Increased health problem results in more expenses of hard-earned income, leading into incapability of investment in children education. In absence of education, children become unqualified of getting proper employment which minimizes member for earning money. In absence of sufficient income, loan cannot be obtained and one cannot afford to invest in good and healthy housing. This encourages tenure insecurity and the above cycle is repeated again.

World Bank has forced on two policies about poverty alleviation due to tenure insecurity.

- Provision of land and house to the poor so that they can use their house as productive assets.
- Identifying financial markets to assure house ownership and tenure security.

Poverty cannot be succeeded only by focusing tenure insecurity.

ADB(Asian Development Bank)

ADB is actively working on several development and urban pre requisite Development of Nepal. ADB has some guideline for development programs that can impact on squatters too.

Slum and squatters are basically established near river banks. ADB launches the program to manage river banks, road widening and so on which impact the squatters. There is no any compensation while dismantling such illegally builds structure in existing law of Nepal. AS per the guideline of ADB, the affected squatters must be given compensation according to market price.

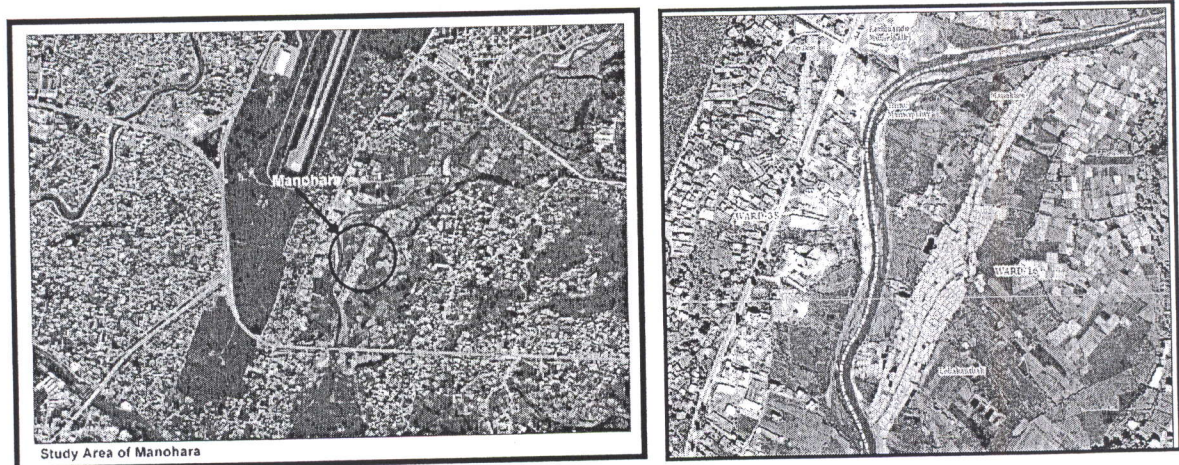
CHAPTER 3: OVERVIEW OF SQUATTER SETTLEMENT

3.1 Manohara Squatter Settlement (Pragati Nagar), Madhyapur-16

Manohara squatter settlement Squatter settlement is located in ward no 16, Madhyapur Municipality along the bank of Manohara River. It is situated on the old Manohara River and in present context, it lies along the river.

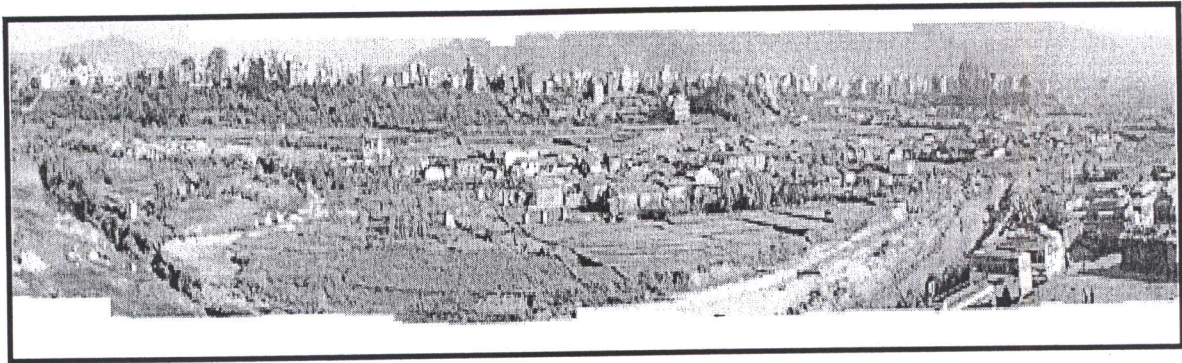
The ward, with the population of 4788 living in 1075 households in 2001(District Profile) The ward has a confluence of huge agriculture land and Araniko Highway on its South east. The Manohara squatter community is situated on the bank of the Manohara River, in the Bhaktapur district of the Kathmandu Valley. The site lies at approximately 1300 m above sea level, in a very congested and polluted area adjacent to one of the main routes into Kathmandu and directly under the flight path of Kathmandu Tribhuvan Airport The total area covered by the settlement is around 16200 sq.m.(around 32 ropani). The site is expanding rapidly

Fig. 3.1 Location of the Settlement



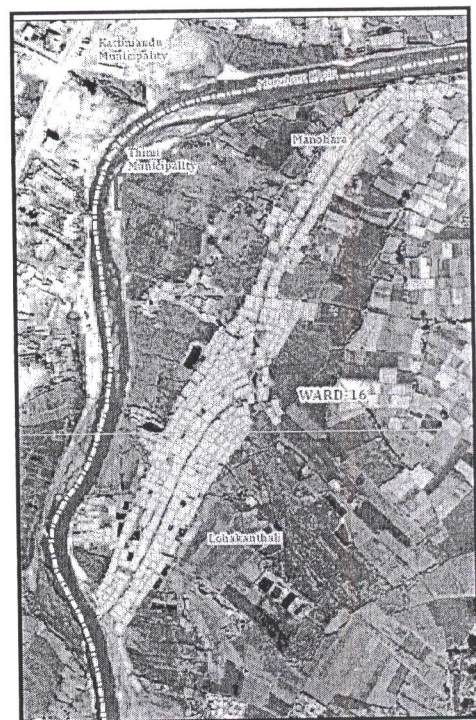
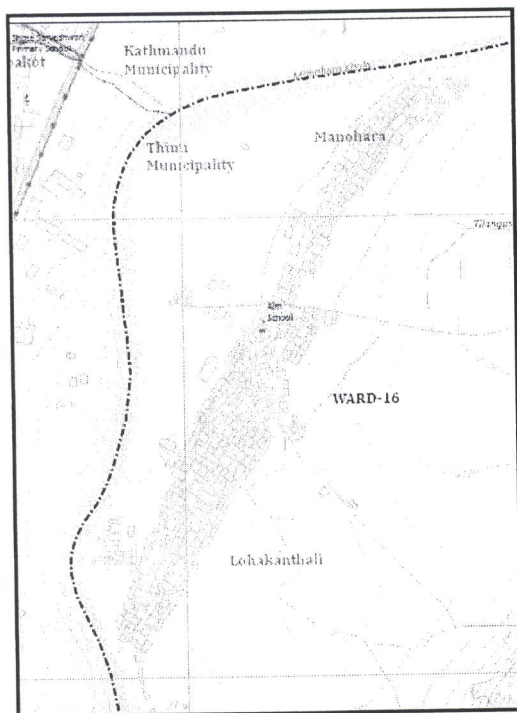
The settlement has the households lined in a linear pattern with compact and row housing units. According to the local community leader, there are 600 households in the settlement excluding the School Building.

Fig: 3.2 View of Squatter Settlement



The Designed questionnaire survey was conducted to the 10% of the households for getting the detailed information. The designed questionnaire is given in the appendix.

Fig: 3.3 Showing the buildings of the settlements

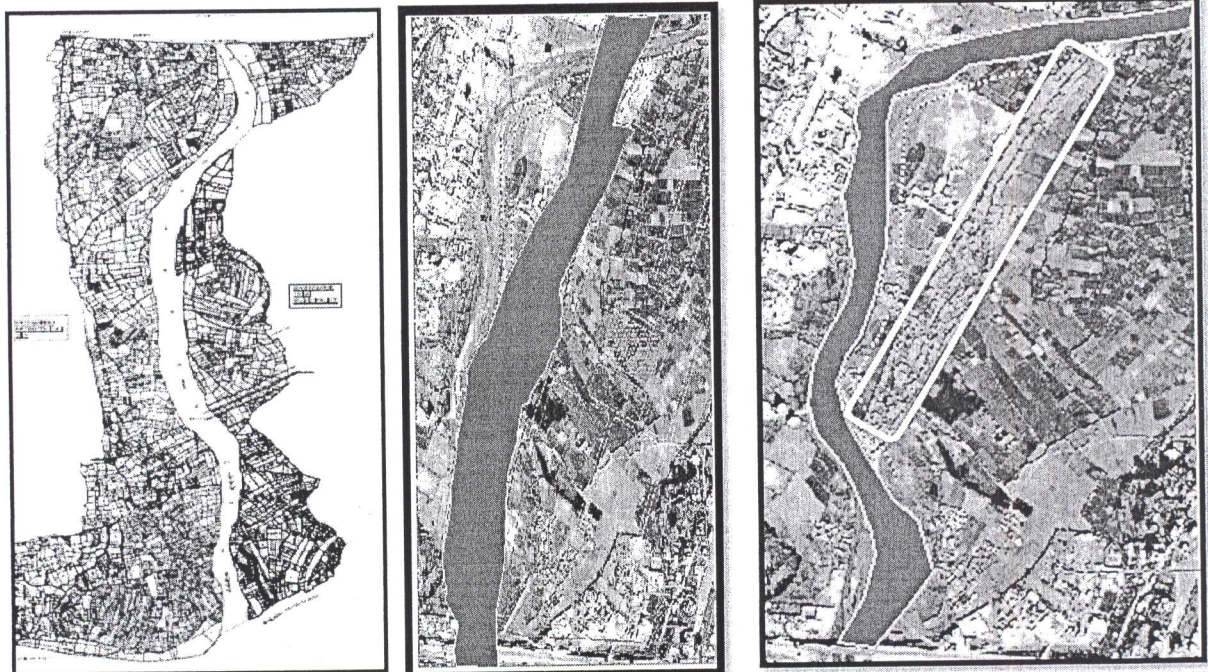


3.1.2 Squatter Settlement Development along the Manohara River

The Manohara River acts as the political boundary of Kathmandu district and Bhaktapur district. The process of squatting has focused on this particular area was the dubious nature of land title in this riverside areas resulting from frequent flooding in the Mansoon season. The flow of the river has been changed a lot from the year 2021(B.S) to 2067 (B.S), the river has been entirely shifted from the original river flow. By changing the flow of river, there is plenty of Land created which is titled as Public Land. within this vacant land the Government of Nepal, Ministry of Agriculture has proposed the Vegetable Market center and the Municipality of Kathmandu and Mdhyapur has jointly proposed the Development Scheme for settlement, the Land pooling (2059 B.S). Unfortunately both of that proposals has not been implemented in this area but the emergence of Squatter settlement.

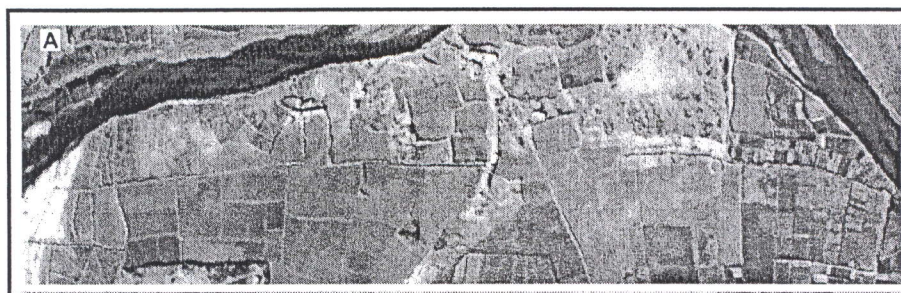
Fig: 3.4 Flow of River in 2021 B.S

Fig:3.5 Change in flow of River 2067B.S



The settlement has not seen in year 2002. But after this year the people has squatted that land for the settlement. It is said that the settlement has expanded from the year 2007. Before this year the settlement has not been seen in this huge amount. One of the main reason for expansion of this settlement is due to the fear of eviction. One of the leader has stated that this settlement has expanded in the period of Prime Minister Sher Bahadur Deuwa and before the Constitutional election. From this statement, the settlement has some political influence too.

Fig: 3.6 Corona Satellite Images 1969.



The satellite image has shown the huge agriculture land along River.

Fig: 3.7 IKONUS Image 2002



it shows the remaining of agriculture land and no presence of squatters along the river in year of 2002.

Fig:3.8 Google Earth 2007



Fig: 3.9 Google Earth 2010



The Image of 2007 and 2010 shows the emergence of squatter settlement and its linear expansion throughout the River Bank after changing the flow of river.

Manohara Land pooling

The land including the vacant land was concluded to develop in 2059-12-26 after the meeting of Kathmandu valley town development committee at Manohara area as the land pooling project, called Manohara land pooling project. The area lies on both sides of the river (partly in ward no. 35 of KMC and partly in ward no. 16 & 17 of Madhyapur Thimi Municipality (MTM)). It is bounded by *Jadibuti-Puranobato* road from west and north, *Hanumate and Manohara Khola* from south and parts of land from ward no. 16 & 17 of MTM at east. The area consists of approximately 3300 ropani of land.

Fig: 3.10 Proposed Land pooling

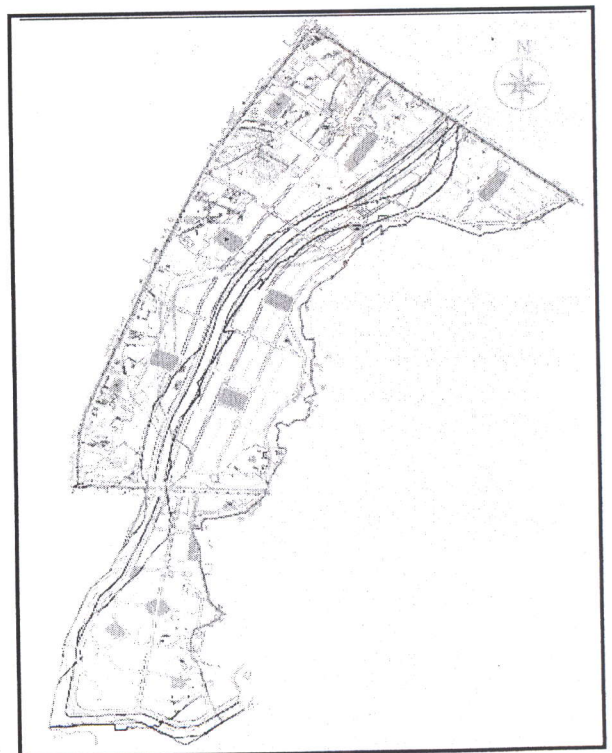
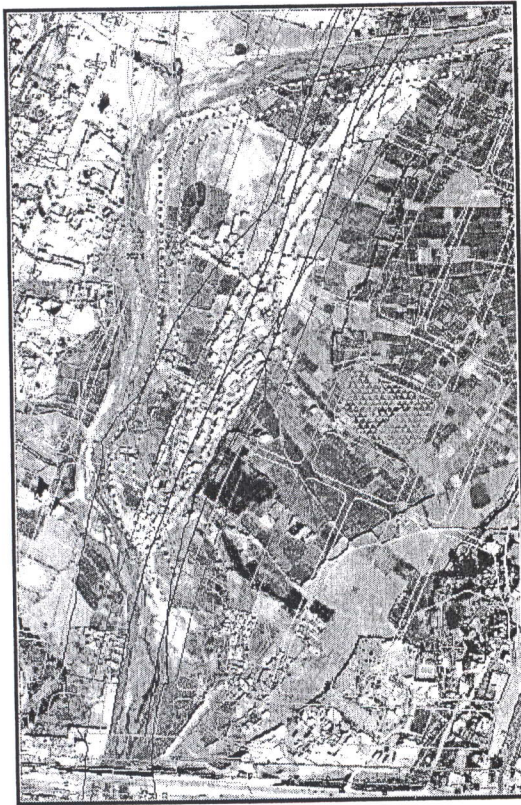


Fig: 3.11 Overlay of proposed land pooling Fig: 3.12 showing 20m ROW of river



It shows that the squatter settlement has lied on the exactly on the river according to the previous flow of river. It shows that the settlement is within in the vulnerable area. And land pooling has proposed the river flow diverted with reference to the previous river flow pattern (2021 B.S)

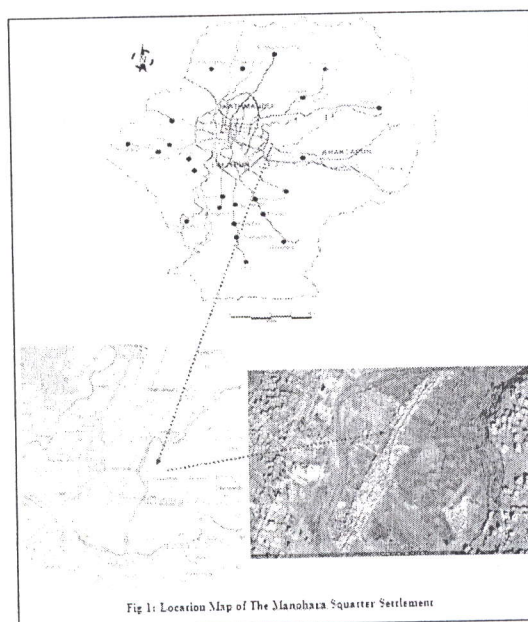
It shows the existing layout of the squatter settlement. With reference to the existing flow of river, the settlement is beyond the 20m from the river.

CHAPTER 4: SURVEY AND ANALYSIS

4.1 Geographical condition

The Manohara squatter community is situated on the bank of the Manohara River, in the Bhaktapur district of the Kathmandu Valley. The site lies at approximately 1300 m above sea level, in a very congested and polluted area adjacent to one of the main routes into Kathmandu and directly under the flight path of Kathmandu Tribhuvan Airport the total area covered by the settlement is around 32 ropani. The site is expanding rapidly.

Fig. 4.1 Location of the settlement



4.2 Demographic Survey

4.2.1 Population and Household

The 40 squatter settlements of Kathmandu valley are providing shelter for about 12726 people (6612 male and 6114 female) (Lumanti 2008) in 2735 household. The average household size of this squatter settlement is 4.7.

Manohara is the largest squatter settlement in Kathmandu valley. 3% of total squatter population of Kathmandu valley lives in this area.

General Demographic data of Manohara squatter-(Lumanti -2008)

Population=2422

Male population=1290

Female population=1132

Total household=589

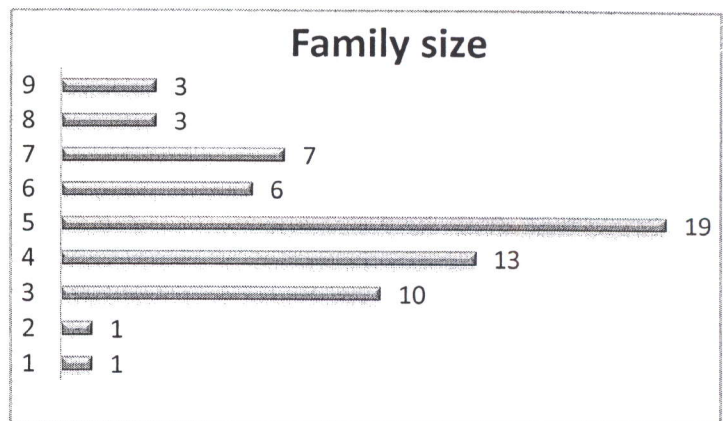
According to the survey (surveyed 10% of total household)

Population= 316

Total population is 3160.

Chart No:4.1: Household size

There are 589 household. The maximum household size is 9 and minimum household is 1. In between them the most of the household have the family size of 5. The average household size of this settlement is 5.01 which is near to National average is 5.45. (CBS 2008).

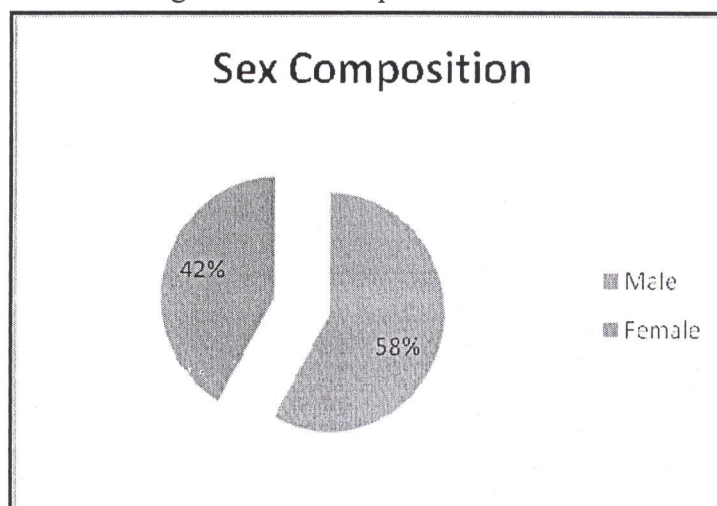


Source: household survey 2010

4.2.2 Sex composition

The National average sex composition is 49.9:51.1. But from the survey, sex composition of male and female is higher of male population

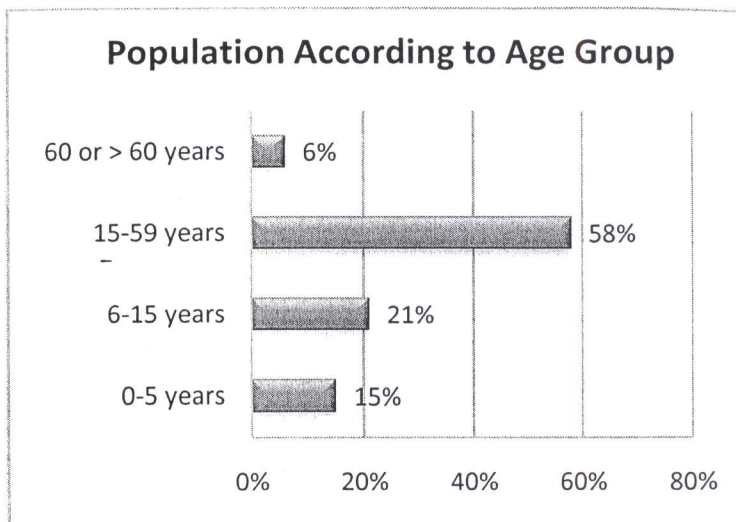
Fig: 4.2 Sex Composition



4.2.3. Age composition

Fig: 4.3 Age composition

According to the survey, the higher population is of age group 15-59 and the less age group is above the 60. This shows the economically active population is higher in number i.e 58%. The decline in the 40-59 and 60+ year age group can be attributed to the life expectancy rate in

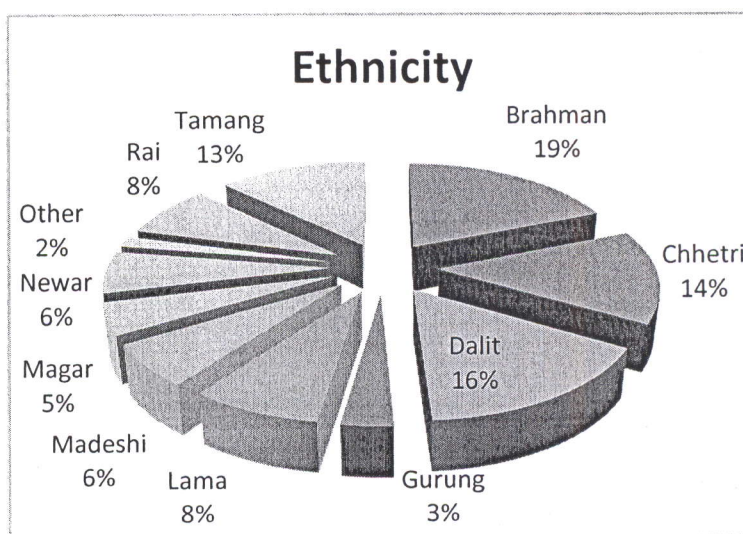


Nepal that averages at 55 years. According to the interview and focus group discussion there is about 80-98% are of male headed household whereas 10-20% are of female which is greater than that of national average female headed household (11%). The main reasons for female headed family are basically of those who are left by their own husband and not supported by their family.

