

MSc Theses Abstract

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Graduation Year 1998**Thesis Title: THRESHOLD APPROACH IN PLANNING****Submitted by: Arjun Koirala****ABSTRACT:**

This thesis applies the concept of threshold approach in planning, taking a case of tourism in Dhulikhel Municipality. The infrastructure base of our towns and the efforts to promote tourism and address the needs to local people in a country like ours raise the issue of how much and until when a town can serve the tourist and its people. The national developmental goals and policies of Nepal are inclined towards exploiting tourism resources more intensely in the coming years. The approach of integrating tourism and settlement in planning to achieve complementary concept in terms of infrastructure and services has been found lacking, and this study integrates the both by assessing the existing infrastructure and services in terms of the needs of tourism and local populating, and establishes boundaries for urban expansion to suggest an effecting sharing of infrastructures.

The local leaders, professionals and the local people realize the potential of tourism industry for the development of Dhulikhel. A shift of beneficiary population form 7.06% (at present) to

29.44% (expected) is one of the best indicators that explains the potential and need of plans to harness the tourism benefits. The strategic location of Dhulikhel for tourism shows the need to treat it as a nodal point for tourism. The in-house tourism development is regarded as one of the strongest tools to involve local community in tourism and seek for conservation of the historic settlements.

The potential areas for urban expansion from the consideration of thresholds due to natural and man-made environments are established around the traditional settlements Dhulikhel and Shreekhandaapur with the advantage to benefit from existing infrastructure and develop a new system of infrastructure and services for a clustered settlement. Because of a number of constraints (basically time and limited scope of this thesis) a number of further areas of research are suggested which help test the recommendations formulated in this study.

As IAP as a planning tool is being used in many of the municipalities in the country, and the Ninth Plan also emphasizes on integrating infrastructure programmes with tourism development, the study of this nature finds relevant ground to conclude that the concept of benefiting local population through the sharing of infrastructure for tourism is essential.

**Thesis Title: RURAL-URBAN LINKAGE FOR
SUSTAINABLE DEVELOPMENT (A CASE
STUDY OF GITANAGAR-
BHARATPUR)**

Submitted by: Indibar Gurung

ABSTRACT:

The perspective on previous development works carried in Nepal reflects the need of integration between rural and urban areas. Immigration problem is one of the main hurdles for balanced development at present, which resulted in urban congestion and pressure on infrastructure and led to economic stagnation. Physical biased plans giving emphasis only on the road sector rather than integrated economic approach are implemented.

In this connection, the study aims to investigate the existing nature of rural-urban linkage in Nepal. It examines mainly three spatial linkage systems namely (1) economic linkage (2) physical linkage and (3) service delivery linkage. A case study approach incorporating several field instruments and document review was used in the study.

The study focuses on seeing the existing inter-linkage of Bharatpur of Chitwan district with five market centres located within four adjoining VDCs with specific focus on Gitanagar. Main focus of

the study is the economic development with its impact on environment. The introduction of one activity can act as the trigger role for other activities with "cascade effect". Therefore, rural product- milk is taken as a case for study in Gitanagar.

Extensive interviews with representatives of the different offices, local farmers with questionnaires served as sources of primary data. System of scoring and indexing techniques were used to transform descriptive results into more precise and calculated numerical comparisons. The analysis is based on the statistical tools. Regarding spatial linkage with market centers, the result shows that the variation on the price of six selected goods is not so significant due to easy transportation access. Positive environmental impact is found from the milk production in Gitanagar.

Integrated program is found to be the weakest component of the milk production sector for which the recommendations are proposed in study area. Some of which includes the infrastructure and services. General policy recommendations are the emphasis towards the development of the small town or market centers, initiating to the enterprises of different scales providing the necessary physical infrastructure making proper institutional linkages with urban centers.

**Thesis Title: EMPOWERING POOR FOR
SUSTAINABLE URBAN DEVELOPMENT**

Submitted by: Nanda Shakya

ABSTRACT:

Cities have been center of change and progress throughout human history. Global urbanization trend shows that cities would be dominant forms of settlement for most of people throughout the world in 21st century. The city is no longer a habit of the rich. In poor countries like ours, sustainable urban development growth has to be built on the foundations of the livelihood of the poor.

Poverty is one of the root cause for accelerating environment degradation. Efforts to improve the physical environment must proceed with effort to provide at least the minimum basic needs, physical, economic and social to the poor. Despite poverty alleviation is on-top priority on national plans and regional (SAARC) declaration, statistics show that proportion of poor are on the increase.

Past performance shows that external aid creates dependency, squatting problem in cities cannot be solved by eviction process. Empowerment of poor is indispensable for the sustainable urban

development whether elite or rich like it or not. This study focuses on one of poorest of the poor group living in squatters in the Kathmandu City. For the purpose of sampling, Kumaristhan was selected as the study area.

The average household income of surveyed population of the study area is US \$ 86 per capita. According to the definition of poverty line (World Bank; 1990), this is not sufficient to cover the expenses for basic needs. Cent percent of the respondent lived in rental accommodation before they began to squat. Lack of access to employment water supply, toilet, electricity, education and health are considered as the main problems.

The recommended proposal contains upgrading efforts that are crucial even if squatters are allowed to stay in the area only on temporary basis. The rent saved on previous accommodation and community awareness level of Kumaristhan acts as potential for incremental up-gradation for their empowerment. Up-gradation process will increase productivity and income through integrated incremental community driven cooperative efforts, which will make them eventually, be able to contribute for sustainable urban development.

Thesis Title: URBAN SPACE IN PATAN

Submitted by: Prakash Bahadur Raghubanshi

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

Urban spaces in Patan possess unique characteristics and play a significant role in the creation of urban form. They exhibit clear hierarchy ordered socio-cultural activities of people.

Streets and squares are the basic typology of urban of Newar towns and determinants to decide the pattern of urban space. Network of streets link different types of spaces - squares, baha, bahi, lachhi, and nanis. Differing access types from thoroughfare, direct to under passage and placing of social, cultural and religious structure in it give a sense of varying public and private space perspectives.

The urban space hierarchy of Newar towns of Kathmandu valley is based on different indicators- type, geometry, scale, physical and social linkages of the city. On the top of that access type and consisting urban element are the deciding parameters to govern it.

The basic difference of Newar town spaces to that of medieval space in the west is that the latter lack the element within the space. Whereas different elements - temple, hiti, pati, chapa/satah, dyochhen, Chiba and well are the major constituents of urban spaces in Kathmandu valley old towns and are meant for public services, which include water supply, rest house, shelter and other socio cultural activities as Jatras or festival.

The urban spaces of medieval towns of Kathmandu valley are not only intended for recreational purpose and circulation corridor but are the centers for gathering, market and social services. It seems in modern planning public spaces are more recreational and social aspect is lacking.

The urban spaces of the Kathmandu valley towns are the part of the life of the people with multifunctional dimensions and hence cannot be studied in isolation without consideration of people as they are primarily made for them.

Graduation Year 1999

**Thesis Title: DEVELOPMENT PLAN OF BANEPA
MUNICIPALITY WITH PARTICULAR
ATTENTION ON TOURISM**

Submitted by: Asta Lal Suwal

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT:

The thesis applies the concept of Development Plan of Banepa Municipality with Particular Attention on Tourism. The infrastructure base of our towns and the efforts to promote tourism and address the need of local people in a country like ours; raise the issue of how much and until when a town can serve the tourist and its people. The notional development goals and policies of Nepal are inclined towards exploiting tourism resources more intensely in the coming years. The approach of integrating tourism and settlement in planning to achieve complementary concept in terms of infrastructure and services in terms of the needs of tourism and local population, and establishes boundaries for urban expansion to suggest an effective sharing of infrastructure.

The local leaders, professional and the local people realize the potential of tourism industry for the development of Banepa. The strategic location of Banepa for tourism shows the need to treat it as a nodal point for tourism. The Tourism Development is regarded as one of the strongest tools to involve local community in tourism and seek for conservation of the historic settlements.

The potential area for urban expansion due to natural and man-made environments are established the advantage to benefit from existing infrastructure and develop a new system of infrastructure and service for a clustered settlement. Because of number of constraints (basically time and limited scope of this thesis) a number of further areas of research are suggested with help test the recommendations formulated in this study.

As 1AP as a planning tool is being used in many of the municipalities in the country, and the Ninth Plan also emphasizes on integrating infrastructure programs with tourism development, the study of this nature finds relevant, ground to conclude that the concept of benefiting local people through the sharing of infrastructure for tourism is essential.

**Thesis Title: PUBLIC-PRIVATE ENTERPRISE-A
SUSTAINABLE SOLUTION OF URBAN
WASTE MANAGEMENT**

Submitted by: Deepak Bahadur Singh

Supervisor: Mr. Bharat Sharma

ABSTRACT:

Nepal is facing a high rate of urban growth and unplanned urban explosion since late '80s'. The unplanned growth of urban centers has led to increased demand for urban infrastructure services, which the municipal centers are not able to scope. Solid Waste Management System is one of the areas where public agency has failed to provide satisfactory services.

Before '70s solid wastes were of organic nature and locally converted into soil conditioner. But, now people have stopped this practice. Volume of wastes has increased to a proportion that the public agency has not been able to tackle with. The reason for failure of public managed system is due to lack of work efficiency, discipline and commitment, and public cooperation. People have taken it as a free service to be provided by the government.

In the above context, and based on successful past experiences of other countries, the government has adopted a policy of promoting private sector in waste management services, who will

provide their services for a certain amount of service-charge collected from the waste generators. Kathmandu Metropolitan Corporation and Biratnagar Sub-Metropolitan Corporation have partnered with Private Firm under the above provision. This thesis has studied and carried out a research on the program, and has evaluated and recommended devising a sustainable waste management system. The scope of study has been to:

- evaluate the public waste management system in Nepal, particularly in Kathmandu.
- evaluate the KMC-SILTES operated waste collection project in Kathmandu.
- analyze the findings, identify the problems and issues, and develop their solutions.
- recommend required additions and modifications in the system so as to make it sustainable, successful, efficient and replicable at other municipalities.

The research, analysis and recommendations are concentrated into:

- devising a system of successful public-private partnership modality
- analyzing sustainable waste management through an appropriate system in all the stages of waste management

- emphasizing on reduce - recycle - reuse principle through waste recovery, composting, recycling and public awareness generation on waste as resource.
- recommending institutional setup and policy formulation for a sustainable Municipal Solid Waste Management.

Thesis Title: REGENERATION OF THE HISTORICAL TOWN (A CASE STUDY OF KIRTIPUR)**Submitted by: Kishore Lal Mahaju****Supervisor: Prof. Dr. Sudarshan Raj Tiwari****ABSTRACT:**

Kirtipur means "The city of glory" and until 18th century the control of Kirtipur was a key to maintaining power in the valley, as it was the gateway to the valley. The specialty of this place is that its historical and traditional character is still alive. Its mediaeval town layout, old architecture, social life, cultural practices all show such characters. But presently this town is in the sever grip of economic decline. The loss of farming land to the University and subsequent failure of subsidiary economic base handloom industry has made the economic future of Kirtipur people uncertain. It has telling effect on its physical environment and socio-cultural life. Further level of infrastructure i.e. drinking water supply, sanitation, drainage, and road condition is far from satisfactory which has contributed to poor living condition. So if action is not taken to arrest its further decline and improve the living condition, this traditional town is bound to lose its historical significance. This shows the need of regeneration of this town.

In the present context when human needs are changing, just revival of traditional economic base cannot satisfy their present day needs. So sensible introduction of compatible modern activities are required to cater to the changing needs. So the tool of urban regeneration has been applied to regenerate the declining town, which is a conservation-based development approach.

This approach demands involvement of various sectors i.e. governmental/non-governmental organizations, politicians and the general public. First, various examples of this approach carried out in western countries and Nepal were studied to have the concept and idea about implementation of this approach. Then the actual study of Kirtipur was made on its physical, cultural and economic aspects. On the basis of situational analysis potential strategic areas were identified. Mainly two sectors "weaving and cottage industries" and "tourism" have been chosen for economic regeneration. An approach for integrated participation in the regeneration process has been devised. A concept called 'Unified Town' approach has been devised to regenerate the town, which aims at establishing linkage between the old towns and surrounding so that existing potentiality of these areas can be used for mutual benefit for their viability. The study ends up with the preparation of conceptual

development plan for conservation and economic rehabilitation with suitable strategies, policies and recommendations.

**Thesis Title: CONSERVATION AND DEVELOPMENT
APPROACHES FOR HISTORIC HILL
TOWNS OF NEPAL (A CASE STUDY)**

Submitted by: Narayan Prasad Khanal

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

Gorkha Bazar is a historical hill town situated on the western development region of Nepal. There is a very old palace constructed in the 17th century by the Shah Kings.

Where the father of modern Nepal King Prithivi Narayan Shah was born. It was a historical defense town but it has lost this significance now. Kathmandu - Pokhara pedestrian main trail passing through the Bazar, Gorkha had as developed as a trading center of western region. After the construction of Gorkha - Narayanghat highway, the pedestrian trail is no more used and thus its economic bases such as agriculture and business have declined. The Highway passes from the lower level of the Bazar, due to that, the elite people started to shift along the highway and the other people were left in the core. Due to the economic decline and the lack of awareness the historical properties are deteriorating day by day. But it should be conserved in all

aspects such as cultural, religious, social, historical and tourists' point of view.

Unplanned growth of the town is expanding out side the core area. Environmental pollution is increasing and as a result of that the gastrointestinal diseases is common in the settlement. To deal with such a situation, a planning approach integrating both conservation and development by laws is proposed. It is hoped that the exploitation of tourism potential of the Gorkha Bazar will provide sufficient resource to implement the plans. These aspects are incorporated in the proposed development plan of Gorkha Bazar.

**Thesis Title: AFFORDABLE HOUSING STRATEGY
FOR URBAN POOR OF NEPAL**

Submitted by: Sunil Babu Shrestha

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT:

Housing is a basic human need for civilized living. It is essential requirement to have one modest house to everyone. In many developing countries, shortage of housing mainly due to rapid increase in population, fast pace of urbanization and other social and economic factors which include breaking up of the joint family system and steep rise in the prices of land building materials and labors. Yet a substantial portion of the world population, especially in the third world countries, lives in substandard dwellings and unhealthy environments. Many of them live under bridges, on the streets, in the slums and squatters and situation is getting worse, primarily due to land speculation, uncontrolled rents, lack of social welfare programs, the overgrowing foreign debt and the trend towards privatization.

Housing has become one of the complex problems for the rapid increasing urban population, especially for poor. Unless the urgent measures are taken both at national and grass root level to mitigate the housing problem, it will assume crisis proportion

with grave adverse consequences on the survival and well being of the people as well as the process of economic and social development. Therefore, affordable housing- housing at affordable price means to achieve cost effective housing for all, particularly for the low- income families, are most essential for the solution of housing [problem to the poor country like Nepal whose 51% (THE WORLD BANK\UNDP 1988-1989) urban population are living below the poverty line. Affordable housing are low cost housing, which doesn't means housing with low quality but total cost of housing is effectively reduced with quality.

It would be worthwhile to concentrate on Science and Technology inputs made available by extensive research and development in various countries both developed and developing countries for achieving housing construction at affordable price is therefore a process of synthesizing various requirements so that the housing process and product are not only cost effective but also acceptable to those for whom it is intend.

Acceptability is an important factor in affordable housing as it is intimately related to the needs of the people and their way of life, as well as their expectations and aspiration. At the same time, it is necessary to cater to more exacting demands of housing

construction in terms of quality, economy and speed in construction by taking advantage of innovative and new materials, construction techniques and designs evolved through research undertaken in various countries.

Hence this thesis "affordable housing for urban poor of Nepal" tries to encompass a variety of inputs, which call for multidisciplinary action in an integrated manner. This study concentrates not only in the case study of Banshighat one of the squatter settlement for finding the social, cultural and economical as well as the housing situation of the urban poor but also does the study of different countries including Nepal to share the knowledge of housing experience. It doesn't only give attention to technological aspects such as architectural, engineering and construction requirement of housing but varied aspects concerning physical planning, land use, conservation of resource, utilization of local material and technology, energy, government policies, plans and programs, environment, ecological balance, mitigation of natural disasters, urbanization and migration trend, socio-economic status of people and many aspects of human settlements development have taken into consideration in the light of advances science and technology and their impact on housing. The findings are analyzed and formulate the affordable housing strategy for urban poor to achieve the socially and

culturally acceptable housing at affordable price to them. The basic concepts of the affordable housing strategy is to create a self sustained settlement consisting of employment opportunities with active participation of 3fp's people, public government and private sector to provide incremental skeleton housing for the heterogeneous income group using the low cost housing technique and applying the principle of cross-subsidy.

The recommended strategies of this study prepared after the multi-disciplinary study in an integrated manner tries to prepare national housing strategy for the solution for housing problem for the urban poor of Nepal.

**Thesis Title: REVIEW OF IAP (A CASE STUDY OF
BANEPA MUNICIPALITY)****Submitted by: Udaya Shrestha****Supervisor: Padam Bahadur Chhettri****ABSTRACT:**

Integrated Action Planning (IAP) is a relatively new approach adapted in our context, which can be regarded as bottom up approach and give preference to action plans. It was introduced in Nepal in 1989 as a training package, later operationalised in municipalities. Till date 25 municipalities have already received IAP and more are to receive it. After spending more than a decade, it has been felt that it has been a high time to review of the procedure.

Regarding this aspect, the research study was carried out with the general objective of reviewing the IAP process. For this purpose Banepa municipality was taken as case study area, which was the first municipality that adopted IAP in operational level in 1993.

From the study it was found that IAP facilitated development through identifying realistic problems from participation and are converted into realistic and affordable projects. These projects are later integrated with multi-sectoral investment program,

which supports the goals of physical and environmental development plan.

Plan formulation, plan implementation and Follow up are the basic stages that convert the theory into reality. In practice it was found that the Plan formulation was done very satisfactorily but the remaining were very much neglected. Some of the reasons are non-availability of fund, frequent change of the staffs, lack of the political commitment and lack of the trained manpower. Despite of these practical problems it is most suitable planning tool that we have presently. Reviewing with time and some changes will prove it into real and complete planning tool.

**Thesis Title: LAND POOLING AND URBAN
DEVELOPMENT (A CASE STUDY OF
KATHMANDU VALLEY)**

Submitted by: Bipin Kumar Chhettri

Supervisor: Padam Bahadur Chhettri

ABSTRACT:

The urban sprawl in Kathmandu Valley is spreading very rapidly without proper planning. In the absence of approved land use plan of Valley, it is spreading outward enormously where ever the land is available. At present, land development and housing is quite haphazard and spontaneous. Moreover, the poor have very little access to developed urban land. Land is the basic raw material for physical development of any area. Hence, it is necessary to find ways by which the urban land development process can be suitably accelerated uses of existing land optimized, and its distribution made more equitably.

Urban land management involves a set of measures to achieve the land needed for the urban purposes at the right time, location, price and quantum with efficiency. Urban land management practices should aim at safeguarding the interests of urban poor so that there is an equitable ownership distribution of urban land. It should also address the issues of land assembly, development,

pricing and disposal. The land assembly techniques generally practiced are land acquisition, land pooling, plot reconstitution etc.

In Nepal, during the last three decades different towns and local bodies have made efforts to develop land for planned urban expansion and growth. The lands developed were basically for developing commercial plots. The need of total urban land for housing and other urban services were ignored. The basic reason for this was attributed to the ignorant town development authorities, of towns with mostly rural character, on the essence of modern urban planning and development. Physical development plans for all the regional center were formulated and adopted by through land development efforts and land use control system. Site and Services, Guided Land Development (GLD) and Land Pooling are the major tools adopted by government in urban land management.

The unplanned urban sprawl has been corrected up to some extent by Guided Land Development (GLD) planning, which was started in late 80s. Land Pooling/Readjustment is one of the techniques, which is being used at present for urban development and housing in the valley.

Three case studies have been considered

- Naya Bazar Project
- Chabahil Gopikrishna land pooling Project
- Sinamangal Land Pooling Project

With ample improvements in the existing land pooling practices, in the context of Nepal, land pooling can be considered as one of the most effective tools in urban land management.

**Thesis Title: URBAN INFORMAL SECTOR IN
KATHMANDU CITY (A CASE STUDY OF
COMMERCIAL VENDORS)**

Submitted by: Dhanita Sthapit

Supervisor: Prof. Dr. Pushkar K. Pradhan

ABSTRACT:

Vendors are traditional identity of Kathmandu cities. They have existed in the urbanscape in the form of Banja, Phanja and bazaars and have established a form of urban economic activity. In the modern urban system, they are recognized as the informal sector due to their characteristic features like ease of entry and exit, self employed, less capital-intensive enterprise, etc. Out of five different economic activities if informal sector namely: manufacturing, construction, transport, trade, commerce, and services, vending and hawking comes under the trade and commerce category of informal sector.

This is an empirical study based on primary data with the main objective of examining the characteristic feature of Kathmandu City in terms of spatial, social, physical and economic context. The study area covered the 47 localities having the vendor's activity selling perishable as well as durable items within the municipal area. Nine sites were considered as sample sites with

the total sample respondents of 57. The study shows that with rapid urbanization, primarily due to rural urban migration, the unskilled labour force, which could not be absorbed in urban modern economic sector thus screened out to different economic activities in the city. Informal sector is one of the consequences of urbanization.

The study concludes that commercial vending is an informal marketing system, which has provided employment to the unskilled, uneducated rural migrants. These vendors have played the role of distribution system of the formal markets. Though their number in the city at present is not much, its trend shows that it is increasing in number and has encroached road space, footpaths and open spaces. In the mean time, they have provided service to the city dwellers. Therefore, these need to be organized in a place, so that its adverse affect can be minimized such as congestion, pollution, etc.

The study has recommended some policy implications as well as some short term and long term measures for organizing the vendors. The study recommends for further studies on different other sectors for the elaboration of the comprehensive employment policy as well as the sustainable solution for urban economic system.

**Thesis Title: UPGRADING OF INFORMAL
SETTLEMENT OF URBAN POOR (A CASE
STUDY OF BUTWAL NAGARPALIKA)**

Submitted by: Lachman Joshi

**Supervisor: Mr. Kishor Thapa, Prof. Dr. Jiba Raj
Pokharel**

ABSTRACT:

Throughout history the city, and especially the big city, has served as a center for the generation of power, wealth and knowledge; a catalyst for development and a respiratory of those cultural traditions that are the foundation of modern civilization. It is no wonder that most rural populations in Nepal, town life presents a view of an oasis where newcomers can enjoy a respite from hunger, disease and ignorance. For many, alas, the vision is illusory: life in a town where there is neither work nor shelter quickly degenerates into nothing more than urban subsistence, an experience more painful than rural poverty. Yet despite its many drawbacks urban migration continues, inexorably, inevitably. It may be possible marginally to slow down the rate of urbanization but it will be impossible to stop in the foreseeable future.

Many cities of Nepal have growth rate of around 7 percent in last decade including Butwal, which is the subject of this study. The

level of urbanization in Nepal was only 3.6 percent in 1971, while it is, at present about 16 percent. The increase in illegal housing in many of these expanding cities is very high and in many cases squatter populations are increasing more than the overall rate of urbanization. Around one-fifth (20 thousands) of the total population of Butwal live in these unauthorized settlements. The situation calls for new solutions increasingly based on a deeper understanding of social and economic requirements and practicalities and less on unsupportable idealism.

Settlement of squatters is a human problem and a human problem needs human solutions. Removing them by force from public land is no solution to the problem. The mushroom growth of informal settlements is the result of sky-high prices of land and building materials. The solution lies in more rational urban planning and development policy to meet the requirements of squatters and improving the environmental conditions in the existing settlements by providing them basic amenities and services.

Housing is a highly visible dimension of poverty. In this thesis an attempt has been made to examine the mature of low-income housing and the changing policies of governments towards it. In

the process an attempt has been made to examine how successful are the poor in building their own houses. What are their main priorities, how the physical up gradation of these informal settlements can be done etc.

Thesis Title: STRATEGY FOR NATIONAL URBAN SYSTEM**Submitted by: Suresh Prakash Acharya****ABSTRACT:**

In the context of spatial planning, the infrastructures and other community facilities are called functions which are used not only by the people living in that particular area where the facility is located but also by the people of adjoining areas. Since all the facilities cannot be located in the same urban center, thus there is a functional interlinkage between the urban centers as well as between the urban center and a large area of rural hinterland. Such linkage and nodes form an urban system.

The subject of inter-linkage between various urban centers in Nepal itself is potentially vast and very much complicated. Lack of database related to functions of urban and rural settlements has made the task rather more difficult. The present thesis tries to focus the importance of this linkage and articulation of national urban system on the basis of this linkage. The scope of this study has been confined under:

- Functional linkage of selected urban centers in Central Development Region on the basis of certain specified activities

- Spatial hierarchies of urban centers and relevancy of Central Place Theory
- Identification of the factors influencing, urban system
- Define roles and functions of different urban centers
- Recommendations of policies, strategies and programs

This study examines the basic concepts behind urban system and studies the various factors influencing the urban system and the interlinkage system in the study area i.e. in Central Development Region of Nepal. The study has been made with respect to some selected urban/market centers in Mountain, Hill and Terai eco-regions of CDR. This thesis expects to clarify the emerging concept of National Urban System and its importance in rationalizing investment pattern in spatial context. Finally, it can be said that the basis of urban strategy lies in articulation of well integrated National Urban System by proper interlinkage of the roles and functions of the urban/market centers, physical and socio economic infrastructures and investment pattern.

Thesis Title: RIVER BANK DEVELOPMENT (A CASE STUDY OF HANUMATE CORRIDOR AT BHAKTAPUR)

Submitted by: Uma Devi Shrestha (Sangachhe)

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT:

This perspective previous development activity carried out in Bagmati, Bishnumati river corridor highlights the need of similar study. Lack of local participation, financial input public awareness and strong commitments of related organizations are the main hurdles for the under developed stage of river corridors.

In this respect, this research aims to investigate the existing situation and standard of hanumante river. It examines mainly three aspects of the corridor specially: I) socio-cultural and religious aspect, II) Environmental aspect, and III) Conservation aspect. A descriptive approach including several field observations including literature review was used in this study.

The study focuses to detail the exact existing situations of each ghat along Hanumante Riverbank. Main focus of the study is the Hanumante Corridor area in between the Hanumante River &

Arniko Highway and its residential development with needful balanced infrastructure development.

An extensive interview with respective related organizational heads, local residents, specialists have been made to secure pertinent facts and figures. Regarding environmental protection, weak commitment of the organization made slow change in people's mind towards protection and preservation.

Integrated approaches are proposed as a recommendation for its sustainable long-term developments. General policy recommendations are the strong emphasis towards the restoration, regeneration, and conservation of each ghat from the spiritual and religious point of view.

Graduation Year 2000**Thesis Title: REVIVAL OF RAJBIRAJ****Submitted by: Kishore Kumar Jha****ABSTRACT:**

A.1. Rajbiraj can boast of being the first modern day planned town in Nepal. The town was initially planned in 47 ha. land in the year 1942 AD. when Koshi river floods forced the earlier headquarters of Saptari district and Sagarmatha zone at Hanumannagar to be abandoned. A team of planners led by Engineer Dillijung, simulated the planning concept of the famous Indian City of Jaipur, which is based on the cosmic principles of *Vashtupurushmandalas* in the form of *Prastara Plan*. The analysis of urban design and form has revealed that all the ingredients of Kevin Lynch's imageability are more or less present in the form of its masses, pathways, edges, districts, nodes and landmarks (Annex-Z). In Rajbiraj, the major and minor principal axis extends from north to south and east to west respectively and they are tilted at 15 degree from the magnetic north to suit the climatological conditions. These two axes intersect each other at Tribhuvan Chowk, the nucleus of the town.

- A.2 In the last three decades, the development took place without any proper guidelines. Nevertheless, the influence of original planning concept, as exhibited by the rectilinear pattern of layout is evident even on the expanded area, and timely intervention could preserve the aesthetics of the planned town. The existence of roads converging from all directions towards the town in radial pattern signify the scope of planned urban expansion of its near circular extension area at lesser cost than say elongated fan shaped extension pattern of most of other terai towns.
- A.3 At the time of its declaration as municipality in 1959, Rajbiraj was amongst the six existing municipalities of that time. Until the east west highway was fully operationalized, particularly after the construction of Kamala bridge some 25 years ago, Rajbiraj was relatively a booming trade center with strong linkages with hilly districts as well as with Indian border towns. But in due course it not only lagged behind its contemporary terai towns like Birgunj, Janakpur and Biratnagar, but also lost some of its urban function to the newly emerging adjacent towns like Lahan along MRM. Presently, in terms of urban development indicators, it ranks 29 out of 58 municipalities in Nepal.

A.4. The basic research questions that led to the thesis proposal on the topic, "REVIVAL OF RAJBIRAJ", was guided by following paradigms;

- Despite being the planned town and having a rich resource base in the hinterland, Rajbiraj has not been able to achieve the urbanization level recorded by other adjacent terai towns like Janakpur, Birgunj and Biratnagar.
- Despite being the zonal headquarters of erstwhile Sagarmatha zone, Rajbiraj has not been able to function as the central place of the sub region incorporating hilly districts.
- Despite of high intellectual potentialities, the society lacks dynamism towards development endeavors.

**Thesis Title: LAND READJUSTMENT AS A PLANNING
TOOL FOR URBAN DEVELOPMENT
(COMPARATIVE ANALYSIS OF LAND
READJUSTMENT SYSTEM IF NEPAL
AND JAPAN)**

Submitted by: Saroj Basnet

ABSTRACT:

This thesis on Land Readjustment as a Planning Tool for Urban Development (Comparative Analysis of Land Readjustment System of Nepal and Japan) is prepared towards partial fulfillment of a Masters Degree course on Urban Planning from Tribhuvan University, Nepal. The study was undertaken at Osaka Sangyo University, Japan during September 2000 to February 2001. The thesis is divided into twelve chapters. Brief about each chapter is given in the following paragraphs.

The main objective of this thesis is to review the land readjustment technique being practiced in Nepal and compare its strengths and weaknesses with the Japanese land readjustment systems thereby exploring the possibility of improvement of the system in Nepalese context. Chapter one describes about the objectives, methods and scopes of study after providing the background information on urbanization trend, problems and

issues of urban development and urban land management system of Nepal. The growth of urban centers of Nepal has been taking place in a very haphazard and unplanned manner, and Kathmandu is no exception. In fact Kathmandu, the capital city, possesses a number of problems like inadequate provision of infrastructure, deterioration of urban environment, depletion of natural resources, development of squatter and informal settlements, weak inter linkage between rural and urban areas etc. Though at present, Nepal has less than 15% of the people living in urban area, the growth is considered rapid as it had only 9 % in the year 1991. By the end of 2025, the total urban population is expected to be about 9.5 million i.e. 23.4%. The extent of problems is envisaged to grow further if timely attention for the improvement is not given.

The main causes of urban problems in Nepal are cited as inadequate resource base and mobilization of resources, inadequate technical manpower at local level, lack of public participation in the development, inadequate land development mechanisms as characterized by low density development, inaccessible vacant land, sprawl and haphazard growth, under utilization of infrastructure, lack of consistent policy framework, poor maintenance of utility services and leakage, lack of political commitment etc.

In this context, the ESCAP study concludes that the Future of Asian cities will largely depend on the efficiency of the city systems in terms of infrastructure provision, environmental management, resource utilization, disaster prevention and management, safety and security; the key component for which is inevitably the efficiency in land use and management.

**Thesis Title: TRANSPORTATION PLANNING AND
MANAGEMENT IN THE HISTORIC CITY
CORE AREA OF THE KATHMANDU**

Submitted by: Raghubar Shrestha

ABSTRACT:

The main objective of this thesis is to explore ways of conservation of the ancient historical/cultural city core area of the Kathmandu through proper transportation planning and management. Since the preparation of KVUDPP in 1991, traffic and nature of activities as well as need of conservation of the core has steadily increased and a review and revision of the action proposed therein is called for. To achieve this goal trend of traffic development since last ten years and the present situation of the traffic within the city core area were carried out. To get the view of present problems and needs concerning traffic a survey was also carried out in the different locations around Ason, Tengal, Kasthamandap, Paropakar Bridge, Suspension Bridge at Kankeshwori, JICA Bridge, and Shovabhagawati bridge site. This together with formal/informal opinions expressed by different authorities concerning traffic related issues made a base, which I needed to propose traffic planning, and management proposals for the ancient historical/cultural city core area of the Kathmandu.

The study reveals that immediate action has to be taken to improve the traffic conditions and conserve-ancient historical/cultural heritages within the city core. Otherwise the situation may get so bad that it will be beyond control. The concentration of commercial activities within the city core area, which has created a problem of congestion, needs proper and complimentary management. Although volume of traffic may seem small it has induced too much of disturbance and had devastating effect on the heritages as well as in the city environment.

Vehicular restriction has been proposed within the area of conservation zone in the city core. These areas are proposed around Chikamnugal, Bhimsensthan, Kasthamandap, Tengal, Indrachowk, Phasikeba, Mahabauddha, Ason, Thanhity and Bangemuda. Durbar Square area is, restricted for all type of vehicles expects in the special ceremonial occasions and rest of the area is restricted for four and three wheelers. It is proposed between 9 PM to 7 AM the area be allowed to enter the light vehicles and medium vehicles, with total restriction to the heavy vehicles.

Construction of bypass road along the Bishnumati River is proposed. The service level of the road will be just to give

accesses to the local surroundings. This road substantially enhances the levels of access to the city from west and improves circulation between Northern to Southern portion of the city core. The road is provided with parking plots at different locations, which caters to the parking needs of the city dwellers.

Graduation Year 2001

**Thesis Title: ROLE OF SMALL TOWN IN
SUSTAINABLE DEVELOPMENT OF ITS
HINTERLAND (A CASE STUDY OF
SHARADANAGAR, CHITWAN)**

Submitted by: Chiranjibi Subedi

Supervisor: Prof. Dr. Jib Raj Pokharel

ABSTRACT:

Small Towns and market centers can perform a wide variety of social, economic and service functions that are important to rural, regional and national development. They play a very important role in the development process of a country. The role of Small Towns in the national economic development of Nepal is now recognized as very important to balanced and equitable growth. As centers of Small-Scale commercial activities, these towns provide essential economic and trade services to a vast rural hinterland. They can be positive forces for developing their hinterland and for linking, rural and urban economics.

An integrated field design was prepared in which data and information were collected in both Sharadanagar Small Town and the two rural hinterland villages (Ward nos. 2 and 5 of

Sharadanagar VDC). The research analysis is based primarily on the field survey information of selected Small Town and responses on 80 structured questionnaires including 20 to each of the two hinterland village households, 15 customers, 15 shopkeepers and 10 local elites.

The study investigates the nature of rural-urban relations and the role of Small Town for the sustainable hinterland development. The major findings of the study show three major rural development functions of Small Towns. They are: (1) acting as market center function; (2) providing employment services and (3) creating service center functions.

The development plan for Sharadanagar is proposed with the potentials and needs of functional development, infrastructure development and physical development plan. The formation of Town development committee (TDC) is proposed on institutional arrangement. The main issues on the development of Small Towns are identified and lastly the areas specific recommendations and the general policy recommendations are given for the development programs of Small Town which should be closely linked to activities in the rural hinterlands. These policies and recommendations are not only applicable in

Chitwan but also in other districts of Terai region having similar problems and circumstances.

The pace of migration from rural to the urban areas is growing and the social, economic and environmental problems of the settlements are becoming deteriorated day by day. Some efforts have been made in the last few years to develop the mutual linkage between rural and urban areas through the development of Small Towns and market centers. Yet the program has not covered a large number of villages. The program "Rural Development through Small Town/Market Center Development" is mainly focused on identification of potential market centers and prepares development plan for selected localities. But these so-called development efforts would be futile unless and until there is economic back up activities.

Contract farming to facilitate the increased agricultural production and marketing system, group marketing to support the needs and to encourage the rural people as well as group transport system to bring down the cost of head load transport are recommended to promote the agricultural marketing of the hinterland farmers. Similarly vocational trainings to develop the skills of villagers adult literacy programs in the villages and small towns which could facilitate the unemployed groups to

enter the job market outside the villages are the recommendations for the employment center services.

Based on the state of small towns/market centers in Nepal the areas for further research have been recommended to understand the relation between the rural hinterlands and intermediate small towns for the regional and national development.

**Thesis Title: EXISTING BARRIERS IN PLANNED
DEVELOPMENT OF KATHMANDU
VALLEY**

Submitted by: Nirmal Kumar Acharya

Supervisor: Mr. Kishore Thapa

ABSTRACT:

The purpose of the study is to contribute to a better understanding of the status of urban planning and implementation in Kathmandu Valley. Physical state of Kathmandu Valley, perceived factors for haphazard growth and perceived barriers to successful implementation of plans and programs in Kathmandu Valley were examined. Some of previous plans and programs prepared for planned development and management of Kathmandu Valley were also analyzed.

A survey instrument was developed and tested. Then it was distributed to ward members of KMC, government and semi government employees responsible for Valley's development and management as well as freelancers working in urban planning sector.

Although more than 3 billions rupees spent for preparation of plans and programs and so many resources have been poured for management of Kathmandu Valley, but the result is unsatisfactory. Findings indicate that Kathmandu Valley is

rapidly growing in haphazard way. The situation seems to be like the proverb "Everybody's concern is no body's concern". Frequently cited reasons for this situation were regarded as the lack of preference of the His Majesty's Government in urban planning and not being serious about the implications or consequences of unplanned urban expansion, and people themselves including high profile citizens of the Valley by neglecting regulations and byelaws due to the social stigma.

Within last three decades more than 56 major plans and programs and reports have been prepared to develop Kathmandu Valley in planned manner, but interestingly, out of them the government endorsed only 27 and even more, only 19 plans or programs could be implemented, this shows that the implementation problems also existed for Kathmandu Valley.

Findings indicate that negligence of stakeholders in planning process and lack of coordination among various line agencies from plan formulation to implementation, weak rules and regulation enforcement mechanism, low risk taking ability of implementing agencies, lack of political will or ruling party, policy maker's preference other than urban development, plans not supported by appropriate Act or law. National Planning Commission's different preference, people's reluctance to follow rules and byelaws, lack of minister's deep sense of feeling about consequences of urban planning, frequent intervention from

politicians and negligence of planners to follow up for implementation of the plan are overall barriers in planned development of Kathmandu Valley.

As the urbanization trend in the country has been taking place rapidly as well as haphazardly, therefore the government should support and focus in the urban development sector by creating an independent Urban Development Ministry and a separate faction in existing National Planning Commission. The lawmakers, who represent the urban area, should represent the ministry. Kathmandu Valley Town Development Committee should be strengthened as a powerful Valley wide planning unit by incorporating and representing planning units of all line agencies and municipalities. All municipalities and prominent VDCs within Valley have to be mobilized for tapping resources and the elected representatives should be made to understand the consequences of unplanned urban development.

**Thesis Title: STUDY OF PROSPECTUS OF JANAKPUR
AS CULTURAL AND RELIGIOUS
TOURISM CENTER (AN URBAN
PLANNING PERSPECTIVE)**

Submitted by: Satya Narayan Shah

ABSTRACT:

General

Cultural and religious heritage are prominent resources of a society. Janakpur Municipality with its hinterland, although teemed with abundant potentials of religious and cultural importance, the city could not prosper, as it should not only the religious and cultural assets but also the historical and 4 archaeological heritage sites in the city and within its hinterland are of equal importance. About 2.5 million visitors visit the city annually. Among these visitors, the daily commuters are substantial and the numbers of pilgrims ranges from 0.6 million to 0.7 million. The pilgrimage is an asset of attracting the third country tourists, especially the cultural tourists. The numbers of third country tourists are significant and are increasing annually. But the inadequate infrastructure and services harasses the visitors. The existing economy of the city is dependent upon trade and agriculture. The trade is supported to greater extent by the existing pilgrimage. But the declining pilgrimage in the city

can unbalance the overall economy of the city. Thus, the deteriorating infrastructure and services if managed properly and the fruits of pilgrimage distributed equitably, pilgrimage will flourish in the city and the overall civic life of the people of Janakpur and its hinterland will be enhanced.

Issues and Problems

The physical infrastructure of the city could not develop in pace with the growing urbanization. Also, the influx of pilgrims whose number is more than the local population can not cope with the existing infrastructure and services and as the result of which the pilgrims as well as the local Population are troubled.

Out of the total pilgrims, the percentage of pilgrims deprived of services are: 13-49% in accommodation, 57-69% in sanitation. 12-68% in bathing, 52-83% in drying their clothes after taking bath, 52-82% in transportation.

Lack of infrastructure and services, declining religious and cultural environment, lack of institutional management are the prime causes of declining pilgrimage in the city. The major issues and problems of declining pilgrimage in the city can be summarized as:

- Deteriorating of heritage sites
- Suppressed religious environment
- Unrecognized tourism and the other potential and resources
- Low expenditure capacity pilgrims
- Lack of social religious and political commitment
- Insufficient infrastructure and services
- Lack of local interest
- Chaotic urbanization
- Environmental pollution
- Substantial local population is innocent regarding the pilgrimage potential
- Low literacy rate

Recommendations

Pilgrimage in the city can be promoted by improving the existing infrastructure and rebuilding new infrastructure, providing basic services to the pilgrims, improving religious and cultural environment of the cit. %, and the Greater Janakpur. Some vital improvements that should be made to Promote pilgrimage are:

- Maintenance of the temples, ponds and the other heritage sites
- Management of the offering stalls
- Making the religious environment more saintly

- Improvement of the sacred zones
- Protection the hermitages
- Encouraging the tourists and pilgrims by providing map guides free of cost and manual guides as well if required
- Increasing the number of public toilets, accommodation and other basic services for the pilgrims
- Increasing the manpower and assets for managing the solid waste
- Improving the existing and making new physical linkage in local, regional and international level
- Maintenance of the health hazardous effects
- Encouraging the local participation by distributing the fruits equitably and involving the locals from the level of policy making to the implementation of plans and programs
- Sustainability can be achieved by involving all the stakeholders (host community, the pilgrims and the hotel managers), generating revenue by collecting entry fee from the third country tourists, service fee from the pilgrims, discouraging the unbridled pilgrimage.

Threats, Opportunity and Benefits

Cultural and religious tourism, a emerging tourism worldwide is not dressed only with the benefits but also some-Limes imparts reverse impact. The unbridled tourism may thin the religious and

cultural importance of a heritage site. Janakpur with its low literacy rate, minimum infrastructure and the influx of pilgrims and the tourists more than the local population at a time and in one day, may not be exception of this impact.

From the existing pilgrimage and third country tourism industry in the city, the revenue collected annually are about 120 million and 10 million rupees respectively. The third country tourism has provided employment to about 242 persons. It is expected that the existing pilgrimage and the cultural tourism do not decline and progress smoothly, the third country tourism will provide employment to 571 persons where as the revenue generated from the pilgrimage and the third country tourism will be 26j and 62 million rupees respectively.

Not only the direct benefits but the indirect benefits in the form of achievement of social benefit and indirect employment are also the important benefits from the development of pilgrimage and the cultural tourism in the city.

**Thesis Title: MUNICIPAL FINANCIAL IMPROVEMENT
STRATEGY (WITH SPECIAL FOCUS ON
LALITPUR SUB METROPOLIES)**

Submitted by: Dinesh Krishna Pote

Supervisor: Mr. Ram Bahadur Chhetri

ABSTRACT:

Municipal Finance is an important aspect of municipal development. The inadequate financial resource is one of the major constraints for municipal development activities, although very limited efforts have been made to increase the necessary financial resources. If the resources are adequate, local authorities can provide all necessary services, but lack of adequate resources can't even provide basic urban services.

Various opportunities can be explored to improve in the area of municipal finance. If Lalitpur Sub-Metropolitan City as a local body has to provide effective and efficient municipal services to the people, it must have to explore possible areas of local finance for a permanent and sustainable source of revenue.

Local Revenue has three main variables in function i.e. base, rate and collection. In fact, the low performance in revenue collection

in Nepalese Municipalities is caused mainly by inadequacy in collection mechanism of revenue.

To deliver "Good Governance" and "Accountability" to their voters, municipalities must have improved financial status. Based on issues, problems and analysis municipal financial improvement strategies have been identified. Municipalities need to have short term and long term strategies for improving their local revenue resources.

Short term strategies include:

- Maximisation of existing resources
- Introduction of new sources and provisions
- Maximisation of resources through people and private sector participation
- Improvement in revenue administration
- Improvement in financial management system
- Other strategies:
 - Reduce administrative expenses
 - Establish financial institutions for local bodies
 - Provide summation of advance clearance certificate through elected persons
 - Emphasise special projects such as land pooling
 - Introduce social security programs

Long term strategies include

- Fiscal decentralization
- Separate Act as per level of municipalities
- SAARC funds for local bodies

**Thesis Title: LAND POLLING PRACTICES IN NEPAL FOR
URBAN LAND MANAGEMENT**

Submitted by: Rabi Ratna Shakya

Supervisor: Prof. Dr. Jib Raj Pokharel

ABSTRACT:

Shelter is basic need after food and it is also the point of departure for human socialization and civilization. It is the place for taking different social and cultural activities.

Urbanization in Nepal is recent phenomenon. As urbanization grew, management of land became very essence in me past. In past few years the management tool adopted for land management was site and services and land acquisition. At that time Sites and Services Project was feasible due to political reason. For Sites and Services Project a lot of capital was necessary for land acquisition. Many Sites and Services Project failed due to lack of financial aid and other causes. Land could be managed through various other methods and tools such as Sites and Services, Land Pooling, Guided Land Development.

After 7th five-year Plan, His Majesties Government of Nepal established a separate Ministry of Housing and Physical Planning in 1988. The Ministry took a number of important steps in the field of urban planning and land development. One of the most important steps was the enactment of a new town development

Act 1988 that includes provisions for different land development activities including Guided Land Development Project, Land Pooling Project and Sites and Services Project. The government is not able to give necessary infrastructures to urban dwellers. Cities are growing haphazard way, which will create lot of problems to me valley, if in time the growth is not controlled in planned way. Efficient land management is essential for planned growth.

This study is done for problem identification and to find out causes of project delay, taking Gongabun Land Pooling Project as a case study and brief study of Dallu, Naya Bazar Land Pooling Scheme and Housing Development Project, Sainbu. How and what are the means of getting rid of delays? From the study and discussion with professional it is found that the Land Pooling Project can have total cost recovery if the project can be completed within 5 Yrs. period. It is also found that the delay in the project mainly occurred in land administration, mapping and convincing people for fixing their percentage of land contribution. The project could not run smoothly due to lack of initial fund to run the construction work. So it can be made popular among people and effective by gaining their belief by commencing the project in time.

Graduation Year 2002

Thesis Title: REVITALIZATION OF PONDS FOR
SUSTAINABILITY OF TOWN (A STUDY OF
PONDS IN JANAKPUR MUNICIPALITY)

Submitted by: Shyam Kishore Singh

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

Janakpur is a religious and historical town in Nepal, growing at rapid pace without appropriate plan for future growth. It is also known as city of ponds and monuments. The historical ponds and famous Janaki temple characterize the city image. Each year, there are six major festivals, which attracts between 4 to 5 lakhs pilgrimage in a single day.

Thus this town provides an important religious service benefits to pilgrimages. On the other hand, pilgrimages do contribute to the local economy and considerable potential exists for obtaining local revenue from the pilgrims. But presently the one of vital religious element of town i.e. holy ponds is in a state of danger. Lack of local participation, public awareness, financial input, basic infrastructure facilities, weak laws and regulations and strong commitments of related organizations and politicians are the main hurdles for degeneration of these ponds. Thus,

degenerated ponds have effects on physical, environmental and socio-cultural life. Basic infrastructure facilities like drinking water supply. Sanitation, drainage, road conditions are under satisfactory level which leads to unhealthy living conditions. Due to these reasons, these religious ponds are bound to lose its religious identity. Thus this shows the need of regeneration to these ponds for sustainability of town.

Issues and Problems related to Ponds

- Defining Pond area its Demarcation and Management:
- Overlapping and Inconsistent Legal Provisions:
- Uncontrolled Urbanization and Inconsistent Land Use
- Inconsistent and Inadequate Infrastructure Facilities:
- Pond Water Pollution and Poor Solid Waste Disposal System:
- Ecological Deterioration:
- Lack of Pond Side Landscaping and Beautification Programmed:
- Lack of Pond Side Tourism Development Strategy:
- Poor Bio-diversity Conservation of Ponds and its Catchments Area;

In the present context, human needs are changing. Tradition use of ponds is no longer sustained to match with present need of society. It may have lesser use due to change in life style. Therefore introduction of compatible modern activities (adaptive uses) are aimed to cater to the changing needs.

The pond plays significant roles for its religious cultural, industrial, economic, and agricultural development in most of the developed and industrialized countries; they use their ponds for economic development through recreational uses. But in case of Asian context, specially relating to Nepal, the case is totally different, we are spiritually and religiously connected with ponds than economically. We Nepalese believe a bath in its water is the only way for the salvation of soul. Most of the developed countries gained the knowledge of cost (tangible and intangible) of a polluted pond from their past experience, and processed preservation and conservation from economic point of view, as we do the some process from religious and spiritual point of view.

**Thesis Title: URBAN GROWTH MANAGEMENT IN
BHAKTAPUR**

Submitted by: Rudra Hari Koirala

Supervisor: Mr. Bharat Sharma

ABSTRACT:

Growth management presupposes understanding and agreement on a clear (1) vision of the goals of growth management, and (2) understanding of the dynamic forces that underlie the processes of urban growth. Often the failure to effectively manage growth can be attributed to lack of clear vision of exact goals of such management. Equally significant is also the growth management policies that tend to be based on outmoded understanding of the urban growth processes.

The objective of the paper is to briefly review the growth, trend/pattern and existing situation of Bharatpur Municipality and to understand the problems, issues and opportunities; and to propose urban growth strategy as per guidelines and policies. For this, three types of questionnaire to Households, politicians and experts was produced and surveyed. Effective network of different physical, social and cultural infrastructure components would demonstrate the features of a good planned city. The physical components are adequate network and system of transportation, water supply and sewerage, solid waste collection

and disposal, electricity and telecommunications and other services. Planning tries to regulate these processes through growth management. The traditional tools include: zoning, building codes, official maps, and subdivision regulations. Today instruments of management have expanded and include environmental regulations and exactions, impact fees, performance standards and the like as well as more subtle fiscal techniques.

After malaria eradication, *Lahure* people from Bandipur (Tanahun) started to settle in the main bazaar of Bharatpur. i.e. Narayanghat followed by people from other districts. As a result a medium sized Bharatpur municipality was established in 1979 AD. It lies on the bank of the Narayani River and is the district headquarters as well as a commercial center of Chitwan district. The rapid growth in Bharatpur is also accompanied by rapid growth in the number of urban overcrowded and grossly substandard inhabitants lacking funds for housing. Regionally, Bharatpur is developing as a vital nodal point at the conjunction of the Mugling-Bharatpur and the East West highway and is the entry and exit point for hill towns. Bharatpur is flourishing also is an industrial, tourist (Royal Chitwan National Park, Devghat) and health care center.

Bharatpur's economy is based on agriculture- trade, tourism, industry and administration. Its importance as an industrial center is enhanced by the availability of cheaper raw materials, basic services, land, labor and transportation facilities. The primary objective of the socio-economic survey was to assess the socio-economic status, ability and willingness to pay for municipal services for management as well as to improve environment and to establish baseline data with particular emphasis on poverty. Socio-economic survey reveals that about 90% people are literate, 7.3% of total population has income higher than Rs. 3000 per month and about 35% of the municipal population is served by the NWSC piped water system and rest depend on shallow wells and hand pumps. In transportation sector, there is lack of efficient bus terminal. The natural resources like forest are loosing. Bharatpur has mainly following prioritized problems:

- Growth of slums and squatters
- Scarcity of developed land
- Paucity of resources
- Administrative weakness
- Transportation problems
- Lack of management practices
- Environmental Degradation

An effective urban policy should be formulated to minimize the observed problems. Development plans has to be proposed, earned out and monitored with one eye on the growth and the other on the preservation of indigenous heritage and characters.

**Thesis Title: IMPACT OF BANEPA BARDIBAS ROAD ON
DHULIKHEL MINICIPALITY**

Submitted by: Suman Pathak

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT:

One of the major impediments of Nepal's development is its difficult topographic condition, which makes transportation from one place to another a difficult task. There are several places in the country, which are still not linked by road. Even areas, which are linked by road, seem to be pretty cut off due to the lack of proper networking. Now the capital of the country has to depend on a single road-East -West Highway for the link with the rest of the country. If that is blocked by any reason, the capital would be cut off from the rest of the country. It has happened several times in the past, especially during the monsoon season. An alternative road had long been felt necessary to link Kathmandu with the other parts of the country. In view of this need, the decision to construct the Banepa-Bardibas road was taken and the Japanese government also agreed to provide assistance in this project. Moreover, the Banepa-Bardibas road is shorter and easier, which would lessen the transporters' woes to a large extent. This construction in mm will help the stretches of Bhaktapur, Banepa, and Dhulikhel to develop themselves into more functional towns

and will help them to be more urbanized and cater the population in an efficient manner.

After the opening of the highway and after the flow of traffic along this section will bring both development and problems to these areas. Along with the economic growth will come problems of urbanization if it is not handled well enough- The urbanization of these areas will induce problems such as congestion, physical infrastructure, housing, degradation of living standards and environmental pollution if the growth is not handled well and in a planned manner. The urbanization will need a lot of interventions for the necessary up-gradation of the towns. The expansion of physical infrastructure becomes necessary in order to incorporate the growth of the inflow of population in these areas, which will be the outcome of the opening of the new highway.

The Sub-Region of the Banepa-Bardibas highway alignment has been defined taking 3.5km buffer distances at both sides of the highway, and consists of 49 VDCs and 4 Municipal towns such as Banepa, Dhulikhel, Panauti and Kamalamai.

This road will be constructed section by section approach out of 158 km. Long Banepa - Sindhuli - Bardibas road, the Bardibas -

Sindhuli Bazaar section has been completed to all weather condition in February 1998 under the Japanese Grant Aid Program and the construction of the Dhulikhel Nepalthok section has commence from May 1998 and until now from Dhulikhel to the Nepalthok is completed and opened for the public use. The Government of Japan has been providing grant assistance for this road since 1986. The highway passes through four different biophysical regions. They are as following

- Fertile river valley of the Rosi Kholafrom Dhulikhel to Nepalthok
- Deep river valleys with steep hill slope along the Sunkoshi River from Nepalthok to Khurkot.
- Mahabharat ridges from Khurkot to Dhungrebas.
- Inner Terai valley and Terai plain from Dhungrebas to Bardibas.

The age-sex distribution of population in the corridor region includes 0-4 years, 5-14 years, 15-44 years, 45-59 years and finally 60 years and above. In the whole corridor the non-locals or migrants constitute of 67% and the remaining 33% are local. Out of these, business has been found the most important reason of migration, as- it constitutes almost one -third of the total households. Agriculture has been the second clauses of migration with 16%. Agriculture is the main occupation of the majority of

people in the corridor region. Cash income is another important component of occupation of the households in the corridor region. Nearly 63% of the total cash income based on local products is derived from agricultural sector including fruits and livestock. 84% household visit hospitals for treatment in Sindhulimadhi, Banepa or Dhulikhel, Kathmandu, Manthali and Janakpur.

Dhulikhel lies 30 km east of Kathmandu along the Arniko Highway is also the Administrative headquarters of Kavrepalanchowk district and situated at an altitude ranging between 3,500 and 5,500 ft. above the sea level and has a sub-tropical climate.

Dhulikhel is a relatively small administrative town with a total population of 10,750 in 1989 (Dhulikhel Structure Plan, 1989-2004) with the density of population is 10 persons per ha and an average household size appears as 8.

**Thesis Title: SUBJECTIVE ASSESSMENT OF URBAN QUALITY
OF LIFE IN KMC AND ITS RELATIONSHIP
WITH URBAN PHYSICAL ENVIRONMENT**

Submitted by: Srijan Aryal

Supervisor: Mr. Padam Bahadur Chhetri

ABSTRACT:

This study has made an attempt to establish solid benchmarking information in the fields of Quality of Life (QOL) and Urban Physical Environment (UPE). The study has further strived to explore the relationship between them. Stratified sample surveys of 454 respondents from 35 wards in KMC were conducted to measure overall life satisfaction (or QOL), as well as levels of importance and satisfaction towards various aspects of life. Whereas, assessments of UPE have been done using secondary information. Relationship between satisfaction level (QOL) and physical environment were examined using three sub-models and overall (main) model. In three sub-models and main model, relationships between satisfaction level of life (QOL) were examined at the root level (with all concern indicators) and criticality of each indicator was identified with its association and magnitude of associations with concerned aspects of life using multivariate regression analysis.

The entire methodology for the study has been divided into three parts. In the first part, assessment of urban quality of life at KMC by the KMC inhabitants is presented subjectively using 5-point Likert scale ranging from 1 for "very dissatisfied" to 5 for "very satisfied". In the second part, only urban physical environment of the city is determined with the help of 19 indicators. In the third part, the relationship between QOL and UPE is checked.

An average QOL score of 3.33 is indicative of the fact the respondents are neither completely satisfied nor totally dissatisfied with life. There is statistically significant difference in QOL scores between respondents of different income groups, household sizes and educational attainment. In terms of level of the importance, majority of the respondents rated family life and personal health as more important than other aspects of life. The respondents are most satisfied with personal issues such as family, personal health and social life.

As per the findings, performance of none of the wards is better in absolute term of UPE conditions. Respondents of none of the wards found themselves belonging to the extreme ends of the three indices (housing, public utilities and environment). Similarly, performance of none of the wards is better in absolute terms.

The relationship between three aspects of life and concern indices (refer three sub models) was found satisfactory. More than 57% of wards agree that level of satisfaction of concern aspects of life significantly depends on their respective physical urban environment.

It was revealed that indicators such as condition of houses, congestion level and income levels are mostly responsible for the level of satisfaction in housing aspects of life. In the case of satisfaction level of public utilities, municipal water supply connection is the most critical indicator. Similarly, indicators such as population densities per unit access, traffic volume per unit road length, percentage of squatter area coverage, uncollected solid waste volume per unit area, percentage of road without side drain facilities and percentage of bad conditioned unpaved road play a major role in the level of satisfaction of environmental aspects of life.

**Thesis Title: URBAN MIGRATION: CAUSES, CONSEQUENCES
AND CHALLENGES (A CASE STUDY OF
BANESHWOR KMC WARD NO. 34)**

Submitted by: Aman Babu Shrestha

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT:

Migration is a natural process. It depends upon the facilities that are provided in the urban areas. The rate of urbanization is taking place rapidly. Although reclassification and net migration constitute major components of urban growth, the contribution of natural increase has been substantial since 1950 AD.

Urban migration is the most important aspect of population mobility in the world today. It is not only the chief source by which all of the world's great urbanization trend have been taken place but also it is considered to be main aspect of modernization especially in the third world country like Nepal. Migration has been a decisive determinant of population composition of urban center, which further has a strong bearing on socio-economic of the society. Besides, it helps the economic development of the region.

While talking about urban migration, the analysis of push and pull factors is essential. The role of traditions, social structure, caste and religious affiliation is as important as the economic factors. The poor are pushed out from the areas of origin where as the well-being persons move under the pull of the urban places such as urban facilities, security, better opportunities and bright light of the urban areas. A majority of migrants to the urban centers are absorbed in the petty trade, low-grade production, business and the population induced service sector.

In Nepal, low agricultural incomes, agricultural unemployment and underemployment are the major factors pushing migrants towards the urban areas for greater job opportunities. Transfer of large number of persons from agricultural services and industries in the place of origin and non-agricultural services and industries in the urban areas have been largely responsible for the urban in Nepal. It is the basic transformation of nodal structure of the society in which people move from generally smaller, mainly agricultural communities to large, mainly non-agricultural communities. In Nepal migrants do move from one urban area to other but bulk of them move directly from rural areas to urban places.

Migration has various consequences in the urban area. In-migration has significant impact on growth of community, professional and personal services. Migration also led to poor management of agricultural land in the place of destination. Accommodating the increasing population is one of the major challenges of the urban places. Inadequate infrastructure services and facilities to cater such unregulated population growth worsen the living conditions of incoming people as well as the local people residing in the urban centers. Also due to poor decentralized policies and lack of commitment and willingness to improve the present condition, the urban areas are going to become slum.

Hence this thesis "Urban Migration: Causes, consequences. Challenges" tries to explain the trend, pattern, why people migrated from place of origin, what are the effect facing by the study area, infrastructure situation and also the present and future challenges. This study mainly concentrates the case study of Kathmandu Metropolitan City Ward Number Baneshwor for finding the social, cultural and economical as well as the housing situation and the infrastructure situation of the study area. The findings are analyzed and plan; program and policies are given to improve the present condition of the area.

The recommended policy of the study tries to prepare migration policy for the solution of haphazard urban growth of Kathmandu Valley.

**Thesis Title: UPGRADATION OF URBAN ENVIRONMENT
(FOCUSED ON SURFACE DRAINAGE & SOLID
WASTE MANAGEMENT) A CASE STUDY OF
KAPILVASTU MUNICIPALITY)**

Submitted by: Digamber Thakur

Supervisor: Bharat Prasad Sharma

ABSTRACT:

Kapilvastu town being the one of the important Buddhist religious town of Nepal is in the process of transformation in its character, from urban center to religious tourist center. In Kapilvastu there is high pressure on the present drainage and solid waste management infrastructure making the condition of Kapilvastu even worse and hence degrading the physical environment.

The present practices and activities have not been well managed resulting in a haphazard growth of activities, which has pressurized the urban environment. These haphazard construction activities in Kapilvastu municipality are developed without access to solid waste disposal facilities, water supply facilities, drainage and sewerage facilities and sufficient urban infrastructure services. This rapid urban growth in Kapilvastu municipality has created gap between demand and supply in

urban infrastructure services such as roads, drinking water supply, drainage and sewerage facilities and solid waste management facilities. The existing drainage system in Kapilvastu is not up to the required standard and unable to cater to the demand of the growing urban sector. Moreover, the existing drainage system is malfunctioning due to lack of maintenance and also due to the bad management (or lacking of management) of the solid waste. The solid waste has blocked the drain even in areas where it is supposed to be functioning, hence degrading the urban scenario. This has added to the worsening urban environment and the lack of additional infrastructure facilities deteriorating the environment.

Adding up all the problems in Kapilvastu the most severe of all is the problem of drainage in the municipality. It has become more severe to deal with also due to the bad management of solid waste in the area, leading to worsening the situation of Kapilvastu. Hence the problem should be tackled much more effectively in an uncanny manner. Kapilvastu a rich heritage site is extension of Lumbini with rich ancient remains and religious place. Such a cultural site is endangered due to

- Unmanaged sewerage/drainage.
- Dumping of solid wastes, unscrupulously.