4.2.4 Ethnicity

chart: 4.4 Ethnicity

Squatter settlements are heterogeneous in nature. As the population of the squatters settlements are migrated from various districts. The various caste /ethnic groups are associated with their traditional areas or place of origin. People belonging to a wide variety



of ethnic group are residing in the squatter settlements. The major castes noted are Brahman, Tamang, Chhetri, Lama, Limbu, Rai, Gurung, Newar, Pariyar, Magar, Majhi, Kunwar, Thakuri, Sherpa, Bishwakarma, Deula, Giri, Pujari and many others.

All these castes have been classified into 4 major ethnic groups-Dalit, Janjati, Madhesi and others based on the ethnicity category defined by population Census 2001.

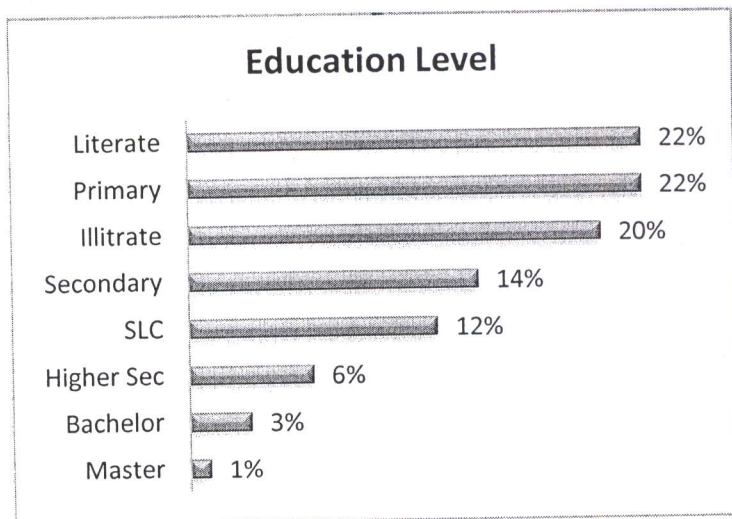
According to the survey, in this settlement the Brahman population is higher i.e 19%. Dalit are of 16% and Tamang are of 13%. The Madhesi are of 6%.

4.2.4 Literacy and Education

Chart: 4.5 Education level

The literacy rate of squatters are 76% (Lumanti 2008) which is very near to National Literacy rate. According to the survey, the level of education is found

Due to the awareness of education about 90% childrens are going



government and Privates schools for the education. According to the focus group discussion, the female population are higher in leaving the schools after the primary education. It is because of the family reason.

In this settlement there is one government school. Childrens went in government schools near by the settlement and few number (10-15%) went in private school. For the edcation service they have to depend on the government school and and few private school which are near to the settlements.

According to the primary survey, in this squatter settlement about 22% can read and write. 22% have primary education, 14% have secondary education, 12% have completed the SLC, 10% have the higher level education including the bachelor and Master level education.

4.2.5 Occupation

It is well known that most of the squatter population relies on daily wages for their income. The survey also shows that about 30% household are mainly dependent on daily wages (unskilled labour). There are some 16% household engaged in service with regular income, some 14% household are doing small scale business and out of Country as a labor force. 13% are engaged in skilled labor and 8% are engaged in self employed work such as knitting, weaving, sewing etc.

Chart: 4.6 Occupation

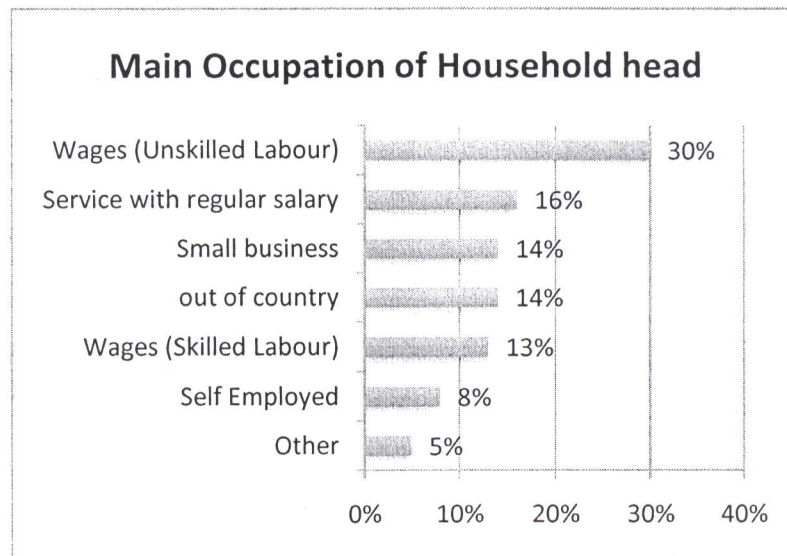


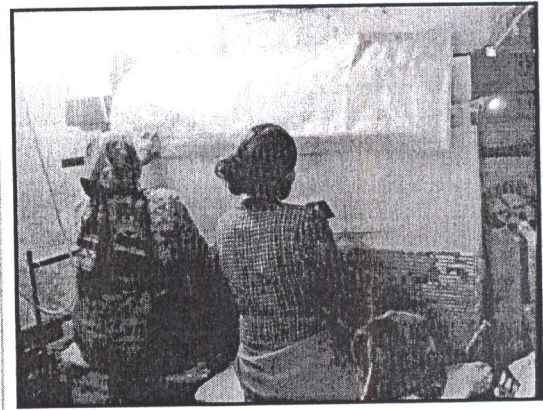
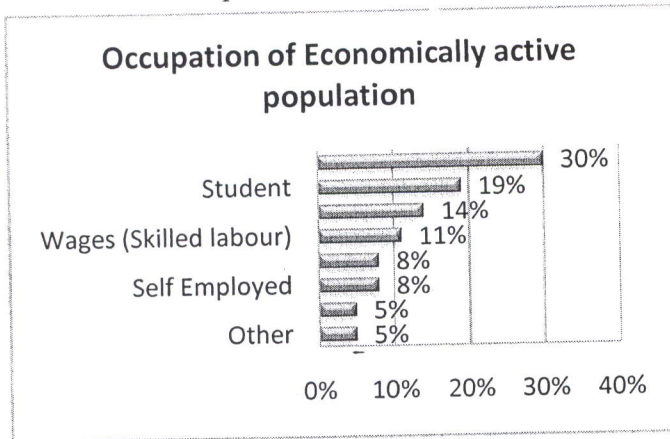
Fig: 4.2 Self helped occupation



There is 6% who went out of country for the work in gulf country.

In this settlement 58% population are economically active. About 29% of the population is engaged in unskilled labor. 19% of the populations are students. 13% are having the services with regular salary. Rest of population is doing skilled labor, self employment and small scale business. Most of the people with small business is small retail shop in the street, street vendors.

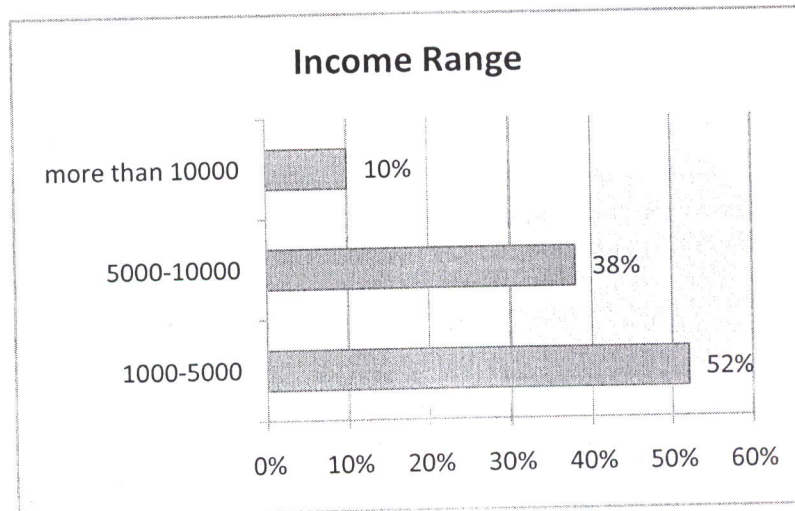
chart: 4.7 Occupation



4.2.6 Income

It is well known that a family's living standard is determined by its monthly income. But it is generally difficult to capture true figure of income from interview as respondents usually do not feel comfortable to disclose their income. Therefore, the data on income should be considered as supportive information only rather than direct indicator of living standard. The survey gathered information on household income by asking the head of household the average monthly income of the family.

Chart 4.8 Income



Source: household survey 2010

Based on the survey, most of the household have the monthly income range is in between 1000-5000. 52% has monthly income in between 1000-5000. 38% has monthly income 5000-10000 and about 10% has the monthly income more than 10,000. They had said the most of the income was spent in food.

4.2.7 Loan

Chart: 4.9 Loan

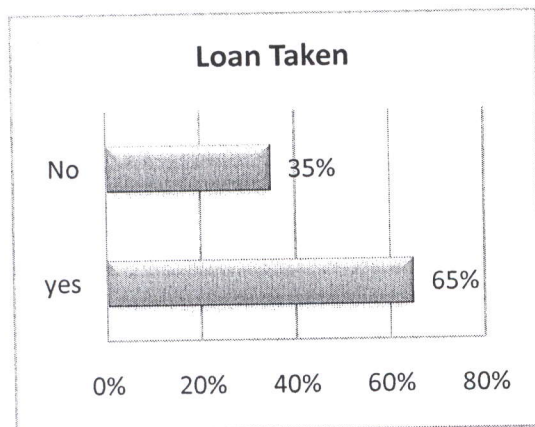
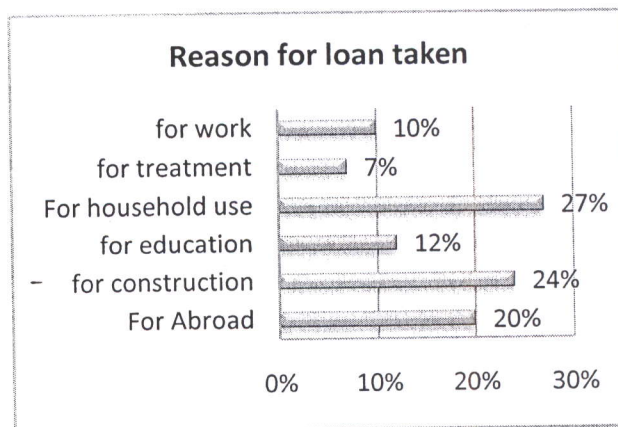


Chart: 4.10 Purpose for loan

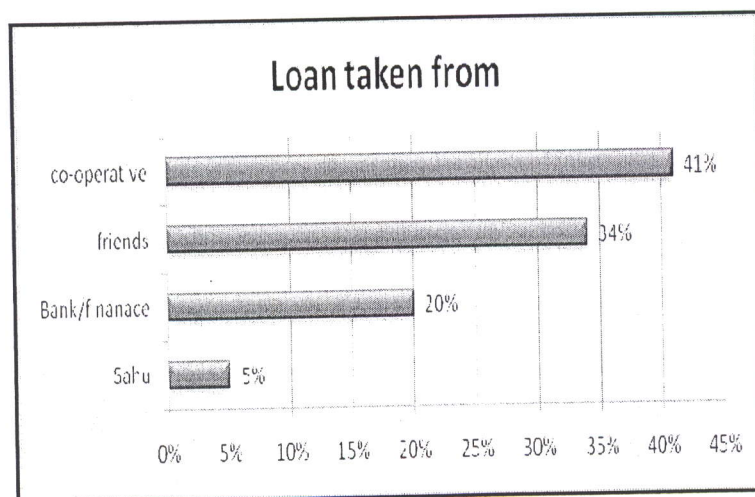


Source: Household survey 2010

Due to the economically incapability of the squatter settlement half of the household has taken the loan for the household use. About 27% household has taken the loan for household use. About 24% household has the loan for the construction of the buildings about 20% has taken the loan for going abroad. 10% household has taken a loan for the work and 7% household taken the loan for medical treatment.

Generally loan is taken from the co-operative. 41% household has taken the loan from the local co-operative whereas 34% household has taken from the friends/ relatives. Only 20% household has approach to bank/ finance for the loan.

Chart: 4.11 Loan taken.



4.2.8 Migration

In the squatter settlement of Kathmandu Valley the people are migrated from 65 district for various reason specially for the work (Lumanti 2008). The major districts from where people had migrated are in the north and north east direction of the Kathmandu Valley. These include Nuwakot, Kavre, sindhupalchowk etc.

The major residents have migrated from from Khotang, Nuwakot, Sindhupalchok, Kavre, etc. the district wise migration pattern shows that the external migration is higher.

According to the survey , 13% are from Khotang which is higher than other district. 11% are from Nuwakot and Sidhupalchwok and 8% from the Ramechhap.

Chart: 4.12 Place of Origin

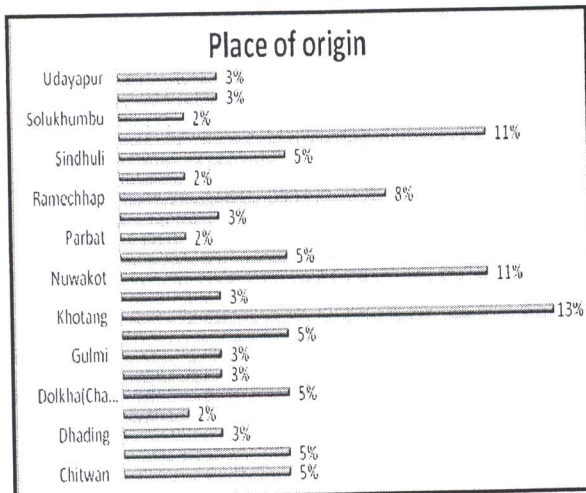
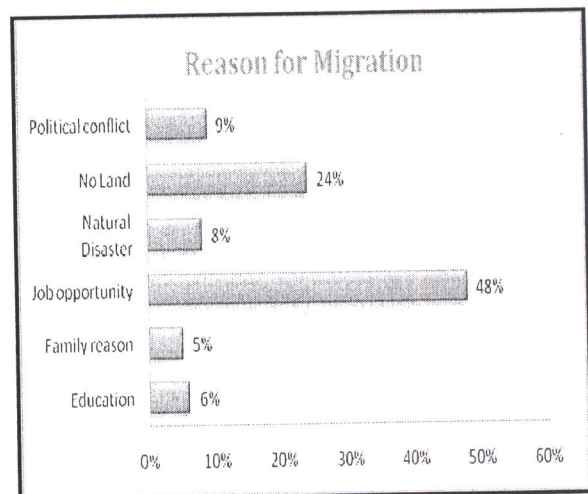


Chart: 4.13 Reason for Migration



Source: household Survey 2010

The squatters have mentioned various reasons such as lack of basic facilities and employment oppertunities in their village,no fertile land for the agriculture. Less economical activities. No land, natural disaster as well the political conflict are the major push factor for the migration from rural to urabn.

From the survey, the main reason for leaving their home town seems the better oppurtunities for the work in the Kathmandu Valley. About 48% of the households respodend that they migrated to the Kathmandu from their village in search of work. They feel thereare more employment oppurtunity in the Valley. About 24% of the household said that they are residing in the squatter settlements as they have no land

anywhere. Rest of the household said that they are leaving their home town for the better education, due to the political conflict as well as natural disaster.

4.2.9 Squatting

According to the household survey most of the household are settled here from 0-5 years. So this settlement is new settlements with compare to the other squatter settlements in Kathmandu Valley.

From the household survey it was found that the squatters in this settlement had initially migrated to some other place in the Kathmandu Valley and they were staying on rent. It was found that a higher proportion of the settler's income was spent on room rent. Gradually they started exploring squatter settlements where at least room rents could be saved and an opportunity could be found to build and improve their living condition by saving certain amount. Then from the relatives and friends they had shifted to this squatter settlement.

Chart: 4.14 Year of squatting

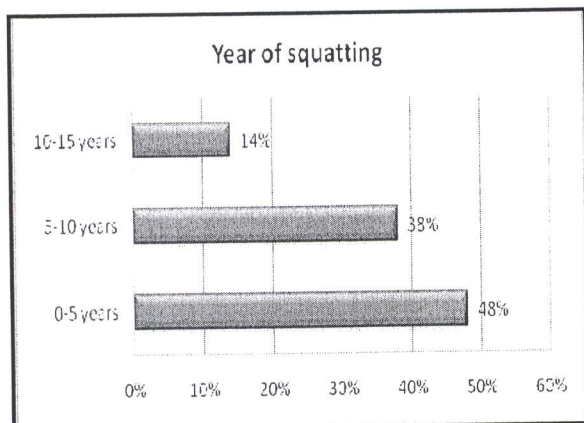
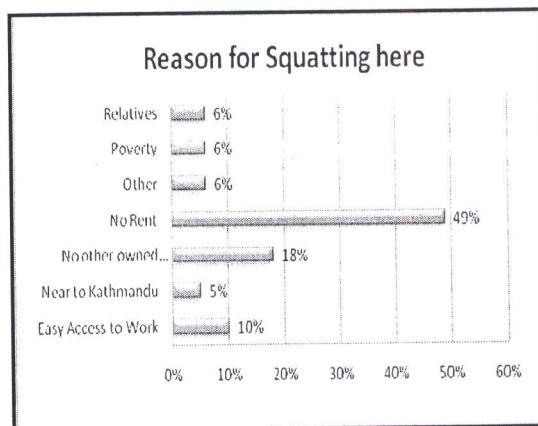


Chart: 4.15 Reason for squatting



Source: Household survey 2010

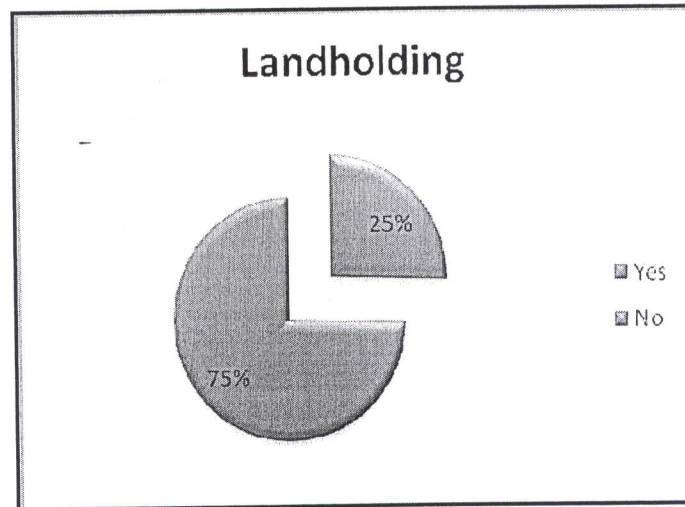
The main reason for the squatting the public vacant land is due to the inability to pay rent and the poverty. The victim of natural disaster, political conflict, no other owned land and house anywhere are the main reason for squatting the vacant land.

According to the household survey the main reason for the squatting in this Manohara squatter settlement is for no need to pay rent.

4.2.10 Landholding/ ownership of land elsewhere

About 30 ropani public lands was squatted by the squatters. Per household squatted the 43.30 sq.m area. The Density per person is 7.8.

Chart: 4.16: Ownership of land

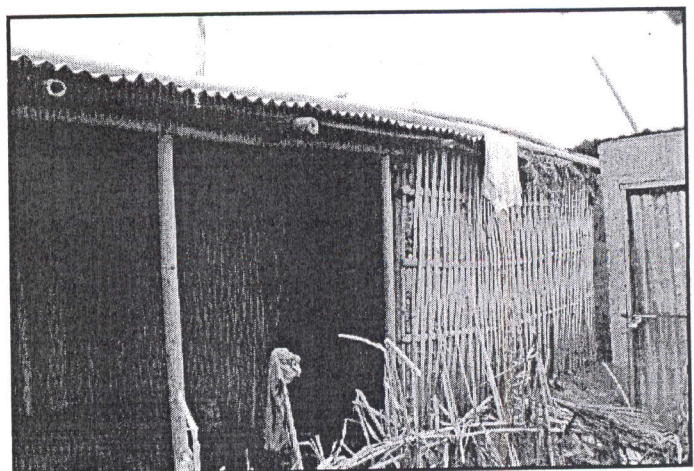
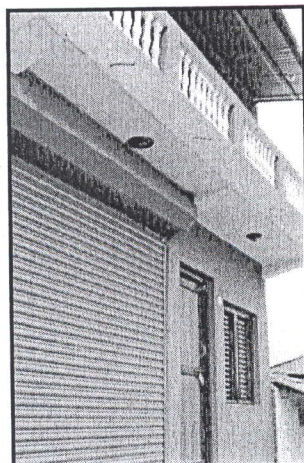


Generally the squatters are those who do not have any owned land in anywhere. But the people who owned their land in their home town also lived as squatters by squatting the vacant land. From the survey about 25% household owned their land/home in their village where 75% household so not hold any kind of land/home.