The recommended policies & Strategies after analyzing the problems facing by the by the municipality has been presented in the following table

Recommended Policies & Strategy for drainage and solid waste
Kapilvastu municipality:

Issues	Policy	Strategy	Time frame	Responsible Institutions
Inadequate and inefficient solid waste Management system	Introduce people awareness program regarding solid waste management Services	Initiate awareness programs through training and campaign	Immediate	Kapilvastu municipality.' Users committee.' Town Development Committee
	Promotion of landfill technique for Solid waste management	Initiate the dumping process for municipal solid waste at Derwagau	Immediate	
	Introduce the principle of Reuse Reduce Recycle	Encourage private sector to convert solid waste in to reusable material, compost	Immediate	

		Motivate community people for recycling and reusing the solid waste by providing incentives	Immediate	
	Introduce Polluters Pay Principle	Charge fees for solid waste management Services to hotels, institutions, etc Subsidies such fees for households	Immediate	
	Phase out the use of plastic bags and packing	Explore alternatives for plastic bags and packing	3-5years	
		Introduce the system of penalty for throwing plastic bags in streets and open space	5-5years	

	Introduce the concept of zero waste to Landfill site	Return the waste to generators Producer should take care of whole product cycle Encourage vendors and private entrepreneurs		
Inadequate and inefficient Drainage system	introduce adequate management plans for drains	Prepare suitable drainage networks for the municipality and negotiate with the donor agency for proper implementation.	3-5 years	Kapilvastu municipality TDC

		Create awareness through various programs in community level for proper use and maintenance of the existing drainage net work	Immediate	Kapilvastu municipality' Users Committee. TDC
		Introduce the system of penalty for throwing solid waste in to the existing drains	Immediate	
		Introduce bylaws and appropriate Land use plan to avoid the encroachment of drains	Immediate	

		Introduce public - private programs for proper maintenance of existing drains and construction of new drains as per the drainage network	Immediate	
	Capacity building of local institutions	Create environment cell under the municipality	Immediate	Kapilvastu municipality
		Train appropriate man power through Proper training for institutional strengthening of capacity and capability of municipality to meet the requirement for damage & solid waste management	Immediate	Kapilvastu municipality

**Thesis Title: HOUSING FOR URBAN INFORMAL SECTOR
WORKERS (A CASE STUDY OF KATHMANDU
CITY, NEPAL)**

Submitted by: Anup Mangal Joshi

Supervisor: Dr. Puskar K. Pradhan

ABSTRACT:

With increasing urbanization, developing countries are now facing with a new challenge: how to improve the urban environment and living conditions? 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 the growing incidence of poverty. One striking features of urban economy in developing countries is that a large proportion of people living in urban areas derives their income from informal sector. Studies show that there is a strong association between incidence of urban poverty and number of people working in informal sector and that the poor people have a high probability for being engaged in this sector.

In case of Kathmandu, informal sector such as petty trading and commercial venders provide an employment to large urban workers because people get easy access that other. Reason for more and more people engaging in this sector may be due to the

failure of formal sector to keep pace with ever growing demand of employment and majority of job seekers are unskilled migrants from the rural areas. Cities are primarily an engine of economic activities and generator of employment. From various data sources, it may be predicted that the population engaged in the informal sector activities in Kathmandu city ranges between 40-50%. However, the exact figure is not known. It is expected that within 20 years, half a million new employment will be required. In the absence of formal employment opportunity, this additional labor force will have no option but to opt for informal sector for jobs and income earning.

Housing is an important indicator of the nation's economic development and general social well being. Most of the housing schemes have been directed towards the people who can produce collateral or guarantee. As a result, poor section of population is usually out of the schemes. Owning house/land in Kathmandu has become difficult proposition even for average people. Based on sample size from various localities of Kathmandu City, the finding reveals that there are no significant differences in the socio-economic and housing characteristics among the three sectors understudied such as trade, service and manufacturing. The housing programs for IS workers have been formulated based on i) housing priority ii) migration stages iii) income level

and iv) housing status. Based on the study's finding, at least two housing approaches may be suggested. The first is improving the housing condition from temporary to transitional status through provision of rental houses. The second program is to improve the housing status from transitional to fixed status by providing individual houses. In order to achieve these propositions, three housing proposals have been put forward: For low and middle low income workers, who are categorized as immigrant or whose housing status is temporary needed, provision of low price accommodation. Thus transitional housing is thought to be appropriate for this group of people. The second for those who prefer to live in the city center area for job proximity reason, improvement of existing settlements is thought to be appropriate. The third provision is new settlements for those who may need their own houses or especially for those who want to transfer from transitional to fixed status of housing.

In order to address the problems and issues faced by this section of population in Kathmandu and to anticipate the future challenges related to the IS, a number of reforms in policies, regulations and institutions may be put forward, leading to the integration of the sector with the mainstream development. Out of numerous issues and problems faced by IS workers, housing is one of them. The prospects for improving living condition of IS

workers depend critically on overall economic performance of the city or country. Without adequate economic growth, any development or improvement attempts in informal sector will only be temporary.

Thesis Title: CONSERVATION AND REGENERATION OF INNER
CITIES (A CASE STUDY OF RAMKRISHNA
GANESH TOLE OF POKHARA)

Submitted by: Indra Kumar Poudyal

Supervisor: Mr. Bharat Sharma

ABSTRACT:

Kaski Rajya is said to be flourished after the take - over by the first Shah ruler 'Kulmandan Shah' around 1527 B.S (1470 A.D). Rulers of Kaski were very much impressed with the Newar Communities, and their trading skills. Thus they invited 14 merchants from Bhaktapur to Kaski around 1658-69 A.D. These merchants were provided with the land and other facilities by issuing special order with Royal Seal {*Mohar*}. Those communities settled in south of Bindyabasini temple and the area is popularly known as *Mohariya Tole*. The extension of this is Ram Krishna / Ganesh tole.

Being m the Indo- Tibet trade route Pokhara enjoyed the locational benefits. People from northern side used to come to this bazaar for selling salt and buying other goods. That is why this bazaar is also called as Salt route bazaar.

Newar merchants when migrating from Bhaktapur did not only bring trading skills but also the rich cultural traditions. Various festivals like Ganesh Jatra, Bhairab Jatra, Bagh Jatra Gai Jatra, are still performed. Long rows of buildings with traditional architecture and craft giving attractive sky line is quite notable. Settlement form is distinguished from the squares the cities of the Kathmandu Valley. This is a long eye teasing street.

As Pokhara got connected with the road heads, market shifted to the other side of the city. At the same time loss of traditional jobs, enforcement of land reforms, and incapability to capitalise the upcoming tourism business led this area to degenerate.

The need for regeneration: One reason for the importance of inner cities is the people who are already there are important. There is also in existence the infrastructure to support the people. The second reason is that inner cities are generally the point of departure for the extension of the whole city. It gives the past reflection of the city, possess cultural heritage. Thirdly, considering city as a growth engine for economic development and a part of the engine suffer from rusting or malfunctioning, the output and efficiency of the engine will be affected. To prevent the increase in rusting in other parts and to have better out put regeneration is needed.

For the research question philosophy was guided by the followings:

- Creation of economic infusion for the revival of the area is needed
- Regeneration alone may disturb the charm of the inner city and conservation alone may not sustain. Thus a joint approach of conservation & Regeneration has been adopted.
- Sustainability approach is a must.

For the study purpose collection of information regarding various maps, sharing experiences of local people, local experts, NGO, CBOs, study of the available reports, sharing some international experiences, field survey were carried out.

The economic status of the study area is found to be quite below the average of that of hole Pokhara Sub Metropolis (60 % of per capita income of PSM). Rental charge is very low (almost 1/3 rd of the adjacent areas). Scrap dealers (*Kabadi wala*) cheap Indian labourers, tend to stay in rent. Similarly some houses have found not to have basic services like toilets. Some of the buildings need immediate repair.

Some 22 % of the tourists coming to Nepal visit Pokhara (that accounted about 260,000 Including Indian tourists in 2000 A.D.)

and around 68,000 domestic visitors come to Pokhara staying over night for various purpose like making of citizenship, making of passports, collecting pensions and other purpose. Some people of this area have started to keep paying guest.

Plans and programmes for the conservation and regeneration of the area have been proposed. Improvement programmes for Environment, Physical, Economic, Social lifestyle and heritage conservation plans are described.

For the sustenance of any development programme people's participation is a must and thus this thesis emphasises to use this valuable tool of people's participation. For the application in micro level a participatory model has been designed for the sake of mobilising community people so that the same level of performance can be achieved even after the programs.

**Thesis Title: URBAN ENVIRONMENT MANAGEMENT
STRATEGY FOR JANAKPUR MUNICIPALITY
(WITH SPECIAL FOCUS ON SOLID WASTE AND
DRAINAGE SYSTEM)**

Submitted by: Umesh Kumar Mishra

Supervisor: Mr. Bharat Prasad Sharma

ABSTRACT:

Janakpur Municipality, because of its cultural and religious heritage, has become the 2nd most visited tourist destination by Indians in Nepal and mostly also has the Nepalese religious tourists. Due to this increasing tourism industry, the town side and its surrounding area have become the most attractive place for private entrepreneurs to invest in the construction of buildings, hotels, restaurants and other tourism related activities. Thus, the settlement of Janakpur has become the most attractive place for tourism activities. Private houses, hotels, Dharmasala and restaurants are built within the municipality in numbers thus resulting high pressure on the present infrastructure making the condition of Janakpur even worse and hence degrading the physical environment. Illegal constructions were developed in the religious preservation area after the political change from single party to multi party system of 1990 without any

permission of the controlling authorities making the physical environment of the area more worse.

The present practices and activities have not been managed resulting in a haphazard growth of activities, which has pressurized the urban environment. These haphazard construction activities in Janakpur municipality are developed without access to solid waste disposal facilities, water supply facilities, drainage and sewerage facilities and sufficient urban infrastructure services. This rapid urban growth in Janakpur municipality has created gap between demand and supply in urban infrastructure services such as roads, drinking water supply, drainage and sewerage facilities and solid waste management facilities.

Thus the Urban development in Janakpur has been chaotic and, along with increasing industrial and commercial activities, has led to deterioration in the urban living environment. The pressure on the existing infrastructure: roads, water supply, drainage, solid waste management, and electricity are growing with an increasing incidence of overload and breakdown. If it is allowed to continue, the farther generation has to pay not only for the redevelopment of infrastructure facilities but also to pay for irreversible damage done to its environment. Thus the problems need a rather prompt response.

The main Problems Faced by Janakpur Municipality is solid waste collection and disposal and drainage system. The most common problems in solid waste collection and disposal are namely: - Inadequate legal provisions. Lack of health protection and community participation. Inadequate quality of human resources in SWM, Lack of public awareness, Casteism system. Traditional Custom and for drainage system are: -Solid waste disposal, Misuse of drains, Improper invert levels and Household entrances.

The main causes of problems in the municipality can be stated mainly due to Lack of adequate knowledge about the potential adverse effect of solid waste. High degree of tolerance towards the waste, Common Property syndrome and non-belongings. Easy and free disposal of household wastes on the road, Untidy surroundings have killed the desire to remain tidy, Lack of proper co-ordination between the municipality and community.

The solution of the problems most critical in the municipality would seem to lie in: An improved solid waste management system; Improved organization, management and supervision of drain cleaning activities in the town (and the allocation of an annual budget for this purpose); Effective control of buildings and crossing structures (e.g., culverts) over or next to drains and Additional construction of drainage in prioritized areas.

The prime Recommendations made from the analysis of problems has been:

- To initiate an integrated solid waste management system at the municipal and local level (or ward level) with the involvement of both the government and the public and also to identify an appropriate landfill site with due care to the environment of the surroundings.
- To initiate for the preparation of an appropriate land use to avoid the degradation of the environment and better enforcement techniques for the implementation of bye laws both through creation of awareness among the people of the municipality and also through penalty action.
- To introduce better management plans for drains in the municipality through public private partnership programs and to create awareness among the people for proper use and maintenance of the existing drainage network.
- Institutionalizing Broad-Based Participatory Approaches to Decision-Making. To involve the people for the management of both the solid waste and drainage at all level starting from collection to the disposal introducing incentives to recycling and waste minimization at the source and also to maintain coordination between the respective agencies and the municipality.

- To establish a process of monitoring and evaluation for the appropriate implementation of the management plans and its proper functioning.

Along with the recommendations the major actions have also been outlined. Thus the study seems to outline the importance of the urban environment management in the municipality and its need in the present scenario. Thus to conclude the study the main prologue is to improve the management of the infrastructures along with the adequacy of the same, with this demand being fulfilled Janakpur will be a better and attractive place for the tourists, both national and international, also increasing the revenue and living standard of the people of the municipality.

**Thesis Title: PLANNING FOR PARTICIPATORY TOURISM IN
PRITHIVINARAYAN MUNICIPALITY, GORKHA**

Submitted by: Ishwar Chandra Baniya

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

This thesis is the outcome of primary survey, field observation and study of secondary information of Prithivinarayan Municipality, Gorkha. The study is primarily based on field observation and secondary information rather than base line survey. The primary and secondary data are studied, analyzed, synthesized and some problems and prospects of participatory tourism are finalized.

Being newly formed, one of the least developed and hilly Municipality, there are many problems of physical as well as social development. The infrastructure situation is very poor and resources are limited. The Prithivinarayan Municipality in Gorkha has a very small but dense core and remaining settlements are scattered in villages. Most of 1 people are based on agriculture. In the case of district, most of the scenic areas t located in remote northern side and are accessed with difficulty.

Despite all of these, there are lots of prospects of tourism in Gorkha. Its location, natural beauty, historic background and religious places offer mighty potentials of tourism development. The community based development approach of Manaslu Conservation Area Project and Centre for Community Development and Research Nepal are supportive examples in Gorkha for Participatory Tourism Development.

Although tourism is a good source of earning foreign currency, the conventional tourism has not been successful to distribute the benefit of tourism to base level. This study is focused to develop community-based participatory tourism. For the fulfillment of this concept, some plans and policies with possible participatory approach in tourism development for Gorkha District and Prithivinarayan Municipality are recommended separately.

**Thesis Title: POSSIBLE IMPACT OF PLANNING CORRIDORS
(A CASE STUDY OF DHOBI KHOLA
CORRIDOR, KATHMANDU)**

Submitted by: Kichah Chitrakar

Supervisor: Mr. Padma Sundar Joshi

ABSTRACT:

City river corridors of the Kathmandu valley have a significant role to play on urban planning and urban development. Unlike others, these rivers flow through the middle of the city; therefore, it's high time to study and plan these river corridors before they are encroached and turndown into messy slum riversides by the haphazard urban growth.

Dhobi-Khola, though the discharge is low and small, is a perennial river and flows through the heart of the city. The built up area which was 4% in 1954 within the 200 meter band of Dhobi-Khola River has now been increased to 31%. Net river area has been decreased to 9% now from 18% in 1964. Against this backdrop, this study has been carried out with the aim to investigate the existing situation and changes; to review proposed projects namely DKCIP and GAIAUPP; to find out possible impacts focusing on the transportation networks, socio

cultural aspect, people's response, environmental aspects like sewage and solid waste; and land development etc.

A descriptive and interpretive approach has been adopted including data analysis of primary survey namely 'river use survey' and "Household questionnaire survey". Chronological studies of river corridor with the help of aerial photographs, Satellite Images and field visits have been made.

Urban land availability, environmental degradation, easy to layout roads and sewers as corridors, less cultural and religious linkage to the river, financial viability for development as road corridor too has encouraged authorities to intervene this river corridor.

Unlike Bagmati and Bishnumati, less archaeologically important sites and monuments have been found in this river. Less cultural and religious linkage to the river of the surrounding people is also due to the changes on river alignment naturally and artificially in the past. Lacks of facilities to perform their cremation **works** and other religious function have kept them far from this river.

Nearly 5.5 m³ solid wastes per day has been found to be deposited at the entire river corridor from Bagmati confluence to Chabahil (Section 1 to section 7) which should be added to the 350 - 400 m³ per day being managed for KMC today if planning intervention is to made at the corridor.

Through the urban planning perspective, the 'Dhobi Khola Link Road' (DKLR) is justifiable. Less cultural impacts, significant improvement over river environment, immediate functioning of the innermost ring road and Dhobi Khola ring road along with existing ring road among four concentric ring roads of the valley envisioned with the huge relief of traffic from city core, decongestion at Thapathali junction, Gaushala and Chabahil Chowks, establishment of connector road between the rapidly growing urban fringe Kapan area and Patan core area and large vacant plots going to be developed at Chabahil, Ghattekulo etc. are the justifications of the construction of DKLR. Comparative chart made in this study for various origin and destinations have also proved this road to be significant.

The corridor may be converted into a large institutional and commercial center of the city combining the characteristics of both the river corridor and the major transport corridor.

If not intervened, the proposed land development pockets at Ghattekulo and Chabahil areas, which are the river banks of last 100 years, is most likely to develop as the present area of GAIAUPP, which was also a river bank in the past. The large spaces remained at the corridor as the household courtyards and vacant plots have positively indicated the land readjustment schemes necessity. Still, around 60% area of the corridor has found to be vacant including roads. The prospect of appreciation of land value, with reference to the lands of Bishnumati corridor, where the price hike was almost 10 times after construction of Bishnumati link Road, has been found to be sufficient to finance the proposed planning intervention at the corridor if minimum of 25 meter land is acquired and developed. The proposed ratio of contribution for separate land development schemes and the peoples will for contribution have found significantly different. The necessity of partnership programs with people have been recommended.

Finally, since the different rivers of Kathmandu Valley have their own characteristics and require different approach for intervention, the study will definitely help the future researchers specifically for them who want to study in rivers like Manohara, Nakhu etc.

Hence, the strategy to develop river corridors should be synchronizing its potentiality with the potentialities of the surrounding areas of the river.

**Thesis Title: INSTITUTIONAL DEVELOPMENT FOR BETTER
URBAN MANAGEMENT**

Submitted by: Keshav Raj Nepal

Supervisor: Dr. Jibgar Joshi

ABSTRACT:

A bitter experience with almost all types of public institutions in respect of their response and service delivery had been ruffling my mindset for an improved functioning system. But, as similar to all general Nepali people, I could do nothing with them because the persons in the chairs of such institutions were falsely the masters of people. The so-called theories of fair administration and prompt service delivery have become helpless in the hands of such regrettable public authorities. We can find a lot many occasions when one has to pay illegal money or has to use power through some influential acquaintance to get works done. To the ultimate odds, people are subjected through extreme situations when neither of the hooks is applied.

The culture of public administration is reflected in urban management institutions as well. Besides, we find some additional issues requiring a sincere attention for making them efficient towards accomplishing their liabilities and duties. The need of an effective institution came first to my mind while I

worked as an Engineer in town development implementation committee of Lalitpur in the years 1993-1996. The need set in the mind was further intensified during completion of the Masters degree course in Urban Planning. The course revealed me that the matter of urban planning, and thereby the question of urban management is unique among all developmental phenomenon that comprises multitude of diversified activities. It thus became clear to me that the traditional institutions with defamed identification could never deliver the very complex responsibility. This was actually the factor that inspired me to undertake a detailed query for establishment of a very efficient urban management institution. The work has been undertaken as fulfilling the partial curricular need of Masters degree course in Urban Planning.

As there was not even a chapter on institutions included in the whole syllabus of the masters degree, and very little of secondary literature were available, plethora of problems came since the very beginning of the dissertation work. The attempt to study and develop an institution for any specific urban area in the country became impractical due to the absence of a firm theoretical background. It was hence decided to develop first a clearly defined theoretical frame of reference for urban management institutions. This is the main reason why the dissertation work

comprises more of theoretical references and analysis rather than objectivities of a particular urban area. It is in this reference that whatever objective facts and information have been inserted in the text, they are all intended to support and exemplify the notion explained in the corresponding chapters.

Based on these pre-conditions, the whole work has been arranged in a sequential order so that to start from broader theories of management and transcend the analysis to urban management sector as an specific application. The whole work has been divided into eight chapters, each having a particular significance of analysis. A brief description of each of them is given below.

The first chapter is traditionally the introductory one. It has tried to establish that urban areas are the latest outcome of development attempts of human civilization. But with continuously increasing public attraction and diversified activities taking place in the urban areas, it deserves innovative interventions for its sustainable development. The traditional methods of development management have become insufficient to cater with specialties of urban areas. Therefore, intervention of a different type of urban management institution has become very necessary to address the newly developing challenges. The main objective of the study is therefore to identify what an

institution could do for a pre-decided model of urban development and in what way.

The second chapter is confined to literature study. As very little of literature on urban management were available, an attempt has been made to explore relevance of general managerial theories with urban management endeavor. Through literature analysis, it has been found that the managerial and organizational theories can be used for the purpose, provided a degree of flexibility and relevance is incorporated. Matrix organization structure has been recommended as the best form for achieving a desirable degree of coordination among line agencies and other related institutions.

Another useful input received is concerned with the concept of urban development. The literature has strongly established that the developmental phenomenon is a continuous phenomenon in space, and, any attempt to limit its flow within a politically decided line of artificial boundaries does not work well. Undertaking of development activities within the false line of municipality is hence to be abandoned and the concept of rural-urban continuum to be adopted. The sphere of continuum could be governed by the law of distance decay. The sphere is also a

dynamic one that is liable of modification with time according as the changing characteristics of its factors of interaction.

Next category of literature available comprises of case studies and reports. As the reports are directly related to urban management sector, these are very useful reference materials for our purpose. However, most of them are related to municipal governance and organization only. The study on "Nepal urban sector strategy" conducted by DHUD and the MODA reports of UDLE have very extensively explored on these issues. Among all literature of this category, the report on 'Organizing Metropolitan Development' conducted by Indian Institute of Public Administration (IIPA) is rather a complete one that has discussed not only the governance issues but also the developmental and societal aspects as well.

Through all these discussions, chapter two has tried to distinguish why the urban management endeavor is different from practices of project management in other enterprises.

Third chapter incorporates the views and ideas of planning professionals, academicians and authorities of local bodies. It can also be considered as the diagnostic tablet of the problem under study, because it provides ultra-fresh ideas that are directly

related with practical facts as concluded through direct observation by the opinion builders in person.

The fourth chapter is dedicated to analysis of urban dynamics phenomenon. It is one of the very fundamental but totally neglected aspects of urban development endeavor. It has been established in the first chapter of the work that a 'dynamic management system' is a must for urban sectors. But unless the urban dynamics is understood in its actual sense, establishment of a dynamic institution to handle the dynamic management becomes impossible. The fourth chapter has tried to fill up the same necessity.

The chapter has also tried to explain the forces of urban development, their interaction mechanism and their effect on urban development programs. Unless one can understand basic characteristics of the forces, it is almost impossible to design an institution to administer the effect of the same thing. Otherwise, it would be similar to try to cure a patient without making a diagnosis of the disease. The chapter has also tried to explain how the forces affect the participation and goodwill of urban management institutions. A better understanding of the laws of urban dynamics can explain clearly about why many programs can not succeed to produce their desired output.

The fifth chapter belongs to the theory of institutions. This explains in detail the elements, strategy and other basics of institution. It lays a strong foundation for establishment of a new institution and for rectification of existing one as well. This chapter also establishes the difference between an organization and an institution as well. Uphoff model of institution has provided a firm ground and frame of reference for analysis of this chapter, though other reports and views of many proponents have also provided a delicious input. It can be expected that once an institution is established based on the analysis of this chapter, including the cultural elements, it can penetrate its roots deep down to the nerves and flesh of a society.

Sixth chapter is related to the governance of institutions. It is one of the most visible parts of an institution that the public can feel in their daily life. Also, governance is one of the highly questioned aspects of institutions, especially in the third world countries. Governance is defined as the system of service delivery to the people. Therefore, a defective governance system always minimizes the significance of all other elements of institution. This chapter has cast sufficient light on how governance could be made perfect.

Seventh chapter is the practical aspect of discussions made in the previous chapters. The urban management institutions in Nepal with special consideration to Kathmandu valley have been tested with the theories. Through the discussion, it has been revealed that the institutions are required to drive past miles of distance to meet the ideal conditions of a perfect institution. The chapter has tried to identify the basic factors that are necessitating newer interventions for the institutions. On the other hand, the critical analysis has tried to cast light on how and why the prevailing institutions have become ineffective. These discussions have been intended to provide a better diagnostic look over institutional rectification for Nepal.

Chapter eight, the last chapter, has been designed to make the concluding remarks and for making pragmatic recommendations for correcting the shortfalls thereby identified. However, the chapter has been defined differently to the traditional style. The terminology 'synthesis' has been used in place of 'conclusion' with a view that whatever discussion and finding has been made, it would have been more practical to synthesize the information rather than to conclude. The term conclusion would ideally terminate the study at the point while the term synthesis would leave room for more detailed study of the same thing. As the question of institution building is new to Nepal, It has been

decided to keep the door open for more rigorous discussion rather than to seal it off.

Similar is the concept while using the terminology of 'Improvement Potential' in place of recommendations. The explanation is that 'recommendation' would urge the readers to adopt the particular for making improvements, while the term improvement potential would mean that so much of potential has been discovered from the study, and different methods might become necessary if the provided conditions are different, or perceived differently. It also refers that the potential so identified is of general nature, and certain degree of creativity is needed if one intends to apply those potentials under particular conditions.

Lastly, an organization structure for urban management institutions for Nepal has been proposed. The structure has been designed as given in the last chapter so that a perfect coordination could be achieved among different agencies, and they could become dynamic enough to address the dynamic characteristics of urban development programs.

Thus on the whole, chapters one through six provide a defined frame of reference for building an effective institution; chapter seven represents the practical testification of the discussions made and the last chapter how to find the rectification strategies.

In other words, the work has tried to recommend an institution (chapter 5) with effective management system (chapter 2 & 3) through identification of the forces (chapter 4) which make the urban scenario to change continuously.

Graduation Year 2003

**Thesis Title: POST LAND DEVELOPMENT EVALUATION: A
CASE STUDY OF LAND POOLING PROJECTS IN
KATHMANDU VALLEY**

Submitted by: Prashant Man Singh

Supervisor: Mr. Padam Bahadur Chhetri

ABSTRACT:

Monitoring and evaluation has not yet formed a part of any land pooling projects in Kathmandu Valley despite their successful implementation. So little is known about the nature and pace of development in these schemes and also to what extent the general objectives of land development has been realized is yet to be established.

In this thesis an attempt has been made to assess land-pooling projects in Kathmandu Valley, taking few such projects for the case study. Two important aspects are being looked into for this purpose. First is about what is going on in the projects after implementation, for which, some key aspects of this phase of development need to be considered such as the nature and pace of development; infrastructure and services provided, their use and condition, land value and land market before and after the

project, characteristics of people living in and their perception on the schemes. Second, how far the land pooling schemes implemented so far have been successful in the realization of its broader objectives as a land development tool, such as to achieve planned urban expansion, supply of serviced housing plots and provision of basic urban infrastructure and services in Kathmandu Valley.

The development within the schemes is often virtually on their own in terms of development nature and pace. No mechanism to monitor, control or regulate development exists. As a result slow development rate, deterioration of physical infrastructures, rampant escalation of land value, is a common phenomenon. Further, the limited number of land pooling projects sparsely located have failed to perform satisfactorily towards the attainment of its objectives, especially that of planned urban expansion and supply of serviced housing plots. In order to address the problems and issues faced in these regards, a number of policies and strategies for incorporation in projects implemented at present as well as for future ones are recommended through this research thesis.

**Thesis Title: RESOURCE RECOVERY IN SOLID WASTE
MANAGEMENT (A CASE STUDY OF
KATHMANDU METROPOLITAN CITY)**

Submitted by: Umesh Silwal

Supervisor: Bharat Prasad Sharma

ABSTRACT:

Whenever the environmental issues of Kathmandu Metropolis are raised the problem created by solid waste stands first. All the city dwellers of Kathmandu Metropolis are much more familiar with the solid waste problem. It is not only limited at the local level sometimes it becomes national political issue too. The increasing population, rapid urbanization, changing consumption pattern and social behavior has caused massive waste generation in the capital. In previous days the amount of generated waste in the capital city were less and high organic contents so that there was not a serious problem in managing generated waste because those wastes were easily assimilated into the soil and consumed as an organic fertilizer for agricultural purposes. As the urbanization trend goes on increasing the waste characteristics have also been changed from organic to inorganic where the chances of reuse and recycling of materials are also high but recovered quantity of waste at present is significantly low as the rate of waste generation is high.

This study is basically focused in resource recovery aspect which is an integral component of municipal waste management. It also tries to postulate the resource recovery in municipal waste management can be a major source of income for informal and formal sector workers of urban area and if it is undertaken effectively municipality can also recover its expenditure on solid waste management in significant amount. The interviews with the entrepreneurs involved in recycling business of both inorganic and organic waste and interaction with municipal officials and experts were carried out to find out the current situation of resource recovery prevailing in Kathmandu Metropolitan City. On the basis of current situation on resource recovery aspect of solid waste management the problems and issues in physical and environmental, social, institutional, legal, financial and political sectors are identified. Certain recommendations are made to overcome the current problems in different aspect to make the resource recovery a sustainable approach on municipal solid waste management and secure business for both formal and informal entrepreneurs involved in this business.

**Thesis Title: HOUSING CONDITION OF URBAN POOR IN
CHYASAL, LALITPUR**

Submitted by: Suresh Lal Shrestha (Kakshapati)

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT:

Nepal is an independent kingdom situated on the southern slopes of the Mid-Himalayas in central Asia. Nepal is a multi-lingual, multi-cultural and multi-racial country. Lalitpur district is located in Bagmati zone of the Central Development region. Migrating trends of population from rural areas to the urban areas of Chyasal, Lalitpur is rapidly increasing the population density and there is an acute deficiency of the physical facilities especially to the urban poor. In this regard, the research analysis has been done for the study of the socio-economic, physical infrastructures, institution and environmental aspect of Chyasal Area.

Before 1970, all the planning was done in the agricultural areas focusing mainly on the site & services approach only. In Nepal, there are altogether 3,000,000 dwelling units at present. Among them, 2,700,000 dwelling units are in rural areas and only 300,000 dwelling units are in urban areas. As many as 2,500,000 new dwelling units are required for the period of 1992-2006 and

out of that, the requirement of urban areas will be only 17 percent. Out of these, about 732,000 existing dwelling units are required to be repaired and renovated. If we consider the town planning of Rajbiraj designed following the concept of town planning of Jaipur, the Pink City of India during the Rana Regime, at present, the city is almost in a dead state. There are less economic activities and the city dwellers are finding hard to sustain and manage the city. Although, we have a long practice of urban planning for the formulation of new towns and various land development techniques, in the similar manner, there is a lack of urban upgradation programme in the Lalitpur Municipality.

If we make a review of past projects, in 1988, the Urban Upgrading of inner Kathmandu was initiated by the Norwegian project along the bank of Bishnumati. Then after followed some rehabilitation works done in more than 174 courtyards in the Kathmandu Valley with the joint effort of the Ministry of Housing & Physical Planning, Udle and other NGOs. These entire action-oriented programme give us the idea of upgrading the housing conditions of *the* Urban Poor in Chyasal, Lalitpur.

The study area has been selected in the core area of Ward No 9 & 11. In these areas, the local people give accord the least

importance towards the improvement of housing condition in the Chyasal areas. The housing conditions and inadequate government policies in the Sub-metropolitan city, Lalitpur have greatly affected adversely to the policy of the management as seen in many developing countries.

It is often observed that many urban poor are discriminated to the use of physical facilities. It is found that usually the urban poor are compelled to live in a bad housing condition and there is no possibility of improving its present situations. Some of the Governmental organizations, the Lalitpur Municipality, the ward offices, the NGOs and UN are trying there best to improve this area- Their main goal is to upgrade the living conditions of these urban poor. But so far, all the efforts have been exerted in a small area only.

Theoretically, habitat of human settlement view housing as the shelter or living space only, and more consideration for the environment or the services are needed to support them. The true importance of housing lies in the fact that it is a package of services inclusive of land, public facilities, access to jobs, as well as the structure itself. Income can be considered as the most important element in shaping the housing condition. In most of the cases, in these cities, infrastructure planning (roads, water

supply, sewerage, electricity, schools, health, clinics, public open spaces and the like) has lagged behind city growth. Housing finance for low-income families in developing countries suffers from disabilities such as financial systems, which are typically been dominated by commercial banks. This research work tries to fulfill the gap and the shortcomings as seen in the Chyasal areas. In order to achieve this goal, a national policy on human settlements, should aim to improve the condition of human settlements particularly by promoting a more equitable distribution of benefits of development among urban poor regarding the public services and equal access to all facilities.

Furthermore settlements must be continuously improved. Renewal and rehabilitation of existing settlements must be oriented to improve living conditions, functional structures and environmental qualities. The process must respect the rights and aspirations of inhabitants, especially the urban poor and preserve the cultural and social values embodied in the existing fabric. In addition to this, there is a need of planning at all levels requiring coordination, monitoring, evaluation and review, both for different levels and functions as well as feedback from the people affected. There must be institutions at national, ministerial, and other appropriate levels of government responsible for the formulation and implementation of inner city

upgrading policies and strategies, for national and local levels. All these improvements are only possible, if there is a strong economic base. The provision of health, nutrition, education, security, recreation and other essential services in all parts of the country should be geared to the needs of the community and receive an effective priority in national and local level.

Community participation through the grass-root level and all the planning, execution, evaluation and the monitoring should be done for the inner city up gradation programme as envisaged in Chyasal area of Sub-metropolitan City, Lalitpur. There is the need of public awareness campaign for the urban upgradation programmes, which may take the issues of urban environment and sanitation. Then only, the people of Chyasal will be able to attract the national and international tourists. The frequent visit by these tourists will automatically generate the income sources and give support to the economic base. This scenario can be compared with Bhaktapur Town. The author visualizes the situation of Bhaktapur and there is the possibility of upgrading housing conditions of the Urban Poor in Chyasal, Lalitpur through the same process as done by Bhaktapur Development Project.

**Thesis Title: ROLE OF SMALL - SCALE INFORMAL
INDUSTRIAL ENTERPRISES IN URBAN
DEVELOPMENT: A CASE STUDY OF
MADHYAPUR THIMI MUNICIPALITY, LUBHU
AND KHOKANA VDCS**

Submitted by: Deepak Mishra

Supervisor: Dr. Puskar K. Pradhan

ABSTRACT:

In most of the developing countries like that of ours, urbanization is accompanied by an increase in the numbers of urban poor. Due to the effect of various pull and push factors, people are migrating to few of the urban centers including Kathmandu valley. Unprecedented growth of population in these towns has created problem of how to improve the urban environment and living conditions of the people. The people are being engaged in various occupations for their livelihood, giving rise to the informal sector activities. The urban economy thus consists of a dualistic structure of economic activities, formal and informal. The broad goal of reducing poverty and maintaining urban life standard will not be fulfilled unless a poor gets ways to earn for his sustenance. Providing employment to all these people is the major challenge in front of us. Among various kinds of informal activities, the small-scale informal industrial activities (SSIIE)

especially run by family members have been the major source for absorbing large numbers of work force and income generation. Indigenous people in the historic settlements of Madhyapur Thimi Municipality, Lubhu and Khokana V. D. C. have been found to be engaged in SSII related to the traditional activities, which also helps to promote tourism and maintains the identity of the area.

The formal organized sector is governed by governmental rules and have modern accounting methods, hierarchical organizational structure, division of labour, specialization and complex decision making process and is dynamic in nature. While these Informal un-organized sector anyhow tackle the market situation and have poor access to commercial sources of credit and facilities and they are surviving themselves strictly on a hostile environment. It is clear that unless the level of urban poverty is significantly reduced, there is little chance of improving the current situation. Substantial urban poverty hinders revenue collection and resource mobilization while the effective demand for housing and other basic urban services goes on increasing. Therefore employment is the most effective instrument to reduce poverty on a sustainable basis.

The Kathmandu Valley Plan estimated that with in 20 years, half a million new employment would be required to meet the demand for growing population. The challenge of meeting the

new job demand to a large extent will be fulfilled by SS1EE. While on the other hand it has been the fact that the numbers of families formerly engaged in traditional occupations are shifting their occupations. In this context it becomes more essential to understand the problems and issues faced by these sectors. Most of the problems lie with in Marketing management, loans and credit facilities, provision of raw materials and absence of trained manpower.

In order to address the problems and issues faced by this sector, integration of institutional efforts is essential. Certain reforms on policies, rules and regulations are also important and following the proper Management strategy will help solving most of the problems with in these sectors.

**Thesis Title: UPGRADATION OF SLUM SETTLEMENTS (A
CASE STUDY OF NAGAGA TOLE, LALITPUR)**

Submitted by: Binita Poudyal

Supervisor: Mr. Bharat Sharma

ABSTRACT:

With increasing urbanization, developing countries are now facing with a new challenge: How to improve the urban environment and living condition? 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 the growing incidence of poverty.

The area of Lalitpur Municipality has a rich historical past and represents the embryo here from a city evolved. But over time rapid urbanization led to the emergence of commercial and industrial activities within the area. With little attention from the authorities, this area soon began to deteriorate environmentally causing a severe strain on the infrastructure and services that has lead to a degraded living environment, and hence the emergence of slum settlements.

This study is aimed at preparing feasible proposal for the study area in order to upgrade the deteriorating urban condition, in case

of housing with the enhancement of community awareness programme. Keeping in view the overall situation of the city level, the constraints needs, preferences and priority of the inhabitants in the present socio-economic context within the area urban study has been studied in detail.

Reason for increased rate of growing of slum settlements may be due to the growing demand of employment and majority of job seekers are unskilled migrants from the rural areas.

Secondary information and data were collected from related organizations whereas primary data and information were collected using different techniques i.e. observations, discussions, and socio-economic survey collected information and data were analyzed.

The findings of analysis have been used as a base for preparing outline proposal, which emphasizes on incremental improvement of the area, his has been done by setting the minimum standards, dividing the responsibilities between various organizations and by giving importance on community level decisions. In order to decrease the density or overcrowding condition within the area, two different housing schemes has been given for those who want to go away from their present area, with the proximity of job and adequate compensation. And for those who are

traditional link up with the area and are not willing to go away in any case, upgradation scheme has been formulated. In order to achieve these propositions, three housing proposals have been put forward. Residents who are categorized as immigrant or whose having status is temporary needed, provision of low price accommodation. Thus transitional housing is thought to be appropriate for this group of people. The second for those who prefer to live in the same area for job proximity and cultural link up improvement of existing settlements is thought to be appropriate. The third provision is new settlements for those who may need their own houses or especially for those who want to transfer from transitional to fixed status of housing.

In order to anticipate the future challenges related to slums, a number of reforms in policies, regulations and institutions might be put forward, leading to the integration of the context with the mainstream development. Out of numerous issues and problems faced by the area, overcrowding is one of them, resulting in degradation of all types of basic amenities, as a result emergence of unhealthy living environment. The prospects for improving living condition of slum dwellers critically depend on overall economic condition and awareness of the residents. Until and unless the residents are not made aware of the better environment for living and not giving change to improve their economic

status, any development or improvement attempts in slum settlements will only be temporary.

**Thesis Title: PLANNING FOR URBAN EXPANSION OF THE
KATHMANDU VALLEY - A THRESHOLD
APPROACH**

Submitted by: Kirti Kusum Joshi

**Supervisor: Mr. Kishore Thapa, Prof. Dr. Masahiro
Nakano**

ABSTRACT:

The socio-economical and political value of the Kathmandu Valley has never been challenged in the history of Nepal. Even the victory by King Prithivi Narayan Shah of Gorkha over the Valley did not change the status but only highlighted the place of the Valley in the map of Nepal, with the capital city of unified Nepal in its heart. But times changed, and the modern addition in traditional cities of the Valley tarnished the glory which had been so fondly treasured.

Today, the Valley faces a number of problems- poor environment, water scarcity, traffic congestion, ugly built-up areas and so on. The list seems endless. But these problems have not stopped the high rate of urbanization of the Valley with annual population growth rate of over 4 %. In fact, the urban problems are the unwanted byproducts of uncontrolled urbanization. So to prevent further deterioration of the Valley,

which in near future will be a conglomeration of settlements, analysis of population, including migrants, needs to be carried out to figure out under certain circumstances, how many people the Valley can accommodate and at the same time, provide adequate urban services.

The physical boundary of the Valley with high hills around it, puts a limit on the urban growth beyond the foothills. Even for the area within the boundary, there is agricultural land to be preserved for ecological reasons, and there are open spaces to be left for seismic safety. There are people, and many are added each year. Services have to be provided to them, and among all, water stands as the most crucial one. The Melamchi Project is at the doorway, but it needs to be examined for how long it can satisfy the thirst of the Valley people. Of all the perspectives, physical space and drinking water requirements are particularly important in suggesting the threshold capacity of the Valley. Definitely, the carrying capacity is not a static value and changes with change in social and technological changes. But for a country which cannot carry out dramatic development works, planning works have to be based on the realistic limitations and constraints.

This study attempts to define the carrying capacity of the Valley based on selected factors, and recommends strategies based on threshold approach.

**Thesis Title: DEVELOPMENT DYNAMICS IN URBAN FRINGE
(A CASE STUDY OF LALITPUR SMC)**

Submitted by: Rajan Kumar Shrestha

Supervisor: Prof. Dr. Jib Raj Pokharel

ABSTRACT:

Urbanization is an inevitable process of the development and the expansion of the cities in the fringe is the basic stage of development of country like ours. In case of Lalitpur Municipality, the second most urbanized city in Nepal is becoming congested and the municipality in the present context can't fulfill increasing demand of urbanized land. The main objective of this Thesis is to present Haphazard Urbanization Trend in the fringe area of Lalitpur, which represents the situation in the area, adjacent to the Ring road in Valley and other places of country, and its impact on the urban environment. Fringe area of Satdobato-Dholahity-Kusunti of Lalitpur District has been selected for the case study. The present uncontrolled population growth is attracted towards the Fringes of the cities because of the low land price and similar rural environment with urban facilities. Moreover, loose building by-laws adjacent to the metropolitan city have attracted the people from core area also. People are moving towards the fringes in search of better environment and peaceful living place.

The main issues that emerges out of the study are (land use related) unauthorized construction on agricultural land, defining permitted uses on vacant lands, lack of open spaces and industrial reservations in contradiction to the previous Development Plan and Regional Plan; inadequacy of parks, libraries and piped water supply. As per institutional and legal setup related objectives, study shows and absence of a separate cell for planning of fringe area.

The thesis is focused on the haphazard urban growth in fringe area and dealt with the problems and opportunities of the Fringe area. And finally have tried to suggest the possible measures to cope with the Fringe Problems. The conclusion of the study is that regularization plans along with consideration to town planning schemes and infrastructure provision should be formulated and there should be no further concentration of industries in the municipal limits. There has to be designated land use for vacant land with development controls. The establishment of an umbrella institution along with coordination committee to look after the development trend of the municipalities has been felt must.

**Thesis Title: IMPACT OF GUIDED LAND DEVELOPMENT ON
URBAN DEVELOPMENT (A CASE STUDY OF
KATHMANDU METROPOLITAN CITY)**

Submitted by: Aashish Pandey

Supervisor: Mr. Purna Kadariya

ABSTRACT:

Rapid rate of urbanization have been a major challenge for the KMC. Severe land scarcity and diverse needs of industry, commerce, institutional setups, housing etc has made access to land increasingly difficult. The cost of providing infrastructure has multiplied and the ability of existing area to absorb more population has become limited resulting in the haphazard growth of the city.

To cope with this problem, the concept of Guided Land Development (GLD) was introduced by HMG in the year 1988/1989. GLD aims to guide urban development by creating a road network that opens up an area for the development. The concept in its simple form relates to a process whereby lands owners in a locality agree to contribute a part of their land, on the basis of pre agreed layout plan, for advance provision of space for roads and other services.

This thesis is an attempt to find out the impact of GLD projects on urban development of Kathmandu metropolitan City. The thesis also aims on identifying key problems associated with the GLD concept GLD as land development tool and GLD as land improvement tool have been widely practiced in KMC so two different Wards of KMC Ward No. 15 and Ward No. 32 has been chosen for the study to depict a clear picture of the two different approaches of GLD implementation. The thesis incorporates the local people's views who have contributed land for GLD projects. Various aspects of physical changes such as level of infrastructure as well as socio-economic changes such as change in occupation, land value, market places etc has been looked into detail to find out the changes in the project area after implementation of GLD projects.

The study has found that GLD technique either used from land development perspective or land improvement perspective has certainly influenced the urban development process of KMC. The mode of traditional land use, culture, economic environment and the social structure have been markedly changed in the GLD project implemented areas.

**Thesis Title: INTEGRATING SPATIAL AND MONUMENT
CONSERVATION WITH DEVELOPMENT
DEMAND OF A LIVING HERITAGE (A CASE
STUDY OF BOUDHANTH MONUMENT ZONE)**

Submitted by: Amir Mangal Joshi

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

More recent studies have shown that most of the heritage places of global importance are the historic core of the city and have been witnessed many development pressures in the history. One of the striking examples is from heritage sites in the Kathmandu Valley. The strategic location of the heritage sites in the valley from present economic perspective contributed much to its rapid development. It was only after its inscription in the World Heritage sites in 1979 and consequent flourishing of tourism industry in the Valley, rapid development in these heritage sites started. The effect of modern frenzy constructions and consequent deterioration of heritage environment is now still continuing.

What is of primary concern is the rapid loss of traditional setting of the monuments through the loss of private historic buildings. The deteriorating condition of cultural heritage is due to

economic development pressures which resulted in low importance placed by the local residents and incoming migrants for the conservation of the heritage. Past experiences have shown that strong enforcement of development control regulations only work against the sentiment of the people and it can hamper the conservation objectives in the long run. This suggests that heritage sites should be planned and makes it prepare to receive the development consequences and changes it will bring.

The challenge today however, is to strike a balance between development demands of the society and conservation needs of our heritage. Therefore, the effect of modernization and the changing needs of the people have to be accommodated with the national and global objectives of heritage preservation. In this context, strategic interventions at key areas can be provided to reduce the development pressure in the heritage sites in urban areas. Such interventions should absorb the changes, relieve the conflict and develop the site gradually.

**Thesis Title: ROLE PF INFORMAL BUILDING
CONSTRUCTION IN URBAN DEVELOPMENT: A
CASE STUDY OF KATHMANDU
METROPOLITAN CITY**

Submitted by: Lok Raj Singh

Supervisor: Dr. Puskar K. Pradhan

ABSTRACT:

It is obviously known that there is a better opportunities in the urban center which attract the poor people from the rural area so the influx of people are increasing tremendously in the city since long ago and it is found to be continuous process in the developing countries like ours. Formal sector can not provide jobs for all migrated and urban poor are getting very difficult to survive in the city. Along with urbanization, urban areas are suffering from the growing incidence of poverty. Because of dualistic urban economy when formal sector does hands up, at that situation informal sector attract them to start their own self business, it is easy to start self business like street venders, vegetable seller etc because that does not need big amount of investment. And these people derive their income from different informal sectors.

In case of Kathmandu, informal sector as construction provides an employment to large urban workers because people get easy access that other, they do not need money but they need good health. Reasons for more and more people engaging in this sector may be due to the failure of formal sector to keep pace with ever growing demand of employment and majority of job seekers are unskilled migrants from the rural areas. Cities are primarily an engine of economic activities and generator of employment. From the data source construction enterprises generate more than 20.00 percent employment opportunities in the Kathmandu valley. In absence of formal employment opportunity, this additional labor force will have no option except go for informal sector for jobs and income earning.

For development of the country construction play the vital role and buildings are the identity of prosperous city. Due to the unprecedented population pressure in the city housing units are increasing rapidly. It is found that informal building construction enterprises are becoming the main private building construction agency in the Kathmandu Metropolis and their contribution accounted for more than ninety eight percent. There is no presence of formal contractors were found during study period in private building construction, existence of domestic and expatriate workers were found moreover equal and in some

special cases such as Plaster of Paris, Marble and Tile fixing sector there is dominance of expatriate workers in the market.

They are in some extent earning handsome income rather than other informal sector but lack of insurance provision they are working on psychologically depressed environment, they always have a fear of accident.

It is obviously known that unless and until urban poverty is reduced the city can not be said prosperous whether infrastructure and many beautiful buildings are constructed densely. So to uplift the living standard of the people they need more employment opportunities and make them capable to use different urban facilities. This building construction sector is contributing to reduce poverty in some extent.

Out of numerous problems and issues faced by the IBCE insurance is one of them. In order to address the problems and issues faced by this sector a number of reforms in policies, regulations and institutions may be put forward, and their integrated effort is essential.

**Thesis Title: FINANCING OF MUNICIPALITIES IN NEPAL FOR
INFRASTRUCTURE DEVELOPMENT AND
SERVICES (A CASE STUDY OF BHAKTAPUR
MUNICIPALITY)**

Submitted by: Saroj Sharma Poudyal

Supervisor: Mr. Padam Bahadur Chhetri

ABSTRACT:

As local bodies, municipalities have crucial role in the matter of the overall infrastructure and social development activities within their jurisdiction. Local Self Governance Act, 1999 has entrusted a large number of functions to be performed by the municipalities. The Act has provided more power and authority to the municipalities. However, the municipalities have not been able to carry out the multiple functions to a desired extent. The demand of city dwellers for better physical facilities and effective social services have been growing every year. Likewise, municipalities also have been facing various problems and constraints. The first and foremost problem is that of finance. In the context of Nepal, financial-resource has been a major bottleneck in fulfilling the needs and basic necessities of urban population.

This study attempts to study the overall scenario of financing of municipalities in Nepal concerning infrastructure development

and delivery of social services with special reference to Bhaktapur Municipality. The report consists of six chapters.

Chapter I to III, deals with the background, objective, methodology scope and limitation of the study followed by the literature review, brief notes on the financing of municipalities.

Chapter IV -VI is concerned- with the general information on Bhaktapur municipality, financial status, followed by analysis, findings and recommendation regarding effective mobilization of financial resources. On the basis of the information received during the study period a few recommendations have been made in this connection.

**Thesis Title: ROLE OF COTTAGE AND SMALL INDUSTRIES IN
URBAN DEVELOPMENT (A CASE STUDY OF
BHAKTAPUR)**

Submitted by: Tulshi Ram Shrestha

Supervisor: Prof. Dr. Jib Raj Pokhrel

ABSTRACT:

In most of the developing countries like Nepal, urbanization is accompanied by an increase in the numbers of urban poor. Due to various pull and push factors, people are migrating to few of the urban centers including Kathmandu valley. Unprecedented growth of population in these towns has created problem of how to improve the urban environment and living conditions of the people. The people are being engaged in various occupations for their livelihood, giving rise to the cottage and small industries. The urban economy thus consists of a dualistic structure of economic activities, formal and informal. The broad goal of reducing poverty and maintaining urban life standard will not be fulfilled unless poor get ways to earn for their sustenance. Providing employment to all these people is the major challenge in front of us. Among various kinds of informal activities, the cottage and small industries (CSIs) especially run by the family members have been the major source for absorbing large numbers of work force and for generating income. Indigenous

people in the historic settlements of Bhaktapur have been found to be engaged in CSIs related to the traditional activities, which also helps to promote tourism and maintain the identity of the area.

The formal organized sector is governed by the governmental rules and has modern accounting methods, hierarchical organizational structure, and division of labor, specialization and complex decision making process and is dynamic in nature. While these informal un-organized sector anyhow tackle the market situation and have poor access to commercial sources of credit and facilities and they are surviving themselves despite a hostile environment. It is clear that unless the level of urban poverty is significantly reduced, there is little chance of improving the current situation. Substantial urban poverty hinders revenue collection and resource mobilization while the effective demand for housing and other basic urban services goes on increasing. Therefore employment is the most effective instrument to reduce poverty on a sustainable basis.

The Kathmandu Valley Plan estimated that within 20 years, half a million new employment would be required to meet the demand for growing population. The challenge of meeting the new job demand will be to a large extent fulfilled by CSIs. On the other hand it has been found that the numbers of families formerly engaged in traditional occupations are shifting their

occupations. In this context it becomes more essential to understand the problems and issues faced by these sectors. Most of the problems lie with in Marketing management, loans and credit facilities, provision of raw materials and absence of trained manpower.

In order to address the problems and issues faced by this sector, integration of institutional efforts is essential. Certain reforms on policies, rules and regulations are also important and following the proper Management Strategy will help solving most of the problems with in these sectors.

**Thesis Title: URBAN RENEWAL IN THE HISTORIC TOWN OF
SANKHU: AS A TOURISM PRODUCT**

Submitted by: Suman Meher Shrestha

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

This research document has been prepared for the partial fulfillment of the requirement of M. Sc. Urban Planning thesis project. The topic of the thesis work is "Urban Renewal in the Historic Town of Sankhu: As a Tourism Product".

Sankhu is a traditional town of the Kathmandu District of some 12,000 people at the foothills in the north-eastern fringe of Kathmandu Valley and had once been an important trading center at the Trans-Himalayan trade route between Tibet and Kathmandu. Sankhu is one sociological entity artificially carved into three Village Development Committees for the political reasons.

The town of Sankhu can be considered a ritual universe in its own right. The unity and identity of town determine by its ritual relations rather than by socio-economic, political or administrative divisions. These rituals also link Sankhu to the surrounding Kathmandu Valley.

Even after the change in political setup in the country very little has been done so far for the development of the ancient Newari Town. Since then piece meal approach has been adopted for the development of the area like road to Kathmandu has been upgraded, commuting activities to the Kathmandu has increased but in reality nothing has been done to improve the physical and living condition of the city and its inhabitant.

In a country where historically there has been little infrastructure development in ancient settlements, tourism has created opportunities to bring commercial activity to these places. The evolution of Nepal's unique style of trekking tourism has provided an excellent development tool. Since mid 1960s. Nepal has led the way with successful integrated conservation and development initiatives in protected areas. And in the nineties community based village tourism model came up such as SIRUBARI for the rest of the world. The idea is to adapt 'conservation and development' approach based in cultural tourism to revitalize the local economy.

Many development agencies active in Nepal have recognized the potential of ecotourism. With a range of development motives, these organizations have been implementing ecotourism

activities in the hills and valleys of Nepal since the 1970s. Nepal now has a sophisticated track record in ecotourism. a body of tried and tested development methods and a strong cadre of ecotourism field professionals with many years of experience. Some of the world's best success stories of ecotourism achieving poverty reduction are found in Nepal. As well as indicating a capacity for Project implementation in this field, there is as yet an undeveloped potential for drawing attention to this significant leading edge through more effective marketing and promotion.

The prime objective of the thesis work is to formulate a Urban Renewal plan for the historic town of Sankhu to regain its economic viability, which could be achieved not through "trade route (silk route)" in the present context, but through tourism development by integrating 'conservation and tourism'. Preserve its antique characteristic and life style along with sustainable physio-economic development.

The overall objective of the project is to formulate a revitalization plan for the ancient *Newari* Town of *Sankhu* in such a way that it will successfully preserve its antique characteristic and life style along with sustainable physio-economic development.

Anthropological research in *Sankhu* had led to a renewed interest amongst the local population in their cultural traditions.

The rationale of using tourism as a tool for poverty alleviation. Sankhu has pervasive levels of unemployment and poverty and rich natural and cultural heritage. Tourism based on spectacular natural landscape and unique cultural heritage is an area of comparative advantage and the central Government has accorded high priority to the sustainable development of the tourism sector. In Nepal, tourism has already proven itself able to spread economic benefits to rural areas. For this reason, the government has made poverty alleviation a primary objective for the tourism sector.

Development of infrastructures like roads, housing, sanitation, and water supply are prerequisite to develop tourism. Realizing this fact, over the time, the government has invested large amount of financial resources and time on infrastructure development. However, on one hand the growth of infrastructure in the country is far from adequate, and on the other, operation and maintenance of the so far seen infrastructure has been more or less than satisfactory. This is largely due to insufficiency in and inefficient way to financial allocation towards building, operation and maintenance of these infrastructures. Therefore, as

there is a need to mobilize more financial resources, community people involvement directly and allocate them more efficiently towards building, operation and maintenance of infrastructures private sector participation is given due consideration.

To achieve the goal set in this study for economic revival of the settlement through tourism; there has to be change in current institutional arrangement. It is recommended that the *Sankhu* settlement should be of either single VDC by merging 3 VDCs into one or establish the status of Municipality. The current institutional arrangement is inefficient with lack of man power and poor coordination due to 3 different VDCs.

**Thesis Title: POTTERIES AS AN URBAN ECONOMIC BASE OF
MADHYAPUR THIMI**

Submitted by: Deepak Manandhar

Supervisor: Mr. Padam Bahadur Chhetri

ABSTRACT:

Madhyapur Thimi currently having low average density and does not face grave environmental problem. This however does not mean that environmental threats are absent. The impact of urbanization and industrialization are beginning to cause serious environmental problem. The current trend of urban sprawl and industrial expansion in and around density-populated area is unsustainable and poses a serious threat to a clean environment. Immediate actions were therefore necessary while there is still some time to manage and coordinate the development of the area.

Madhyapur being a newly formed municipality does not have any systematic data and information on the existing infrastructure and environmental status directly focused through small-scale enterprises. The existing information basis available with the local bodies was grossly inadequate to attempt any significant and systematic action on environmental management and urban development.

Thus, in order to facilitate the disseminated database and information on local economic development, mainly focused on potteries and environmental infrastructure facilities, which will help the municipality in planning systemic action on local economic development. The seminars and workshops were undertaken on several times.

A simple methodology was conceived to collect data on the background information. The data were collected from the private cooperative sectors (primary information), through household survey and interviews. The collected data were analyzed in an appropriate manner for the real documentation analysis.

Madhyapur Thimi situated (24 40'00" to 27 42' 00" N latitude and 81 21'30" to 85 25'00" E Longitude) on a terrace plateau, which is safe from flooding. Its mean elevation is 1300 m above sea level. Thimi has good accessibility by road. The municipality spread over areas of 11.47 sq. km. The built up houses in old settlement area are in traditional three storied structures built along the line of a relative simple construction model. The socio-economic condition of people is dependent on a craft i.e. trade with agricultural the majority of populations are part-time and

supplementary farmer only few of the inhabitants of Thimi are full - time farmer. With few exceptions all inhabitants of Thimi are thus involved in some way with agriculture part-time or supplementary farmer on as lesser or tenants.

The densities of the population are concentrated more on the old settlement Area of Balkumari, Chapacho, Bode and Nagadesh and Thimi. The least density is recorded in Lokanthali and Kausaltar area. The gross population density of the municipality 3272 persons per sq.Km. and the rate of literacy 50%. The literacy among women is comparatively much lower than the men's. The occupational structure of the municipality is predominately agriculture based. The MT with its 17 wards was constituted by combining five - village development committee of Bhaktapur district in 1996. The present conditions of building in the old settlement area are getting deteriorated. The gross residential density is 528 houses per sq. km. But there are wide differences in prevailing densities among old settlement areas and new built-up areas. In the old settlement areas there is no open spaces to accommodate the new housing stock.

Thimi a traditional urban core area existing from Lichhavi period (5th - 8th century.), is predominantly a Newer settlement with complex caste system and it's spatial as well as work distribution.

It is famous for many festivals, diverse art, cultures, traditional music, and its own life style. Crafts are especially for potteries and masks i.e. handicrafts. Hence it has potential to be a "*Craft city*" by promoting tourism. The potteries profession is very well known for overall nation. The city has also potential to be an "agriculture center" as it is famous for green vegetables and called "*Kuthmandu's Kitchen Yard*" hence the research problem is to propose a land use concept integrating environmental and local development aspects by conserving agriculture as well as core area conservation for the sustainable development of Madhyapur Thimi.

Though there exist complex problems in almost every sector of local economic development like open spaces, sources of raw materials availability, environmental pollution through kilns, needs immediate attention from the planners. Municipality authority and policy makers. The study after its critical analysis has given priorities on the "Local Economic Development as Potteries as prime future action areas.

Thesis Title: FINANCIAL MANAGEMENT OF URBAN INFRASTRUCTURE MAINTENANCE (WITH SPECIAL FOCUS ON MAINTENANCE OF ROAD NETWORK IN KATHMANDU METROPOLITAN CITY)

Submitted by: Sudib Kumar K. C.

Supervisor: Dr. Jagadish Chandra Pokharel

ABSTRACT:

The main aim of this study is to suggest better urban road network in Kathmandu Metropolitan City on timely maintenance through proper financial management. Planning, Coordination, Motivation, Control and Resource are the main principle of good financial management. This framework is approached to examine road maintenance in Kathmandu Metropolitan City.

Kathmandu Metropolitan City (KMC) has good organizational structure which has finance, revenue collection, information and communication, road section, legal counseling section, personnel and HRD section. All these departments are responsible for planning to proper budgeting and fund allocation, coordination with other organization and community level, motivation of staffs to collect revenues, control in corruption and haphazard mobilization of fund and resource generation and mobilization

should be good in proper financial management in road maintenance.

Among others, inadequate financial resource is the major constraint for municipal maintenance activities. Very limited efforts have been made to increase the necessary financial resources despite of the huge potential that exists in KMC. International practices on road maintenance and resources generation give creative potential to the KMC. Road Board which is still on pipe line is also an international practice to create a stable fund through involving road users and channel it to the road sector to implement the Annual Road Maintenance Program (ARMP). It will make use of appropriate technology and locally available resources for cost optimization.

KMC provides Rs.1.5 million annually to each ward with respect to area and population. This fund is used to initiate various local developments and maintenance of existing services.. Road maintenance budget, which is allocated by KMC. is not adequate as this budget meets only 1.6 Km length to maintain. But KMC started cost sharing mechanism for new road construction and maintenance. For construction of new road KMC provides 60% and community contribute 40% where as in road maintenance.

KMC provides 30%. Department of Roads contributes 50% and remaining 20% is from community level.

The proposed budget did not meet the actual budget. Actual budget was decreased by 6.31% in fiscal year 2058/2059 in the additional of communal participation, HMG grant and grant from donors, which was not proposed in the beginning and decreased by 51.70 % in fiscal year 2059/2060.

Design of road network is not good as systematic side drain has to put on either side of roads will increase life of roads. But these practices are lacking due to insufficient budget in road networks and improper planning.

Before the introduction of LSGA 1999, the major source of revenue for all municipalities in Nepal, including Kathmandu was octroi. In 1997/98, the own source revenue of 58 municipalities were 1125 million whereas contribution from one single source, i.e. octroi was Rupees 827.24 million in which Kathmandu claimed the biggest percentage, i.e. nearly 24.97. That year, Kathmandu collected Rs. 206.58 million rupees from octroi. It comes to be approximately 80 percent of total revenue collected. Because of this practice no attention had been given alternate source of resource collection.

There is a lack of data regarding tax payers of different taxes ie. Rent tax, vehicle tax, house and land tax, business tax etc. Due to lack, of data it is difficult to estimate the revenue from tax source correctly and it is also difficult to calculate the remaining taxes the people have to pay to the municipality.

Thesis Title: PHYSICAL AND SOCIAL TRANSFORMATION OF THE URBAN FRINGE OF THE KATHMANDU VALLEY (A CASE STUDY OF ORIGINAL FARMERS AND THE LAND OWNERS OF SAIBU LAND POOLING PROJECT AND SUNAKOTHI VDC)

Submitted by: Anir Kumar Upadhyay

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

Urban areas are continuously gaining population and urban activities overspill from central cities to peripheries rapidly. Urban fringe areas are the localities where the cities are expanding. These areas reflect urban dynamics and the non agricultural land uses which are trying to adjust in an urban complex, In the wake of urbanization, fringe areas have both threats and opportunities due to the expansion of urban areas, On one hand, when agricultural land converts into urban land use, it certainly provides economic opportunities and on the other hand decrease in agricultural land causes serious problems to the farmers who do not have other skills than agriculture.

Kathmandu Valley is experiencing rapid land use conversion. Twenty two percent of the agricultural land was converted for non-agricultural purposes in the last two decades. Conversion

rate was more than 950 hectares per year in the last decade only. Agricultural land is gradually converting into other land uses. The study aims to know how the farmers and the landowners of urban fringe are affected by the ongoing rapid urbanization. This study concentrates on physical, social and economic transformation of the local farmers and the landowners.

Two case study areas are selected along two major arterial roads of the Kathmandu Valley. These two areas represent both planned intervention and un-organized development. *Saibu* Land pooling area is planned by the government to accommodate growing housing demand of Kathmandu. *Sunakothi* VDC is an unorganised development led by informal market.