4.3 Physical infrastructure

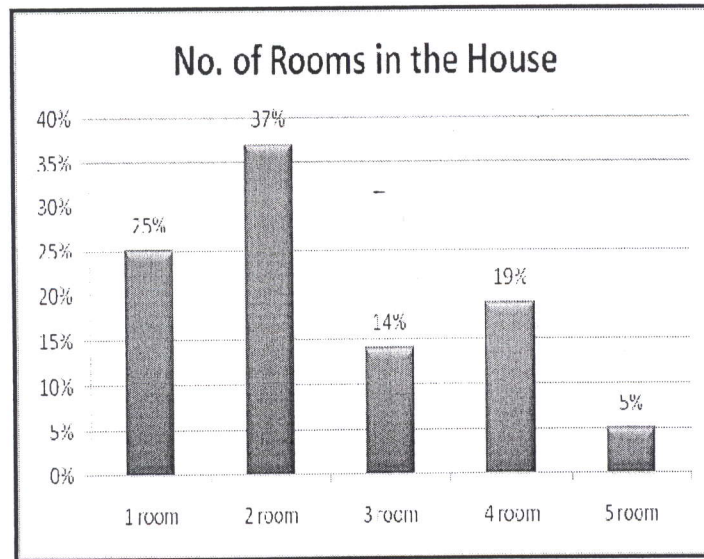
4.3.1. Housing Condition/ Sapce Available

As this settlement are linear in nature, the houses of this settlement are also grouped in linear way. The housing is like a compact and low housing with one storey height. There are few number of two storey building. The house are mostly made up of Concrete block with CGI roof. There is still some temporary structure buildings as well. The maximum area of the land squatted by the squatter are about 8 anna.



In general condition of the houses in this settlement seems quite permanent in nature due to the material used in the houses. Most of the houses

Chart:4.17 No of Rooms



Source: household survey 2010

Single storied building and are used for residential purpose except for few houses, which are used for school and childcare center, church. Some of households was found to be renting the rooms to other. The houses having a single room have a partial separation for sleeping and kitchen area. About 5 houses are of two storey and two houses are of RCC. From the collected data, it is found that the average resident space available in the settlement is 7.30 sq.m per person.

4.3.2 Building Material

The houses of the settlement were also observed to see general living standards. The type of house a family is residing can be an indicator of the economic status of the family. Considering type of materials used for the wall and roof, a house is categorized as permanent, semi-permanent and temporary type as defined in Population Census of 2001.

4.3.2.1 Roof type

According to the survey the houses in this settlement seems permanent houses as the materials of the roof and wall are permanent such as CGI sheets, Concrete Block, Brick Wall with Cement mortar. 78% household have roofing material is CGI sheet where as 13% household have Khar Ko Roof and 9% household remains plastic sheets as their roofing materials.

Chart: 4.18 Roof type

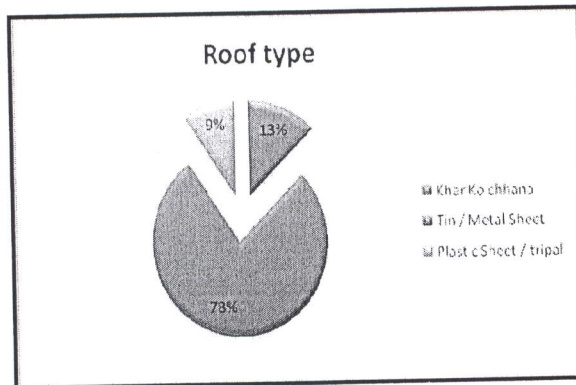
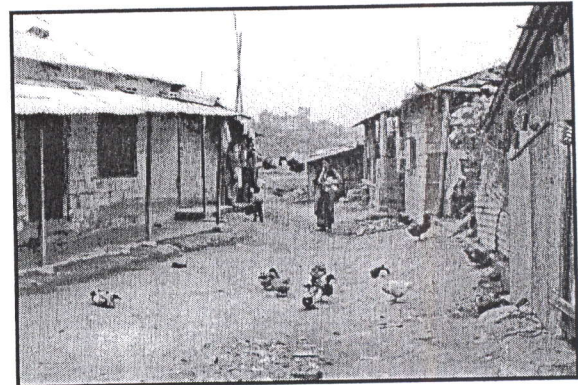


Fig: 4.18 CGI Roof



Source: Household Survey 2010

4.3.2.2 Wall type

Most of the household have the concrete block with cement mortar which is considered as the permanent materials. Recently most of the building has been newly constructed and changed the construction materials from temporary to permanent. 33% houses are built with concrete Block with cement mortar.

22% houses are of Brick with cement mortar. 19% buildings are of Tin/ CGI sheets. And temporary structure like Bamboo and Mud mortar seems 13% and 10% respectively. RCC construction is started in this settlement about 3% houses are of Concrete pillar but the roofing materials are CGI sheets.

Chart: 4.19 Material used for Wall

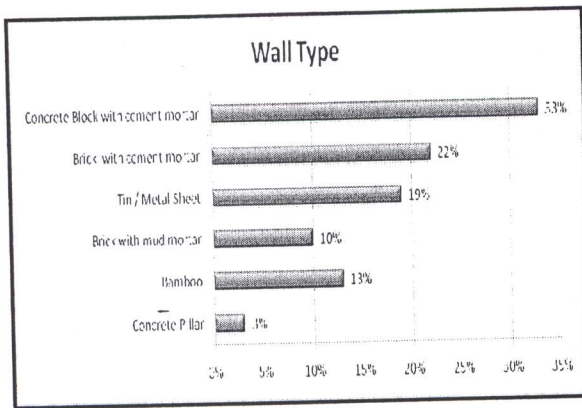
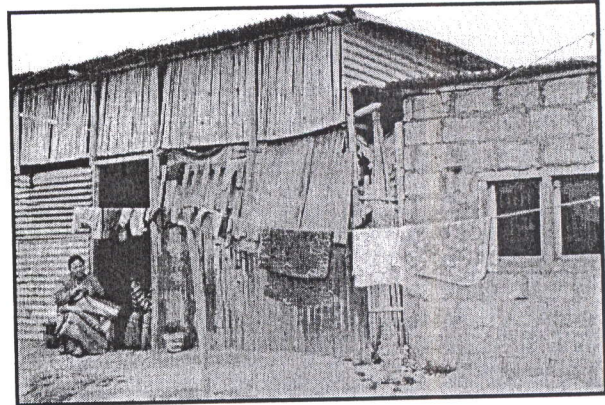


Fig: 4.4 Material of Wall



4.3.3 Utility Services

4.3.3.1 Water Supply

Almost all households depend on a variety of source for water. Major drinking water source of the settlement is the Water Spout near by the settlement. As Waterspout water is not meet water demand , then most of the squatters used the boring water.

Chart: 4.20 Water source

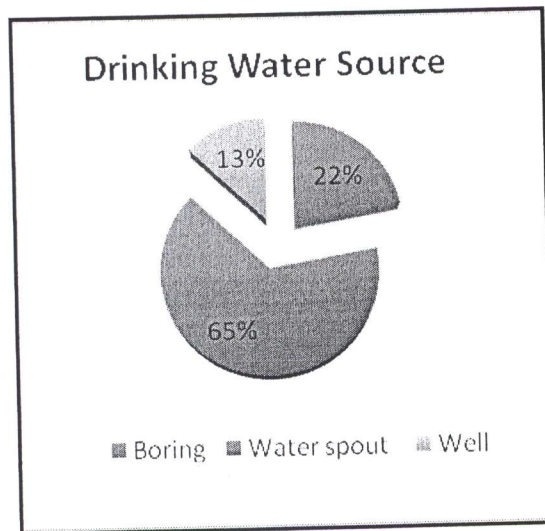


Fig: 4.5 Water Scarcity



Source: Household survey 2010

More than half of households are using water spout water i.e 65%. 22% used the boring Water for drinking and about 13% used the Well.

Well water and Boring water tested by the ENPHO and not giving approval for drinking.

4.3.3.2 Toilet Facility

It was found that the sanitation condition of the households in the settlement was very poor. According to the survey all household used the toilet. According to them they neither do nor rely on open spaces, and no any households use river banks for defecation. About 47% households are using their own toilet. And 53% households are using the toilet by sharing too many household. The toilet structure type are found in this settlement are pit latrine drained to sewerage flowing to the river. And latrine directly drains to river which is responsible for polluting the river.

54% households are using the Latrine which is directly drained to the river. And 46% household is using the pit latrine.

Chart: 4.21 Type Of Toilet Used

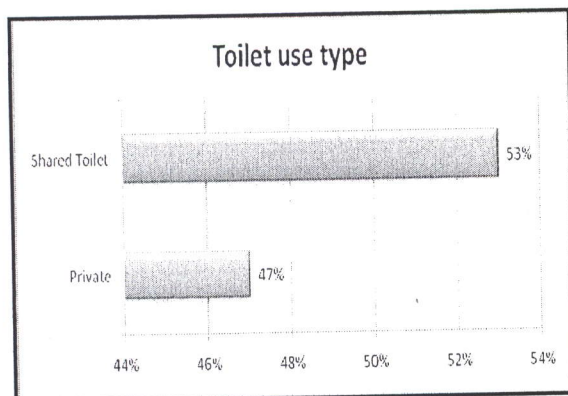


Fig: 4.6 Private Toilet

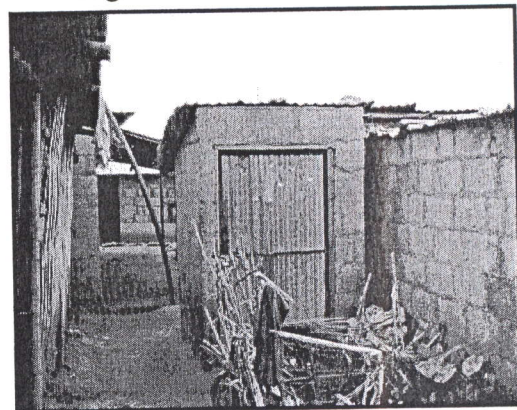


Chart: 4.22 Toilet Structure

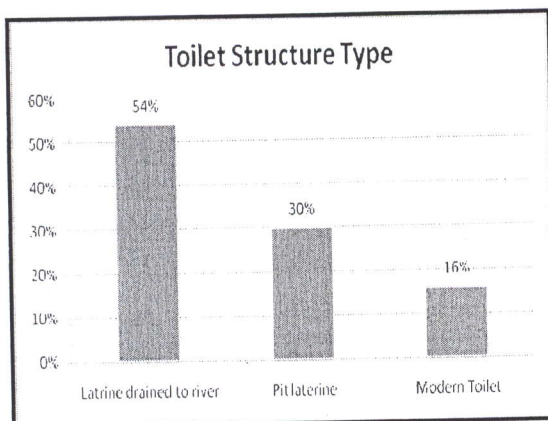


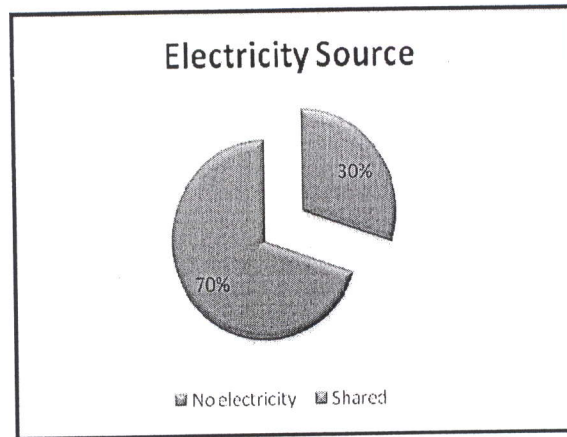
Fig:4.7 Latrine drained to River



4.3.2.3 Access of Electricity

Regarding the access of electricity in the settlement, about 30% household does not have electricity connection. About 70% have the electricity connection but it is shared. It is said that the electricity meter is one and each household has sub-meter. And monthly the money is collected according the unit.

Chart:4.23 Electricity source



4.3.2.4 Availability of side drain

There is open side drain also. This side drain was provided with the local effort but the drain is not functioned well and this creates the unhygienic condition of the settlement.

Chart: 4.24 Availability of side drain

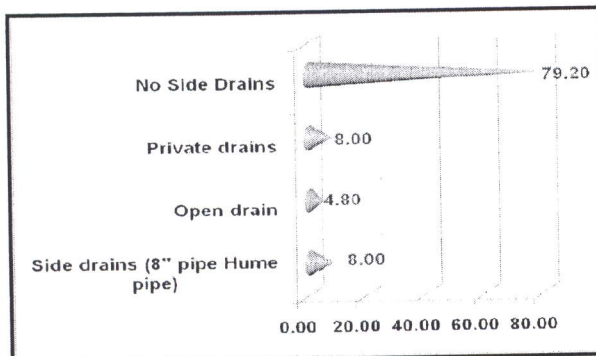


Fig:4.9: Open Drain



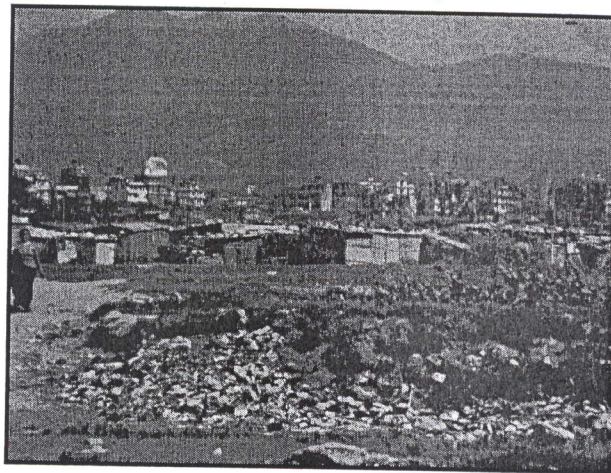
Fig:4.8 Side Drain



4.3.2.5 Solid Waste:

There is no any management in solid waste disposal. The household waste and garaged disposal waste are disposed on river bank and in vacant space near to their own houses. Such disposal makes the settlement dirty and unhealthy as well as deteriorates the environment and river itself.

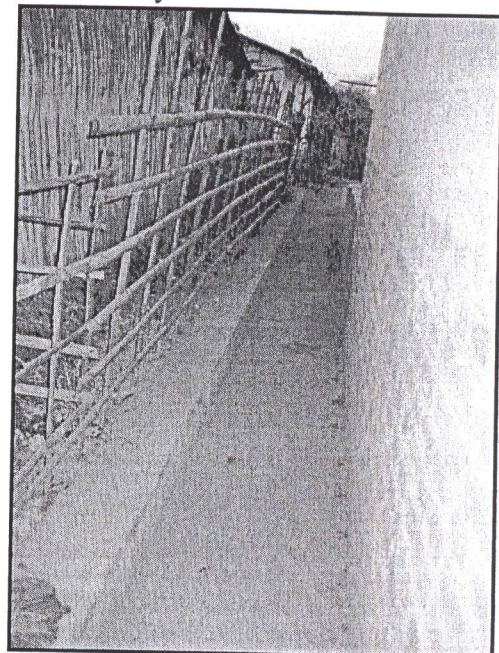
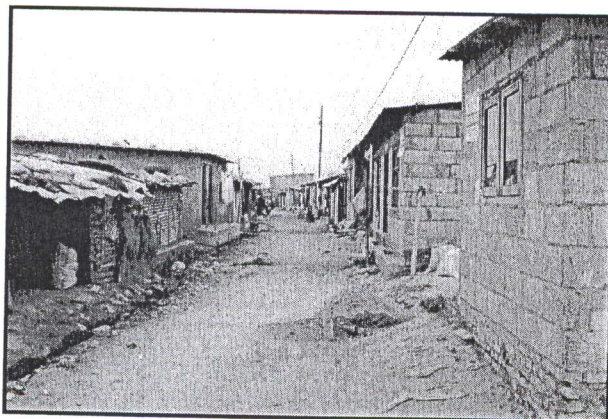
Fig:4.10: Solid waste disposal



4.3.2.6 Access to Roads and pathways:

The main road of the settlement is longitudinal from started to the end of the settlement. it is about 4m wide and it is earthen road with some of the portion of the road has side open drain which make the settlement so ruined. The connection road to the each household is made by themselves for their easiness. The connection road are also of earthen and very narrow. It is about 1m to 2.5m only.

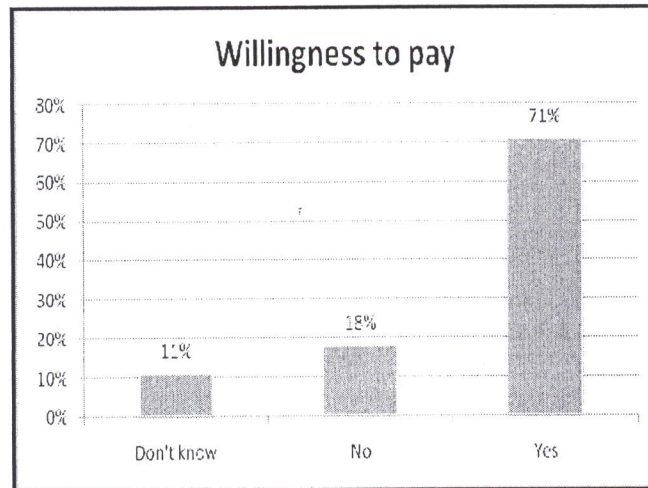
Fig: 4.11 Earthen main road



4.4 Willingness to Pay

About 71% said yes if Government or any other Agencies provided them a housing with minimum monthly installments (to be paid back in 15 years of the time) to shift from there. and about 18% household respondent as No. because they want free and it should be paid by government rather than themselves. About 11% respondent as Don't know. They said they will do whatever the leader will say to do.

Chart:4.25 Willingness to pay

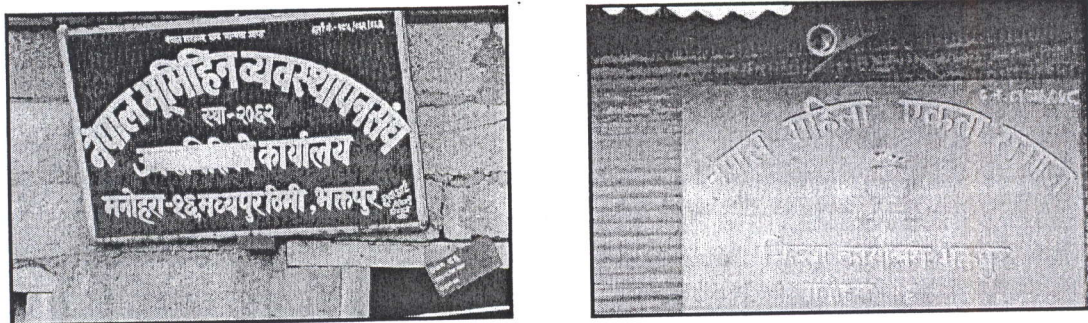


4.5. Social infrastructure

The squatters community itself are very conscious about their right and they are far knowledgeable. So from their own initiation they have some social organization who works in education, health, micro financing etc.

There is one primary school, Saraswoti Primary School which is the only one school within such communities which are supported and approved by the Nepal Government and funded by AHRCDF (Asian Human Right and Cultural Development Foundation). Total students are 215; all students are of within that settlement. There are altogether 7 teachers, 4 are paid by government and 3 are paid by AHRCDF. All members of Management committee are of the squatter's settlement.

Fig: 4.12 Social organization in Settlement



There is no any health post within that settlement and nearby. Every Saturday there is one doctor came from Bir Hospital and health checking is done for 2 hours (According to the one of squatter's leader) but other squatters denied that there is no any health camp from 2 years. So they are dependent to private clinic and hospitals.

- Nepal landless management organization, 2062
- Tol Sudhar Samiti
- Children prevention programme (CPP)- a participatory action for reducing vulnerability of children
- Nepal basobas basti samrashayan samaj
- Construction development committee of Devghat pilgrim's bath place
- Nepal Mahila Yakata Samaj

Among them Nepal Mahila Yakata Samaj is actively working. They worked for female welfare and worked as co-operative. There is some aama samuhas which is initiated by this Nepal Mahila Yakata Samaj. A group of women gather weekly and make savings on the agreed amount. The leader of the group takes care of the money and based on the group decisions the credit is given turn by turn as per the need. Every member can lend upto 5000 from the savings and if group of member are interested to take the loan, they can take upto Rs. 25,000.

4.6 River condition

The following photographs show the general scenario of the river. The flow of river erodes the land.

Fig:4.13: Earth cutting by the river

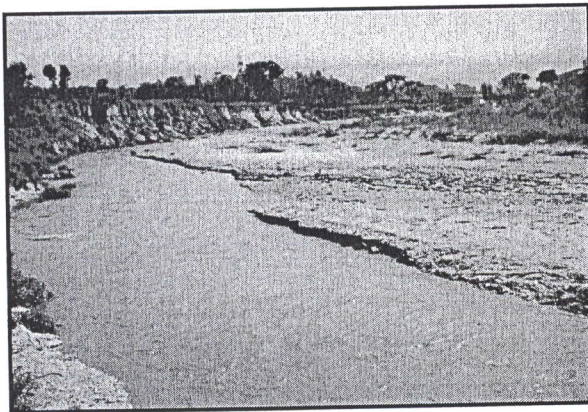


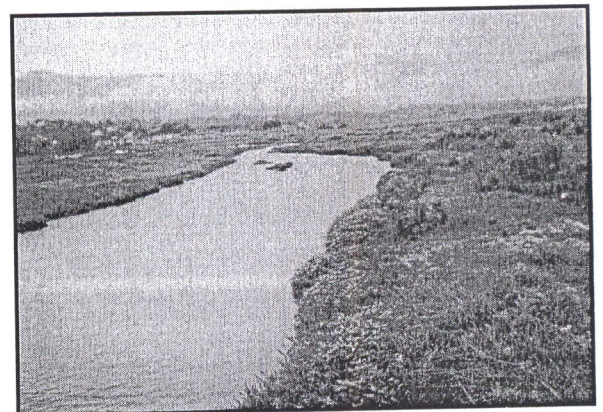
Fig: 4.14: Sand mining from river



Fig: 4.15: Sand collection from river



Fig: 4.16 View of Manohara river



4.7 FINDINGS

- Most of the Squatter population has migrated from the out Kathmandu valley.
- Most of the squatters used to live in the rented rooms in the city before coming to the settlement.
- Most of the squatters has the two room per Dwelling unit.
- Semi permanent houses are recently built by most of the squatters. CGI sheets are commonly used for roofing where as Concrete Block with cement mortar is extensively used in this settlement. however there is still some houses of temporary structure with Khar ko / plastic Roof and Bamboo/ Plastic wall. It shows the shelter upgradation is gradually take place by their own initiation in term of improvement in material used.
- There is lank of drinking water supply in the settlements. Community has to depend upon the water spout, wells and boring water which are not approved for drinking.
- There is a serious lack of open spaces and recreational area for the children in the settlement.
- Major occupations are labor and the average monthly income range is 1000-5000 of which more than half of the money goes for household use basically in food. According to the reason for loan taken it is also showed that most of the people has taken the loan for the household use.
- Un affordability and high rent is one of the major reason for squatting.
- Security of the Tenure is the top most housing priority in the settlement which is followed by the services.

They are willing to move from there if the government has given to them a secure housing but location of the settlement near to the employment centre is the major location priority.

Comparing the Monohara squatter settlement with the other squatter settlement along the river

4.7.1 Vulnerability

The indicators are;

Location: does the settlement on the river banks get affected by floods during monsoon?

Approach road: does the settlement on the river bank can have the appropriate road width in emergency cases (ambulances, fire brigade etc)?