The literature review and information gathered during the field survey, consists of information on physical, social and economic aspects of the farmers and landowners of both the case study areas. Considering the physical aspect, findings from the study suggest that people are deprived of proper access due to haphazard and

incoherent land fragmentation in an un-organized development. In both the cases, land holding capacity of landowners has reduced significantly. Physical displacement of the local residents is also observed and some more households are at the verge of displacement in near future.

Socially the relationship that has been developed through agricultural activity has reduced significantly and people are facing difficulties to continue with agriculture. Mutual help among friends and relatives is found to have been maintained in the un-organized development while the similar relationship has decreased in the planned area.

Considering the economic aspects, it was observed that the people are changing their professions from primary (agriculture) to secondary (business) and tertiary (services) sectors but the transformation process is rather slow and most of the households are still dependent on agriculture. Those who are practicing multiple professions are earning better than those who are practicing agriculture only. Due to the lower income, people are forced to sell their property whenever they get attractive price. They spend the money thus received for the needs of the family. Comparative study of both the planned intervention and un-organized development divulge some strengths and weaknesses of these two different developments. Strengths of both the cases should be incorporated and weaknesses should be mitigated while planning in the urban fringe areas. Strengths of un-organized developments are good social relationship in the community, incremental land use change etc. Good social relationships could be maintained through infrastructure sharing among local residents and the migrants in the community. Staged

and pocket wise development of infrastructures would help in preserving agricultural land while supplying the building parcels at the same time. This would help farmers to continue with their profession for a longer period of time.

Graduation Year 2004

Thesis Title: A STUDY ON SOCIO-CULTURAL ASPECTS OF
NEIGHBORHOODS IN URBAN SETTLEMENTS OF
KATHMANDU VALLEY

Submitted by: Anjan Raj Shrestha

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

Urban planning is predominantly linked with physical planning of urban areas, in addition to the social and economical considerations. Provision of a good and healthy physical environment, community living, growing social equity have resulted in a strong ideological need for urban planning. Social and spatial structures are interdependent and closely related to each other.

Human beings are social animals, social environment is equally important as the physical environment. It plays the important role in daily life of the people. In the current Nepalese context the social aspect has not been as integrated into the planning system as would really be desirable, which in the ancient planning system had remained as the undisputed backbone to planning. There is loss of group solidarity in the society, loss of security,

neighborhood relation. There is reduction in cultural activities too. It is in the society, where people satisfy their all types of need collectively. There is a loss of relation of urban and community spaces. In the name of urban planning, it is mostly the planning of land parcels, infrastructure and services that are being conducted at the Government level. Urban space concept and neighborhood concepts have not really been considered. The main objectives of land pooling projects used to be and still are to readjust land parcels with sufficient frontage of road, and to increase the land value. Social and cultural values are missing in most of the projects.

The study aims to conduct research in this regard interconnecting the physical setting and social aspects. It focuses on the fact that the current approach in planning the land, emphasizing only on land subdivision and infrastructure provision is not sufficient to upgrade the social environment of urban area. The study also aims to understand how to create livable settlement in consideration with social aspect of the residents as a goal.

Different types of settlement patterns are selected to get a diverse idea of societies. Case studies from three different categories of settlements are conducted. (Traditional Settlement, Settlements developed on institutionally developed land and Spontaneous

developed settlement. (Bhinche Bahal of Patan, Bhimsengola and part of ward no 10 of Baneswor, and Gongabu Planning area).

The neighborhood concept used to serve as a blue print for development of post World War II .It still holds relevance for planning today. The idea worth saving is that, local facilities should be distributed to be easily accessible to dwellings. It may be desirable to group dwelling to encourage the formation of true neighborhood that is into areas within which people are friendly terms because they live close to one another. Another reason often given for arranging housing in neighborhood units is to provide a sense of belonging and territory that will encourage social relationship, permit surveillance by neighbors and reduce crime.

For certain age groups, particularly the young child and elderly, a place-based social community is quite important. In our society the 'Tole' is an ideal neighborhood. Street patterns and layout pattern as a tool are used for the study of the settlement, layout patterns of building and street like,

- a. Street front pattern.
- b. Cul-de-sac, dead end street or 't' end
- c. Cluster type or court type, are taken as a basis to categorize the Physical setting of each settlement. Where as social solidarity, kinship, safety, security, sense of belonging, recreation level,

awareness level involvement and interaction among the neighbors' etc. are considered as a parameter to measure the different level of socialization in the locality. Beside resident's perceptions, the researchers own judgement by empirical observation is considered for the analysis of qualitative aspect of socialization.

Different numeric values are given as per the judgment from observation. A Matrix table is used to judge whether the socialization level is high due to the homogeneous nature of the society or due to any appropriate physical setting of the settlements.

The findings indicate that socialization level is not more effected by nature of the homogeneity. Physical pattern plays great role in the socialization of community. Heterogeneous communities in cul-de-sac pattern or in cluster pattern have more socialization level then in homogeneous community of street front pattern. The physical spaces for regular gathering improve interaction among the locals. Regular gathering is one of the reasons to increase social activities and development activities in the locality.

In absence of those activities people became more individualistic and are not getting supports from the community.

Due to the feeling of sense of belonging, socialization level is always high in the neighborhood along semiprivate roads. With the reduction of sense of belonging most of the social activities like social solidarity, kinship, eagerness of making society lively get reduced.

The mixed use of residence, working and living together, makes the society lively. Socialization level is indirectly proportion to the frequency of vehicular movement. More the vehicular movement lesser the socialization levels. A grocery shop in the neighborhood area also helps to generate level of socialization.

Since social life is very much important for human being, social aspect has to be integrated into the planning system, which in the ancient planning system had remained as the backbone of planning.

Planning concept should include the prevention of the loss of group solidarity in the society, loss of security, neighborhood relation etc. Subdivision and layout should be done in such a way, which improve the socialization level. Current approach of planning the land, focusing on subdivision, infrastructure and service provisions are not sufficient to address socio-cultural aspect. Since there is a strong relation between physical setting

and social aspects, socialization level can be improved by applying appropriate physical pattern to create livable environment of emerging settlements. Existing policies on land development program should be improved by incorporating the socialization parameter in the existing planning guidelines.

**Thesis Title: INSTITUTIONAL CAPACITY OF LOCAL BODIES
IN URBAN FRINGE OF THE KATHMANDU
VALLEY**

Submitted by: Saraswati Kumari Pandey

Supervisor: Dr. Mahendra Subba

ABSTRACT:

Urbanization is fast proliferating to the fringe VDCs and further beyond to the rural hinterland of the Kathmandu valley. The lack of physical planning is visible in most of the VDCs despite the fact that the Local Self Government Act 1998 has already authorized the local bodies to formulate and implement physical plans, issue buildings permits and regulate building by-laws. Therefore, the main purpose of this thesis to examine the present status of the selected VDCs of the fringe area especially their technical and financial capabilities in relation to physical planning which would enable them to manage future urban growth of their jurisdictions.

Theories reveal that the institutional capacity of local bodies are affected by the internal factors such as technical and financial capacities; and the other external factors such as inter-organizational relationships, the prevalent acts, and government policies. The prevalent views in urban governance also appear to

attach less attention to institutional capacities of the local bodies in the urban fringe areas. Institutional behavior of local bodies, therefore, is kept the focus of investigation. Qualitative research method is employed, but quantitative research on financial, technical and logistic capacity is also carried out.

The urban fringe comprised of village development committees (VDCs) adjoining the municipal boundaries of Kathmandu, Lalitpur, Kirtipur, Madhyapur Thimi and Bhaktapur Municipalities is taken as the case study areas. These VDCs show some to substantial urban characteristics, caused especially by low-density residential sprawl. The VDCs, which have significant growth rate and situated along the arterial roads and adjoining the municipal boundaries, are selected for the study with an assumption that the knowledge may be generalized to the all VDCs situated in the urban fringe of the Kathmandu Valley.

The main findings reveal that the present status of local bodies-their financial capacity, technical capacity and behavioral capacity on physical planning remains weak and inadequate. Their limited activities are mainly concentrated on administrative work and revenue collection. The lack of human resources appears to be apparent behind the low institutional capacity of the local bodies especially in relation to physical planning.

Despite the legal empowerment of the local bodies through the LSGA, these local bodies tend to be in no position to utilize these authorities as envisaged. However, participation of local people has appeared to significantly influence the institutional performance especially in terms of raising the internal revenues of the local bodies. Peoples' participation seems to be one of the important factors behind the disparity of financial income of the fringe VDCs. Institutional capacity is also affected by inter-organizational relationships, that is relationship of VDCs with the District Development Committees (DDC) and the Kathmandu Valley Town Development Committee (KVTDC). Especially, the role of the KVTDC is found to be limited in providing support to the local bodies-that tends to be mainly concentrated on preparing physical plans neglecting implementation. Thus institutional capacities of local bodies in the urban fringe are found to be affected from lack of human resources, loss of building permit revenues, lack of financial resources, lack of capacity to prepare and implement physical plans, and weak inter-organizational relationships.

The thesis has recommended the following actions to promote physical planning and implementation in the fringe VDCs. The actions include building human resources especially concentrated on generating and mobilizing financial resources, maintaining stronger inter-organization coordination, increasing peoples'

participation in planning and development, attaching special policy priorities to the fringe VDCs vis-a-vis applying concerted efforts on plan implementation including enforcement of by-laws.

Thesis Title: IMPROVING THE ROLE OF INFORMAL LAND DEVELOPERS IN URBAN DEVELOPMENT OF GREATER KATHMANDU

Submitted by: Kedar Man Shrestha

Supervisor: Prof. Dr. Puskar K. Pradhan

ABSTRACT:

Kathmandu Valley is a rapidly urbanizing capital region. The urban population 1 million in 2001 is growing at the rate of 5.81% per year. As a result land plot demand in the valley is increasing. Main causes of demand pressure are migrants from outside, household member numbers decreasing in valley, and people living in rent. i.e. 54%. These rent living people are the most potential buyer of informal land transaction. Huge money from remittance is invested in land.

Formal private companies and government has supplied only less than 380 ha lands in more than one decade. It is very less significant quantity compared to the demand of 180ha per year (*table 8*). This means it is obvious that the rest of the demands are fulfilled by the informal sector. However there is lack of adequate knowledge about their performance. This study has made an attempt to study informal land developers. This study was based on checklist interview with the land developers at the sites and their document review.

During discussion they have mentioned the procedure, difficulties and suggestion to improve the work. In procedure, location choosing, document verification, rate negotiation, advance payment, subdivision and selling advertisement are main steps.

Risk of advance payment without legal status is the main procedural problem. There has some technical weakness in subdivision quality. Plots without basic infrastructure demands more investment to rectify the problems. The work is more profit motive in short period. There exist financial and legal problems in the business. Some legal problems in land development are, impracticable land ceiling, private sector have no right to land acquisition, no public private partnership land development approach, no legal encouragement to real state business and no legal status of advance payment and agreement before transferring ownership. No institutional financial support to developers. Data recording, filing and map updating is poor. Weak coordination between line agencies, complicated land administration and registration, vacant land issues, encouragement and facility not provided to the land developers.

Improvement of informal land development can achieve through clear government policy, simplification of land administration, institutional finance support, training, awareness and regular monitoring. Periodic land market survey and dissemination of

information is necessary to minimize the speculation. Engineer's input in subdivision planning and accountability helps to improve the product. So, timely monitoring mechanism is essential.

Graduation Year 2005

**Thesis Title: CHANGE AND DEVELOPMENT OF PERIODIC
MARKETS IN THE CONTEXT OF URBAN
DEVELOPMENT IN SARLAHI DISTRICT**

Submitted by: Vishwa Nath Sinha

Supervisor: Prof. Dr. Puskar K. Pradhan

ABSTRACT:

This study is designed in a way to evaluate the change and development of periodic market in the context of urbanization in Sarlahi district. In Sarlahi district there are 99 VDCs, one municipality, 48 periodic markets, 15 market centers and 4 market centers prone to urbanization. Three periodic markets have taken for detailed study. Each of the three market places 15 traders from periodic market and 15 from market centers were selected. Twenty customers from each market place were taken. Lalbandi lies on East and West highway. Barahorathawa located at 14 km. south of Mahendra highway (way to Naya Road to Dumariya). Bayalbas is located on gravel road in the south of Mahendra Highway (way to Phuljor to Tribhuvan Nagar). Factors contributing to the growth of periodic markets are, historical, population, organization, transportation, political conflict and technology. Social analysis shows that the

participation of Brahman, Lama, Chhetri, Yadav and Kusbaha are dominant in habitants. Sarlahi district has huge agricultural and fertile land. Northern part is newly developed after the deforestation. East and West highway has facilitated the development district. Many market centers has been developed at the nodal points such as Naya Road and Nawalpur. Due to propping of new industry like Bhudeo food industry at Lalbandi, Indu Shankar Sugar Mill at Hariwon and Khadsari Industry at Pidari district have begun to developd. Manusmara and Bagmati irrigation project irrigate most part of the district. District has sufficient surplus grain. There is no periodic market in the northern part of highway. The average distance of all periodic market is calculated at 3.20 km. R_n index is 1.273, which shows that the pattern is dispersed. Neighborhood distance of many of these market center lies between 3 to 7 km. Action plane of these three markets have been prepared on the basis of problems and prospects shown by traders, customers, stakeholders and PRA survey.

**Thesis Title: URBANIZATION PATTERN IN NEPAL - A MICRO
LEVEL STUDY****Submitted by: Milan Acharya****Supervisor: Dr. Saurav Dev Bhatta****ABSTRACT:**

The dispersion or nucleation of urban centers in the area or space is called the Urbanization Pattern. The objective of this thesis, titled Urbanization Pattern in Nepal - a Macro Level Study, is to find the existing urbanization pattern in Nepal and in different regions within Nepal. The Urbanization Pattern was found with respect to all its major aspects i.e. level of urbanization, structural pattern, and geometrical pattern for getting the overall idea of the Urbanization Pattern in Nepal.

It is found that the urbanization levels in different regions are not similar. This disparity in the level of urbanization is itself causing the slow and unbalanced urbanization in Nepal. The possible consequences of this disparity in the form of socio-political conflicts and tensions between the regions might be very counterproductive to the development.

The structural pattern of urbanization in Nepal is small towns dominated and there is lack of big, primate cities and medium

size cities, due to the fact that these small towns have been evolved to serve the rural agricultural areas. I lie multi-tiered structural pattern is still to be developed in different regions.

There is fast growth of urban centers along the Highways. Hence, construction of the Highways and the transportation and communication infrastructure facilities might he proved instrumental for urbanization of any legion. There is very few numbers of agglomerations of towns seen in Nepal. The towns are' widely distributed and there is large gap or absence of towns between two towns.

Since urbanization and development are directly related and have both way relation of cause and effect, the regions backward in urbanization are backward in development. Hence, there is the need of an urbanization promotional policy especially for backward regions.

The development of agricultural or rural sectors is dependent on the development of urban sectors. So, a policy to promote the development of urban centers would be a medium to achieve the national goal of reducing poverty and promoting balanced development.

**Thesis Title: IMPACT OF PROPOSED OUTER RING ROAD ON
TRADITIONAL SETTLEMENT OF
KATHMANDU VALLEY - LUBHU: AN
ECONOMIC TRANSFORMATION**

Submitted by: Ganesh Bahadur Roka

Supervisor: Mr. Kishore Thapa

ABSTRACT:

The Kathmandu metropolitan city (KMC) is the capital and largest city in Nepal. Almost 700,000 people live here amidst a swirl of business, industry, politics, old temples and colorful festivals. Kathmandu has expanded into a modern international metropolis while still preserving its ancient culture and architectural heritage. Similarly Kathmandu attracts people from different part of the country in search of various opportunities. Regardless of the various planning efforts initiated by different governmental or non-governmental agencies, the urban development has been creating urban sprawl in unplanned and haphazard fashion, thereby making difficulties in urban service provision.

Similarly, unplanned settlements and density of vehicles and pedestrians are increasing enormously at the periphery of existing ring road, which was constructed in the early seventies by the technical and financial assistance from China.

In this thesis report, the topic itself reflect the main theme of the study. Here basically the economic impact and hence the transformation possibility has been incorporated due to the proposed outer ring road. This thesis report tries to consider mainly the land use, housing pattern and the economic activities that are going to change due to concept outer ring road in the case of Lubhu. Since the outer ring road is still in conceptual stage, it is not sure that outer ring road would exist and the experiences that have been drawn from the case studies would cater the similar properties. Beside the major economic indicators, major part of the impact parameters have been considered. To fulfill the requirement to mitigate the economic transformation the similar case of impact of ring road in Balaju has been considered. The abstract of this thesis report stands with the view of change occur in particular place after the construction of the ring road. Since the study area here is Lubhu, which is traditional settlement of the Katmandu valley, the possible impacts have been assessed with careful scrutiny based on the primary as well as secondary data.

**Thesis Title: ASSESSMENT OF GOVERNMENT
INTERVENTION IN A FIRE HIT TOWN (A CASE
STUDY OF MYANGLUNG BAZAR, TERHATHUM)**

Submitted by: Narayan Sundar Shrestha

Supervisor: Prof. Dr. Jib Raj Pokharel

ABSTRACT:

This research has been done with the objective of finding and evaluating the government intervention in the physical development of the fire hit town Myanglung Bazaar, Terhathum district. This study has attempted to analyze the different tools used for redevelopment program such as land pooling and guided land development. The people who lost their shelter and assets and became helpless requested to redevelop the devastated area. The redevelopment of such devastated area has much constraint to planning its infrastructures and amenities due the lack of sufficient land and less contribution of house owners because the land plots are very small and limited area in compact traditional place. The development cost could not be recovered by the people's participation or contribution of land only because all lifeline infrastructures were damaged by the fire and its recover is very crucial.

Distribution of relief materials and some resources to disaster-affected area is a temporary solution. To minimize the affect of

natural disaster it is necessary to raise disaster awareness in people and provide training at the community levels for disaster management. The government, at all levels, is responsible for providing continuity of effective leadership, direction of emergency operations, and management of recovery operations and rehabilitate the disaster victims. For this reason, it is essential that government entities continue to function during and following a disaster. In this context government should take actions on preparedness such as: preparing plans/manuals to guide initial response; establishing systems for communications and coordination among the different line agencies.

The vast direct and indirect economic and societal losses caused by disaster can be reduced by reinforcing the infrastructure such as open spaces and wide road for fire protection and easy movement and accessible to entry in the fire engines. The private and public buildings should not have severe deficiencies regarding earthquake and fire resistance. The awareness campaign and technology transformation on earthquake and fire resistance building construction to house owner and mason is most essential. As the result of the study, the implementation of land pooling and guided land development programs for the redevelopment of fire hit towns guided to make a policy for improvement of physical environment, infrastructure and building structures.

Altogether the thesis contains six chapters. First chapter covers back ground, objectives, rationale of study, and scope of the study and methodology. Second chapter contains for literature review and includes theoretical model. Third chapter gives the condition of case study area before fire hazard. Fourth chapter includes the case of fire hazard and problems on put off fire. Fifth chapter includes the findings of government intervention on fire hit town. Sixth chapter includes the analysis of the government intervention on case study area. And the Seventh and last chapter includes conclusions and recommendation.

**Thesis Title: AN APPROACH TO SUSTAINABLE SOLID
WASTE MANAGEMENT : PRIVATE SECTOR
PARTICIPATION IN KATHMANDU CITY**

Submitted by: Nava Raj Pyakurel

Supervisor: Prof. Dr. Bhagwan R. Kansakar

ABSTRACT:

High pressure in urban areas resulted haphazard development and generation of huge amount of solid waste posing difficulty to the municipalities for its proper management. In the early days there were not more problem of solid waste management (SWM) in Kathmandu Metropolitan City (KMC) and it was used as resource. As the haphazard urbanization grew, solid waste management becomes problematic. During 70's KMC took the responsibility of street sweeping and collection of solid waste generated by the city dwellers.

The prevailing trend in the world to reduce the environmental pollution is based upon the principal of 'Polluters must pay'. The volume of waste has increased to that extent in which public agency alone could not bear with its own financial, technical and managerial capacity.

In the above context KMC is trying to establish a public sector participation (PSP) approach especially for street sweeping, collection of the waste and transport it to the transfer station

(TS). KMC is trying to develop the strategy to define the role of different sectors with municipality as manager and facilitator and private sector as the operator.

The major problem regarding solid waste management lies not at technical level but at managerial and policy level. Although KMC there are more than fifty private parties involving in the solid waste management (SWM) of KMC, only fifteen of them have the legal contract with KMC. Some of the private companies such as Nepal Pollution Control and Environmental Services (NEPCEMAC) and Kathmandu Mahanagar Solid Waste Management Services (KMSWMS) etc. are doing well in this sector. Still there are numerous problems in the private as well as in the public sectors. Recommendations have been made for the improvement of the public and private sectors in the SWM of KMC. The study showed that the municipality is weak in the legal and managerial aspect of SWM. The private sector is facing problem with the fee collection and KMC should help them to resolve the disputes rose during the time of fee collection. The equipments and accessories for the collection of solid waste are not maintained properly. Duplication of the services in the same area by various agencies should be avoided. Zonal monopoly for the private sector should be defined for the welfare of the people and effective private sector involvement. The recommendations

made in this study are expected to lead the private sector participation in the SWM towards sustainable direction.

**Thesis Title: COUNTER MAGNET GROWTH MODEL FOR
KATHMANDU VALLEY**

Submitted by: Sushil Gyewali

Supervisor: Dr. Jagadish Chandra Pokharel

ABSTRACT:

Kathmandu Valley has been experiencing an unprecedented population growth from its history. The migration has been playing a major role for the growth of population especially from 1980s onwards and in the last decade it has been increased dramatically. As per Census 2001, Kathmandu Valley has the population of more than 1.6 million with a growth rate of 3.96 per annum. At the same time the share of migrants in the total increase in population from 1981 to 2001 is more than 50% and due to present security situation this share has certainly been increased. Hence the growth management of the valley should have a special focus on the management of migration into the valley for which a broad regional approach is necessary.

Among the various metropolitan growth management models based on the broad regional approach Counter Magnet Growth Management Model, having its theoretical basis on the Growth Pole Theory, has been one of the popular and applied by various countries. This model has its strength on counter attracting the migrants destined towards the already congested or

overgrowing metropolis. This CMG centre thereby supports for the balanced growth in that metropolis and at the same time takes advantage of developing itself.

Kathmandu valley has its limitation for future growth. Though valley can manage for more extra population but if the present growth trend continues it will fail due to its limited resources such as land and water and it will also have negative impact for the balanced development of the country. Past planning efforts and study have also focused on the problems such as environmental degradation, low level of infrastructures, haphazard urban sprawling and have recommended the strategies to overcome such problems but the aspect of developing counter magnet growth centres to counter attract the migrants destined towards the congested Kathmandu valley was not analyzed properly. So this study has been concentrated on this aspect.

In 1969 plan also Bhadgaon was proposed as a Counter Magnet to congested Kathmandu -Patan urban complex. In India, New Delhi adopted this concept in its NCR Plan 1981-2001 and also Navi Mumbai was developed as a counter magnet to Bombay. The data reveal that New Delhi and Bombay were to some extent successful for managing their tremendous population growth through the adoption of counter magnet model along with various other growth management strategies. Being in close proximity to Nepal with similar socio-cultural & political

situation, the applicable parameters used by those cities in this regard has been taken into the context of Kathmandu Valley also. Thus, this study has been focused on the analysis of the migration trend into the valley with special concentration on origination and purpose of the migrants. Through the analysis of the parameters such as migration, migratory corridor, proximity, transportation linkage, size of population, potential economic activities and availability of infrastructures & services; Bharatpur and Hetauda have been identified as possible CMG centres to Kathmandu Valley. Accordingly the strategies and policies have been recommended to implement this model.

**Thesis Title: PUBLIC PRIVATE PARTNERSHIP (PPP)
APPROACH FOR SUSTAINABLE
INFRASTRUCTURE DEVELOPMENT
(A CASE STUDY OF KAPAN VDC,
KATHMANDU)**

Submitted by: Bibhushan K. C.

Supervisor: Dr. Pushkar Pradhan

ABSTRACT:

The urbanization trend is growing rapidly all over the world and Nepal is no exception. The urbanization in Nepal started after 1950 and the momentum has picked up only after 1970. 30.9% of the total urban population live in Kathmandu valley. The increase in the population of the valley due to migration and the natural growth has given substantial implications on the fringe land near the municipal boundary. Due to the various pull factors of the urban area and the various push factors of the rural area, the rate of urbanization has been increasing at an alarming rate. The Urbanization rate in Nepal is 6.6% against the national population growth rate of 2.24%. The wide gap between the demand and the allocation of the infrastructure facilities has caused the serious environmental degradation. Theories reveal that the Public sector has various strengths such as political power, immense risk bearing capacity, legal power, existing

bureaucracy. But the Public sector lacks capital, creative skill, diligence, willingness, motivation, flexible technology and management. On the other hand, Private sector has the various strengths such as capital, creative skill, diligence, willingness, motivation, flexible technology and management. But the Private sector lacks political power, immense risk bearing capacity, legal power and existing bureaucracy. So PPP (Public Private Partnership) would be the best tool for economic, efficient and equitable local infrastructure development.

This research has been done with the objective of examining the role of PPP in the sustainable local infrastructure development, comparing PPP and the Public approach in sustainable local infrastructure development and exploring the further potentials of sustainable infrastructure development through PPP in the study area. The case study area Kapan VDC is an urban fringe area near KMC boundary, having the wide gap between the demand and the allocation of the infrastructure facilities. The other VDC Jorpati lies near the Kapan VDC and is also facing the urbanization pressure of Municipal area. Comparison of PPP and Public approach in the development of local infrastructure (Road and Surface water drain) has been done between the two VDCs. The result of the analysis shows that the various parameters of the sustainability are supported by PPP projects than the Public one.

Altogether the thesis contains seven chapters. First chapter covers background, problem statement, rationale of the study, objective of the study, case study area, scope of the study, hypothesis of the study, methodology, expected outputs and activity schedule. The second chapter includes literature survey. The third chapter contains analysis of role of PPP in sustainable local infrastructure development. The fourth chapter deals with comparative study of PPP and Public projects. The fifth chapter includes the potentiality study of PPP in the study area. The sixth chapter covers summary of findings. The seventh and the last chapter includes conclusions and recommendations.

**Thesis Title: ALTERNATIVES FOR FINANCING OF URBAN
INFRASTRUCTURE (A CASE OF NEPAL)**

Submitted by: Sarin Adhikari

Supervisor: Dr. Jibgar Joshi

ABSTRACT:

Like any other developing country today, the urban centers of Nepal are also experiencing high growth rates. As a result the gap between demand and supply of urban infrastructure is ever increasing. There had been a lot of practices from the government as well as private sectors in minimizing this gap by providing infrastructural facilities but most of them are done on an ad-hoc basis. On the other hand financial shortfalls in the central government and the government's priority to rural development has resulted in limited access of local governments to the central revenue. Recently, the government has passed the Local Self Governance Act which enables the local governments to raise funds on their own and take part in development process according to their specific needs. However, the local governments' revenue collecting mechanism is still weak and most of the own source revenue goes into administrative and operation & maintenance expenses.

In order to build capacity of the local governments and enhance their accessibility to national and international funds,

institutional practice is being done through Town Development Fund. This mechanism has shown positive results but looking at the huge deficit in urban infrastructure, it still seems inadequate. Urban infrastructure development through central government, local governments or government backed organizations, etc are funded either by central revenue share and international grant or loan, but direct private participation has not been practiced in a large scale. There is a strong private community where most of the capital rests. The commercial banks operating in Nepal have been successful in collecting this private capital and re-lend it in revenue generating projects. Unfortunately there has not been much practice in developing infrastructural facilities through loans from the capital markets. The private capital market in Nepal is a strong potential source for funding of urban infrastructure, provided a technique be developed to harness this resource. The concept of municipal bonds and infrastructural development banks are showing successful results in other developing countries. But this does not mean that the practices being done elsewhere can be directly replicated in Nepalese context. Hence, this study focuses in developing a contextual method for financing of urban infrastructure based on the practices currently being done in the country as well as the best practices in other developing countries. This report tries to explore such different financing techniques and develop a

synergetic model that could be applied in the urban areas of Nepal.

**Thesis Title: MASS TRANSIT OPPORTUNITY STUDY WITHIN
THE RING ROAD OF KATHMANDU VALLEY**

Submitted by: Shiva Madi Nepal

Supervisor: Dr. Shanta Bir Singh Tuladhar

ABSTRACT:

The population of Kathmandu Valley is about 1.6 million distributed in an area of 889 square kilometer (Sq Km). But the urban core area is confined within the Ring road occupying an area approx. 95 SqKm; thus a highly dense settlement. The transportation network in Kathmandu Valley comprises of ring road circumscribing the urban core and radial roads emerges out from Central Business District (CBD) and connects to small urban settlement outside the ring road. The point where these radial road crosses the ring road are the major intersection and these nodes are developing as the secondary CBD. As a result, these points are acting as the bottlenecks and creating problems for efficient movement of vehicles to the inner city.

The principal planning objective of the Kathmandu Ring road was to connect the radial roads incoming and outgoing from central business district (CBD) and to check the octopus growth by encouraging the growth in vacant space in between the octopus legs. But, with the rapid pace of urbanization, the ring road itself has been congested route. The public transportation in

Kathmandu Valley is by low occupancy vehicles like minibuses, micro buses and three wheelers (locally called Safa tempo) with capacity of 11 to 30 passengers in a single vehicle. The insufficient road network and alarmingly increasing number of vehicle population has already put threat on the transportation system. If we observe the increasing vehicular population and the frequent jams and delays, we can say that we need to go for mass transit system. But the question is what type of mass transit system shall we adopt? The study analyzes the applicability of different mass transit systems in Kathmandu Valley in terms of Passenger kilometer, travel demand supply, energy consumption, emission and total travel cost. The traffic study was carried out in the two road corridor: a) Saadobato to NG chowk route (12 km in length), the most congested route in Kathmandu and; b) Kathmandu ring road (28 Km in length). The study data were processed and LEAP data model was formulated using four basic parameters: GDP growth, vehicle growth, population growth and passenger travel demand in the base year.

The study concluded with the recommendation for LRT in the ring road and making access to the CBD by means of trolley buses in the major arterials. Since, the trolley and LRT are environment friendly transportation; we can go for Clean Development Mechanism (CDM) projects to subsidize the additional cost required to operate. The government should adopt

policy to discourage private vehicles and low occupancy vehicles. In the respect, it is recommended to adopt the high taxation in petrol, ban the low occupancy vehicle after the year 2011 and make some road Bus Only Lanes. The study suggest for long term mass transportation strategy for Kathmandu Valley.

**Thesis Title: GROWTH MANAGEMENT STRATEGY OF
TRADITIONAL SETTLEMENTS (A CASE STUDY
OF CHAPAGAUN)**

Submitted by: Roshan Bhakta Bhandari

Supervisor: Dr. Mahendra Subba

ABSTRACT:

The thesis examines the urban transformation occurring in the traditional settlement of Chapagaun located in the outlying area of Kathmandu Valley. Kathmandu Valley is continuously gaining population and there is an overspill of urban activities from central cities to the peripheral areas. The proliferation of urban activities in the edge of the valley where the small traditional settlements are located, is initiating the transformation of these settlements, in the wake of urbanization, these settlements have potential threat of loss of agricultural land which causes serious problem to the farmers who don't have other skills than agriculture. Apart from their agro based economy, the traditional rural settlements have close relationship with agriculture to conduct socio-cultural activities and preserve the built heritage and urban form.

The case study of Chapagaun is selected which is a unique Newari settlement located along the traditional Indo -Tibetan route and the present Kantirajpath which extends as an arterial

road from ring road of Kathmandu Valley. Being located in close proximity to LSMC, the urban pressure of larger urban area in the North is likely to induce development pressure in Chapagaun sooner or later. The pressure of rural migrants from Southern villages is already exhibited in the form of haphazard urban sprawl in the outlying areas of Chapagaun.