Building condition: are the construction materials durable enough to provide shelter for the squatters without any risk of collapse?

Health: looking at the activities and the cleanliness of the settlement and use of toilet.

Availability of spaces per person:

indicator	Manohara squatter settlement	Thapathali Squatter Settlement	Balkhu Squatter Settlement
Location	Houses have been located at the distance of 10 to 100m from the river bank.	Houses have been located at the distance of 10-20 m from the river bank.	Houses have been located at the distance of 10 to 50m from the river bank.
Approach road	Main road is of 4-5m wide and access road to each household is narrow 1-2 m.	2-3 m wide road , narrow and earthen	Main road 3m wide and approach towards the individual access road is narrow width 0.9m and in fair condition
Building condition	55% of houses are of Pakka as the construction material are Concrete Block with cement mortar, Brick with Cement mortar	30% are of temporary shade covered by plastic and tripal.	16% are of Pakka (Block+cement mortar) 6% are of Semi Pakka (Brick+mud mortar) 19% - Bamboo

	<p>Semi pakka is 10%</p> <p>13% Bamboo</p> <p>3% RCC building</p> <p>No any temporary shade</p> <p>-</p>		<p>10%- ply wood</p> <p>17%- tin and metal sheet</p> <p>32%- covered with plastic/ tripal sheet.</p>
	<p>78% household have CGI sheet as roofing materials</p> <p>22% household roofed through temporary material like plastic and khar ko</p>	<p>58% roofed through the temporary materials</p>	<p>29% roofed through the plastic and tripal sheet</p>
Use of toilet	<p>53% household have shared the toilet</p> <p>47%- private toilet</p>	<p>65% household has shared toilet.</p> <p>10% household have private toilet</p> <p>Drained to river</p>	<p>87% - shared the toilet</p> <p>13% - private toilet</p> <p>Drained to river</p>
Availability of Space	<p>One person of household in Manohara has the space of 7.85 sq.m of residential space available for living.</p>	<p>One person of household in Manohara has the space of 6.5 sq.m of residential space available for living.</p>	<p>One person of household in Manohara has the space of 5.67 sq.m of residential space available for living.</p>

Source: Manohara Field Survey 2067 B.S, Thapathali and Blkhu: Physical Mapping of the Squatter Settlement along the Bagmati (East-West) River Corridor, under taken by DUDBC, Babarmahal

Chart 4.26: Availability of Resident Space

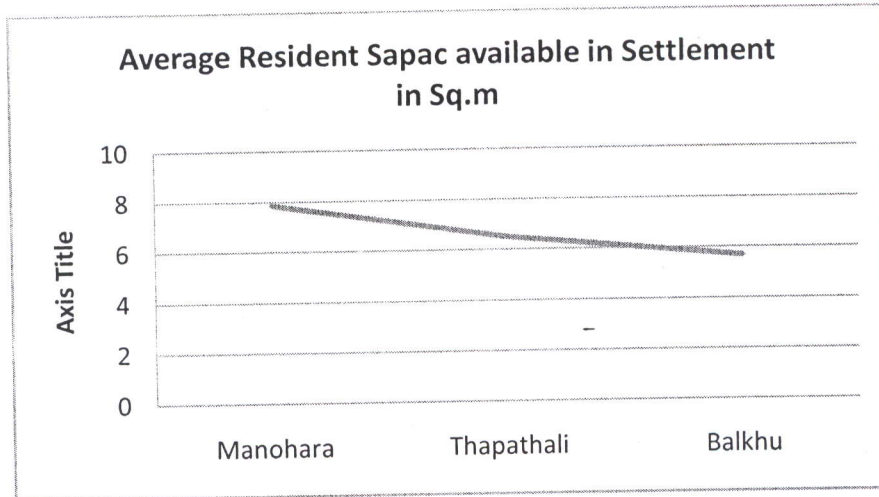


Fig 4.17 Manohara

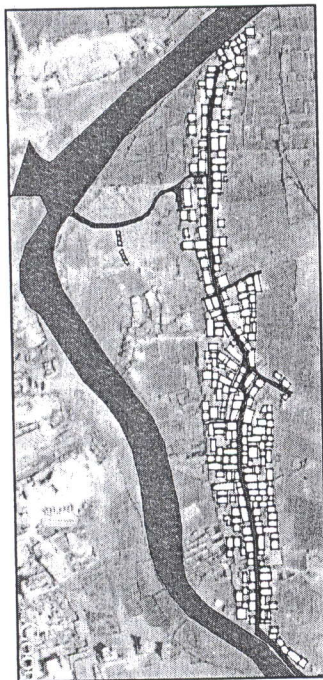


Fig 4.18: Thapathali

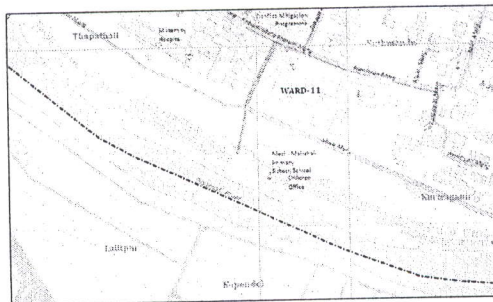
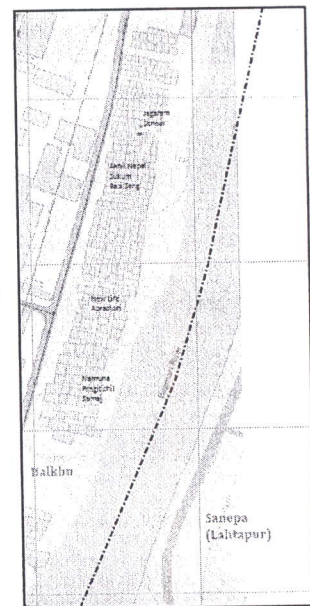


Fig 4.19 Balkhu

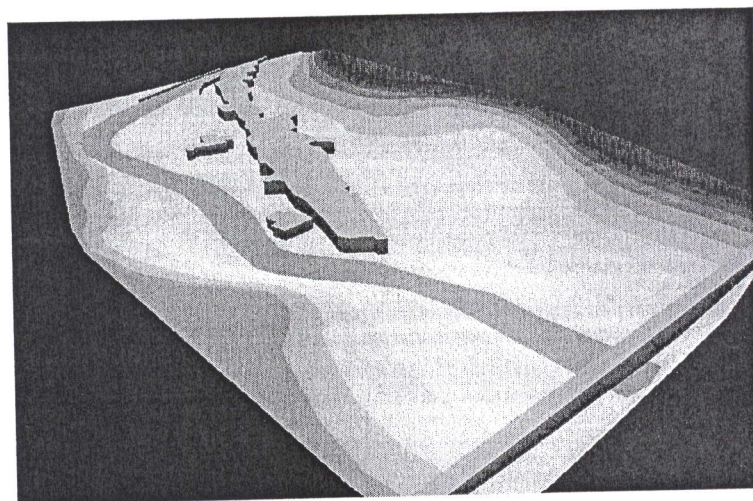


From the above data and indicator the Manohara squatter settlement seems less vulnerable in terms of location and building condition than the Thapathali squatter settlement and Balkhu squatter settlement. thus the squatters can be rehabilitated within that location.

4.7.2 Site Characteristic of Manohara Squatter Settlement

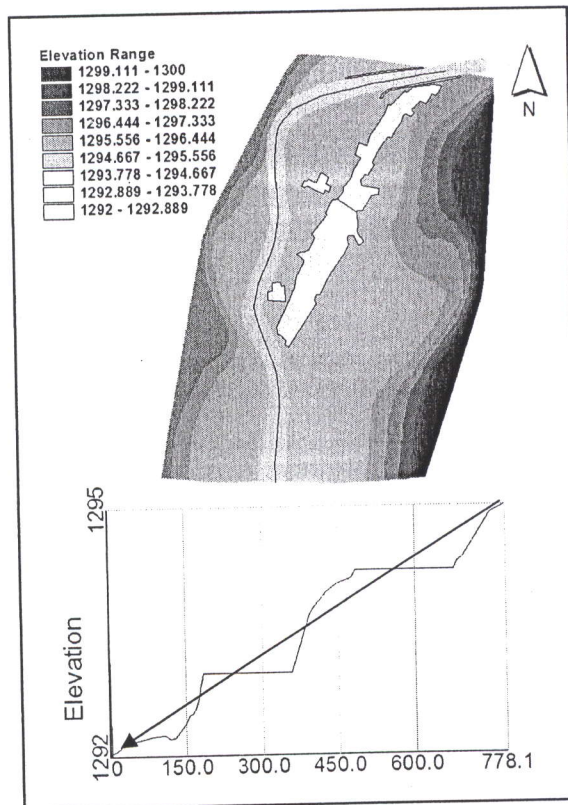
The site is slightly sloppy towards the South. The north side settlement is in height with compare to south of the settlement. The settlement area situated at left of the bank of river in the area is partly protected by Sand bags and Gabion Walls in the north side of the settlement. The settlement has been located at the distance 10-100 m from the river bank. at the beginning of the settlement and end of the settlement, the houses have been installed at very near to river.

Fig 4.20: 3D View of the Site



the section along the river shows the river flow pattern and the land profile. The elevation range is from 1296 to 1292 m. the difference is about 4m

Fig: 4.21: Section along the River.



The section shows the flow of the river in the gradient of 1:300 which indicate the velocity of the river flow. According to the Flood Record it is noted that the flood level in this stretch was found 0.75 to 1 m from the river bed and bank full width varies from 12 m to 20 m. Floodplain height in the area is at 0.75 to 1 m from river bed (*Preparation of Flood Risk and Vulnerability Map of the Kathmandu Valley.*)

The sectional profile 1 shows the settlement level, river level and the distance of the settlement from the river bank. the Flood plain level and the settlement level in this section is almost is in same level and houses are close to the river bank. During the monsoon, inundation on this area because of blockage of monsoon flow on the bridge.

Fig 4.22: Sectional profile 1

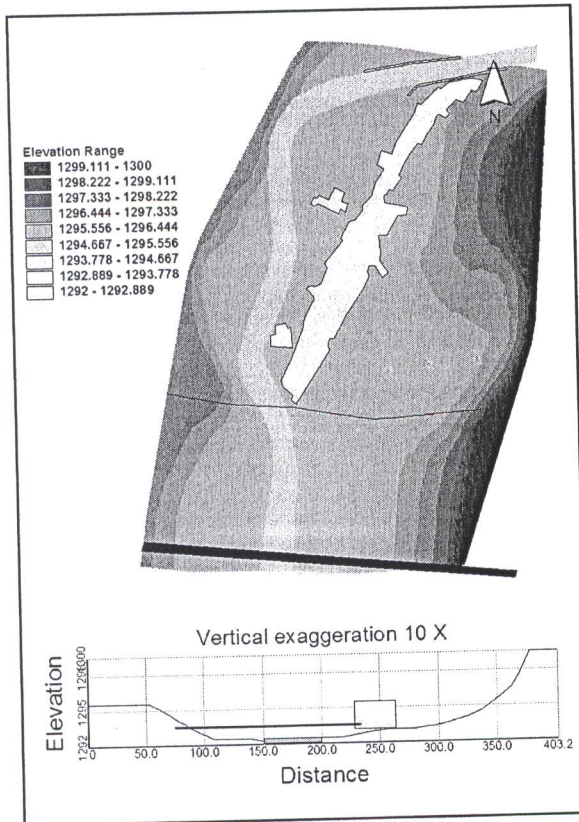
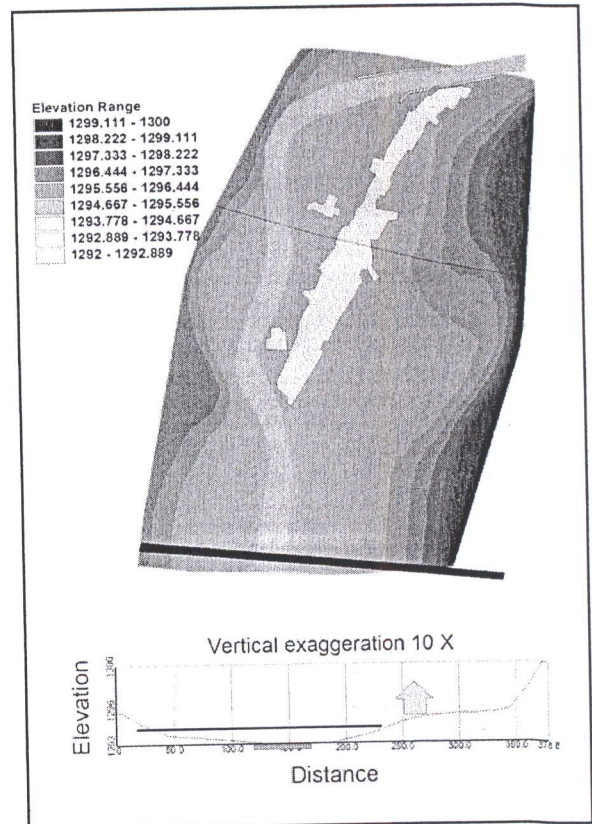


Fig 4.23: Sectional profile 2



In sectional profile 2, the level of settlement and the river is different. And settlement is far from the river bank. it beyond 20 from the river bank. The houses are not in flood plain so the houses are less vulnerable in terms of flood. This area is partially filled with the water as here is the problem of backflow water during the monsoon.

Sectional profile-3 shows the level difference of River bed and land. as the land is in higher level and the settlement is far from the river bank the area is less vulnerable than the other part. In this stretch there is retaining wall to prevent the flood during the monsoon.

Fig 4.24: 3D view from North

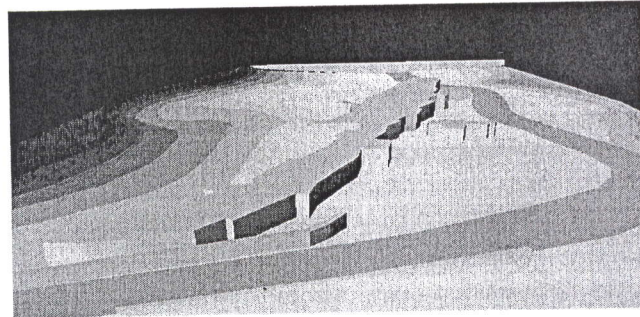


Fig 4.25: Sectional Profile 3

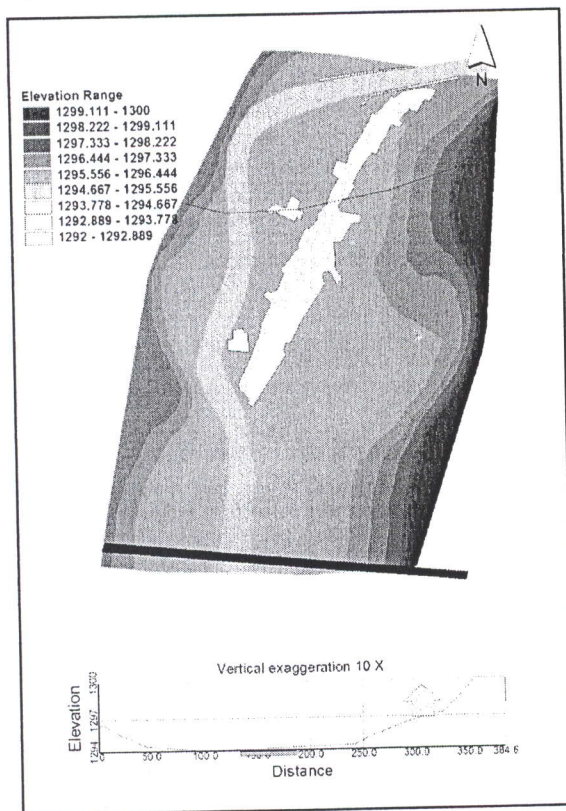


Fig 4.26: Showing the Vulnerable Area

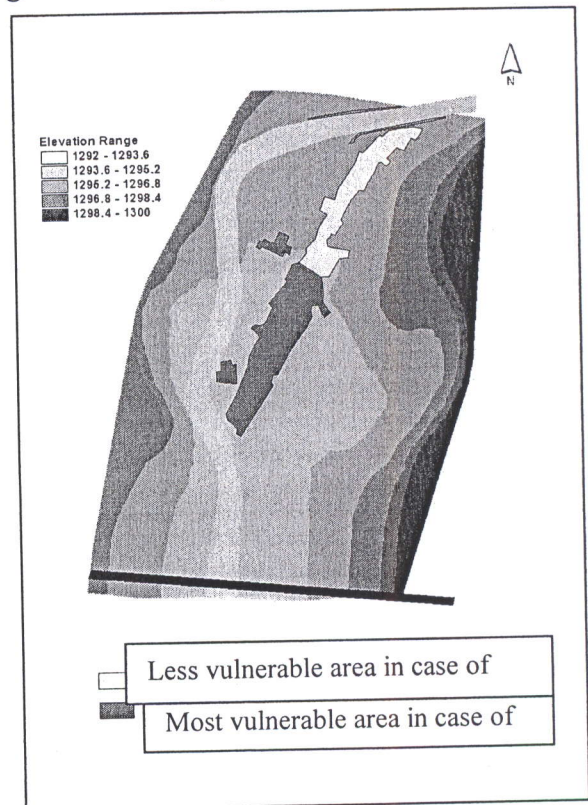
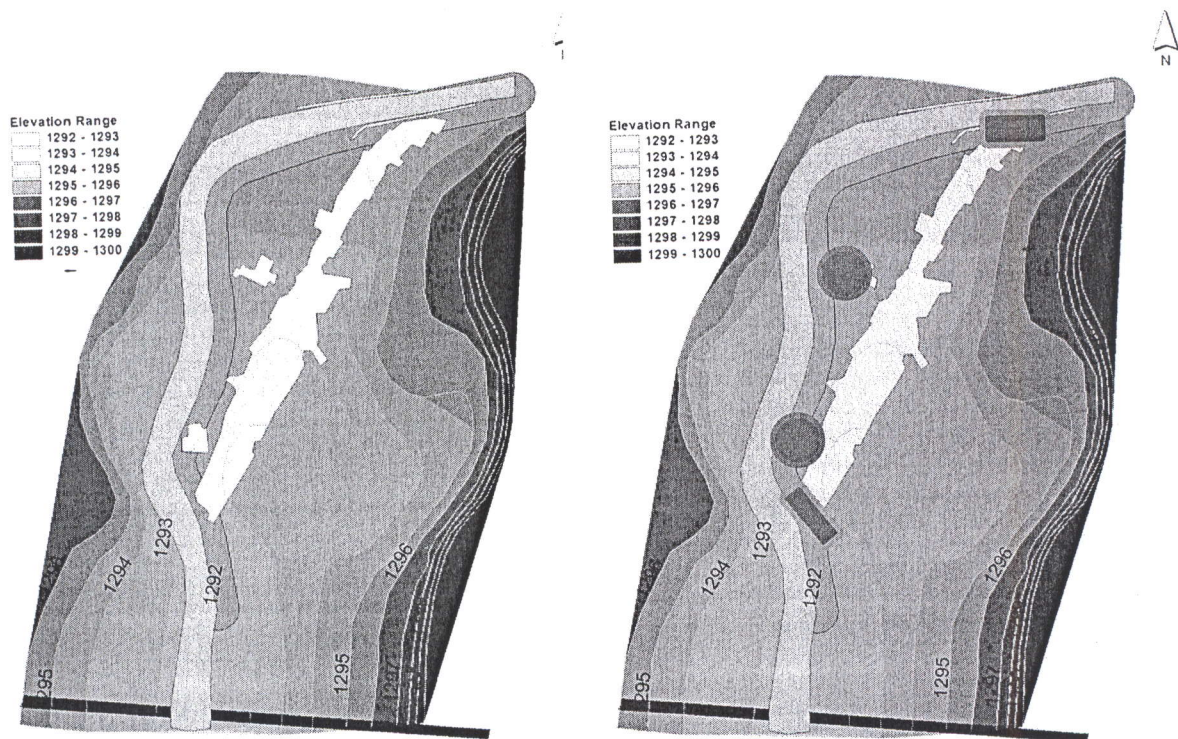


Fig 4.27: Settlement and Right of Way of River and the most vulnerable area



Total area of the squatter settlement is about 32 ropani in which from the data it shows that half of the area is vulnerable to flood and half of the area is less vulnerable. Thus the most vulnerable area should be strengthened by taking structural and non structural mitigation measure to prevent from the flood during the monsoon.

Flood/inundation

All the sites falling around the Manohara River had been affected by the floods in the past, notably during 2006 BS in the recent past. The worse case happened during 1996 monsoon. The flood level in this stretch was found 0.75 to 1 m from the river bed and Bank full width varies from 12 m to 20 m.

and the squatter have been installed their houses at the distance of 10 m to 100 m. so the settlements within that 10 m are very vulnerable than the settlement within 100 m.

4.8.1 Problems and issues

4.8.1.1 Physical problems

The housing conditions are lacking proper dwelling standards and basic infrastructure.

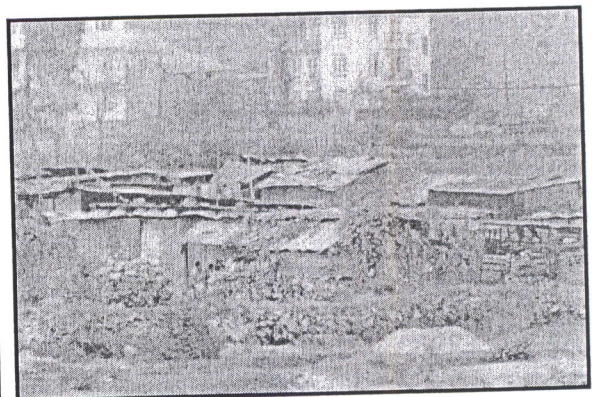
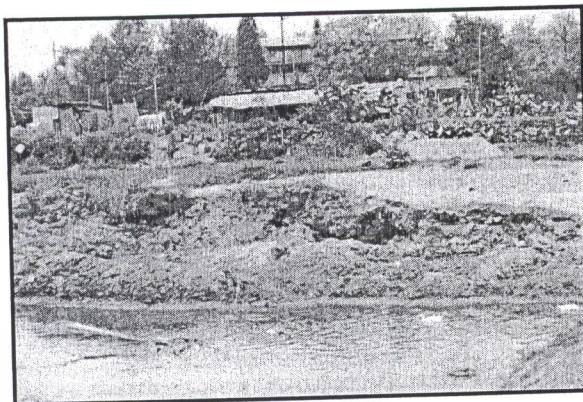
Drinking water supply is not there. Toilet facility is available which are temporary in nature and it causes the pollution of the river. And create the diseases problem to the settler

This settlement has no drainage, sewerage and garbage disposal.

No any social community buildings except the school buildings and organized open spaces.

Access of the road is earthen and very narrow except the main road of the settlement.