The study examines the ongoing physical, social and economic transformation in the settlement. The physical transformation is manifested in the form of poor state of physical infrastructure, deteriorating historic buildings, monuments and artifacts, incoherent land fragmentation due to haphazard development outside the settlement and reduced land holding capacity of farmers. Socially, the relationship developed through agricultural activity has reduced significantly due to changing occupation from agriculture. The cultural functions are disappearing leading to weak social bond in the community. The economic condition of many people has been substandard and people are selling land to fulfill familial needs. Only those people practicing multiple professions are earning better than those only practicing agriculture.

With the understanding of urban transformation, the growth management strategy gives a general framework under which the physical growth of Chapagaun can be managed sustainably. The economic base of Chapagaun should be strengthened so that

physical growth can be sustained in a long run. Tourism promotion through cultural heritage and modern agricultural practice with judicious use of land can resurrect the local economy and sustain growth of area in a long run.

**Thesis Title: AN APPROACH TOWARDS EARTHQUAKE
DISASTER MANAGEMENT IN HISTORIC CITY
CORE (A CASE STUDY OF PATAN DHOKA
AREA, LALITPUR - 16)**

Submitted by: Navin Kumar Jha

Supervisor: Prof. Dr. Jib Raj Pokharel

ABSTRACT:

Urban natural disaster risk and it is developing is fast increasing due to massive urbanization, aging infrastructural facilities and poor stock of city statistics. Over the years will attest to urban population growth and physical infrastructure expansion. Researchers have recognized the severity of this problem and have offered solutions to parts of it. In particular, in the area of urban seismic risk assessment, different disciplines have made progress in different directions. Engineers and Earth scientists have expanded the definition of seismic hazard and losses. Social scientists, on the other hand, have characterized the socio-economic effects of disasters and evaluated them in the context of existing social, political and economic circumstances. These efforts though excellent in their area of specialty, have been fragmented. These disparate efforts need to be integrated in order to achieve comprehensive assessment and management of natural disaster risk.

Nepal is a disaster-prone country mainly due to its young geology, sloppy terrain and wide spread poverty. The disaster threats to the country are Earthquake, flood. Landslide, Glacial Lake out burst flood. Fire and disease epidemics. These together affect, on average, 3,00,000 Nepalese annually with about three hundred death casualties. However, last year the water induced disaster (Floods and land slides) alone killed about 450 peoples and 50,000 families plus were affected. The losses of productive properties such as public properties infrastructure, animals, agricultural land and crops etc. are overwhelming. In fact, the South Asia data on disaster losses show about 0.4% of the disaster affected Nepalese population died compared to only 0.07 % average deaths in the region. This reveals the poor state of even the relief operations.

In this dissertation an attempt has made to make a preparedness plan to minimize the losses from the possible earthquake in urban core area. In this study, two stages are studied. One area is to find out the vulnerability of the study area whereas other area is to find ways of reducing the earthquake effect. The study area has been selected in Laitpur Sub Metropolitan city ward no-16 near Patan Dhoka of Patan. As this area is very compacted, the earthquake vulnerability is very.

Altogether there are six chapters included in this thesis. First chapter describes about Introduction in which Background of Topic, Problem statement. Rational of the study, Objective of the Study, Research methodology are included. Second Chapter deals with the Literature Review in which different literature regarding Patan Area is included. Also in this chapter different earthquake experiences in Nepal and in other countries are dealt. Recently occurred earthquake experience in Pakistan is dealt in elaborate way. In third chapter Identity of the area is explained. Fourth chapter deal with Analysis of Study area. In fifth chapter detailed Preparedness Planning for Earthquake in the study area is incorporated. Lastly Conclusion and some Recommendation are in sixth Chapter.

**Thesis Title: THE EXPANSION OF PUTALI SADAK CENTRAL
BUSINESS DISTRICT**

Submitted by: Neeti Rajbanshi

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

This research has been done with the main objective of identifying the emerging commercial center with Kathmandu Metropolitan City and suggest implementation strategies for enhancing the commercial development as well as accommodating the future commercial pressure on the selected commercial sub - center.

Kathmandu is an important business center though it is not possible to estimate the business establishments currently working in the city. A host of other business activities have come up in the Kathmandu Valley indicating new business prospects and employment opportunities. Though the historic center of Kathmandu has being started to behave like a Central Business District, but no declaration for a clearly defined CBD has been made yet. Nevertheless, there are signs that a CBD is emerging and an appropriate response is necessary.

So, how the commercial places has been defined in Kathmandu according to the building bye -laws, various patterns of urban land allocation and the experiences of the study of commercial activities made in other cities has been obtained from the literature review. Employment -population ratio, population - density, average rental value, assessment of the available infrastructures, number of road accidents, building permit data etc have been identified as the key requirements for analysis of the commercial centers.

For the analysis, five most happening places of Kathmandu valley, namely New Road, Putali Sadak - Bag Bazzar, New Baneshwor, Bhatbhateni, Teku, Kalimati are selected and the data for these selected commercial centers were collected as per the identified parameters. Except the average rental value, all the required data have been obtained from the secondary sources. Similarly, the commercial activities and their possibilities to develop as commercial center or specialized center are analyzed for other places also.

New Road is identified as the major Central Business district of Kathmandu. The current commercial activities at New Road can be viewed as the expansion of commercial activities along the major traditional trade routes. The analysis of the data on New

Road reveals that it is extremely pressurized by the commercial development and the available infrastructures have fallen short of population growth. New Road is saturated and it can not withstand the future commercial development pressure. But the expansion of commercial activities in New Road is blocked in front of New Road Gate by huge plots of land used as open space for the public (Tundikhel, Rani Pokhari) and the Dasrath Stadium.

Besides New Road, Putali Sadak has been identified as the secondary commercial center. The pattern of commercial development at this place suggests that it is the result of the expansion of the commercial activities at New road. The commercial activities which cannot sustain in New Road has shifted to Putali Sadak, this place being closest to New Road in terms of the distance as well as the available infrastructures. Despite of the physical blockade of the institutional area and open space, the commercial expansion at New Road reached beyond its boundary towards Putali Sadak - Bagbazzar area. But again the most recent data on various parameters on Putali Sadak indicate that it is also saturated and there is a need to search for a place which can accommodate the residual commercial development pressure from Putali Sadak. The expansion of commercial activities in Putali Sadak is again restricted by large

tracts of institutional land and public green space at the southern and Western part. The Royal palace does not permit further expansion of this center towards the northern direction. Similarly, eastern side expansion of this commercial center declines due to the low terrain at Gyaneshwor area and possibly due to the inferior infrastructural condition.

With regard to this search, New Baneshwor has been recognized as the emerging commercial center in KMC. Among the other selected commercial center. New Baneshwor is close competitor to Putali Sadak in terms of the availability of the infrastructures. Like the shift of commercial activities from New road to Putali Sadak, the similar kind of shift of commercial activities from Putali Sadak - Bagbazzar to New Baneshwor is expected. The Amiko Highway, BICC, many commercial complexes being constructed, star hotels. Banking and financing institutions, health and educational institutions all are impetus for the development of New Baneshwor as commercial center. So a SWOT analysis for New Baneshwor is performed to in order to identify the most urgent and effective actions needed to be taken to improve urban condition in the this place, and to facilitate its physical and economic growth, a realistic assessment must be made of the development potentials and constraints of the selected emerging commercial sub - center.

Finally the study arrives at the concluding part with recommendations of implementation strategies to guide and regulate the commercial development pressure at New Baneshwor. The implementation strategies recommended are as follows:

- Improving the northern linkage.
- Improving the southern linkage.
- Revising the FAR and GCR in relation to the present trend and future demand of commercial activities in New Baneshwor - Tinkune - Koteshwor area.
- Preservation of the only public open space (Tundikhel) at the heart of KMC.

Graduation Year 2006

**Thesis Title: ROLE OF URBAN REGENERATION IN OVERALL
CITY DEVELOPMENT STRATEGY OF
PANAUTI**

Submitted by: Subarna Shobha Shakya

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT:

Opening of new roads bypassing the traditional area of the cities is the main cause of decline of historical cities in Nepal. In the case of Panauti also, the reason is similar. Not only the national highways like Araniko and Banepa - Bardibas, but also the local service roads like Panauti-Khopasi and Panauti-Namobuddha road also bypass the core area. Due to bypassing of such roads, the immediate effect is decline in the commercial activities. Though, decline in commercial activities is one of main issues of degeneration of Panauti core area, there are other many types of factors which also further increase the decline of the core area. Some of such factors are decline in agriculture and cottage industries, lack of employment opportunities, alarming rate of out -migration, degeneration in urban fabric, riverside pollution, cultural degradation etc.

Being the best -preserved Newar town after Bhaktapur, Panauti incorporates a large number of important holy sites and plenty of miscellaneous architectural treasures. In fact, the whole city is like an open museum with many temples, *Dyochhens*, *Patis*, *Dhugedharas*, *Chaitya* and *Stupas* etc. Not only is the tangible cultural heritage, but also in intangible heritage, the city very unique. So due to this marvelous cultural heritage, the place has high potential of tourism development.

From the analysis of major issues of degeneration of Panauti, it is clear that, Tourism and Agriculture sectors, obviously, are the main sectors of regeneration of the core area of Panauti, as these two sectors have major potential in the area. Furthermore, tourism must be given as first priority, because only through tourism development, variety of employment opportunities can be generated and also the sustainable conservation can be done. But the sectors of traditional occupations like Trade and Cottage Industry also can not be ignored. So, all of these four sectors must be considered for the regeneration of the study area. Similarly, for the regeneration of the area, the institutional backup of the Panauti municipality and community participation are also the inevitable factors, so these factors must also be strong enough to launch any regeneration programme in the area. For the tourism development, heritage zone preservation plans

must be formulated and necessary tourist related services must be established. Similarly necessary improvements must be done in agriculture, trade and cottage industries also to accelerate the economic as well as social growth of the area.

Graduation Year 2007

**Thesis Title: FLOOD MANAGEMENT IN URBAN
AREA (A CASE STUDY OF RAJBIRAJ
DUE TO KHADO KHOLA)**

Submitted by: Ranjeet Karn

Supervisor: Prof. Dr. Jib Raj Pokharel

ABSTRACT

Flood Management in urban areas is especially important because many people concentrate in urban settlements and cities where flood-hazard areas are most expressive. It is a composite process of integrating management and operation steps of early-warning, flood control and rehabilitation, in order of taming floods and associated risks.

This research 'The Flood Management in urban areas (case study of Rajbiraj Municipality)' has been carried out with the objective of developing a flood management plan to minimize the impact of flood related disaster by identify the flood disaster area in the case study area and knowing the effects of flood in the area. At the end of the study, the detailed plan for preparedness, recovery and reconstruction phase for flood in urban and its peripheral areas has been discussed.

Rajbiraj Municipality is considered as study site as the study focuses on the flood induced problem in urban cities and its management procedures. The Rajbiraj Municipality in recent years has witnessed the flood mainly caused by spillover of Khando River. The inadequate discharge capacity of the city drains and outfalls into the recipient streams were reported as being the add-on cause of inundation in the city. So, as the Khando River is being the route cause of problem the flood entry routes into the city areas had to be investigated in detail to lessen or wipe out the problems. The flood impact areas have been categorized into three regions based on intensity of various losses like physical, economic and social.

It was found that poverty and lack of education is a major factor for adversity of flood in the region and the people are not conscious about their food and sanitation. They do not manage the drinking water and toiletries and suffer from many diseases like diarrhea, jaundice, typhoid. The total loss of property has been estimated at around Rs. 2.80 crores every year. Lack of proper embankments along the river bank, insufficient drainage outlets, lack of river training works etc. are also the major factors for greater losses and damages due to flood. Zoning and flood proofing measures are not used to control and reduce future flood damages. The municipality and government do not formulate

proper policies and take any initiations to prevent flood. Only around 10% of population adopts some measures to mitigate the effect of flood.

After analyzing the data of study area, the plan for the management of the floodwater into the urban area of Rajbiraj municipality along with the management of the storm water has been prepared by construction of structures required to divert the food water along with the rehabilitation of diversion drain and other main collector drains and by constructing embankment along Khando khola. The plan for non structural measures like awareness trainings, income generation programs preparation of bye laws, control of urbanization for flood prone area etc. are also equally important to mitigate the adverse effect of flood.

Altogether the thesis contains six chapters. First chapter covers back ground, objectives, statement of problem and scopes of study. The second chapter gives the methodology, where as third chapter describes the various literatures that were reviewed and referred to this study including community based approach for management of flood. Fourth chapter is about the case study which expresses the existing conditions, its impact and the prevailing measures being taken. Fifth chapter deals with the strategy for urban flood management through logical frame work

approach (LFA). And the sixth and last chapter includes conclusions and recommendations.

Thesis Title: **IMPACTS OF LAND SPECULATION (A
CASE OF PRIVATE HOUSING
DEVELOPMENT-SUNRISE HOMES**

Submitted by: **Surya Gyawali**

Supervisor: **Mr. Sanjay Uprety**

ABSTRACT

Land speculation occurs when the demand for land, at present time or near future, outstrips the supply of land. This can be caused by several factors both on the demand and on the supply side. Land speculation has high economic, physical, social and environment cost. Its different effects include: inelastic supply, non-commitment, reluctance to sell, timing of sales, creates unstable economy, and it has produced the amateur speculators. Each site is in one of the three states: suitable for agriculture, suitable for housing and suitable for commercial activities. The state of land is changed mainly for two purposes which include: speculative and land management reason. The speculative reason is purely private, while the land management reason is both private and social.

Sunrise Homes, Balkumari and Sunrise Towers, Dhobighat are taken as case study housing. And Balkumari is taken as case study area for research purpose. The Sunrise Homes is already

completed and handed over, but Sunrise Towers is on the under construction stage. The developers of both housing are same. The first project Sunrise Homes Balkumari is already completed and handed over to social management, whereas the second project Sunrise Towers Dhobighat is an under construction stage. The first housing is low raised group housing and second is high raised apartment housing.

Different three areas are selected sunrise homes. The first is the area surrounding to the Sunrise Homes; the second is area beyond Sunrise Homes; and the third is area between Sunrise Homes and City Core (Saptakhel). The study of three areas mainly considered includes: the change in land price; land holding patterns; change in land use pattern; the classes of people etc.

The majority of housing plots supplied in Kathmandu Valley are through private formal and informal developers. The formal private housing development in Kathmandu Valley was initiated in 1984. After the enactment of Apartment Ownership Act 2054; the concept of apartment was reinvented in the Valley. At present this business has been developing in big way. The Apartment Ownership Act has only provision about the ownership of housing units. Another Real Estate Transaction Act 2062, this act

is more comprehensive as compare to first act. But Real Estate Transaction Act is yet to be enacted.

In Nepal land management policies are also not functioning properly due to insufficient land information system in urban land market, cadastral map prepared in 1964 not updated. Land is fragmented due to ancestral rules, lack of subdivision regulation. In 1976 Land Use Plan of Kathmandu was prepared, which is outdated so new comprehensive Land Use Plan is necessary. Land Acquisition Act 1977 is still practiced which is not compatible in current situation. This act does not mention about appropriate amount and time of compensations.

While analyzing the housing policies and programs in the perspective of private developers active participations, there is no satisfactory space for efficient functioning of private housing developers. There is an ample chance to enhance the land speculation because any existing legislative measures cannot regulate the land speculation. The recently drafted Real Estate Transaction Act has some hopes for private sectors involvement in land and housing development in Nepal.

In summary the study is reveals that the area surrounded by sunrise homes and area beyond the sunrise homes are highly

influenced by Sunrise Homes housing development. The cause behind the above-mentioned adverse situations is an excessive land speculation. The influence of Sunrise Homes is not found in Saptakhel area. But there is also found some adverse effects, which are natural phenomenon as practiced everywhere in the Kathmandu Valley.

The study reveals that the land tax system is not effectively levied; the tax rate is very, and not justified. This land taxation system helps to increased land speculations tendency rather than decreased. The service plots developed by government has been remaining vacant due to excessive land speculation, and there is no mechanism to control this. So it is suggested that the progressive vacant land tax will be necessary to combat from excessive land speculation.

**Thesis Title: CORRIDOR URBAN DEVELOPMENT IN
NEPAL (A CASE STUDY OF JHAPA)**

Submitted by: Santi Ram Poudel

Supervisor: Prof. Dr. Pushkar K. Pradhan

ABSTRACT

Corridors are very persistent historically, and they form one of the major types of urban systems in Nepal. In general, the development of a corridor-centered economic change and development can be argued in four historical stages: initial occupance, commercial agriculture, motor transport and metropolization. In each stage, the innovation of changes in the system appears first in the corridor and diffuses outwards in a sequential pattern term as cultural gradient.

The potentiality of Jhapa district having location advantage in the process of urban growth in Nepal clearly shows more concentration of urban centers in eastern terai leaving behind the Kathmandu valley. The dynamism created by the east west national highway made the holistic shift leading to the conglomeration of different points into a larger whole of metropolitan concept.

Urbanization is a parameter of growth and development and the process is inevitable in a country having low per capita income and economic generation. The tenth national plan has spell to develop the east west national highway as a growth corridor with the aim of higher economic generation in the region. Among the other regions along the axes the eastern most district has the better position and so the district has been selected with an objective to access the development process of urban areas along the corridor axis.

The major contributing factors leading to the corridor urbanizations are social, economic spatial and physical factors. The geographical factor of 93 percent flat land and its strategic location with juxtaposition to Darjeeling district become the multiplier factor along with the aforementioned factors. The economy is rapidly transforming to urban type with broader based of production and distribution mechanism. The social factor of migration pattern made it viable to accept the changes more comfortably and creation of social harmony led to the growth. The physical infrastructure and other services are growing and they together made the system more adoptive to the common mass.

Similarly the different historical phenomena also contributed to the rapid development of this zone.

The development pattern found out in this region is the formation of nodes in the initial stage and these nodes grow into market centers and the shells of growth are found enlarging engulfing the node as the focal point. The stiff churre range in the northern frontier made the settlement harder and people prefer to settle in the low range. And southern insertion forced to the people to settle along the periphery of highway. So the compression exerted from north and south made the corridor to grow fast and this lead to urbanization extending in the east-west direction.

The district has more strength like location, climatic condition, physical services economy as compared to the less number of weaknesses like lack of policy, etc. The opportunities are ample like developing the area into Asian development corridor, conversion of Karkarvitta exit into dry port center from Fulbarimarg connecting Bangladesh, making certain towns into different specialization towns and the threats are in-significant like the impact caused by the relation with India and competition with the Indian market in search of market.

Jhapa, when it is compared to the similar district of the region, its position is relatively better and their grading indicators clearly indicate the status when the position of other district when the weighted value is given to different district of central and western development region.

Corridor development components inserted the external pressure having the multiplier effect those together are responsible for the rapid development of corridor along the east west highway. Jhapa, the district of location advantage made the faster pace in the development both in the transportation as well commercialization within and outside the district making a knot of corridor.

**Thesis Title: URBAN CORE: CHALLENGE FOR
CONSERVATION AND DEVELOPMENT
(A CASE STUDY OF KATHMANDU
CITY CORE)**

Submitted by: Roshan Shrestha

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

The traditional core area used to be a homogeneous society dominated by the Newars. Traditional festivals and culture used to be a part of the settlement. The planning of the core area was designed to fulfill the cultural as well as social requirements of that particular society. As Kathmandu city core developed along the ancient trade route of India and Tibet, trade and commerce used to be of small scale and it was more like a service providing center to the travelers along the route. Though there used to be small trade and commerce, the core area was developed basically as the culture centric center in the past.

With the trend of globalization and modern economic development, the core area has been commercialized very rapidly and is now a commercial center. The streetscape along Indrachowk to Ason and its inner residential areas definitely prove this fact. The core area has become the hub of retail as

well as the whole sale market. The commercial developments along the streets are booming to such an extent that it has led to the evacuation of inner city and has converted the city core into the godown of wholesale markets with multiple functions within a single building.

The new issues of conservation and development within the city core emerged as the indigenous people moved out and the business class Marwari people and working class poor people replaced it. The primary concern today is the rapid loss of traditional urban fabric following the new demands and trend of the society. Modernization has evolved the loss of traditional cultural activities as well as economic activity.

Tendency to erect taller buildings violating the bye laws with entirely new function is very prominent to be seen in these areas. This ultimately has resulted in the degradation of the core area where open spaces used to be center for social gathering and the inner chowks the residential neighborhood squares. The city core which used to be arid up to certain extent still is a social and cultural centre is gradually converting into a big slum. Because of this the core area is facing strong challenges of conservation and development.

The challenge today however is to state a compromise between development demand of the society and the conservation need of the cultural city core. In today's context compromise for only conservational aspects or the development aspects solely is not acceptable. Considering the varying characteristics of the core area the policy approach for conservation and development also should vary accordingly.

This thesis attempts to provide the areas of conservation and development with certain tools for its implementation, taking into consideration the fact that the opportunity to preserve the Kathmandu city core as a cultural heritage has already been lost, and that it is better to accept the inevitable trends of modernism. Therefore the effect of modernization and the changing needs of people have to be accommodated maintaining the minimum value of conservation.

In this context, strategic intervention at key area such as the nodes, facade control, and allocation of different areas for different activities is provided along with various tools to implement these strategies like taxation, development rights development of counter poles to reduce the development pressure and maintain basic minimum traditional urban character in the core area. This will help absorb the change, relieve the conflict and develop the core gradually.

**Thesis Title: HOUSING DEVELOPMENT AT THE
LAND POOLING AREA (A CASE STUDY
OF SINMANGAL LAND POLLING
PROJECT)**

Submitted by: Rina Devi Bajracharya

Supervisor: Mr. Padam Bahadur Chhetri

ABSTRACT

In the context of rapid urbanization of Kathmandu, the resulting growth of haphazard urban settlements without provisions of even basic amenities such as access road, sewage and drainage system, water supply, etc., numerous land pooling projects implemented in the past seems to be successful as it provides serviced plots with vehicular access to each plot. However, looking at the land pooling project with respect to the surrounding areas and in a wider city context in terms of broader development framework, the way land pooling projects are planned and implemented in the Kathmandu Valley have many shortcomings. Such land pooling projects are yet to address the broader concept of continuity of neighborhood character, new urbanism and the built environment.

This Thesis project presents opportunity as well as challenges due to many reasons. It can utilize the lessons learned from the

past experience of land pooling projects. This project prepares Housing Development at Land Pooling area focusing on the residential neighborhood design through literature reviews of urban design. It proposes numerous land use activities, urban morphology, street network, open space system, building typology and other detailing. It reviews the literature and case study in a broader perspective to identify the salient features of good residential neighborhood especially for the Land Pooling areas. It also proposes some guidelines for the development, management and implementation method without going into detail. In the land-pooling site, it is more concerned on planning, design and detailing rather than calculating each plot, which are for the return to the landowners. Nonetheless, this project aims to provide a new setting on Land Pooling area for urban expansion.

Thesis Title: **FINANCING SEISMIC SAFETY IN
URBAN HOUSING**

Submitted by: **Pralhad Uprety**

Supervisor: **Prof. Dr. Jib Raj Pokharel**

ABSTRACT

Urban Planning envisage promoting the human welfare which includes convenience, health and safety. Housing is one of the important elements of urban planning. House is vital element in Housing. Housing provides security, rest and satisfaction to the human beings. Housing has been accorded topmost priority in any society. A country without proper housing facilities cannot rise to higher level of development. More developed societies have fairly better provision of housing.

With the increased pace of the urbanization, Nepal is also facing increased housing demand. Due to the gap between the income and consumption, it is very difficult to have a house in the urban areas. And most of the people who have managed to build their houses have found very difficulty in constructing the engineered one due to their low savings and high cost of construction. Though housing loan is available from different financial institutions nowadays, there are many obstacles in accessing it.

People die of the building not of the quake itself. As people live most of the time in the house, unsafe buildings can become the killing grounds. Incorporation of seismic safety in house construction needs extra money/resource. The study has shown that the principal reason of non-incorporation of structural seismic safety is due to the limited resources of people.

Public infrastructures are likely to get damaged or affected by the falling houses in the time of large earthquake. So the seismic safeties of individual houses also come under the public concern. That is the reason why the seismic safety of housing has become the matter of public safety too. In this regard the financing seismic safety is not only the matter of house owner but also of the society and nation. In one hand there is need of the easy and simple access to credit for housing while on the other hand there is need of public investment on seismic safety of individual houses for achieving safe city as a preparedness measure of impending earthquake.

Thesis Title: **AN ANALYSIS OF MAJOR FACTORS
THAT LED TO SUCCESS IN
CONCERVATION AND DEVELOPMENT
WORK OF DAKSHINKALI AREA**

Submitted by: **Rajendra Man Shrestha**

Supervisor: **Mr. Kishor Thapa, Mr. Unam Man
Pradhan**

ABSTRACT

Various renowned historical, religious, and cultural sites spread throughout the country. This important cultural and religious site is giving the nation's identity in the world. Due to these sites, the valley is famous in the world and attracts the international tourist to visit the sites. But, today, these entities are going to die slowly due to carelessness of government and citizens. In contrary to other government Development Committees, the Dakshinkali Area Management Committee is sustaining with economical as well as physical infrastructure and it is assumed that a successful project.

The specific Objectives are to assess various activities of the project which led to the success, to assess the impact of the project in the Dakshinkali area and to find out whether the model of Dakshinkali Project can be replicated in other similar project.

The scope of the study is the assessment of all activities that carried out by Dakshinkali Area Development Project and compare to other similar religious site viz. Changu Narayan, Budhanilkantha, and Boudhanath. Detail study has been limited on parameters of Environmental improvement, origin and establishment of the project, Infrastructures development, people participation and impact of the project and institutional arrangement etc.

A month long field survey covered all two VDCs of Dakshinkali area and its hinterland in the vicinity was carried out in November- December 2006. The household survey is carried out only on 150 houses (29.67%) initially and later on resurveyed on 100 (15%) in total household from Chhaimale -7 and Dakshinkali-1, 2, 4, 5, 7, 8, 9 to get clear impact picture of the area with additional questionnaire of health as prescribed by the World Bank, Environment Department, "Environmental economics series" paper no. 84. The Data collected in aspect of conservation, physical development, economic, environmental, socio- cultural and institutional aspects.

There are 21 retail shops besides the Dakshinkali temple, 26 flower selling stalls at old motor cycle parking area, 1 multipurpose building at vehicles parking area, 1 hat bazar, 26

chautaras, 5 foot bridge at temple area service for the visitors. Similarly, 23 picnic spots, 1 shoe locker and two bus parks has been constructed.

This model of two tiers of Management Committee (an institution) is seen effective, because of involvement of the high officials and prominent personalities during the project period.

Although, there are some negative impacts like, river pollution, air pollution, noise pollution, and waste increased in site due to increased in vehicles and visitors. From conservation aspect, the religious site and monuments of the area in dilapidated condition had improved in good environment in the area with keeping the cultural rituals. The area is covered with greenery about 95% with beautiful scene and helping to reduce the pollutions.

The institution is sustained both economically and technically. The Dakshinkali Management Committee has its own office and multipurpose building. According to official record of Management Committee, they have earned NRs. 2.5 million per year up to fiscal year 061'062 from various services and now it is in increasing order and job offering direct and indirectly to the people.

From the data analysis, in the vicinity of the Dakshinkali area, the building construction system has changing in wall system, roof system and construction materials. Similarly, the student enrollment rate is decreasing in the government schools, but increasing in private boarding school. In the same way, health condition of local people has improved due to access of safe water that is seen from the health condition, the household surveyed for health related to diarrhea disease and respiratory infection. Likewise, due to the increase in visitors, the market is flourished and income of traders and local people has increased. So, the rate of rent and land has also increased. Therefore, after the conservation and development work carried out by the Project, the economic status of the local people has been raised.

In conclusion, the successful development of Dakshinkali area can mainly be attributed to its management and people's participations. Mobilization of the local people and local body is very essential to success such project. This kind of religious site developments can form an integral part of regional development strategies influencing not only the religious sites, but also its surrounding areas. The successful management model of Dakshinkali can be applied to other places also. Though the site and opportunities in different religious sites differ, the mode of management can be replicated easily. Nepal Tourism Board and

the UNESCO can play great role in conservation and development of such area.

**Thesis Title: ROLE OF EMERGING HIGHWAY
TOWNS AS A GROWTH POINT (A CASE
OF GOLBAZAR AND CHOHRWA IN
SIRAHA DISTRICT)**

Submitted by: Pradeep Kumar Singh

Supervisor: Dr. Jagdish Chandra Pokharel

ABSTRACT

Transportation provides services, comfort and saves the valuable time. It plays a key role in the development of any place. After the construction of East-West highway in Nepal, many small settlements emerged along its route for providing services to the passengers. Later on, some of them developed quite rapidly and others followed in their natural pace. While on a long journey from one place to another along the highway, we pass through some developed and large town/cities and even through other small chowks (squares) or settlements that act only as places serving the on or off passenger's needs. So the study was focused on why some of the highway towns developed rapidly and others did not. This study is also focused to examine the hinterland resources, backward and forward linkages of town, and role of town for its hinterland and urbanization problem in the town along with to answer the core question of development of the town.

The study is mainly based on primary data while secondary data are also used to understand the development trend. The observation, interview and focus group discussion survey methods are used with many survey forms to examine and find the answer to the objective of study. The data are analyzed both by using computer software and manually, and final presentation is made in the form of text, map, tables, graph and charts.

The comparative analysis of two settlements Golbazar and Choharwa, along East-West Highway, shows the existing physical fractures, development trend, road head link, utility and social services, land price & transaction and ethnicity of the towns. The analysis of existing institutions, market, economic activities and services examines the role of town as a service center, market centre and as a growth point. Due to the fast development of the town, many urbanizing problems such as environmental problem, prowl development, unsafe construction of buildings and insufficient infrastructure and services are detailed out. For the development of the town, rich hinterland resources are examined. The study also discovered that the new dimension for the development of any town is geared by the remittance money. So the remittance analysis is done in separate chapter. The study is focused on how the remittance money and the spatial development of the town are related to each other.

This study will be fruitful to understand the emerging highway towns and its problem & potential to growth and will help to duly make the future planning intervention.

**Thesis Title: INFORMAL STREETS VENDORS IN
NEW ROAD AREA - KATHMANDU**

Submitted by: Padmendra P. Shrestha

Supervisor: Dr. Jibgar Joshi, Mr. Batuk K. Parajuli

ABSTRACT

Though informal street vendors, who sell their goods in public without any permanent structure, have existed in Kathmandu from ancient times, recent developments in New Road area, a prominent commercial area in Kathmandu, have shown a highly increasing number of street vendors from 378 to 1891 in a short span of seven years. With its increasing trend, it has also given employment opportunities to many people and cheap goods and services to general people. While on the other hand it has added to the traffic congestion, littering, and selling of substandard goods etc. Besides Local Self Governance Act 1999 that gives power to the municipality to remove any obstructions to traffic due to street vendors in public spaces, there are no existing plans and policies that have addressed the issues of informal street vendors in Kathmandu.

The thesis is a descriptive research based on observations, focus group discussions with members of trade union involved in street vending and questionnaire survey through stratified sampling,

depending upon the types of goods they sold for street vendors and random sampling for pedestrians/buyers. It finds out the current general characteristics of informal street vendors; their spatial preferences; their socio-economic linkages; and perception of the government, formal traders, consumers and general public towards them. It presents a comparative analysis of general characteristics of street vendors of Kathmandu in 1999 and finds out the changes that have occurred in the span of seven years.

The findings show that street vendors have not only enlivened the spaces but also have been contributing to the urban economy. Despite their service to the society, there are various problems and issues faced by street vendors, like municipal eviction, harassment of people, poor access to infrastructure and services, illegal payments, bitter relation with shop owners, involvement of child vendors etc. To improve their scenario the study formulates a vision to integrate informal street vendors into urban system where all the stakeholders can co-exist in harmony. The thesis gives some short term and long term planning interventions that would help realize the vision and benefit the society as a whole.