Fig: 4.28 Soil Erosion near to the settlement Fig: 4.29 Housing condition



4.8.1.2 Socio-economic

Most of the squatters work as unskilled labor. So they are based on the daily wages basis which is fewer wages with compare to those of skilled labor. Due to the daily basis wage they have very less saving or they could not save the money.

They do not have access to formal finance systems such as banks, credit institution, and formal co-operatives. They depends on money lenders and only the local Bachat Samuha. And most of the earning is spent on Food, education, clothing and health. They hardly spend any amount in housing out of their monthly.

Household having small business are mainly engaged in the production of the Alcohol and sold it near to the settlement and within that settlement. so there is a number of

young people who are addicted from drinking. Which may cause the social crime in the settlement?

4.7.1.3 Legal

Household do not have any tenure ship right (lease, ownership, and renter). They have squatted that public land under a constant threat of eviction or demolition.

4.7.1.4 Public health

as the settlement is along the river bank, the polluted river cause the health hazard to the people. The sewer is directly drained to the river and garbage dump are collected in river bank.

Most of the households are suffer from the dampness and less ventilation.

4.7.1.5 Other

The main environmental problem of the site is flooding and inundation during the monsoon. The main Cause of flood

- Excessive sand mining.

The inundation occurred only because of the backward water flow and blockade of water flow at the bridge of Jadibudi .Protection work to be adopted Sand mining should be stopped.

Retention of wall is needed.

CHAPTER 5

5.1 Models for Rehabilitation/improvement of Squatters' settlement

5.1.1 Eviction without Resettlement

This is the common practice in the third world countries and Nepal too. Eviction without resettlement is already practiced in various part of the Nepal like in Butwal Municipalities in different time but is found totally unsuccessful (joshi,L 1999). Municipality is unable to protect its land, so the land grabbers manage to occupy the area once again. In the Monohara also government has been tried a thrice to evict them from that area but government fail to evict them.

Squatter problem is one originating from the human needs for shelter, employment, communicational and social services. They also believe that people squat not through need but because it is an alternative way of living which can provide cheap accommodation in a central location. Hence, Eviction of squatters there by restoring the land to its formal use is suitable where the squatters' not genuine encroachment has occurred on ecologically important place or against explicit plan or policy.

Eviction can happen in different ways. Private landowners and government agencies have their ways of pushing out the poor who have no legal right to the land they occupy. Evicting households might be an effective way of clearing land for other uses, but in almost any eviction, the poor are the greatest losers: they lose the houses that they have invested in; they often lose their jobs, their belongings, their building materials and their social support systems. Plus, evicting informal settlements reduces the city's stock of affordable housing and instead of solving the problem simply moves it elsewhere, at very high social, economic and political costs.

Eviction has three basic impacts on those affected: physical, economic and psychological. Eviction reduces the housing stock of the city and ruins the economic value of the housing which may be small in real terms but big for the individual. It detaches the squatter from employment opportunities which are usually nearby or even in the settlement itself. It also uproots them from the community which functions as an economic and psychological safety net. While the eviction is a traumatic experience in itself, the most harmful impact of eviction may actually be the fear of being evicted.

The fear makes people fatalistic, loses confidence in themselves and discourages them from improving their housing.

5.1.2 Relocation and Resettlement of Squatters

In this approach, squatters were evicted and resettled in another area. Public authorities believe that resettlement of squatters elsewhere is suitable where

- the land is necessary for environmental reasons such as for river training and erosion control.
- has explicit advantage for use other than low income household. Relocation of the whole settlement
- If the settlement is uninhabitable and not acceptable for normal living
- Natural hazards are frequent
- Possibility of other hazards such as fire
- Environment which cannot be improved by interventions
- Government has big plans in the whole settlement for future
- Does not have any proper facility for water supply, sanitation electricity etc and is difficult and expensive to provide it

5.1.3 Upgrading and improvements of the settlement

in this model, the squatters are given the right to stay and developed the area. Then the necessary infrastructure and services were provided and development charge was taken per month per household. The environment conditions of the site are improved. Up gradation of the squatter settlement is suitable where

- There exists no immediate danger for the settlement.
- If relocating the settlement is not required.
- It is relatively safer settlement with less vulnerability and risks
- There is a need of improving services and facilities
- Housing condition is livable.

Fig 5.1: Showing the settlement before upgradation and after upgradation



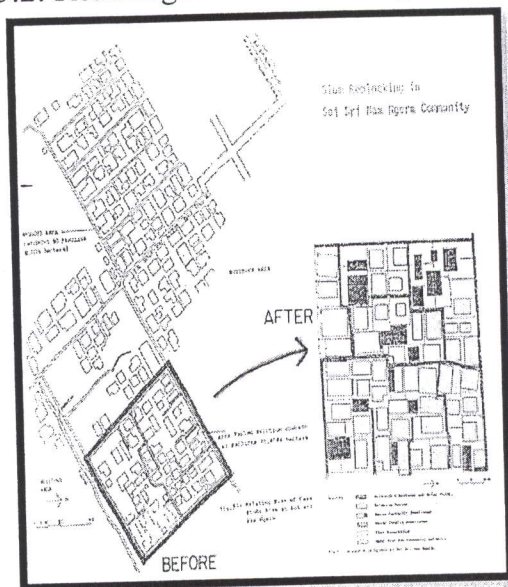
5.1.4 Rearrangement of housing units

166 squatter settlement in Bangkok added a sizable number of low cost of housing stock and some of the plots and lane are rearranged (reblocked).

- If land is adequate but inefficiently used
- Housing condition is not fully satisfactory
- Less risks of natural hazards
- Not much investment has been made
- Government does not have any big plans for the future

In this up site upgradation through the Rearrangement of housing unit, the haphazardly laid out housing unit are arranged in such a way that the every household has equal access of facilities with recreational areas.

Fig: 5.2: Rearrangement of housing unit in Thailand



Charoenchai Nimitmal Rearrangement and Reblocking Upgradation

The situation was the Threat of Eviction then the community Purchase the Land taking loan from the CODI (Community Organization Development Institute). Then they decided to reblocking the housing unit with the Road width 4m . A community Center and varying plot size according to the affordability. Using community labor saved 30% of the cost of development. 15 houses had to be moved to new location to make way for new road and plot layout.

Fig 5.3: Before and after Reblocking upgradation

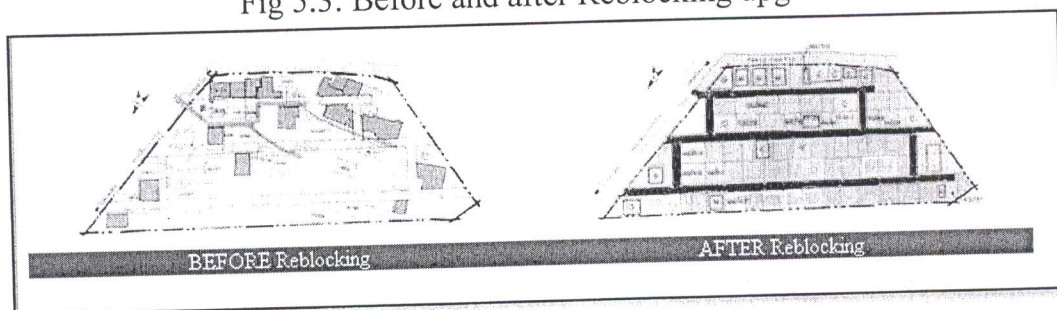
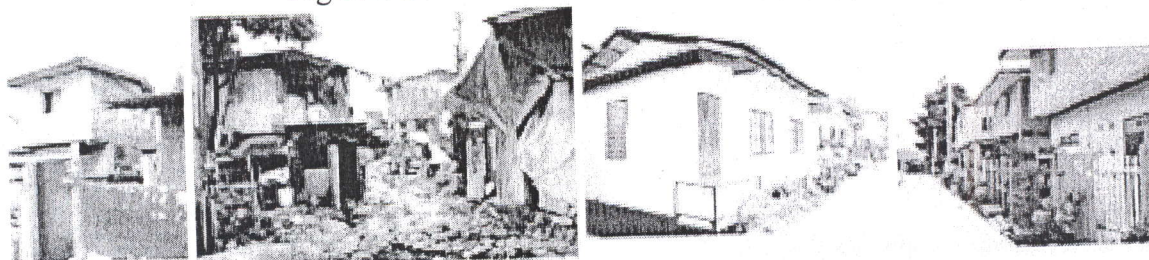


Fig 5.4: Before and after Reblocking upgradation

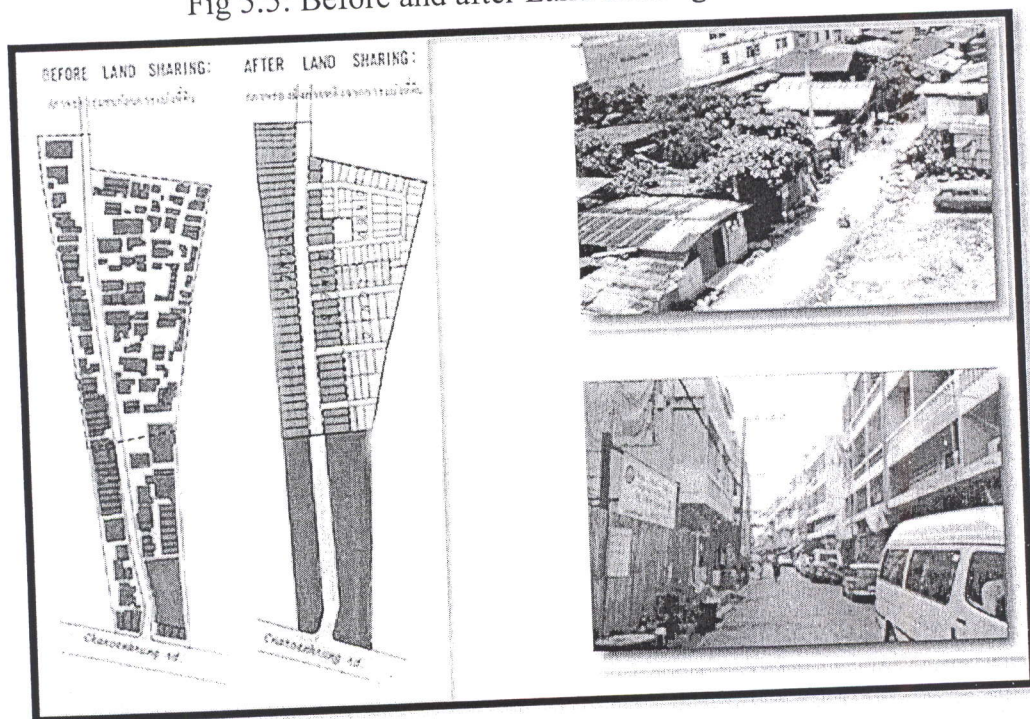


5.1.5 Land Sharing

Land sharing is most popular in India, Thailand and other Countries. In this model, some of the total (50% of total land) the land occupied by the Squatters are given to the private developers to develop commercial land use. In the Remaining land (50%), the private developers have developed the low height Apartment to each household with area of 60 sq.m. The squatter should pay Rs.200 per month for 10 years. The ownership of the apartment is then registered to them. The employment can be provided on that developed commercial areas.

- After choosing an optimum utilization of land for the people living there, plenty of vacant land remains
- Location of the settlement is in a commercial location with high value of land
- The land can be sold to other people
- No risk of natural hazards

Fig 5.5: Before and after Land Sharing in Thailand



5.1.6 Site and Services

Site and services is one of the implemented model to resettle the those slums and squatters who were displaced from the natural calamities and development work. The kirtipur housing project was based on this method, the housing was made for those squatters who were displaced during the construction of the Bishnumati link road

kudaki basti is the one of the example of site and services the main concept of this kudaki basti was to settle the people first then provide the houses and basic infrastructure. In this concept the proposed resettled land was divided in to 80 sq.ft and distribute to the squatters. Then they had started to make the huts then the drinking water was supplied through the water tank. Later in the incremental basis the houses and infrastructure were constructed. The development cost was collected to each household and saved in common account.

For this project, government have invest only the land cost

5.1.7 Regularization Of Settlement

Regularization is the tool to give the legal right for the squatters who have illegally squatted the government land for the settlement. The legal right is provided by taking the development charge. In this method ownership of the land is on the name of community which prevents the future land transaction by the squatters.

This model can be seen in Ananda Nagar of Surat Municipality of India and the unauthorized colony in New Delhi. Each household who got the maximum area of 80 sq.m, they should pay Rs 500 per month for 20 years. The land title was given to individual after the all payment. The infrastructure development charge and Land charge were taken in this model

5.1.8 Land Development Program

There is the provision of 10% land for the urban poor(Economically Weaker Section) in the Town Planning Scheme of Gujarat and Maharashtra of India. In this Model each household was given the area of 24 sq.m(6mx4m) with subsidies rate. Within the 30 days of land provided, the area is developed with the incremental development concept of houses and infrastructure. This program believes to discourage to form squatter settlement.

in case of Nepal also, policy of provision of 10% land for urban poor in Land Pooling and development area is under discussion.

CONCLUSION:

The squatter problem is the big socio-economic and development issue as it is deep rooted in poverty, unemployment, inequalities and land tenure insecurities. Poverty is the main cause of squatting so the effective policy and program towards alleviation of poverty are needed. Provision of low-cost and affordable housing for the poor, resolution of land tenure problems, sustained economic growth

Evictions are one of the common means that government resorts to for the solution of the squatter problems but it is not the right solution because everyone has right to decent housing. Force eviction create many social and economic problems such as community and family break up, worsened living condition, removal of children from school, higher transport costs etc, therefore eviction should be avoided.

The squatter are rehabilitated through the different approaches such as in site upgradation, redevelopment, and resettlement depending upon the condition that they exist.

To rehabilitate the squatter community the upgradation, redevelopment, land sharing and Land Development Scheme are the effective tool in Manohara squatter settlement but sometimes relocation are unavoidable as in case of Kritipur Resettlement area from the Bishnumati Link road area.

In such case where relocation is more appropriate than the upgradation in such case the genuine squatters are provided with the means to build a new dwelling in the resettlement site, this sites should be developed before anyone is forced to move from their present settlement. It is important to let the relocated inhabitants settle close together, the social values existing settlements must preserved and It must be assured that everybody has access to the same facilities

Land tenure comes in many different forms and degrees of formality. Some tenure rights are held by individuals while others are held collectively by a group. Formal land titles make people feel secure enough to invest in their houses and neighborhoods. When those living in informal settlements receive some official recognition or occupancy rights from the government, it can greatly reduce the threat of eviction and amount to a stronger form of perceived tenure. A simple way of

defining tenure security is when people believe that the land they occupy is the land they are allowed to live on and use.

Under international human rights law, secure tenure is one of the seven components of the right to adequate housing. The other six components are: availability of services, materials, facilities and infrastructure, affordability, habitability, accessibility, location and cultural adequacy

Form the study of the different model to rehabilitate the squatters, and the study of the Manohara the appropriate model for the Manohara squatters is;

Squatter should be incorporated in Land pooling Area(Land Development Scheme)

On site Upgradation with rearrangement of the housing units

Land sharing with Redevelopment plan.

RECOMMENDATION

Squatter should be incorporated in Land pooling Area(Land Development Scheme)

As this location has already proposed for the land development scheme, the squatter population can be incorporated in this scheme.

The policy of the provision of 10% land to the urban poor on development scheme is under the discussion, if this policy is executed then these population can be incorporate in that area but it should be neat to the existing settlement.

The area consists of approximately 3300 ropani of land. Since the area is the river valley and flood plain of Manohara River, the slope, obviously, follows towards the riverside with mild sloping with low topography. The area consists of fertile agriculture land, barren field, flood plain and sloping terrain. The settlement is developing linearly in a very haphazard manner.

Total Area of Land pooling = 3300 Ropani

=18070800 Sq.ft

If 10% of the land is left for them and provided in subsidize rate then

Area provided= 1807080 sq.ft

The provision of the land to the squatters should be near to the existing settlement. within that area the squatters are settled in low rise high density apartment having with all basic infrastructure and social amenities.

On Site Upgradation through Rearrangement of Housing Unit

The existing situation of the land squatted by the Squatters are unequal. Some of Squatters have occupied about a Ropani and some of squatter have occupied a minimum space for the residence. There is need of rearrangement of housing unit by providing basic infrastructure and the recreational areas.

- the site should make less vulnerable from the flood by providing the structural and non structural Mitigation measures such as construction of Retaining wall along the river bank. Plantation along the river bank etc.
- Different size of the land and housing area is using by each household, so these unequal housing unit should be re-arranged
- Improve housing-; safe, low cost and affordable houses should be developed.
- Provide secure tenure- the squatter don't have any ownership so, the government should take initiatives with some policy regarding to the secure tenure. The first demand of the squatter settlement area is to have a ownership document of land. The distribution of land is not a solution as past experiences has proved. Even without documents, land sale is being held. So existing corrupt socio- cultural norms must be discouraged and that must be replaced by legal- activities. Real squatters must be identified and it must be under continuous examination.

For Rearrangement of housing unit the 4 m and 3 m Road is provided with 24 sq.m land plot.

Available Total Land area= **16288 Sq.m(175232 Sq.ft)**

- Size of Plot = **24 sq.m (258.3 sq.ft)**
- For the Household **589** the required area is **14136 Sq.m**
- Open Space = **3 %**
- Road= **10.21%**
- Built Area= **226 Sq.ft**
- Cost of per sq.ft = **Rs.500**

Total cost of the housing unit

- $226 \times 500 \times 589 = \text{Rs.}66557000$
- Per household is **Rs.1,130,00**

Pay Back Period is **15 years**

- Per year they have to pay **Rs. 7533**
- they have to pay Per month = **Rs. 628**
- So they have to save per day at least **Rs. 21**

Thus, they can afford the housing unit.

The conceptual drawing of the proposal has been shown in the Annex.

Rehabilitate the squatter settlement through Land Sharing Model

Another appropriate model for the rehabilitation of the Manohara squatter settlement is Land sharing. The land sharing model was adopted in India and Bangkok. In this model 20% land was given to the Private developers and 50% land for the squatters' settlement and 30% land will develop as per government requirement.

In this settlement it is proposed that 20% land in the settlement are given to the developers for commercial use and the benefits from the selling or rent is used for the development of the dwelling unit for the squatters. These dwelling units are given to the squatters on the condition of non transferability and leasehold of 20 years.

Proposal

Minimum housing norms was adopted for in 1990(CEDA 1990.)

House with 30 sq.m of floor area for household of six with a minimum plot size of 40 sq.m for each household.

Kritipur Housing project

Area of of each type of housing unit are 537.79 sq.ft (46.96 sq.m) and 502.97 sq.ft (46.72 sq.m) with two storey height

Janata Aawas

Total built up area of one unit is 324 sq.ft with one storey.

Total cost of one unit is Rs.156440,

Users are 10,000

Finance by Nepal Government.

DUDBC has proposed the building for the squatters

Area of one unit 41.21 sq.m (442.6 sq.ft)

Space standards

India-

Economically weaker section - 12.5 to 18 sq.m - 25 to 40 sq.m

Dharavi Redevelopment project

225 sq.ft. carpet area free of cost for per family.

Average Size of each house at Manohara is 34.31 sq.m (369.31 sq.ft)

Proposed area is 41.12 m (442.6 sq.ft) including circulation.

Development plan

The proposed development area is 50% of the total land i.e 87616 sq.ft

Total area = 87616 sq.ft

FAR = 2.5

Per unit area is 442.6 sq.ft

Permissible floor area = 2.5 x 87616 sq.ft

$$= 219040 \text{ sq.ft}$$

Ground Coverage by the Units is 50% of total area

$$= 0.5 \times 87616$$

$$= 43808 \text{ sq.ft}$$

No. of Storey = 219040/43808

$$= 5$$

Number of dwelling unit = 219040/442.6

$$= 495 \text{ unit}$$

Total cost of project

Building cost = 1500/sq.ft

=1500x219040

=Rs. 328560000

Open space =0.5% of Rs.328560000

=Rs.1642800

Road= 2.5% of total cost

Rs.8214000

Electricity and telecommunication= 5% of total cost

Rs 16428000

Drainage and solid waste= 7% of total cost

Rs 22999200

Total Project cost is Rs. 377844000

Commitment per unit is $37784400/495 = \text{Rs.}763321$

Payback period 15 years

Rs. 4240 per month

Saving required per family per day is **Rs 140**

At least they should save **Rs 71** per day.

This amount could not be affording those household who has income level 1000-5000. In this area about 50% household has income range 1000-5000. for those Financial scheme should be developed for the housing loan without requiring the conventional individual collateral.