**Thesis Title: PROCESS OF CHANGE IN
TRADITIONAL SETTLEMENT TOKHA**

Submitted by: Moon Singh Dongol

**Supervisor: Prof. Dr. Sudarshan Raj Tiwari, Mr.
Krishna Bhakta Bhandari**

ABSTRACT

I here arc many traditional settlements in the valley which are undergoing the phase of transformation. Rapid urbanization within the valley and the whole nation has resulted in the urban expansion proliferating through these settlements causing its change process. Expansion of settlements has resulted in haphazard and sprawl development. Modernization and its various aspects are seen in these settlements but they lack basic physical and social infrastructure required.

This thesis is a study of the change process in the traditional settlement Tokha. Tokha is a traditional Newari settlement lying to northern edge of the valley on the lap of Shivapuri range. The settlement has a beautiful natural setting along with its own physical, social and cultural dimensions. Along with various other peripheral settlements Tokha is also one which is experiencing urban pressure and undergoing through various phases of change process.

Initially Tokha was not easily accessible and was not given much importance. The opening of roads through ring road via Gongabu and Dhapasi toward Tokha has made it easily accessible. Being located near to the Shivapuri range along with various unique cultural activities, the settlement possesses potential for development. There are certain indicators outlined in the study which are marked as main component for the change process to occur. They are the physical aspects, social aspects, cultural aspects, economic and the environmental aspects. The physical change are marked through change in built form, land use, nature of land fragmentation, poor level of infrastructure, and reduced land holding. The economic indicator is the shift of occupation from agriculture to others which have ultimately affected the social bonding among the people with decreased level of coordination for various cultural activities.

Analyzing these indicators, the immediate requirement for the upliftment of the society is through the participatory approach, introduction to modern methods of agriculture and various skill development trainings for women to improve their production as well as their economic base which ultimately will help the development of Tokha in a balanced manner. Similarly promotion of cultural tourism through various temples, festivals as well its natural setting will help to sustain the local economy

and growth in the development needs of the people and the society.

**Thesis Title: PLANNING FOR SEISMIC
 VULNERABILITY (A CASE OF
 KIRTIPUR MUNICIPALITY, NEPAL**

Submitted by: Kumar Dhamala

Supervisor: Dr. Mahendra Subba, Mr. Kishor K. Jha

ABSTRACT

This thesis tries to know seismic vulnerability of people of Kirtipur Municipality by proposing a three-step vulnerability assessment technique, and also attempts to recommend a general framework of mitigation measures including measures specific to Kirtipur Municipality. The thesis therefore hopes to contribute to current understanding on seismic risk and vulnerabilities vis-a-vis also improve upon the current policies and practices pursued in seismic risk management and planning.

The research strategy sets out by examining both empirical and normative questions. The empirical investigation aims to generate understanding and create knowledge on various disaster associated terms such as hazards, risk and vulnerability. And the normative investigation tries to examine the policy context and the prevailing practices. The earthquake induced losses of both human and properties is estimated using computer model called RADIUS and an attempt is made to see association of social

variables and these losses by using a statistical package such as SPSS. For the analysis purpose, the earthquake scenario is taken from the past study carried out by JICA.

The main finding reveals that vulnerability of people against seismic risk is resultant of complex interplay among several causal factors namely locational, physical, socioeconomic, and institutional factors. The Kirtipur Municipality therefore regardless of its location is susceptible to seismic vulnerability, although magnitude of loss—whether that be building or infrastructure damages or human casualties appear to vary depending on the soil conditions, quality of buildings, income status and awareness level of households, and the institutional capacity of the municipality itself. Damage of physical assets—whether that be housing or municipal infrastructures tend to be higher in the case where soil type is soft alluvial, building constructions are taller or of low quality, and households have lower education level and vice-versa. The thesis finally recommends a set of mitigation measures comprising of zoning, enforcement of building code and regulations, diversifying economic base and capacity building of the Kirtipur Municipality.

**Thesis Title: SPATIAL TRANSFORMATION OF
 THIMI**

Submitted by: Dil Bhakta Jayana

Supervisor: Mr. Biresh Shah, Mr. Deepak Pant

ABSTRACT

Kathmandu valley has been increasingly urbanized in last few decades. The pressure of urbanization is intense in Kathmandu and it has been spilling over the surrounding municipalities and VDCs. Thimi, as a part of Madhyapur Thimi municipality (MTM) lying in close proximity to urban centres of Kathmandu and Bhaktapur has also been influenced by the urbanization.

Thimi is one of the traditional settlements of Kathmandu valley. The present form of Thimi is the agglomeration and overlap of different historic layers. The oldest settlement nucleus on the plateau is the area at the vicinity of present Layaku. It expanded incrementally to form the traditional core area that extends from Pancho tole on the north and Balkumari - Tachhutole on the south.

It was in 1853, a road (present Old Kathmandu-Bahakha-Bhaktapur road) was introduced at northern edge of the settlement for horse drawn carriages and vehicular movements

started in 1940's and Araniko highway was constructed on low lands at south. These activities added dynamism over the space and triggered the development outside the core. This is the point of departure of the recent spatial transformation in Thimi which has been concentrated to the north and south of the traditional core.

The principle objective of this study is to investigate the trend of spatial transformation beyond the traditional core over last few decades with its causes, characteristic & impacts and relate it with the urban context of MTM.

The methodology adopted in this study is survey and explorative method, supplemented by descriptive and explanatory method as the case demands. For the purpose of study, a questionnaire survey and observations was done on the area of 250 m radius of Bhimsen (Bahakha) chowk and Shankhadhar (Nayathimi) Chowk, which records 692 households in total. Time series maps of last six decades were prepared to see the expansion of built up area in each decade and linked it to early expansion to give complete picture of the town. Based on the field data, socio spatial and economic analysis was done. Existing plans/ policies and practices were reviewed and relate them with urban context of Thimi.

The study came out with following findings:

- The spatial transformation of Bahakha chowk area has initiated from Rana period and that of Shankhadhar chowk initiated from 1970's. With the increase of population, spatial transformation is just inevitable. The spatial expansion is found to be primly access driven. Secondly mobility & topography, thirdly potential for economic and commercial benefits have accelerated the process initiated by access road. Other subordinate factors are availability of utilities & social services, affordability & ownership of land, social cohesion, etc.
- The pattern of expansion is linear along the roads that is either contiguous with already existing built up area or towards the periphery of activity (mobility or economic) centre. The density reduces as it moves away from the junction or towards the streets of lower hierarchy.
- Besides the general impacts like reduction of agricultural land, change in land use, social heterogeneity, fragmentation of land parcels, increased in land value, rental value and commercialization, spatial transformation in Thimi has brought about under utilization of land, due to ribbon development along road and dead locking land parcels at interior. Lack of open spaces for community activities and narrow lane

formation has also been noticed. Pressurization on existing infrastructure networks is getting more challenging. There are some site specific characteristics as well. This shows high development pressure at north of Bahakha and south of Shankhadhar chowk.

- Because of lack of integration of individual efforts of development including construction, the new settlement area lacks integrity in urban forms and has no appreciable image, as such, unlike traditional core. Traditional core is also deteriorating as the effect of changes around it.
- Existing plans and policies has rational base of sustainability and phasing urban expansion. However, there many gaps and mismatches in current practices. Recent planned interventions are done is ad hoc basis, not based on development pressure and actual need, often making contradiction to the plan.

Finally, the study identified following issues as the ultimate product of the research, based on the findings:

- i. Owing to high development pressure, the spatial transformation at north of Bahakha and another to the south of Shankhadhar chowk is seeking some planned intervention immediately. The planned intervention has

to address the underutilization of land, lack of open space and pressurization of infrastructure networks, etc.

- ii. Integrity of urban forms and appreciable image of the township in new settlement area can be realized with shared vision image shared image of urban fabric, as noticed in traditional settlements, as pointed out by Habraken (1985). The shared image can be manifested in terms of social milieu, cultural milieu, and environmental improvement, commercial and economic benefits, etc, as the case depends. Local area plans and provision of special bye laws has to be made accordingly. Participation of people and other stakeholders in planning and implementation can aid this process.
- iii. In light of deterioration of built environment in traditional core area, plans and actions are now also required to conserve and maintain built environment and culture of the historic town.
- iv. Having understood the characteristics of spatial transformation, it can be used as a tool for effective urban land management by:
 - Appropriate phasing of urban expansion based on development pressure.

- Prioritizing investments for any planning interventions like construction of roads, installation of utility networks, location of social services, etc.
 - Accelerating the development in earlier planned areas which are lagging desired speed. However, the suitability of the parameter is site specific, which the planner has to decide after adequate observations and analysis of the actual phenomenon.
 - Discouraging the developments in reserve areas and environmentally sensitive areas. Discouraging investments, both public and private, for introduction of any transformation guiding parameters like roads, utilities, social services, etc. can preserve those lands.
- v. Different institutions like municipality, road department, water supply corporation, whose activities can influence spatial transformation, are to be coordinated and their activities to be integrated for effective planning and implementation of plans / policies regarding urban land management and efficient use of resources. The municipality has to take leading role in this process, with Institutional restructuring of these institutions and enhanced institutional capacity of municipality.

So far the future planning of MTM is concerned; it should be guided by the issues identified above. Further, the municipality has to identify other areas with high development pressures and plan for them. Unlike conventional planning interventions like land pooling, which is generally carried out in large area leading to too long time to be executed, small areas should be taken, planned and implemented quickly so that the problem could be addressed on time before it get worst. Such areas should be linked with trunk infrastructure network and as per land use plan. Urban expansion should be phased, based on development pressure and to complement overall development strategy of MTM. This will ensure better urban land management in MTM. Actually, this model can be equally valid for other regions as well.

Graduation Year 2008

**Thesis Title: URBAN WATER SUPPLY SERVICES,
PUBLIC PRIVATE PARTNERSHIP:
REVIVAL OF TRADITIONAL WATER
SUPPLY – HITI OF LALITPUR**

Submitted by: Solar Shrestha

Supervisor: Prof. Dr. S.R.tiwari

ABSTRACT

The available water sources of Lalitpur are becoming depleted and this problem is aggravated by the rate at which populations are increasing, especially in the urban areas. This has brought into focus the urgent need for planned action to manage the 'traditional water supply - *hiti of Lalitpur*' as an alternative for the prevailing water stress. With increasing urbanization pressures coupled with existing un-sustainability factors and risks inherent to conventional urban small scale water management; Lalitpur-the second big city of the Kathmandu Valley is experiencing difficulties in efficient management of hiti water and the supply system.

In order to meet these challenges, there needs to be a shift in the way the community managing the water from the age old supply

hiti in the urban context. There is a need of paradigm shift and which need to be based on several key concepts of urban water management including: interventions over the entire traditional water system - cities of Lalitpur; reconsideration of the way water is used (and reused); the regeneration, rehabilitation and revival of this traditional system implementing the appropriate mechanism, both theoretical and practical.

Further, this needs to be coupled with increased stakeholder involvement, institutional development, capacity building, and overall public private partnership. Clearly, this will substantially contribute to a reduction in the vulnerability of Lalitpur City due to the water crisis and an increase in their capacity and preparedness to cope with present water stress and rapid urbanization.

Making water services accessible from hiti, should not only be considered as a local agenda and a target of the MDGs, but also as a core responsibility of both national and local governments, and community to satisfy the legitimate rights of all citizens. In this regard, the role of PPP with professional expertise are expected to contribute significantly in fulfilling the people's need at community level in affordable ways which eventually help in achieving national objectives. However, successful PPPs require

that all partners and stakeholders promote sustainable development through the formulation and implementation of specific policy measures.

A first step toward meeting a human right to water would be for governments (both national and local), concerned line agencies (e.g. water agencies); and international and local organizations (community) to guarantee all humans the most fundamental of basic water needs and to work out the necessary institutional, economic, and management strategies necessary for meeting those basic needs, quickly and completely.

**Thesis Title: URBAN INFRASTRUCTURE
 DEVELOPMENT THROUGH PUBLIC
 PRIVATE PARTNERSHIP: A CASE
 STUDY OF KATHMANDU AND
 LALITPUR**

Submitted by: Nirmal Raj Baral

Supervisor: Dr. Mahendra Subba

ABSTRACT

Various factors of pull and push contribute for population migration from rural settings to the towns and cities in search for a better life resulting in the growth of these areas. Due to the ever-increasing population, the need of basic urban services also increases which demands huge capital investments and efficient and effective management in service delivery.

The constitutional recognition of decentralization as a means of ensuring optimum participation of people in governance to enjoy the benefits of democracy and the introduction of LSGA in 1999 requires local bodies to ensure the services to their populace. It also recognizes the role of the private sector to enhance the development sustainably. However, the scarce resources and lack of management skills characterize the challenges of service delivery facing the local administrations.

The case study area Gongabu is an urban area and Godawori V.D.C is an urban fringe area near to Lalitpur Municipality, having the wide gap between the demand and the allocation of the infrastructure facilities. Comparison of Key characteristic of PPP in the development of local infrastructure has been done between the two case study areas.

The findings of the research were that there was various difficulties in project implementation phase, less transparency in user's committee's activities, there was no system of public auditing, women participation was minimum and maintenance system of the project was very poor. The satisfactory findings of the study were users committee, people's contribution/ Participation and satisfaction in the projects. The major findings of the research were that the role of public sector in water supply project in Godawori was intangible.

User's Committee was the key player in urban infrastructure projects. The selection of right people in the committee and the transparency in the activities of the user's committees were of great importance.

**Thesis Title: ROLE OF LOCAL GOVERNMENT IN
 SOLID WASTE MANAGEMENT: A
 CASE STUDY OF BHAKTAPUR
 MUNICIPALITY**

Submitted by: Liza Talchabhandari

Supervisor: Associate Prof. Padma Sunder Joshi

ABSTRACT

Increase in urban population, rapid urbanization, change in consumption pattern and social behavior seriously degrading the urban environment. One of the serious environmental consequences of the process of urbanization is the ever-growing amount of solid wastes generated by the cities. In the past waste management was probably not a major problem in the towns of the Kathmandu Valley. This was mainly because the amount of waste generated was not very significant, and the society had developed its own system of managing the waste; a system, which was an integral part of the culture and life style of the Valley. With the taste of urbanization and modernization, the waste characteristics have been changed from biodegradable to non-biodegradable.

Solid waste management is a costly service and most municipalities are struggling for the resource to meet their

regular expenses so that they are not able to invest on equipment and construction of infrastructure for waste management.

The study is based on the existing situation of solid waste management and tries to find the role of local government in solid waste management taking a case study of Bhaktapur Municipality. Based on current situation, problems and issues in technical, environmental, financial - economic, social - culture, institutional, and organization and policy and legal aspect were identified. The study judge the waste management practice of Bhaktapur from integrated solid waste management approach.

In Bhaktapur Municipality, solid waste management is under the responsibility of Sanitation Sub division of Social Welfare and Sanitation Division. The municipality provides street sweeping, door-to-door collection system and waste collectors namely *tipan tapan* to promote the World Heritage Site. The municipality has compost plant and paper recycling factory, which is a good initiation in waste facilities. The municipality is managing the solid waste relatively better than other municipalities of Kathmandu Valley with high operational cost. Thus, the municipality needs a sustainable improvement by integrating all stakeholders, considering waste management elements and local aspects.

**Thesis Title: PUBLIC PARTICIPATION IN URBAN
COMMUNITY DEVELOPMENT: A
CASE STUDY OF TOLE SUDHAR
SAMITI (TSS) IN KATHMANDU
VALLEY**

Submitted by: Suman Kumar Karn

Supervisor: Prof. Sanjay Upreti

ABSTRACT

Human beings are social animal so they seek desire to live in a society or a community so that all their needs are fulfilled as far as possible. From the beginning of the civilization, people have been wondering from place to place in search of better living and better opportunities. Urbanization in Kathmandu Valley is increasing constantly with time. With increase in population, Kathmandu Valley is facing myriads of problems like degrading environment condition, overcrowding of places, lack of infrastructure and services in housings and unregulated growth of town is rapidly eroding the quality of the urban living. As public participation in urban community development many community development organization in the name of Tole Sudhar Samiti were emerged for need based organization in last few year for urban planning and development of Kathmandu Valley. Tole Sudhar Samiti (TSS) is a group from a community

working towards the self need basis to unite the development activities in the community and welfare of the community they live. A local body formed Tole Sudhar Samiti with the responsibility of mobilizing the community approving and planning the project strategy and activities and supervising and monitoring the project. The enactment of Local Self-Governance Act, 1999 in Nepal has empowered the local governments to mobilize their own resources and carry out the development works by themselves. In this context, TSS will have more responsibility to play for its own development and sustainability. The specific objectives of the research are to understand the evolution of TSS as a tool for community participation in urban planning practice, to outline strengths, problem and challenge of TSS in urban area and to suggest policy framework to integration and enhance the role of TSS and its performance for urban development. In literature review all necessary and related books are reviewed carefully and made concept for research. The data and information obtained from field and from different sources and some information was collected by household survey, some from key informants, meeting and discussions with members and some from secondary sources. All TSSs data were compiled on computers through SPSS and analyzed. Systematized information, obtained from analysis was synthesized in required form. After all those, the real situations concerned with process

of people's participation in urban community development and as institution of community for the physical development and social living of particular area or tole. The spatial development and public contribution and participation were analysis with emerging issues for sustainability. After the detail analysis some problems and challenges with more strength will identify and need to institutionalize the TSS as sub committee level organization. If the concerned authority makes policy to monitoring and evaluation and recognizing TSS in municipal level planning get real urban planning and development with people centered planning through public participation. There is not difficult task for authority to integrate TSS for the urban community development through Public Participation in each level of planning and development.

Thesis Title: **SOCIAL ENVIRONMENT OF THE
PRIVATE HOUSING IN KATHMANDU**

Submitted by: **Hari Dangol**

Supervisor: **Prof. Dr. Jib Raj Pokhrel**

ABSTRACT

The rapid developments of Kathmandu valley fetch the high demand of the housing units. The private sectors are involving to grab the opportunities and are developing a numbers of colonies in the Kathmandu valley for the rich families. Thus planned urban growth is seen outside the ring road.

This dissertation is more focused on the social context of present housing scenario. For this, three separate housing colonies are taken as a study area. The people of the colony, their profession, education background, their income level etc. are studied. However, the constituents of social environment differ from country to country. The common facilities like clubs, libraries, health facilities, educations etc. are essential factor which constitutes and supports the social environment in the housing. Further, the housing design, layout and spatial relationship between family level as primary group, neighborhood level as a secondary level and community level are essential factor which indicates the level of social environment. However, the social

relations are intangible factors and cannot measure but the certain indicators like infrastructure, movement, no of festival, utilities and services can support to check the level of social environment in private housing.

At present, there is different kind of loopholes regarding the rules and regulations of the housing which has affected in social environment at other side. For this, the different stakeholders should be aware with social factors and legal framework and institutional bodies should be re-structured. To understand the social factors the SIA is best tool and should be done with an interval of time.

This thesis work is the first attempt to understanding the social environment of private housing. People of the colony have spent just 3/4 years only. So people's true reactions towards living in such community may change in future. It may take a time many decades to define and compare with in international context. The social environment of private housing is in offspring stage so it may take time to be well grown up.

Thesis Title: URBAN AGRICULTURE FOR
SUSTANABLE URBAN DEVELOPMENT

Submitted by: Uttam Bahadur Raut

Supervisor: Prof. Dr. Puskar K. Pradhan

ABSTRACT

The thesis examines the urban agriculture pattern for the sustainable urban development in the Kathmandu urban area. The high migration rate has caused high unemployment and is beyond the carrying capacity of the city. At Present urban system is gradually practicing unsustainable pattern of urban development and the environmental degradation, food dependency, high fossil fuel consumption, and linear system of development that is not consistent with the historic agricultural urbanism. Urban agriculture can be combined with urban ecological system. There is also the opportunity of utilizing traditional skills of migrants and indigenous farmers of Kathmandu. Previously the agriculture was used to practice in the fertile low land and land closed to river but presently the trend is same but doing in leased land and using the public land.

Different case study areas were selected to assess the characteristic trend of the UA. The case study of Tahanani, Kathmandu is taken to examine the traditional agricultural

urbanism. Similarly to study the new type of UA patterns started in Kathmandu and Lalitpur urban boundary and in peripheral area that has strong connection with the closed loop system and employment generation. The case study of the bank of Balkhu (Tinthana) and Bagmati (Kupondole and Gothatar) has revealed the different types of currently prevailing urban agriculture pattern. Similarly a one kilometer stretch of the present ring road is taken for finding out the present land use pattern of the roadside greenery.

The study examines the economic, social, and environmental indicators of the study area. The agriculture practices are more concentrated in the intensive and integrated system, intensive agriculture is practicing vegetable farming by the traditional farmers of the *Jyapu* community and the integrated farming was the Piggery cum Duckery cum Fishery cum vegetable farming specially done by the migrant. Both of them are self employing as well as employment generating activity. Similarly both of them have contributed significantly to the waste management of the city. The study has explored the land potential for urban agriculture in road corridor (ring road) and river corridor (Bagmati).

Different issues were identified related to land access, social, economic, institutional, environmental and health. To cope with

the challenges, the institutional recognition of the UA is needed for the formal sustainable development. Similarly new dimension in urban planning is needed from integrated dimension of food, employment, environment, and urban waste management not only from the leisure, entertainment, and high level infrastructure development.

Thesis Title: **EFFICIENCY MEASURES IN**
 INFORMAL STREET VENDORS OF
 URBAN CORE AREA OF KATHMANDU
 METROPOLITAN CITY

Submitted by: **Gaurab Sagar Dawadi**

Supervisor: **Prof. Dr. Puskar K. Pradhan**

ABSTRACT

Urban areas in Nepal are receiving rapid influx of migrants from rural areas in search of work due to the insurgency, low productive rural occupations or high expectations livelihood in urban area. As the job opportunities in cities are limited in the formal sector, migrants with low level of skill and education has only option remaining, which is to involve in the informal sector. In urban areas like Kathmandu most visible manifestation of informal activity is in the form of street vending.

Most street vendors conduct their activities in urban spaces no, desired for such purposes hence the conflict in use of space has arisen among vendors, vehicular traffic and pedestrians, since they struggle for their right of space in urban area. In this struggle, the position of street vender becomes insignificant and often has to suffer the punitive measures from the local authors. But provided that these vendors contribute positively to the urban

economy and cater to the sizeable proportion of the urban poor, the punitive measures undermine the efforts to combat poverty. Hence the main policy challenge today is to formulate the regulatory policy framework which will alleviate the negative aspects of the vendors and at the same time strengthen the potential to contribute to urban economy. This study attempts to reflect the same.

The study has been carried out at the urban core area of Kathmandu Metropolitan city, Comprising 75 samples of street vendors, 10 pedestrians and customers each, 5 case studies and 11 key informant interviews which involved stakeholders and civil societies. Mapping of vendor's density, magnitude and composition has also been incorporated. Forward and backward linkages, socio-economic and spatial characteristic, locational preference, organizational affiliation and policy situation has also been analyzed in the study with regard to efficiency measures.

This study has come up with the conclusions that, the street vending occupation provides employment to the 3,308 persons and 13,232 persons in the urban core relied in this activity, which has contributed positively to the urban economy. However space struggle, increased number of informal participants and unorganized market system are some of the problems related to

street vendors, creating adverse effect to urban setting, and needs to be curbed and regularized with appropriate policy and regulatory measures, and those measures has also been recommended by this study

**Thesis Title: CONSERVATION AND DEVELOPMENT
 PLAN OF TILRAKOT**

Submitted by: Saroj Bhattarai

Supervisor: Prof. Dr. Jaba Raj Pokharel

ABSTRACT

Kapilvastu was the land of Shakya rulers and Tilaurakot was the capital city before they were massacred by Muslims. Kapilvastu (Hermitage of Kapilmuni) might have named after Kapilmuni, a Sacred Yogi, whose ashram (home) was at the bank of Bhagirathi (Banganga River). Present Tillaaurakot area is considered to be the palace area of King Sudhdhodan, father of Gautam Buddha. This place is only few kilometers (24 Kilometers) away from Lumbini, the birth place of Buddha. Gautam Buddha had spent first 29 years of his life here; so, this place has also a religious value for the Buddhist pilgrims. Emperor Asoka had come to Lumbini and Kapilvastu with his spiritual teacher Upagupta in the twentieth year of his reign. Chinese pilgrims Fa-Hien and Hieun Tsiang had entered in Lumbini, Kapilvastu and its vicinity during the fifth and seventh centuries respectively. Those pilgrims have mentioned the direction and distances of the various places viz. birth place of Krakuchanda Budhdha, Kanakamuni Budhdha, circuit of the capital town of Kapilvastu, various Budhdhists monuments and

images of Kapilvastu. which help us to identify the ancient ruins of those places today. The purpose of this thesis is firstly to find out the possible ways and means to conserve and to develop the historic settlement of Kapilvastu and the problems being faced by the settlement and secondly to prepare conservation and development plan. For the study purpose collection of information regarding various maps, sharing experiences of local people, local experts, NGO, CBOs, available reports, field survey were carried out. According to 2001 Census, total population of this district is 481284. Out of which, 51.36% are male and 48.63 % are female. The economically active population (16-55 years group) is nearly 49.65% of the total population. The population growth rate in 2048 was 3.20% per annum and 2.97% per annum in 2058 B.S., which is slightly higher than national population growth rate of 2.27 % per annum. There are more than 1.5 billion Buddhists in the world and the 1.5 billion Hindus are equally respectful of the Lord Buddha, as they believe he is the 9th incarnation of Hindu's mighty God Lord Bishnu. However, great heritage sites are place of attraction for everybody, irrespective of personal religious faith. It is therefore logical that Lumbini/Kapilvastu, which is symbolically related to peace and harmony, should be promoted as a place of reverence for all peace- loving people, and visitors with historical and archaeological interests. These aspects, which contribute to the

world Heritage Status, should also be promoted in potential local and international tourism markets. Even if Nepal can attract 5% of those potential markets it would be a miracle for Lumbini/Kapilvastu, as well as for Nepalese tourism. Taulihawa is the district head quarter of Kapilvastu district. It has been also serving as an administrative, trade and service center for other villages in the district. According to 2001 Census, population of Kapilvastu Municipality is 27170. By the end of 2010, population of Kapilvastu municipality can be projected @ 2.97 per annum to 35239. If the population is projected for other next 20 years at national rate (2.27%), the municipality will have about 51238 people. To accommodate these people, present land use pattern will be certainly changed; hence will have threatened to the nearby archeological site such as Kudan, Tilaurakot etc. So, immediate conservation plan of these archeological sites is necessary. Plans and program for the conservation and development of the area have been proposed. Improvement program for Physical, Religious, Archeological, Cultural center and Transportation plans are described.

**Thesis Title: RENTAL HOUSING CONDITIONS IN
 URBAN AREAS OF KATHMANDU**

Submitted by: Rama Maiya Manandhar

Supervisor: Dr. Mahendra Subba

ABSTRACT

This thesis attempts to get the scenario of 'Rental Housing Conditions' in the Urban areas of Kathmandu, by studying available documents in this subject and gathering primary informations with the help of household survey in three sites, Lagan, Bagbazaar and Sano Bharyaang.

The general objectives of this study is to assess and evaluate the Rental Housing Conditions in the urban areas of the rapidly urbanizing city of Kathmandu, in which the specific objectives like studying the living conditions of the rental populations in the city centers and the suburban areas and analyze their living environment and trace out the prevailing problems. Setting out the Empirical and Normative questions of related issues are done to get answers to the various details of the living environment. The Empirical investigation tries to get answers and generate understanding of the prevailing situations, while the Normative investigation tries to get answers to questions that arise after

going through both the site situations and the secondary data along with the policies practiced.

Related reports, literatures on this subject have been reviewed to get the enhanced picture of the prevailing situations of the rental housing in the urban areas. The experiences and policies of other countries have been referred as case studies.

The thesis reveals details of the Rental Housing Conditions in the urban areas of Kathmandu. The general status of physical conditions of the rented buildings, locality, infrastructure provisions, social and economic conditions of the renters were found out and the relationship between these different variables were analyzed. The use of SPSS program had been helpful in getting cross tabulated results of different variables. Details of the renter households in the city were found out through this study and the relationship was examined between the locality and their occupations, choice of renting area, profession, varying rent price depending upon the building structure. Besides, some problems are found to be prevalent since long ago.

Through this study, it was found that the Rental housing in Kathmandu city core areas are facing problems of overcrowding which in turn has affected the infrastructure facilities. The problem of insufficiency of basic physical infrastructures like

water, sanitation is more acute in the renters' case because of the high rate of occupancy of houses.

Significant numbers of houses lack proper maintenance and are in the dilapidated conditions. The living conditions in most of the cases seemed to be an adjustment to whatever space available rather than a healthy home.

**Thesis Title: UTILITY OF MULTI CRITERIA
ANALYSIS IN LARGE URBAN
INFRASTRUCTURAL PROJECT: A
CASE STUDY OF URBAN AND
ENVIRONMENT IMPROVEMENT
PROJECT**

Submitted by: Manoj Kumar Sigedel

Supervisor: Dr. Sagar Prasai

ABSTRACT

This thesis attempts to analyze the utility of MCA in large urban infrastructural investment as it is not effectively applied for such projects in Nepal. The paper, in its attempt to show that multi-criteria analysis might be a reliable tool in the context of Nepalese planning processes, tries to point out the repercussions of decision making process at different level which directly undermined the projected goals of such projects in the past. During the process of research, the WT and AHP methods was applied on different criteria used in selection process of UEIP towns. It attempts to analyze the ranking of towns by the change of weights in criteria and sub-criteria in sensitivity analysis. In the process of defending this thesis, this research showed that intervention from several external criteria, which directly affected the entire implementation of projects, led to a reduction

in the utility of multi criteria analysis. Also the research found that the actual decision making process rested on the decision makers' hierarchy. Finally this research draws the conclusion that multi criteria analysis is an appropriate decision support tool for rational judgments in decision making but the wide spectrum of criteria should be selected to avoid distortions in the decision process. Moreover, the research also calls in for the application of AHP in MCA since the results obtained through this method quite tally with the one drawn by WT method. AHP, which focuses on qualitative data and subjective judgment, is more suitable for a country like Nepal where there is a substantial dearth of quantitative data.

Key words: Decision, Multi - Criteria Analysis, Analytical Hierarchy Process, Urban, Infrastructure Development.

**Thesis Title: URBAN FRINGE DEVELOPMENT
 PATTERN IN KATHMANDU VALLEY**

Submitted by: Manisha Rana

Supervisor: Arun Pant

ABSTRACT

We live in democratic society, wherein people's expectations are high. Urban centre are magnets that promise to meet these expectations. This urbanization has brought a significant change in the physical, social and environment of the urban area.

To cope up with the urbanization pressure, people have started to migrate towards the fringe area. Urban fringe areas are the localities where cities are expanding. The urban expansions towards the fringe areas have both positive and negative impacts. The urbanization in the fringe area provides economic opportunities to the local inhabitants and discourages the migration pressure of urban area. On the other hand, it is also creating problems due to haphazard growth and rapid changes to the agricultural land. Similarly it weakens the essence of traditional settlement pattern and life styles.

Urban fringe areas are categorized as the alternative places of settlement as an alternative to the urban core. The study has

concentrated on the physical, social and economic development pattern of the urban fringe area, with its reasons, characteristics, impacts etc. in connection with other fringe area.

There is ample evidence that areas are developing along the major arterial road (Ring Road). Imadol VDC in Lalitpur and Sitapaila VDC in Kathmandu, both are experiencing urban pressure and undergoing changes, through various phases of developmental process. The present population growth is attracted towards the fringe area because of low land price (preferably provision of further investment etc) and easy rules and regulation of VDC. Also, people are motivated towards the fringe area for better environment.