The conceptual drawing of the proposal has been shown in the Annex

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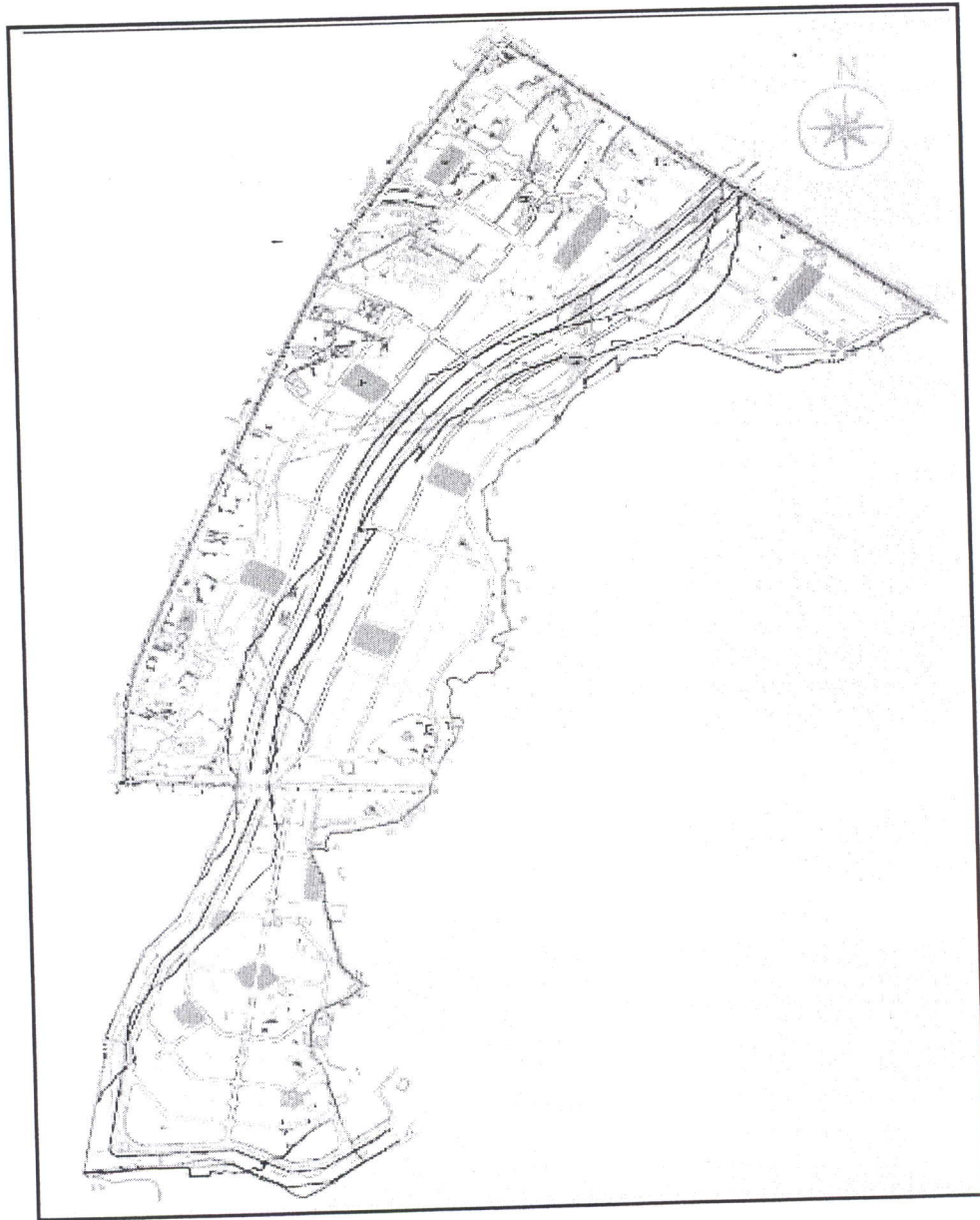
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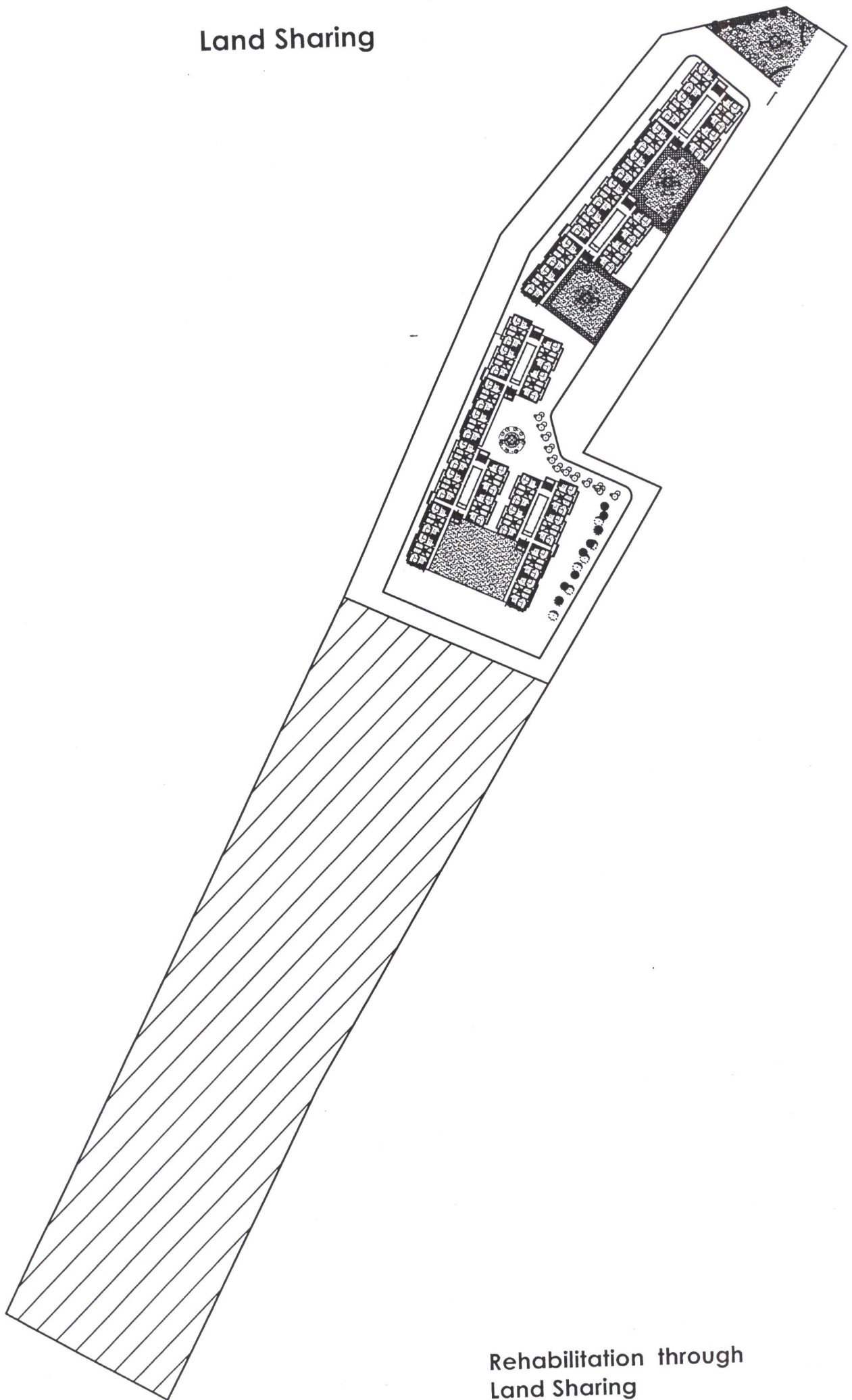
ANNEX

Land development scheme

Proposed land pooling area, the squatters can be placed within this area.

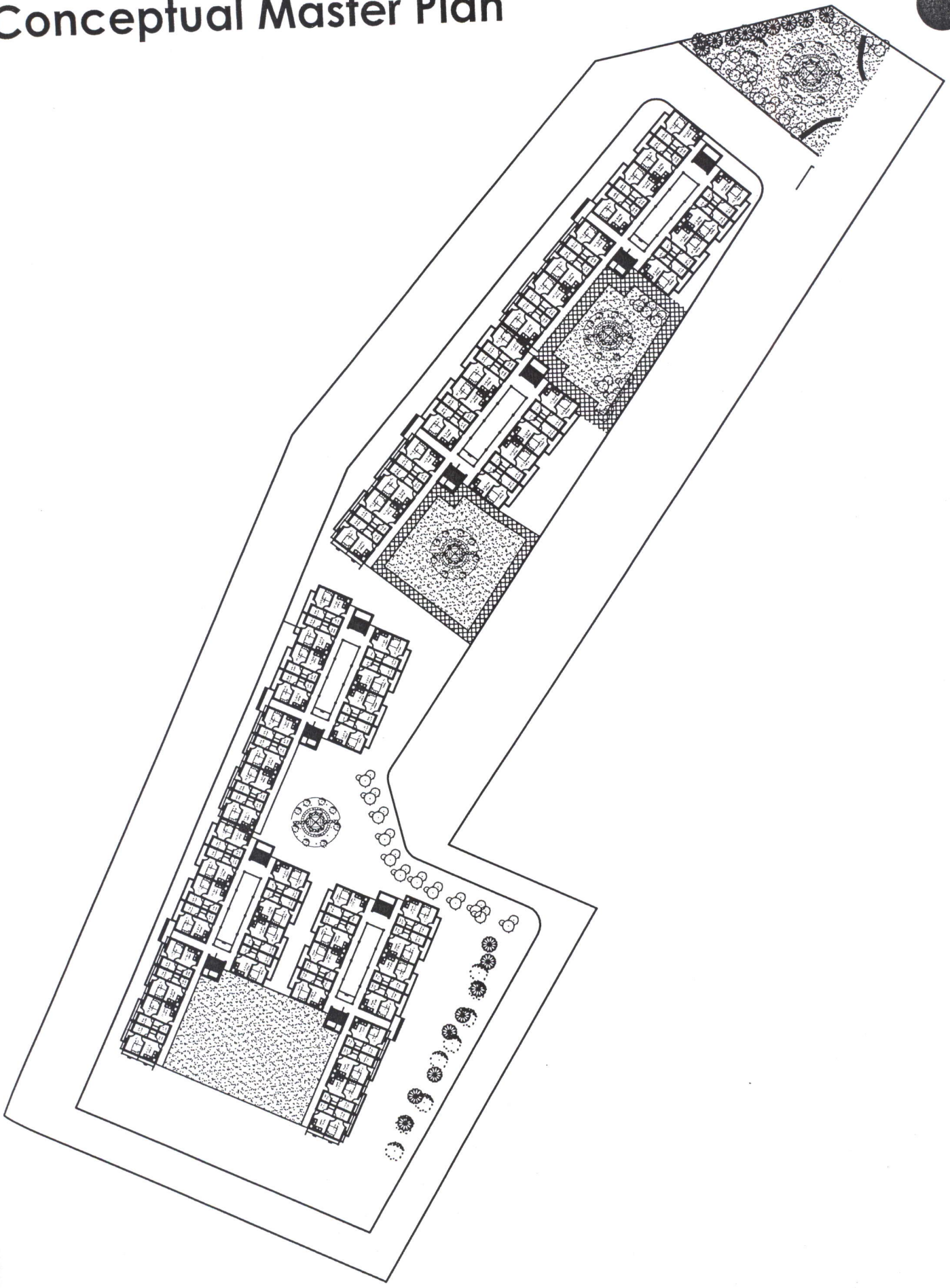


Land Sharing



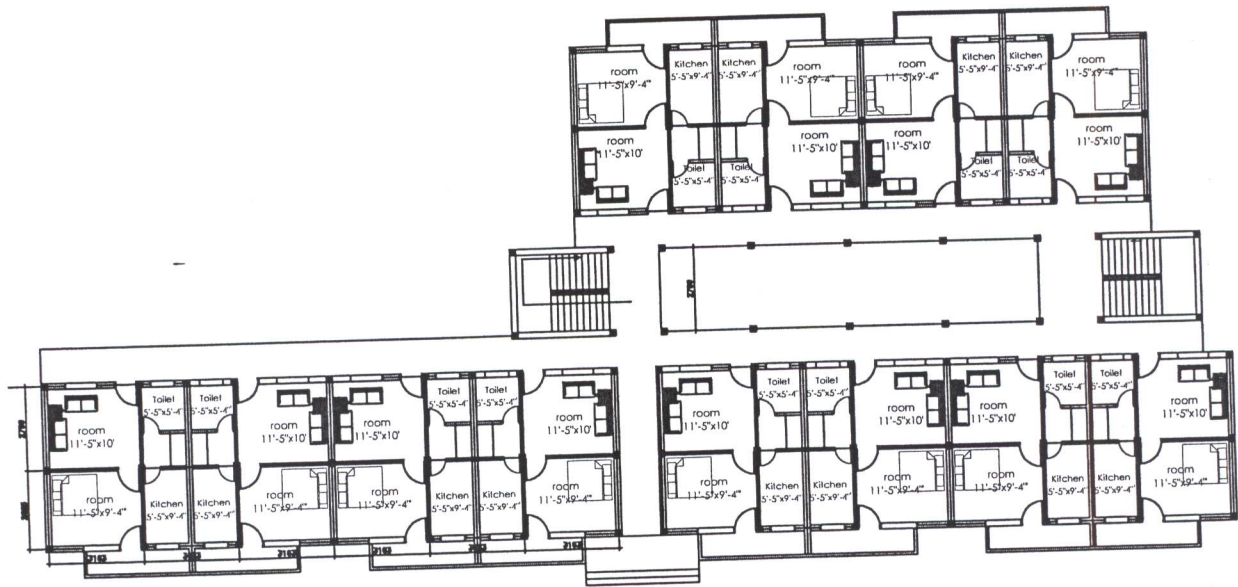
Rehabilitation through
Land Sharing

Conceptual Master Plan



Development Plan

Conceptual Plan and Elevation

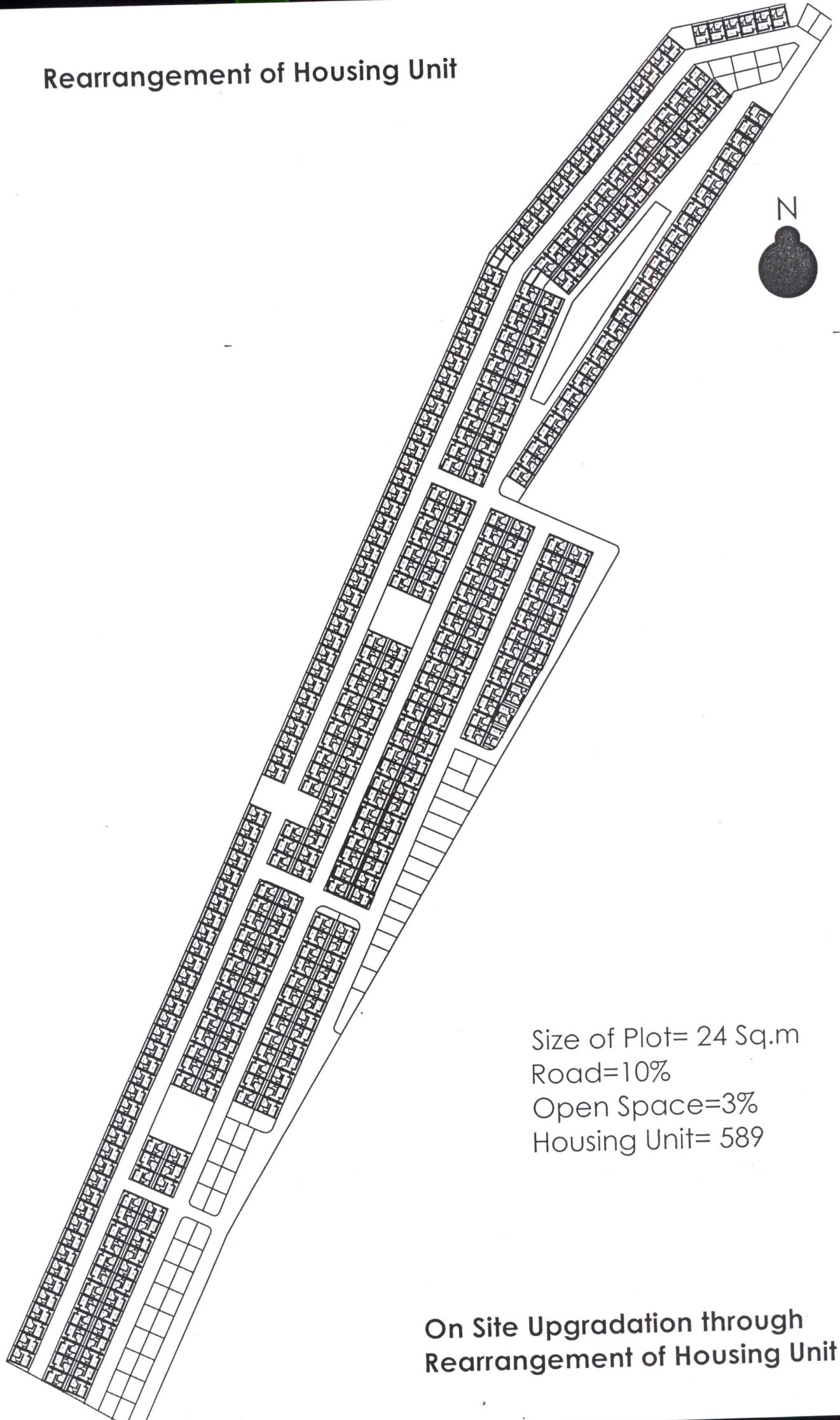


Plan



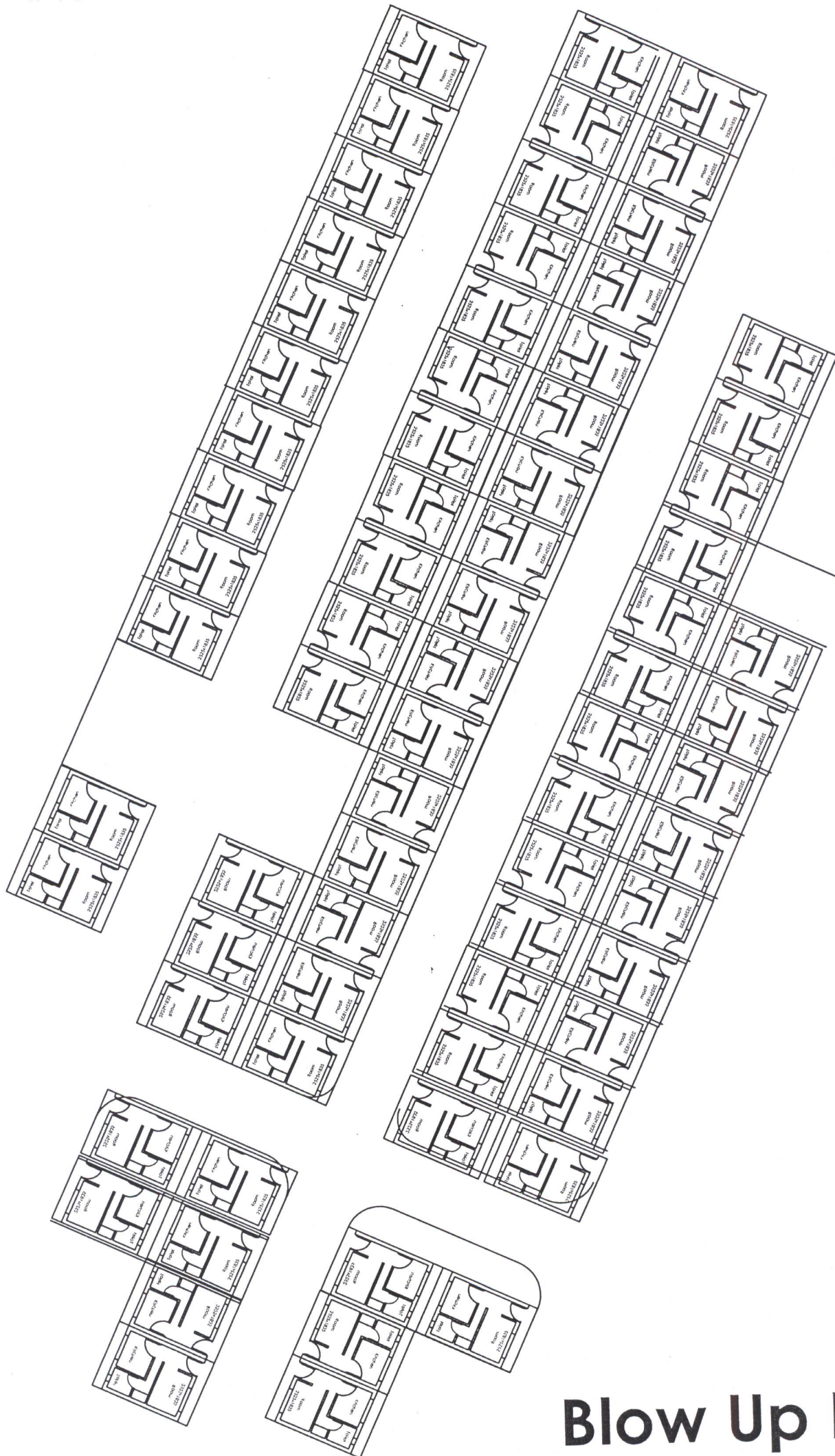
Elevation

Rearrangement of Housing Unit

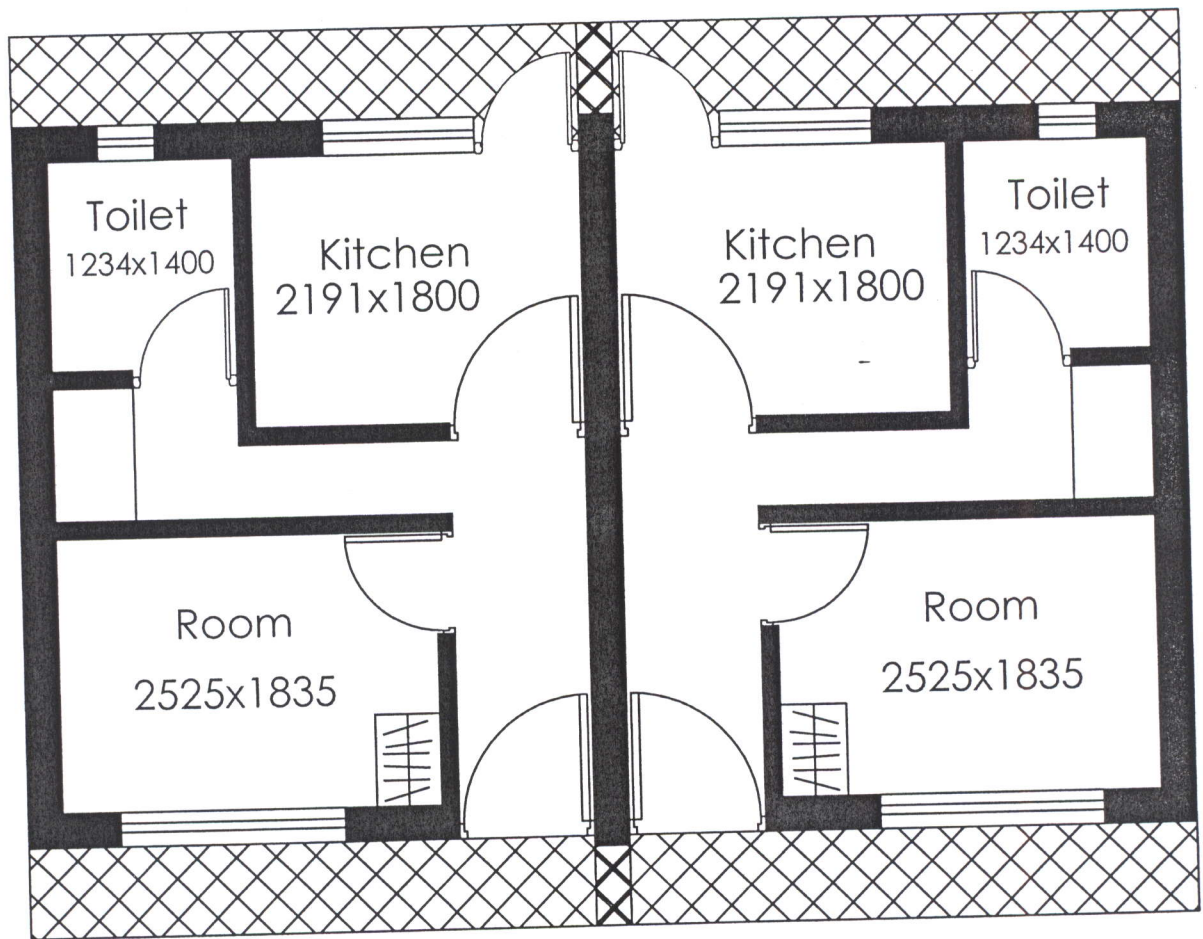


Size of Plot= 24 Sq.m
Road=10%
Open Space=3%
Housing Unit= 589

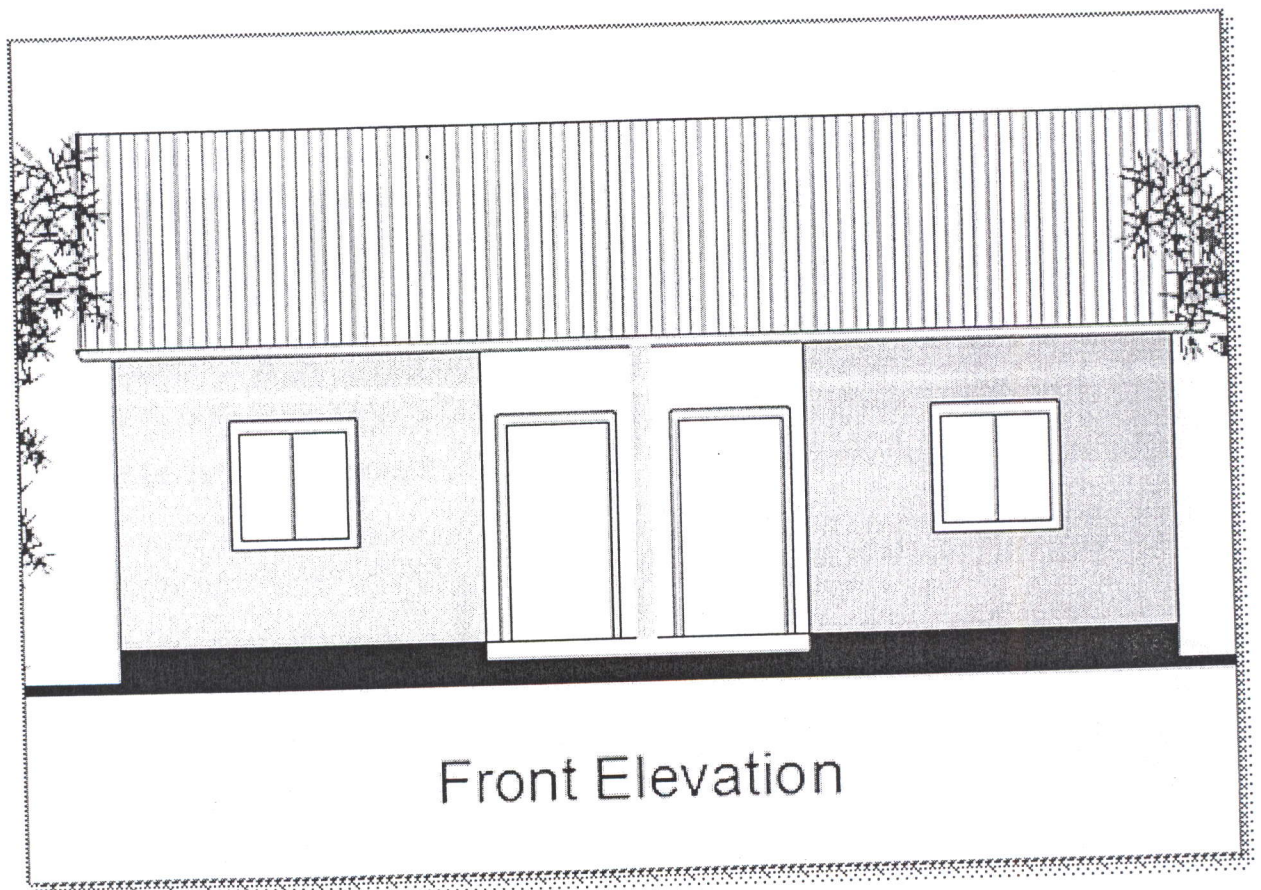
On Site Upgradation through
Rearrangement of Housing Unit



Blow Up Plan



Plan



Front Elevation

Questionnaire Survey Sheet

Date:

Physical Survey(Personal identification)

1. [a] Household's name : Sex:.....[b] Building no.: [c] Building story:...
2. Family Size:
3. Ethnicity:.....
4. Education level.....
5. Do you have citizen card? [a] yes [b]No

Living Condition

6. What is the no .of rooms used by a family?.....
7. If rooms are rented, average rent per room per month.....
8. Frontage of the building.....
9. Depth of the building.....
10. Materials used in the building
[a] Walls [b] Flooring/ceiling [c] Doors/windows
[d] Roof
11. Household with Access of road
[a] Earthen. [b] Concrete Block. [c] Brick Paved. [d] Gravel. [e]Black Top [f] Other
12. Access width
[a] 1m [b] 1-3m [c] >3m.
13. Access condition
[a]Good [b]Deteriorate. [c]Fair
14. What type of fuel do you use for daily cooking?
[a] Gas [b] Kerosene [c] Electric heater [d] Wood [e] Other
15. State the physical problems in your home and community:
Building: [a] Roof leaking [b] Poor light and ventilation [c] Dampness [d] Other
Infrastructure:
Neighborhood:
16. Land holding
[a] own [b] Rented [c] others
If rented, average rent per month.....
17. In your opinion how safe is your building and courtyard from earthquake and fire?
[a] Safe [b] Not safe [c] Do not know [d] Other

Socio-economic and Cultural Survey(Origin and Family Background)

18. [a] Your place of origin:[b] Year of living in this locality: [c] Your caste:
19. You have a family: [a] Joint [b] Nuclear [c] Other
20. Do you have a home there? a)Yes... b)No.....

21. Does your family own farm land? a) Yes..... b)No.....

22. If yes how many do you have.....

23. How many members do you have in your family now and their occupation and working places?

Family members	Relationship	Age	Occupation	Job location [distance]

24. Your approximately monthly total income and their sources:

25. What is your occupation?
 a)Wage laborskilled/unskilled b)Small Business c] service(regular salary d] other

26. income
 [a] [b] [c]

27. Your expenditure pattern from high to low [1- highest and 5 lowest]:
 [] food [] cloths [] education [] health [] o

28. What type of social institution you belong to in your community?
 [a] Guthi [b] VDC [c] NGOs/ CBOs [d] Others

29. Why did you leave your hometown?
 [a] Job opportunity - [b] Natural Disaster [c] No land [d] conflict [e] Others

30. Why do you choose this site for the settlement?
 [a]Easy access for job [b]community [c] No objection

31. what is the source of drinking water?
 [a]Private connection [b]public tap [c]well [d]boring

32. Do you have toilets in your place of residence?
 [a]Yes..... [b]No.....

33. What type of toilet?
 [a] Open deification [b] Public [c] private

Health

34. What type of illness or injury?
 [a] Water borne disease [b]Respiratory problem [c]Fever [d]Diarrhoea [e]T B
 [f] jaundice [g] Injury [f] Other(Specify):

35. Do you have health services near to your place?
 [a]Yes [b]no

APPENDIX-2 CASE STUDY SURVEYED DATA

S.N	Household Head	Family Size	Ethnicity	Settled Since	Reason for Squatting	Place of origin	Reason for Migration	Ownership of Land/House Elsewhere
1	Ratna Maya Karki	7	Chhetri	4 years	No Rent	Udayapur	Education	No
2	Mandira Devi Kafle	5	Brahman	7 years	Easy Access to Work	Taplejung	No land	No
3	Badri Prasad pokharel	6	Brahman	15 years	No Rent	Khotang	Job opportunity	No
4	Ram Kaji Rai	6	Rai	8	Relatives	Khotang	Natural Disaster	No
5	Aruna Lamsal	5	Brahman	7	No Rent	Gulmi	Job opportunity	No
6	Bindra Lal Shakya	5	Newar	7	No Rent	Dolkha(Charikot)	Job opportunity	No
7	Ganesh Lama	5	Lama	8	Poverty	Gulmi	Job opportunity	No
8	Shri Maya Lama	4	Lama	6	No Rent	Sindhupalchowk	Job opportunity	No
9	Kanchhi Lama	3	Lama	5	Poverty	Sindhupalchowk	No land	No
10	Ramesh Shrestha	2	Newar	6 months	Near to Kathmandu	Sindhupalchowk	Job opportunity	No
11	Pasang Sherpa	4	Lama	9 months	Near to Kathmandu	Sindhupalchowk	No land	No
12	Gopal Khadka	3	Chhetri	1	No Rent	Solukhumbu	No land	No
13	Suman Tamang	4	Tamang	5	No Rent	Ramechhap	Job opportunity	No
14	Raj Kumar Maji	4	Dalit	5	Easy Access to Work	Morong	No Land	No
15	Laxmi Rai	3	Rai	8	Relatives	Khotang	Job	No

16	indra Bahadur Gurung	4	Gurung	1	Relatives	Okhaldhunga	political conflict	No
17	Bharat Rai	5	Rai	5	No Rent	Khotang	political conflict	No
18	Nirmala Yonjan	3	Tamang	3	Near to Kathmandu	Ramechhap	No land	No
19	Runisha Rai	5	Rai	5	No Rent	Sindhuli	No land	No
20	Hari Prasad Shrestha	1	Newar	1	No Rent	Dhankuta	Job opportunity	No
21	Dil Bahadur Lama	8	Lama	8	No Rent	Kavre	Job opportunity	No
22	Padma Bahadur Sijapati	6	Other	6	No Rent	Dailekha	Natural Disaster	No
23	Thum Bahadur Basyal	6	Brahman	10	No Rent	Parbat	Natural Disaster	No
24	Laxman Pariyar	5	Dalit	5	No Rent	Kavre(Panauti)	Natural Disaster	No
25	Maya Sitaula	5	Brahman	6	Easy Access to Work	Taplejung	No land	No
26	Laxmi Rai	7	Rai	8	Easy Access to Work	Khotang	Job opportunity	No
27	Sita Devi Tamang	7	Tamang	7	No Rent	Gorkha	No Land	No
28	Bimala Gurung	3	Gurung	7months	Relatives	Morong	Job opportunity	No
29	Promod Narayan Mishra	6	Madeshi	2064 (3 years)	No other owned land or house anywhere	Rajbiraj	No Land	No
30	Binda Shah	7	Madeshi	2060 (7 years)	No rent	Sarlahi	Job opportunity	No
31	Debika Rimal	4	Brahman	2065 (2 years)	No rent	Chitwan	Job opportunity	No
32	Indra Das	7	Dalit	2060 (7 years)	No rent	Dailekha	Job opportunity	No

33	Roma Pariyar	8	Madeshi	2062 (5 years)	No other owned land or house anywhere	Chitwan	No Land	No
34	Yogen Shah	4	Madeshi	5 years	No rent	Rajbiraj	No land	No
35	Ratna Maya Thapa	5	Chhetri	3 years	No rent	Udayapur	Job opportunity	No
36	Kailash Bahadur Nepal	5	Brahman	5 years	No rent	Dhading	Family reason	No
37	Krishna Bahadur Pariyar	3	Dalit	6 years	No rent	Gorkha	Job opportunity	No
38	Poonam Timilsina	5	Brahman	7 years	Easy Access to Work	Okhaldhunga	political conflict	No
39	Sarta Bahadur Tamang	4	Tamang	5 years	Easy Access to Work	Ramechhap	political conflict	No
40	Laxmi Tamang	9	Tamang	6 years	No rent	Ramechhap	political conflict	No
41	Bir Bahadur Tamang	4	Tamang	5 years	No rent	Sindhupalchwok	No land	No
42	Ram Bahadur Tamang	4	Tamang	4 years	No rent	Sindhupalchwok	No land	No
43	Sonam Tamang Lama	4	Tamang	3 years	No other owned land or house anywhere	Sindhupalchwok	Political conflict	No
44	Hira Gopal Shrestha	3	Newar	10 years	No rent	Dolkha(Charikot)	Natural Disaster	No
45	Sita Ram Magar	3	Magar	9 years	No rent	Khotang	Job opportunity	No
46	Thuli Kanchhi Magar	4	Magar	14 years	No rent	Khotang	Job opportunity	No
47	Arjun Pariyar	3	Dalit	13 years	No rent	Nuwakot	Job opportunity	No
48	Sanu Bhai Pariyar	9	Dalit	12 years	No other owned land or house anywhere	Nuwakot	Family reason	yes
49	Purna Maya Pariyar	3	Dalit	13 years	No other owned land or house anywhere	Nuwakot	Family reason	yes

50	Narayan Pariyar	5	Dalit	14 years	No other owned land or house anywhere	Nuwakot	Job opportunity	yes
51	Dilli Prasad Sapkota	5	Brahman	7 years	No other owned land or house anywhere	Chitwan	Education	yes
52	Hem Prashad Upreti	6	Brahman	5 years	Other	Khotang	Job opportunity	yes
53	Sushila Chhetri	9	Chhetri	3 years	Other	Dhading	Education	yes
54	Tula Bahadur Thapa	4	Chhetri	2 years	No other owned land or house anywhere	Nuwakot	Education	yes
55	Yamanath Bhattacharai	7	Brahman	2 years	No other owned land or house anywhere	Nuwakot	Job opportunity	yes
56	Dev Rana	5	Chhetri	5 years	Poverty	Okhaldhunga	Job opportunity	yes
57	Yagya Bahadur/ Bina Nepali	8	Dalit	5 years	Poverty	Sindhuli	Job opportunity	yes
58	Shankar Gautam	7	Brahman	7 years	No rent	Kavre	Job opportunity	yes
59	Santa Rana	5	Chhetri	7 years	No rent	Sindhuli	Job opportunity	Yes
60	Bimala Khattri	5	Chhetri	7 years	No other owned land or house anywhere	Dolkha(Charikot)	Job opportunity	Yes
61	Nirmala Ale	5	Magar	7 years	No other owned land or house anywhere	Ramechhap	Job opportunity	Yes
62	Ramesh Niraula	5	Chhetri	10 years	Other	Nuwakot	No land	Yes
63	Bhai raja BK	5	Dalit	9 years	Other	Dailekha	Job opportunity	Yes

Household information

Household Head	Family Size	Male	Female	0-5 years	6-15 years	15-59	above 60
Ratna Maya Karki	7	4	3			4	3
Mandira Devi Kafle	5	3	2	1	1	3	
Badri Prasad pokharel	6	2	4			5	1
Ram Kaji Rai	6	5	1		1	5	
Aruna Lamsal	5	2	3	1	1	3	
Bindra Lal Shakya	5	3	2	1		4	
Ganesh Lama	5	3	2		1	4	
Shri Maya Lama	4	2	2		2	2	
Kanchhi Lama	3	2	1			3	
Ramesh Shrestha	2	1	1			2	
Pasang Sherpa	4	3	1	2		2	
Gopal Khadka	3	1	2	1		2	
Suman Tamang	4	2	2	1	1	2	1
Raj Kumar Maji	4	3	1			2	
Laxmi Rai	3	1	2			3	
indra Bahadur Gurung	4	2	2	1	1	2	
Bharat Rai	5	2	3		2	3	
Nirmala Yonjan	3	1	2	1	1	2	
Runisha Rai	5	3	2		1	4	
Hari Prasad Shrestha	1	1				1	1
Dil Bahadur Lama	8	4	4	2	1	4	
Padma Bahadur Sijapati	6	3	3	1		4	1
Thum Bahadur Basyal	6	4	2		2	4	

Laxman Pariyar	5	3	2		2	3
Maya Sitaula	5	3	2	1	1	3
Laxmi Rai	7	4	3	2	2	3
Sita Devi Tamang	7	4	3	3	1	3
Bimala Gurung	3	2	1		1	2
Promod Narayan Mishra	6	3	3	1	2	4
Binda Shah	7	4	3		2	4
Debika Rimal	4	3	1	1	1	2
Roma Pariyar	7	5	2	1	2	4
Indra Das	8	5	3	2	2	4
Yogen Shah	4	3	1		1	3
Ratna Maya Thapa	5	3	2		2	3
Kailash Bahadur Nepal	5	1	4	2	1	2
Krishna Bahadur Pariyar	3	1	2			3
Poonam Timilsina	5	3	2	1	1	3
Sarta Bahadur Tamang	4	3	1		1	3
Laxmi Tamang	9	6	3	3	2	3
Bir Bahadur Tamang	4	3	1		1	3
Ram Bahadur Tamang	4	1	3	1	1	2
Sonam Tamang	4	3	1	1	1	2
Hira Gopal Shrestha	3	2	1			3
Sita Ram Magar	3	3				3
Thuli Kanchhi Magar	4	3	1		1	3
Arjun Pariyar	3	1	2			3
Sanu Bhai Pariyar	9	5	4	2	2	4
Purna Maya Pariyar	3	2	1		1	2

Narayan Pariyar	5	4	1	1	1	1	2	
Dilli Prasad Sapkota	5	3	2			2	3	
Hem Prashad Upreti	6	4	2	1		1	2	2
Sushila Chhetri	9	6	3	2		2	3	2
Tula Bahadur Thapa	4	2	2	1			3	1
Yamanath Bhattarai	7	3	4			2	3	
Dev Rana	5	3	2			2	3	1
Yagya Bahadur/ Bina Nepali	8	4	4	2				
Shankar Gautam	7	4	3	1		2	3	1
Santa Rana	5	4	1	1		1	2	1
Bimala Khattri	5	3	2	1		1	3	
Nirmala Ale	5	3	2			2	3	
Ramesh Niraula	5	2	3	1		1	3	
Bhai raja BK	5	3	2	2		1	2	

Occupation By Household Member(Economically active population from age group 15-59)

S.No.	Household Head	Family Size	Self Employed	Skilled(Labour)	Unskilled(Labour)	Service(Regular Salary)	Small Business	Out of Country	Student	other
1	Ratna Maya Karki	7			2	1		1		
2	Mandira Devi Kafle	5					1		3	
3	Badri Prasad pokharel	6		1		1(Secretary)			2	
4	Ram Kaji Rai	8			2	1			2	1
5	Aruna Lamsal	5				6				
6	Bindra Lal Shakya	5		1	1				1	
7	Ganesh Lama	6					1			1(Driving)
8	Shri Maya Lama	5	1 (knitting)			1			1	
9	Kanchhi Lama	4						1		1 conductor
10	Ramesh Shrestha	3		1			1(Alcohol)	1		
11	Pasang Sherpa	5					2(Kaatha ko kaam)			
12	Gopal Khadka	4			1				1	
13	Suman Tamang	5	1 (Sewing)			1				
14	Raj Kumar Maji	5	Weaving carpet			1				
15	Laxmi Rai	3			2					
16	indra Bahadur Gurung	4			1	1				
17	Bharat Rai	5	1		1			1		
18	Nirmala Yonjan	3								
19	Runisha Rai	6		2				1	1	
20	Hari Prasad Shrestha	1					1(Alcohol)			

Education level

S.No.	Settlement	Household Head	Family Size	Illiterate	Literate	Primary	Secondary	SLC	Higher Sec	Bachelor	Master
1	Manohara	Ratna Maya Karki	7	1	2					4	
2	Manohara	Mandira Devi Kafle	5					1	2		
3	Manohara	Badri Prasad pokharel	6		1			1	1	3	
4	Manohara	Ram Kaji Rai	6			1		5			
5	Manohara	Aruna Lamsal	5			2	1	1			
6	Manohara	Bindra Lal Shakya	5	1			2	2			
7	Manohara	Ganesh Lama	5	1		1	1	1			
8	Manohara	Shri Maya Lama	4	2		1		1			
9	Manohara	Kanchhi Lama	3	2		1					
10	Manohara	Ramesh Shrestha	2			1	1				
11	Manohara	Pasang Sherpa	4			1		1			
12	Manohara	Gopal Khadka	3	2							
13	Manohara	Suman Tamang	4	1	1	1					
14	Manohara	Raj Kumar Maji	4	2		2					
15	Manohara	Laxmi Rai	3	1	1		1				
16	Manohara	indra Bahadur Gurung	4	3		1					
17	Manohara	Bharat Rai	5	1			3	1			
18	Manohara	Nirmala Yonjan	3			1		2			
19	Manohara	Runisha Rai	5			2		2	1		
20	Manohara	Hari Prasad Shrestha	1	1							

46	Manohara	Kailash Bahadur Nepal	4	1	2	1	1					
47	Manohara	Santosh Timilsina	3		1		1	1				
48	Manohara	Bir Bahadur Parajuli	9		2	4	1	1			1	
49	Manohara	Ram Bahadur Thapa	3		2	1					1	
50	Manohara	Hira Gopal Shrestha	5	1	3							
51	Manohara	Sita Magar	5		2	2		1				
52	Manohara	Thuli Magar	6	1	2	1	1					
53	Manohara	Dilli Prasad Sijapati	9	1	3	2		2			1	
54	Manohara	Hem Upreti	4	1	1			1				1
55	Manohara	Sharmila Chhetri	7		2			2				
56	Manohara	Dipendra Thapa	5	1	2	2						
57	Manohara	Som Bhattarai	8	1	2	1					2	
58	Manohara	Dev Rana	7		2	4						
59	Manohara	Bina Nepali	5	1	3						1	
60	Manohara	Yagya Bahadu subedi	5		2	2						
61	Manohara	Shankar Gautam	5		2						2	
62	Manohara	Santa Rana	5		2							1
63	Manohara	Bimala Thapa	5		1	2		1				
64	Manohara	Ramesh Dhakal	5			1					2	1
65	Manohara	Bhai raja BK	5	1		1		1				

Main Income Source (House head Occupation)

S.No	Household Head	Occupation
1	Ratna Maya Karki	out of country
2	Mandira Devi Kafle	Small business
3	Badri Prasad pokharel	Wages (Unskilled labour)
4	Ram Kaji Rai	Service with regular salary
5	Aruna Lamsal	Other
6	Bindra Lal Shakya	Wages (Unskilled labour)
7	Ganesh Lama	Self Employed
8	Shri Maya Lama	Small business
9	Kanchhi Lama	Other
10	Ramesh Shrestha	Small business
11	Pasang Sherpa	Wages (Unskilled labour)
12	Gopal Khadka	Service with regular salary
13	Suman Tamang	Service with regular salary
14	Raj Kumar Maji	Service with regular salary
15	Laxmi Rai	Wages (Unskilled labour)
16	indra Bahadur Gurung	Wages (Unskilled labour)
17	Bharat Rai	Wages (Unskilled labour)
18	Nirmala Yonjan	out of country
19	Runisha Rai	Wages (Unskilled labour)

20	Hari Prasad Shrestha	Small business
21	Dil Bahadur Lama	Wages (Unskilled labour)
22	Padma Bahadur Sijapati	Other
23	Thum Bahadur Basyal	out of country
24	Laxman Pariyar	Self Employed
25	Maya Sitaula	Self Employed
26	Laxmi Rai	Wages (Unskilled labour)
27	Sita Devi Tamang	out of country
28	Bimala Gurung	Wages (Unskilled labour)
29	Promod Narayan Mishra	Wages (Unskilled labour)
30	Binda Shah	Wages (Unskilled labour)
31	Debika Rimal	out of country
32	Roma Pariyar	Service with regular salary
33	Indra Das	Small business
34	Yogen Shah	Service with regular salary
35	Ratna Maya Thapa	Wages (Unskilled labour)
36	Kailash Bahadur Nepal	Wages (Unskilled labour)
37	Krishna Bahadur Pariyar	Small business
38	Poonam Timilsina	Wages (Skilled labour)
39	Sarta Bahadur Tamang	out of country
40	Laxmi Tamang	Service with regular salary
41	Bir Bahadur Tamang	Service with regular salary
42	Ram Bahadur Tamang	out of country
43	Sonam Tamang	out of country

44	Hira Gopal Shrestha	Service with regular salary
45	Sita Ram Magar	out of country
46	Thuli Kanchhi Magar	Small business
47	Arjun Pariyar	Small business
48	Sanu Bhai Pariyar	Small business
49	Purna Maya Pariyar	Small business
50	Narayan Pariyar	Small business
51	Dilli Prasad Sapkota	Wages (Unskilled labour)
52	Hem Prashad Upreti	Wages (skilled labour)
53	Sushila Chhetri	Service with regular salary
54	Tula Bahadur Thapa	out of country
55	Yamanath Bhattarai	Wages (Skilled labour)
56	Dev Rana	Wages (Skilled Labour)
57	Yagya Bahadur/ Bina Nepali	Wages (Skilled labour)
58	Shankar Gautam	Wages (Skilled labour)
59	Santa Rana	Wages (Skilled labour)
60	Bimala Khattri	Wages (Unskilled labour)
61	Nirmala Ale	Wages (Unskilled labour)
62	Ramesh Niraula	Wages (Unskilled labour)
63	Bhai raja BK	Wages (Unskilled labour)

CASE STUDY SURVEY FINDINGS

Building Information of the settlement

S.No.	Household Head	Storey	Roof Type	Wall Type	Frontage of Building (m)	Depth of Building (m)	Building Area (Sq m)	Family Size	Resident Space Available per person in Sq m
1	Ratna Maya Karki	1	Tin / Metal Sheet	Concrete Block with cement mortar	6.5	7.6	38.80104	7	5.54
2	Mandira Devi Kafle	1	Tin / Metal Sheet	Brick with cement mortar	7.62	7.8	59.436	5	11.88
3	Badri Prasad pokharel	1	Tin / Metal Sheet	Brick with cement mortar	7.3	8.53	62.269	6	10.37
4	Ram Kaji Rai	1	Tin / Metal Sheet	Concrete Block with cement mortar	4	8.53	34.12	6	5.68
5	Aruna Lamsal	1	Tin / Metal Sheet	Concrete Block with cement mortar	4.2	6.5	27.3	5	5.46
6	Bindra Lal Shakya	1	Tin / Metal Sheet	Brick with cement mortar	7.62	4.6	35.052	5	7.01
7	Ganesh Lama	1	Tin / Metal Sheet	Concrete Block with cement mortar	7	4.8	33.6	5	6.72
8	Shri Maya Lama	1	Tin / Metal Sheet	Tin / Metal Sheet	6.7	4.52	30.284	4	7.57
9	Kanchhi Lama	1	Tin / Metal Sheet	Concrete Block with cement mortar	6	3.65	21.9	3	7.3
10	Ramesh Shrestha	1	Tin / Metal Sheet	Concrete Block with cement mortar	4	6.5	26	2	13
11	Pasang Sherpa	1	Tin / Metal Sheet	Concrete Block with cement mortar	7	6.2	43.4	4	10.85
12	Gopal Khadka	1	Tin / Metal Sheet	Concrete Block with cement mortar	4.8	6.09	29.232	3	9.74
13	Suman Tamang	1	Tin / Metal Sheet	Tin / Metal Sheet	6.09	7.3	44.457	4	11.11
14	Raj Kumar Maji	1	Tin / Metal Sheet	Concrete Block with cement mortar	6	5.2	31.2	4	7.8
15	Laxmi Rai	1	Tin / Metal Sheet	Concrete Block with cement mortar	7.2	5.6	40.32	3	13.44
16	indra Bahadur Gurung	1	Tin / Metal Sheet	Concrete Block with cement mortar	7.9	4.2	33.18	4	8.29
17	Bharat Rai	1	Tin / Metal Sheet	Concrete Block with cement mortar	10	7.6	76	5	15.2
18	Nirmala Yonjan	1	Tin / Metal Sheet	Concrete Block with cement mortar	7.2	4.5	32.4	3	10.8

S.No.	Household Head	Storey	Roof Type	Wall Type	Frontage of Building (m)	Depth of Building (m)	Building Area (Sq m)	Family Size	Resident Space Available per person in Sq m
19	Runisha Rai	1	Tin / Metal Sheet	Concrete Block with cement mortar	7.5	8.5	63.75	5	12.75
20	Hari Prasad Shrestha	1	Tin / Metal Sheet	Brick with cement mortar	4.8	10.6	50.88	1	50.88
21	Dil Bahadur Lama	1	Tin / Metal Sheet	Brick with cement mortar	8.2	9	73.8	8	9.225
22	Padma Bahadur Sijapati	1	Tin / Metal Sheet	Concrete Block with cement mortar	8.4	7.35	61.74	6	10.29
23	Thum Bahadur Basyal	1	Tin / Metal Sheet	Brick with cement mortar	4	6.5	26	6	4.33
24	Laxman Pariyar	1	Tin / Metal Sheet	Tin / Metal Sheet	4.5	5.2	23.4	5	4.68
25	Maya Sitaula	1	Khar Ko chhana	Bamboo	6.8	5.34	36.312	5	7.26
26	Laxmi Rai	1	Khar Ko chhana	Bamboo	5.4	6.7	36.18	7	5.16
27	Sita Devi Tamang	1	Khar Ko chhana	Bamboo	7.2	6	43.2	7	6.17
28	Bimala Gurung	1	Khar Ko chhana	Bamboo	7.4	5.6	41.44	3	13.81
29	Promod Narayan Mishra	1	Tin / Metal Sheet	Brick with cement mortar	4	5	20	6	3.33
30	Binda Shah	1	Tin / Metal Sheet	Tin / Metal Sheet	7	6	42	7	6
31	Debika Rimal	1	Tin / Metal Sheet	Brick with cement mortar	6.7	3.048	20.4216	4	5.1
32	Indra Das	1	Tin / Metal Sheet	Concrete Block with cement mortar	8	5	40	7	5.71
33	Roma Pariyar	1	Tin / Metal Sheet	Tin / Metal Sheet	6.7	8.2	54.94	8	6.8675
34	Yogen Shah	1	Tin / Metal Sheet	Concrete Block with cement mortar	6.10	3.05	18.58	4	4.645152
35	Ratna Maya Thapa	1	Tin / Metal Sheet	Concrete Block with cement mortar	4.27	7.40	31.58	5	6.315456
36	Kailash Bahadur Nepal	1	Tin / Metal Sheet	Brick with cement mortar	6.30	4.00	25.20	5	5.04
37	Krishna Bahadur Pariyar	1	Tin / Metal Sheet	Brick with cement mortar	7.20	3.00	21.60	3	7.20
38	Poonam Timilsina	1	Tin / Metal Sheet	Brick with cement mortar	7.00	5.30	37.10	5	7.42
39	Sarta Bahadur Tamang	1	Tin / Metal Sheet	Brick with cement mortar	6.00	4.27	25.60	4	6.40
40	Laxmi Tamang	1	Tin / Metal Sheet	Concrete Block with cement mortar	9.50	4.27	40.54	9	4.50

S.No.	Household Head	Storey	Roof Type	Wall Type	Frontage of Building (m)	Depth of Building (m)	Building Area (Sq m)	Family Size	Resident Space Available per person in Sq m
41	Bir Bahadur Tamang	1	Tin / Metal Sheet	Concrete Block with cement mortar	6.10	4.20	25.60	4	6.40
42	Ram Bahadur Tamang	1	Tin / Metal Sheet	Concrete Block with cement mortar	6.70	4.67	31.29	4	7.82
43	Sonam Tamang Lama	1	Tin / Metal Sheet	Concrete Block with cement mortar	6.30	4.30	27.09	4	6.77
44	Hira Gopal Shrestha	1	Tin / Metal Sheet	Tin / Metal Sheet	5.18	1.22	6.32	3	2.11
45	Sita Ram Magar	1	Tin / Metal Sheet	Tin / Metal Sheet	9.00	6.00	54.00	3	18.00
46	Thuli Kanchhi Magar	1	Tin / Metal Sheet	Tin / Metal Sheet	11.00	5.00	55.00	4	13.75
47	Arjun Pariyar	1	Tin / Metal Sheet	Tin / Metal Sheet	9.00	3.00	27.00	3	9.00
48	Sanu Bhai Pariyar	1	Tin / Metal Sheet	Tin / Metal Sheet	9.00	3.00	27.00	9	3.00
49	Purna Maya Pariyar	1	Tin / Metal Sheet	Concrete Block with cement mortar	5.00	3.00	15.00	3	5.00
50	Narayan Pariyar	1	Tin / Metal Sheet	Brick with cement mortar	7.20	3.00	21.60	5	4.32
51	Dilli Prasad Sapkota	1	Tin / Metal Sheet	Brick with cement mortar	3.66	3.05	11.15	5	2.22
52	Hem Prashad Upreti	1	Tin / Metal Sheet	Concrete Block with cement mortar	4.96	5.40	26.78	6	4.46
53	Sushila Chhetri	1	Tin / Metal Sheet	Concrete Block with cement mortar	5.67	4.50	25.52	9	2.83
54	Tula Bahadur Thapa	1	Tin / Metal Sheet	Concrete Pillar	3.35	6.10	20.44	4	5.1
55	Yamanath Bhattarai	1	Tin / Metal Sheet	Concrete Pillar	6.10	3.96	24.15	7	3.45
56	Dev Rana	1	Tin / Metal Sheet	Brick with mud mortar	7.00	6.00	42.00	5	8.4
57	Yagya Bahadur/ Bina Nepali	1	Tin / Metal Sheet	Brick with mud mortar	6.00	7.00	42.00	8	5.25
58	Shankar Gautam	1	Tin / Metal Sheet	Brick with mud mortar	6.00	6.00	36.00	7	5.14
59	Santa Rana	1	Tin / Metal Sheet	Brick with mud mortar	5.00	7.00	35.00	5	7
60	Bimala Khattri	1	Tin / Metal Sheet	Concrete Block with cement mortar	6.00	4.00	24.00	5	4.8
61	Nirmala Ale	1	Tin / Metal Sheet	Concrete Block with cement mortar	4.00	4.00	16.00	5	3.2
62	Ramesh Niraula	1	Tin / Metal Sheet	Brick with cement mortar	5.00	4.00	20.00	5	4
63	Bhai raja BK	1	Tin / Metal Sheet	Brick with mud mortar	4.00	4.00	16.00	5	3.2

Access to Infrastructure

Household Head	Toilet Use Type	Watersupply Source	Toilet Structure Type	Electricity Source
Ratna Maya Karki	Private	Water spout	pit laterine	Shared
Mandira Devi Kafle	Private	Water spout	Pit laterine	Shared
Badri Prasad pokharel	Private	Water spout	Pit laterine	Shared
Ram Kaji Rai	Private	Water spout	Pit laterine	Shared
Aruna Lamsal	Private	Water spout	Pit laterine	Shared
Bindra Lal Shakya	Private	Water spout	Pit laterine	Shared
Ganesh Lama	Private	Water spout	Latrine drained to river	Shared
Shri Maya Lama	Shared Toilet	Water spout	Latrine drained to river	Shared
Kanchhi Lama	Shared Toilet	Water spout	Latrine drained to river	Shared
Ramesh Shrestha	Shared Toilet	Water spout	Latrine drained to river	Shared
Pasang Sherpa	Shared Toilet	Water spout	Latrine drained to river	Shared
Gopal Khadka	Shared Toilet	Water spout	Latrine drained to river	Shared
Suman Tamang	Shared Toilet	Water spout	Latrine drained to river	Shared
Raj Kumar Maji	Private	Boring	Latrine drained to river	No electricity
Laxmi Rai	Private	Boring	Pit laterine	Shared
indra Bahadur Gurung	Shared Toilet	Boring	Pit laterine	Shared
Bharat Rai	Shared Toilet	Water spout	Pit laterine	Shared
Nirmala Yonjan	Shared Toilet	Water spout	Pit laterine	Shared

Runisha Rai	Shared Toilet	Water spout	Pit laterine	No electricity
Hari Prasad Shrestha	Shared Toilet	Water spout	Pit laterine	Shared
Dil Bahadur Lama	Shared Toilet	Water spout	Pit laterine	Shared
Padma Bahadur Sijapati	Private	Boring	Pit laterine	Shared
Thum Bahadur Basyal	Private	Water spout	Latrine drained to river	Shared
Laxman Pariyar	Shared Toilet	Water spout	Latrine drained to river	No electricity
Maya Sitaula	Shared Toilet	Water spout	Latrine drained to river	No electricity
Laxmi Rai	Shared Toilet	Water spout	Latrine drained to river	No electricity
Sita Devi Tamang	Shared Toilet	Water spout	Latrine drained to river	No electricity
Bimala Gurung	Shared Toilet	Water spout	Latrine drained to river	No electricity
Promod Narayan Mishra	Private	Boring	Latrine drained to river	Shared
Binda Shah	Private	Boring	Latrine drained to river	Shared
Debika Rimal	Private	8	Latrine drained to river	Shared
Indra Das	Private	Well	Latrine drained to river	Shared
Roma Pariyar	Private	Water spout	Latrine drained to river	Shared
Yogen Shah	Shared Toilet	Water spout	Latrine drained to river	Shared
Ratna Maya Thapa	Private	Water spout	Latrine drained to river	Shared
Kailash Bahadur Nepal	Shared Toilet	Water spout	Pit Laterine	No electricity

Krishna Bahadur Pariyar	Shared Toilet	Water spout	Pit Latrine	No electricity
Poonam Timilsina	Private	Boring	Pit Latrine	No electricity
Sarta Bahadur Tamang	Private	Boring	Pit Latrine	No electricity
Parbati Kachyapati	Private	Boring	Pit Latrine	No electricity
Bir Bahadur Tamang	Shared Toilet	Well	Pit Latrine	No electricity
Ram Bahadur Tamang	Private	Well	Pit Latrine	No electricity
Sonam Tamang Lama	Shared Toilet	Well	Pit Latrine	No electricity
Hira Gopal Shrestha	Private	Water spout	Pit Latrine	No electricity
Sita Ram Magar	Shared Toilet	Water spout	Pit Latrine	Shared
Thuli Kanchhi Magar	Shared Toilet	Water spout	Pit Latrine	Shared
Ajun Pariyar	Shared Toilet	Water spout	Pit Latrine	Shared
Sanu Bhai Pariyar	Shared Toilet	Water spout	Pit Latrine	Shared
Purna Maya Pariyar	Shared Toilet	Water spout	Pit Latrine	Shared
Narayan Pariyar	Shared Toilet	Water spout	Pit Latrine	Shared
Dilli Prasad Sapkota	Private	Boring	Latrine drained to river	Shared
Hem Prashad Upreti	Private	Boring	Latrine drained to river	Shared
Sushila Chhetri	Private	Boring	Latrine drained to river	Shared
Tula Bahadur Thapa	Private	Boring	Latrine drained to river	Shared
Yamanath Bhattarai	Private	Boring	Latrine drained to river	Shared
Dev Rana	Shared Toilet	Well	Latrine drained to river	Shared

Yagya Bahadur/ Bina Nepali	Shared Toilet	Well	Latrine drained to river	Shared
Shankar Gautam	Shared Toilet	Well	Latrine drained to river	Shared
Santa Rana	Shared Toilet	Water spout	Latrine drained to river	No electricity
Bimala Khattri	Shared Toilet	Water spout	Latrine drained to river	No electricity
Nirmala Ale	Shared Toilet	Water spout	Latrine drained to river	No electricity
Ramesh Niraula	Private	Water spout	Latrine drained to river	Shared
Bhai raja BK	Private	Water spout	Latrine drained to river	Shared

Purpose of loan taken

S.No.	Settlement	Household Head	Loan Taken	Purpose of loan taken	From whom
1	Manohara	Ratna Maya Karki	yes	For Abroad	Bank/finanace
2	Manohara	Mandira Devi Kafle	no		
3	Manohara	Badri Prasad pokharel	yes	for construction	Bank/finanace
4	Manohara	Ram Kaji Rai	no		
5	Manohara	Aruna Lamsal	yes	for construction	Bank/finanace
6	Manohara	Bindra Lal Shakya	yes	for construction	friends
7	Manohara	Ganesh Lama	yes	for construction	co-operative
8	Manohara	Shri Maya Lama	no		
9	Manohara	Kanchhi Lama	yes	For Abroad	friends
10	Manohara	Ramesh Shrestha	no		
11	Manohara	Pasang Sherpa	no		
12	Manohara	Gopal Khadka	no		
13	Manohara	Suman Tamang	yes	For household use	friends
14	Manohara	Raj Kumar Maji	yes	For household use	friends
15	Manohara	Laxmi Rai	yes	for construction	Bank/finanace
16	Manohara	indra Bahadur Gurung	no		
17	Manohara	Bharat Rai	no		
18	Manohara	Nirmala Yonjan	yes	For Abroad	Bank/finanace
19	Manohara	Runisha Rai	yes	for work	co-opetative
20	Manohara	Hari Prasad Shrestha	No		
21	Manohara	Dil Bahadur Lama	yes	For household use	co-opetative
22	Manohara	Padma Bahadur Sijapati	No		

	Manohara	Thum Bahadur Basyal	No	for work	co-opetative
23	Manohara	Laxman Pariyar	yes		co-opetative
24	Manohara	Maya Sitaula	No		
25	Manohara	Laxmi Rai	yes	For household use	co-opetative
26	Manohara	Sita Devi Tamang	yes	For Abroad	Sahu
27	Manohara	Bimala Gurung	yes	For Treatment	Friends
28	Manohara	Promod Narayan Mishra	yes	For Abroad	Sahu
29	Manohara	Binda Shah	yes	for construction	co-opetative
30	Manohara	Debika Rimal	yes	For Abroad	Friends
31	Manohara	Roma Pariyar	no		
32	Manohara	Indra Das	yes	For household use	friends
33	Manohara	Yogen Shah	no		
34	Manohara	Ratna Maya Thapa	no		
35	Manohara	Kailash Bahadur Nepal	yes	for treatment	co-operative
36	Manohara	Krishna Bahadur Pariyar	yes	for construction	co-operative
37	Manohara	Poonam Timilsina	yes	for education	co-operative
38	Manohara	Sarta Bahadur Tamang	no		
39	Manohara	Laxmi Tamang	yes	for education	friends
40	Manohara	Bir Bahadur Tamang	yes	For Abroad	Bank/finanace
41	Manohara	Ram Bahadur Tamang	no		
42	Manohara	Sonam Tamang	no		
43	Manohara	Hira Gopal Shrestha	no		
44	Manohara	Sita Ram Magar	no		
45	Manohara	Thuli Kanchhi Magar	yes	For household use	co-operative
46	Manohara	Arjun Pariyar	yes	For household use	co-operative
47	Manohara	Sanu Bhai Pariyar	no		
48	Manohara				

49	Manohara	Purna Maya Pariyar	no			friends
50	Manohara	Narayan Pariyar	yes	for education		friends
51	Manohara	Dilli Prasad Sapkota	yes	For household use		co-operative
52	Manohara	Hem Prashad Upreti	yes	For household use		co-opetative
53	Manohara	Sushila Chhetri	yes	For household use		co-operative
54	Manohara	Tula Bahadur Thapa	yes	for construction		friends
55	Manohara	Yamanath Bhattarai	yes	for work		co-operative
56	Manohara	Dev Rana	yes	for work		Bank/finanace
57	Manohara	Yagya Bahadur/ Bina Nepali	yes	for construction		Bank/finanace
58	Manohara	Shankar Gautam	yes	For Abroad		friends
59	Manohara	Santa Rana	yes	For household use		friends
60	Manohara	Bimala Khattri	yes	for education		co-operative
61	Manohara	Nirmala Ale	yes	for treatment		friends
62	Manohara	Ramesh Niraula	yes	for education		co-operative.
63	Manohara	Bhai raja BK	yes	for construction		

Willingness to Pay

Household Head	Y/N	Remarks
Som Bhattarai	Yes	
Yogesh Shah	Yes	
Arjun Bishwokarma	Yes	
Aruna Lamsal	Yes	Work should be given to pay
Badri Prasad pokharel	Yes	Location should be appropriate
Bhai raja BK	no	
Bharat Rai	no	Land without pay
Bimala Gurung	Don't know	Whatever the leader say
Bimala Thapa	Yes	
Bina Nepali	Yes	
Binda Shah	Yes	
Bindra Lal Shakya	Yes	Location should be appropriate
Bir Bahadur Parajuli	Don't know	
Debika Rimal	Yes	
Dev Rana	Yes	
Dil Bahadur Lama	Yes	Location should be appropriate
Dilip Shah	Yes	
Dilli Prasad Sijapati	Yes	
Dipendra Thapa	no	

Ganesh Lama	Yes	Work should be given to pay	
Gopal Khadka	Yes	Location should be appropriate	
Hari Prasad Shrestha	no	But should be free. Not interested to pay	
Hem Upreti	no		
Hira Gopal Shrestha	no		
Household Head		Reason	
indra Bahadur Gurung	Yes	Location should be appropriate	
Kailash Bahadur Nepal	Yes		
Kanchhi Lama	No	But should be free. Not interested to pay	
Krishna Pariyar	Yes		
Laxman Pariyar	Yes	location should be appropriate	
Laxmi Rai	Yes	Location should be appropriate	
Laxmi Rai	Yes	Location should be appropriate	
Laxmi Tamang	Yes		
Mandira Devi Kafle	Yes	Unity should be there in settlement	
Maya Sitaula	Yes	Location should be appropriate	
Narayan Pariyar	No		
Nirmala Yonjan	Yes	Location should be appropriate	
Padma Bahadur Sijapati	Yes	Yes but the place should be near to work place and basic infrastructure , facilities should be there	
Pasang Sherpa	Don't know	Whatever the leader say	
Promod Narayan Mishra	Yes		

Purna Maya Pariyar	no	
Raj Kumar Maji	Yes	Work should be given to pay
Ram Bahadur Thapa	Don't know	
Ram Kaji Rai	No	But should be free. Not interested to pay
Rama Pariyar	Yes	
Ramesh Dhakal	Yes	
Ramesh Shrestha	Don't know	Whatever the leader say
Ratna Maya Karki	Yes	Yes but the place should be near to work place and basic infrastructure , facilities should be there
Ratna Maya Thapa	Yes	
Runisha Rai	Yes	Location should be appropriate
Sanjeev Das	Yes	
Santa Rana	Yes	
Santosh Timilsina	Yes	
Sanu Bishwokarma	Yes	
Shankar Gautam	Yes	
Sharmila Chhetri	Yes	
Shete Tamang	Yes	
Shri Maya Lama	Yes	Work should be given to pay
Sita Magar	no	
Sita Devi Tamang	don't know	Whatever the leader say
Sonam Tamang	Yes	
Suman Tamang	don't	Whatever the leader say

	know	
Surya Bahadur Giri	Yes	
Thuli Magar	Yes	
Thum Bahadur Basyal	no	But should be free. Not interested to pay
Yagya Bahadu subedi	Yes	