Major finding indicates that the development is happening fast but in an unplanned way. The major impact is on the land use pattern. Buildings are emerging on the agriculture land without proper infrastructural services are another characteristic of the urban fringe. Private developers' plays a vital role in raising the prices of the land of the fringe area.

The development patterns are categorized into three main components, namely, physical, social and environment. The physical development is through the change in the land use, and is marked by a reduction of land holding, development of roads

and availability of infrastructure services. In social development, it is the change in the tradition, and occupation. With regards to the economic aspect, it is the change in the income level, status and commercialization of the area.

Basically, the scenario indicates that government has so far, little direct participation in the whole context of development process. People themselves are developing the area on their own ways. Consequently, there are unregulated plots, deteriorating infrastructure services, lack of social interaction, social integrity etc.

Hence, upon analyzing the development pattern of the urban fringe, there are indication that there is a need for plans and policies to stop the haphazard growth. The infrastructure provision should be formulated and the land use pattern has to be designated with development control. Strong implementation and monitoring system should be formulated for the further control of haphazard growth of the urban fringe.

Thesis Title: **MANAGEMENT OF SQUATTER
SETTLEMENTS: A CASE STUDY OF
MANDIKHATAR SQUATTER
SETTLEMENT**

Submitted by: **Manish Mudvari**

Supervisor: **Batuk Kr. Parajuli**

ABSTRACT

This report would accurately portray the conditions of life in slum and squatter settlements and, In particular, show how the concerned agencies and the residents deal with their problems.

This report attempts at management of squatter settlements in Mandikhatar, Kathmandu with a view to also highlight the socio-economic life of the urban squatter society .It encompasses some aspects of urban life of the squatters related to the field of urban planning

Review and recommendation of policies for slum and squatter settlements is also presented here. However, in analyzing the implications of the case study, it is necessary to situate the findings against a background of possible policy and technical alternatives. The usual range of policy options includes sites and

services schemes, squatter upgrading, aided self help, relocation and other variants of settlements policy for low income groups.

It is hoped that the data and descriptions included in the book will prove useful and that overall knowledge of conditions in slum and squatter settlements will be enhanced. It cannot be claimed that the data are comprehensive: they simply show what was happening in the end of 2007 in particular squatter settlement at Mandikhatar and at resettlement of the squatters from the Bishnumati Link Road at Kirtipur. Much is anticipated to be changed with due course of time under the pressures of population growth, migration and urban family formation, as well as the actions of squatters, authorities and the informal sector in response to such pressures.

It is the purpose of this report to serve as a source of reference and information for policy makers and other persons involved in finding solutions to these fast-growing problems. This book addresses itself equally to persons and institutions in both specially in the developing countries like Nepal. It is hoped that a comparative analysis of this nature will assist the Governments of developing countries in their efforts to find appropriate policy approaches through information exchange. It is also hoped that agencies and institutions in industrialized countries which are

extending aid to the developing world will find it useful to receive inputs for the formulation of their aid policies and the identification of the type of assistance program needed.

The picture presented in this book is an image not only of a particular point in time but also of ongoing processes. The conclusions that are drawn are perhaps not the only ones possible. The data are rich in their complexity and have been presented in the hope that others may draw on them in other ways and for other purposes. The result of the case study is thus an image of ongoing life in slum and squatter settlements, an idea of some of the ways squatters and authorities attempt to cope with their problems and a partial critique of what this implies for existing policies.

**Thesis Title: IMPROVING URBAN LAND
DEVELOPMENT: THROUGH PUBLIC-
PRIVATE PARTNERSHIP**

Submitted by: Baburam Bhattarai

Supervisor: Mr. Surya Bhakta Sangachhen

ABSTRACT

Land management becomes an alarming issue in developing. Urban areas like Kathmandu valley. This is because of rapid urbanization where the development land is also growing fast; Land use trend of Kathmandu valley shows that the conversion of agricultural land to an urban use becomes high i.e. from 5.6 % in 1984 to 27.6 % in 2000. As we knew that cities play a vital role in the social and economic development of any countries with the efficient effective management of land resources. In our context, the key role players involved in the land development projects are basically two sectors i.e. Government (public) and Private Sector. But both the parties found to be ineffective & inefficient. Government managed land development projects lacked in delivering the serviced plots in specified time, mobilizing finance, efficient management skill, profit motive business, incorporating low income group etc. where on the other side private managed land developed projects found lacking long term vision (sustainability), transparency, accountability, in risk

bearing capacity, providing public amenities, providing standard service, low income group, etc.

On one hand government strengths seems that they have got strong legal power, its bureaucratic strength, high risk bearing capacity, strength of mobilizing line agencies, where on the other hand private seems efficient in lime management, advertising (creating awareness), mobilizing financial resources, etc.

Another serious problem is that the displacement of original landowners takes place in the private managed LD projects which seems just opposite in government. Regarding the sharing of benefit, in government projects original landowners solely get benefited where in private only private party (developer) will have that. Participation seems lacking in private managed LD projects which seeing high in government managed projects (especially GLD & LP).

**Thesis Title: COMPARATIVE STUDY OF
 ORGANIZATION HOUSING (A CASE
 STUDY OF NEPAL AND INDIA)**

Submitted by: Radhe Shyam Bhagat

Supervisor: Dr. Mahendra Subba

ABSTRACT

Overcrowding population in Kathmandu Valley is causing high demand of housing and creating extreme pressure on the limited resources of the cities leading haphazard urbanization. Popular traditional housing development on the raw (undeveloped) plots is causing haphazard urban growth creating various problems like traffic congestion, lack of utilities, poor living environment, etc. supply of developed serviced land by Government effort is just a small fraction of the entire demand and involvement of private sector has also not been satisfactory both in terms of quality and quantity. But the scenario is changing as private sector is introducing itself into organized housing development, it is encouraging matter that private sectors are involving in the planned urban growth.

This study is basically focused on the Comparative Study of organized housing (A Case of Nepal and India). Though it is gaining ground in Kathmandu valley, sufficient attention should

be given timely to make such private organized housing sustainable. The interviews and questionnaire survey were conducted with housing developers as well as other concerned stakeholders such as government authorities, consumers, financial institutions both in Nepal & Mumbai to know how the present situation of organized housing. The field survey and visual assessments are conducted. On the basis of existing situation of organized housing development, problems and issues are identified. The housing development and products are also analyzed in terms of target group, affordability of people, impact on urban growth, quality issues. Different types of group houses are also compared to assess the suitability in the physical, social and economic context. Finally, certain recommendations are made in terms of housing strategies to promote as well as regulate the organized housing development towards planned urban growth in future .in comparison with Indian housing situation.

This research work will be the initial step towards understanding the current state and role of organized housing in Katmandu, and how they differs from Indian housing situations. And also how is the housing development arc encouraged in India through regulatory process. Hence continuous study on several organized

group housing has to be studied to make them more effective in the future.

Graduation Year 2009

**Thesis Title: MUNICIPAL DEVELOPMENT FUNDING
 MECHANISM IN NEPAL: A CASE
 STUDY OF TOWN DEVELOPMENT
 FUND**

Submitted by: Deepak Shrestha

Supervisor: Dr. J.C.Pokhrel

ABSTRACT

This research entitled "Municipal Development Funding Mechanism in Nepal" attempt in the fulfillment of the academic requirement towards the completion of the Master of Science in Urban Planning of Institute of Engineering, Tribhuvan University.

This thesis attempts to analyze the various methods of funding the municipal infrastructure by central government, local government (municipalities) as well as by private sector and community. They had been practicing a lot in providing infrastructure facilities but most of them are done in ad-hoc basis. Government is not being able to provide infrastructure because of the lack of fund, efficiency and competitiveness. With the enactment of the Local Self- Governance Act, 1999, octroi

(levy on incoming commercial goods) was discontinued. To avoid a financial crisis, the central Government arranged an interim option with the introduction of LDF that could be collected from different custom points of the country (1.5% of every imported consignment) and re-distributed to 58 municipalities. The expenditure of municipalities is not in proper approach in the field of urban development. There are many funding agents in the municipality like Urban Development through Local Efforts (UDLE), Asian Development Bank (ADB), World Bank (WB), Town Development Fund (TDF), UN Habitat, WHO, European Commission (EC), KOICA, JICA, DFID, and many more.

In order to strengthen the capacity of municipalities and enhance their accessibility to national and international funds, institutional practice is being done through TDF. TDF is the only funding agent which has been providing all the fifty eight municipalities of Nepal. In the study process, it was found that all the municipalities are not borrowing capital for municipal development through TDF. Those who had borrowed earlier have not taken further loan or grant from TDF.

Central government, local governments or semi governments are funded either by central revenue share and foreign grants or loan but straight private participation has not been practiced in large

scale. Community participation has been practiced a lot in local infrastructure development which is also a part of private sector participation.

In this thesis report, I have tried to find out how the TDF works and how the municipalities are in position to repay the borrowed money. This report is divided into seven is an chapters. Each chapter has its own value. Three municipalities are taken for the case studies of TDF funding mechanism. After the study about TDF and its implication six broad aspects are derived. These aspects are Selection of the Project, Project Preparation, Design and Consultancy Services, Borrowing, Revenue & Repayment, Management, Operation and Maintenance.

Analysis and findings are drawn in different aspects mentioned above. The findings reveal similar results in the three cases. Revenues and repayment are different since the interest rates were different. Revenue collection in Dharan was difficult so repayment was delayed while in Bharatpur and Bhimeshwor repayment was done in time but revenue collection is similar to Dharan. Operation and Maintenance were not properly maintained in all three municipalities. Management of the projects was given to private party in Dharan and Bharatpur but was different in Bhimeshwor.

This thesis has tried to reveal the major issues of funding of TDF loan in the municipalities, and to explore different types of financing techniques. Based on the issues and findings, conclusions and recommendations were drawn. Municipalities have low loan taking capacity due to their own low source revenue. So Municipalities are more interested in the MLD grants for the infrastructure projects. The revenue from the project is very low in comparison to the proposed revenue. Interest rates of TDF should be revised at least every five year in order to adjust inflation and improved profitability of the project.

**Thesis Title: IMPACT OF ACCESSIBILITY FOR
SERVICES IN HOUSING AREAS: A
CASE STUDY OF KATHMANDU**

Submitted by: Deepak Cheetri

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

Increasing urbanization in the country is putting extreme pressure on the existing housing stock in the cities. Conventional housing practices will consume lot of land if housing need of the people in valley is to be met. Traditional method of housing development is causing haphazard development which create poor living environment, lack of infrastructural facilities, traffic congestion and pollution as well as unmanaged market especially the central focused. The distribution of services will not be equitable and affordable in terms of cost and time.

Haphazard developed city has to lean on a tangential escape route for its solution. Thus the private housing developers will act as an alternate solution to a needed change in life style leading to migration of a part population from the old city to the modern real estate development. This will reduce the congestion in old city area and can increase the scope of its improvement. Although government is viewing the modern real estate

developments positively, more interest should be given to improve the city infrastructure to supplement the facilities within the complexes. The plans, policies and Programs should be developed in such manner that they could focus the future of development not in the haphazard direction. Though catering to the middle and upper middle-income sections of urban population, this project will only contribute to the supply of readymade housing to a small section of Kathmandu population, who are actually not "in dire need of housing but rather have invested in housing as savings for future. The result of the project is yet to be seen. In this dissertation an attempt has been made to access the trend and impacts of private housing projects in the Kathmandu valley, taking few such projects for case study. Two important aspects are being looked into for this purpose. First is about what is the impact caused by the services on these housing areas, for which, some key aspects need to be considered such as transport as linkage between services and housing, relation with the commuting centers, pace of development of the area, price and affordability. Second is the existing scenario of the housing projects.

**Thesis Title: FINANCING OF URBAN HOUSING IN
NEPAL**

Submitted by: Chandra Laxmi Hada

Supervisor: Kishor Thapa

ABSTRACT

This thesis aims at identifying different forms of housing finance available in Nepal, with particular reference to organized private housing projects. The specific objectives of this study is to identify the housing affordability of different income group viz. higher income group, higher middle income group, middle income group, lower income group, to identify different sources of housing finance such as banks and financial institutions, to review the existing housing policy and practices with respect to housing finance and to recommend necessary policy reform in housing finance system for ensuring affordable housing for middle and low income group.

The general scope of the study is to identify different sources of housing finance for urban housing development with particular reference to affordability of the household in organized private housing projects. It investigates existing financing mechanism, home loan condition, way of financing the housing projects and regarding affordable housing. These studies are done through

questionnaire survey of household of private housing projects, housing developers, and financial institutions, selecting all from the Kathmandu Valley. This research is done to fulfill various objectives within the framework of scope and the method adopted (Hypothesis, Research Questions, Data Collection, Instrument Design Analysis and Synthesis, Identification of Issues, Recommendations) for the study.

Literature review is done in Chapter 3 thoroughly to get a holistic idea of financing of urban housing system in other countries and in Nepal. Different policies are reviewed to recommend the good one.

The study area of Kathmandu Valley is overviewed in Chapter 4. The data on map registrations at the four municipalities of the Kathmandu Valley shows that house construction process is very fast though the Valley's area is 218 square miles. In average, around 9,000-10,000 buildings permit are given in Kathmandu Valley from the 5 municipalities.

The data analysis and findings are shown in Chapter 5. The findings are analyzed and formulated the concept of a holistic approach to provide the affordable housing to all income groups with special consideration for low income people. Housing finance can lead to increased supplies of housing with

possibilities of extending housing wealth and welfare to moderate and low income groups. One key social consequence of this is that low income access to housing is impeded, and housing resources are diverted to the upper and richer end of the housing market. It is obvious that very small group of people in Nepal can afford in private group housing projects or private apartment provided by housing developers. Those who are employees in government, NGOs, INGOs etc having salary less than Rs. 2 lakhs cannot afford decent housing. The problem of affordability is very clear and the importance of finance mechanism of housing needs to be improved.

From the case study of 30 housing finance institutions, the poor are particularly vulnerable because they lack access to affordable housing due to high interest rate from 7.75 to 16 percent. Even the maximum tenure is up to 25 years only. People face high land costs, especially in urban areas, in addition to the high cost of building materials. The poor are often “out of sight, out of mind” with respect to banking institutions. The banks and the housing finance companies also levy a fee for processing the application and it varies between 0.5 to 1% of the loan amount. Besides they also charge what is known as an administration fee of 1% of the loan amount.

From the case study of 4 housing developers and their 6 housing projects, it is found that most of the housing company took loan for the housing projects as a main financial source. The current cost of dwelling units in organized housing projects varies from Rs. 32 lakh to Rs. 200 lakh in Kathmandu Valley. The housing developers of Nepal have been operating since some time now and have been providing quality housing but they have been catering to the need of upper classes only. Access to finance is another factor that has boosted the trend towards apartments and group housing. The banking sector has come up with competitive mortgage loan schemes with various innovative mortgage products and marketing campaigns that have brought about change in residential living trends. Housing developer want the government to put the development of the housing sector on the national agenda. The government should shorten the lengthy process of acquiring land, and set aside certain zones for housing purposes with necessary infrastructures.

The findings from the case study of house owners residing in 4 private organized housing projects are summarized below. The number of household living in the dwelling units are mostly of nuclear family varying from 2 to 5 numbers. The income range of each household varies from NRs. 10, 1000 to 350, 000 per month. The loan taken from financial institutions to purchase construct and buy house is 46% which is quite interesting. Most

household has chosen loan from the formal housing financial institutions as first choice due to their fixed interest rate (lower than informal FI) and fast proceeding time. The 42% household buy dwelling unit on installment basis and managed to pay mostly from income and land sale and some from only land sale. The 77% of the dwelling units are owned by the Kathmandu Valley's people itself and rest 23 % owned from outside Valley. It certainly indicates that people are moving towards informal housing to formal housing and moving outwards from the core area. The 87% of the household have own vehicle. They are mostly satisfied with the better living condition, community, living and good security provided by the private housing projects. At the same time they are very much dissatisfied with the quality of dwelling units provided by the housing developers and this is one of the major issues they felt so far besides the high housing cost.

The key issues of housing finance in Nepal are identified in Chapter 6. Effectively addressing the existing and continuously growing enormous demands and needs for housing depends critically on the availability of long-term housing finance on a fairly large and sustainable scale Conclusion is drawn in Chapter 7. Financing housing is an important component within development policy frameworks intended to secure

environmental sustainability, economic prosperity, cultural diversity and social equality. It also explores policies and strategies that hold the promise of making shelter development truly sustainable, in the process filling the gap between the two extreme outcomes of current shelter systems that are being witnessed today: affordable shelter that is inadequate, and adequate shelter that is unaffordable.

**Thesis Title: ROLE OF ROAD NETWORK FOR THE
 GROWTH OF SMALL TOWN: (A CASE
 STUDY OF DHADING BESI AND ITS
 SURROUNDINGS)**

Submitted By: Binod Shrestha

Supervisor: Mr. Ajaya Chandra Lal

ABSTRACT

The urbanization pace of developing country is very high. In Nepalese context municipalities are changing into metropolitan, small towns are changing into municipalities and key growth centres and service centres are changing into small towns. Analyzing the developing trend of small towns, they were grown along the highway and highway junction in Terai, governmental service sector and nearby the Indian railway junctions.

Transport sector improves the accessibility of the region in different sectors like economic growth, social growth, health, education and employment. Road network plays the crucial role for the growth of small town. Dhading besi is the one of the representative growing small towns which is growing with respect to the growth of road networks. The study mainly explains about the role of the road networks for the growth of

small towns and its surroundings taking case study of Dhading besi.

Dhading besi was connected via road networks i.e. Malekhu Dhading feeder road to national highway i.e. Prithivi Highway in 2032 BS. After the road connectivity the growth of the Dhading besi is accelerated with respect to the Dhading district and the country. The study attempts to analyze the temporal study of growth of Dhading besi and its hinterlands in different time period. The delineation area of the Dhading besi is found out and backward and forward linkage is analyzed in social, spatial and economical aspect. Businessman from the Dhading besi and customers are taken randomly for the linkage data collection. Different methodology was carried out for the research works like questionnaire, interview, observation and discussion.

The past efforts for the road improvements are taken as key time period in which the study is based. They are a) When Earthen road connecting Dhading besi to Malekhu Feeder Road, the district headquarter was just shifted from Sunaulabazar to Dhading besi, b) Construction of RCC Bridge over Thopal River and up gradation of pavement as Gravel road, c) Construction of Bailey Bridge in Trishuli River, d) Feeder road alignment amendment and construction of RCC bridge in Phurkikhola and

the pavement type was upgraded for metalled road. Physical changes, land use changes, demographic changes, functional activities changes, urban practices, transport services and major events in these time periods are comparatively studied. From the throughout study of the growth of Dhading besi, road networks is the inevitable factors for the tremendous changes of Dhading besi and its surroundings. There are no significant efforts beside the improvement of the road networks in the past for the growth of Dhading besi. Size of the hinterlands before and after the road connectivity shows the importance of the road networks for the growth of activities. Average annual daily traffic study and telecommunication linkage study were carried out which shows the economical linkage and transportation linkage of Dhading besi with its surroundings.

The study concluded that the road network is the major factor influencing the growth of a small town and urbanization rate accelerates with betterment of road connectivity toward major urban centers and its hinterlands is proved.

**Thesis Title: A CASE STUDY OF URBAN
 ENVIRONMENT MANAGEMENT IN
 MADHYAPUR THIMI MUNICIPALITY**

Submitted by: Bhimsen Shrestha

Supervisor: Prof. Dr. Sundarshan Raj Tiwari

ABSTRACT

The pressure of urbanization of Kathmandu valley is increasing which has been spilling over the surrounding municipalities and VDCs too. Madhyapur Thimi Municipalities (MTM) lying in close proximity to urban centers of Kathmandu and Bhaktapur has also been influenced by the urbanization. Madhyapur Thimi Municipality, a growing urban area, currently having low average density does not face serious environmental problems. But, this however does not mean that environmental threats are absent. The impact of urbanization and lack of urban infrastructures are beginning to cause serious environmental problem. The current trend of urban sprawl and industrial expansion in and around densely populated area is unsustainable and poses a serious threat to a clean environment. Immediate actions are therefore necessary from the recent stage to provide the urban infrastructure services for better urban environment and planning safer cities in MTM. The urban infrastructure services and environmental status of the municipality help the

municipality in planning systematic action on environmental management and urban infrastructure. The study has focused on the lack of infrastructure facilities within the municipality and its impact on existing environmental condition, the source and the various issues of environment that are linked with possible solutions of urban environment management.

The objectives of this thesis is to study the existing environment and impact on it due to lack of infrastructure services, the sources and characteristics of pollutions and its management so as to create safety cities in the environmental prospective within MTM through the study of physical, social and economical environment. The thesis will seek to bring out guidelines measures to address the planning and development of MTM.

A simple methodology was conceived to collect data and information. The data was collected from the government record (secondary information), through primary survey and interviews. The collected data were tabulated, plotted and analyzed for the study. Existing plans/ policies and practices were reviewed and related them with MTM.

Madhyapur, Thimi (24° 40'00" to 27° 42'00" N latitude and 81° 21'30" to 85° 25'00" E Longitude) is situated on a terrace plateau, which is safe from flooding. Its mean elevation is 1300 m above

sea level. Thimi has a good accessibility by road. The municipality is spread over an area of 11.47 sq. tan. The built form of houses in the old settlement area is in traditional three storied structures, built along the line of a relative simple construction model. The socio- economic condition of people is dependent on a craft, commerce and agriculture. With few exceptions all inhabitants of Thimi are involved in some way with agriculture.

The population of Madhyapur Thimi was 31950 in 1991 and 47751 in 2001. The rate of population growth is 2.9% (Census 2001). The number of households has increased from 5133 in 1991 to 9551 in 2001. The average household size has changed from 6.2 to 5. The population density has been increased from 27.86 pph in 1991 to 41.63 pph in 2001. The densities of the population are concentrated more on the old settlement area of Balkumari, Chapaccho, Bode and Nagadesh.

Water supply is mainly from the deep tube wells in Bode. The water produced is directly pumped in reservoir located at Bode, from where it is distributed under gravity. The water supplied is chlorinated before distribution.

Sewers network serve only some wards of the old area. The sewerage of the households and industries are discharged to river due to combined system of storm water and sewerage system and no facilities to treat sewerage. The solid waste pollution is also a problem of sanitation. The shops, carpet factories and other small industries are the most important sources of residential waste. Improper dumping of solid waste in the vacant land and slope areas outside the settlement create nuisance during the rainy season.

Transport in Thimi composes of mass transportation services mainly by buses and mini buses on Arniko highway and old Thimi Bhaktapur road. The old settlement areas of Thimi, Balkumari, Chapachho, Bode and Nagadesh are pedestrian oriented with emergency vehicles movement only. The numbers of modernized vehicle (buses, minibuses, tempos) are increasing annually. This has added a heavy smoke and dust in the atmosphere. Firing of pottery in the old settlement area has also contributed to air pollution. The serious problem that affects the air quality is the presence of high level of suspended particles.

There are many industries coming up in Madhyapur Thimi Municipality. These small-scale industries include pharmaceutical and chemical industries, spinning mills, toothpaste factory, metal factory, pen industry, saw mill. There

are few brick manufacturing kilns that operate seasonally. There are many rice mills operating in Thimi. The pottery industries are found operation in the old urban centers of Thimi, Nagadesh and Bode.

Forestland is very limited in the Madhyapur Thimi Municipality, being confined to only few hectares of land at Nilbarahi and Bishnubir areas.

Madhyapur Thimi is well known for its diverse art, culture, festivals, dance, traditional music and life style. Many of the existing temples, shrine and places of religious importance are dated back from prehistoric times. Most of the temples shrine and monuments are located within the old settlement of Bode, Nagadesh and Thimi with considerable number located in other parts of the Municipality.

The environmental problems in Municipality range from air pollution to sanitation. Major sources of air pollution in Madhyapur Thimi Municipality are household activities, agricultural activities, vehicles and small industries. A large fraction of suspended dust particulate matters are contributed by fugitive emissions as re-suspension of roadside dust by vehicle, uncontrolled discharges of solid waste and re-suspension of dust

form the agricultural areas. Gaseous emissions are mostly related to vehicle emission, household cooking, burning of solid waste in open spaces, firing of pottery in summer months, operation of chimney also contribute to gaseous and particulate pollution.

Finally, based on the key findings the study identified following issues of planning for environmentally friendly and safe development:

- i. Owing to high development pressure, the basic infrastructure services in the new urban area of Kaushaltar, Ghattaghar, Nikosera, New Thimi chowk is seeking some planned intervention immediately for the improvement of urban environment. The planned intervention has to address land use, water pollution, air pollution, and cultural deterioration, lack of open spaces and pressurization of infrastructure networks.
- ii. Integration of environmental planning with urban planning in new settlement area with a common vision of safer cities. The common vision of safer cities can be manifested in term of physical, social, economical, cultural environmental improvement. Local area plans and provision of special bye laws has to be made. Participation of people and other stakeholder in planning and implementation can aid the process.

- iii. The built-up environment of core settlement is deteriorating. Plans and actions are now required to conserve and maintain built-up environment and culture of the historic town which is the life of cultural tourism.
- iv. Discouraging the developments in reserve plots as prescribe by zoning and environmental sensitive areas by discouraging the investment for basic urban services like roads, water supply, sewerage line, utilities and social services which help to preserve the land.
- v. The municipality has to take the leading role in the case of environmental improvement with the different institutions like road department, communication, cable TV and water supply cooperation so as to integrate for effective planning and implementation of plans/ policies regarding the management of urban environment, its source and impact.

Through there exists complex problems in almost every sector of urban services, services like solid waste, water supply and sewerage needs immediate attention from the planners, Municipality authority and policy makers. Further, the municipality has to identify other areas and priorities the need so, the problem could be addressed on time before it get worst. Such areas should be linked with main infrastructure network and as per land use plan. Whatever the pressure of urban expansion it

should be phased, based on the development demand and to balance overall development strategy of MTM. This will better urban environment management in MTM. Thus, lead to planning a safer city too.

**Thesis Title: RENTAL HOUSING ISSUES &
 OPPORTUNITIES FOR URBAN POOR**

Submitted by: Poonam Bajracharya

Supervisor: Ajay Chandra Lal

ABSTRACT

Rental housing is a vital component in accommodating large number of families in developing countries. The increase in urban population through both migration and natural increase has been absorbed to a large extent by the rental market. In Kathmandu Valley, more than 25% of the households are rented units. This percentage will surely increase as there is no effective mechanism housing delivery'. National housing and strategies did not usually take account of the rental sector and most rental opportunities are provided by the private sector. And in such a condition, the most suffered one is low income group who tend to live in rented rooms.

The general objective of this study is to understand the characteristics of rental housing of urban poor in Kathmandu and the specific objectives are to do a situational analysis of rental housing of urban poor; identify the underlying problems in rental housing of urban poor; explore the options of Public Private Partnership for the improvement of living condition; and

recommend the follow up actions based on the findings for up grading the situation.

Case-study approach is adopted as a methodology for the study. As there is a substantial rental market in slum areas especially in the inner cities, the case study areas are selected on the basis of criteria like traditional fringe area; slum areas as identified by different NGOs/Organizations and High Rental Occupancy. Accordingly Sawal Bahal in Kathmandu Metropolitan City and Kumbheswor in Lalitpur Sub- Metropolitan City are chosen, both of which resembles in locational as well in social and economical aspects.

As per the case study, there is a dominance of male population with high working age group in rental tenure. Owners are generally similar to their tenants in terms of social and economical characteristics. There is a trend of living in a single room by sharing with friends of similar ethnical background. The space being used by tenants is highly compromised and far behind to be wholesome. On the other hand, the only way of extra income for the poor owners is to build a house within their native land occupying full plot for maximum return with no regards to ventilation for rent.

In particular, from the case study and literature survey the following issues have been identified in the rental housing of urban poor:

- Most of the landlords who cater to the low-income groups are less professionally oriented which may create deficit in the supply of rental housing,
- The rental value charged is below the level required for the cost recovery which will discourage the private investment on rent. On the other hand, for most of the poor tenants, the rental accommodation is affordable only through overcrowding which has lead to bad housing condition.
- Though there are no policies directed towards rental market in Nepal, the experience in other countries show those measures are either not feasible carrying excessive administrative burden or directly worsen housing access to the poor particularly includes rent control.
- Many tenants undeniably live in very poor housing conditions, as do many resident landlords and poor home-owners that live in the same neighborhood. Both tenants and owners are equally suffering from the lack of services and facilities which leads the owner difficult in raising expected rent charge and the tenants not been satisfied for whatever being charged.

- The housing standards mentioned in building by-laws and building code does not consider for the urban poor and it is specifically focused towards owner-occupied buildings.
- There are no financial systems developed which can cater the low income people.
- Government policy is more focused towards promoting the house ownership whereas renting part is been seriously neglected.
- Verbal contracts are not uncommon leading to insecure tenure relationship.
- Tenants are less motivated to join community projects and only the owners are assumed to be local residents. Similarly, the community organizations which are mostly dominated by owners also ignore the tenants in community development works.

The poor cannot solely develop every aspect of their own shelter through their own efforts, because they lack the economic and or political power. In such a case Public/Private partnership is one of the best tool for assisting the urban poor in dealing with these aspects of the shelter process. Hence, PPP is considered to be a broader policy recommendation for the support and improvement of rental housing of the urban poor.

Thesis Title: **CLIMATE CHANGE AND CITIES: A
CASE STUDY OF KATHMANDU
VALLEY SETTLEMENT**

Submitted by: **Sudeep Kumar Shrestha**

Supervisor: **Prof. Dr. Jiba Raj Pokharel**

ABSTRACT

Inching attention is being given to the climate change phenomenon in the Himalayan regions of our country for its consequences such as glacier/snow melting and GLOF. Similarly some research has been carried out in our country on the impacts of climate change on agriculture, health, and water resource sectors. But little consideration has been given to the causes of climate change in cities and its impacts on urban dwellers and urban areas/ cities itself, although the rate of urbanization has been increasing constantly and despite the fact that urban areas has a lion's share in the national GDP. With the rise in urbanization and growing dependence on fossil fuels to carry out various activities, the human interference on nature and climate system has been increasing and it has been resulting in climate change. People and cities are already facing extreme weather events and the negative consequences resulting from such a phenomenon.

It has thus been imperative to carry out a study on the impacts of climate change on cities and the contribution of cities towards climate change. This thesis examines the causes and impacts of climate change on the cities and vice versa in the settlements within Kathmandu valley. In this context, two case study areas with the valley are selected; one is the traditional settlement of Khokana located at the urban fringe in Lalitpur and other is the newly emerging sub-urban settlement of Nayabazaar Landpooling area in Kathmandu. The two types of settlement with different form of planning and characteristics along with varied lifestyles of the inhabitants are chosen with an assumption that the knowledge gained from these could be generalized to other similar settlements. The research is focused on the contribution of three sectors viz; Building, Energy and Transport on the production of GHGs and to the climate system as a whole. In this regard the perception of the local people on the issue of changing climate are also collected and analyzed.

The main findings reveal that these two settlements vary in terms of the above mentioned sectors. The analysis of climatic data of Kathmandu and both settlements of study areas shows that the climate is changing in these places but only the degree is different. The form of planning and landuse of the settlement along with the lifestyles of inhabitants causes a major variation

in the production of GHGs. The compact and mixed landuse leads to less dependence on automobile for commuting as that of Khokana whereas reverse is true in case of Nayabazaar LP area. The use of traditional building materials for various construction purposes and vast area of surrounding agricultural field with green cover has contributed to less heat island effect in Khokana but the dependence on biomass such as firewood, plant remaining and animal dung for cooking seems to contribute a lot towards emission of GHGs. The use of CNG for cooking and certain use of solar energy in Nayabazaar can be taken as a positive attempt. The findings also shews that traditional concept of city planning of Khokana was responsive to the climate where as modern settlement of Nayabazaaar LP area lacks such planning philosophy.

Based on the findings, the positive aspects of city planning from the traditional settlement of Khokana and modern settlement of Nayabazaar LP area are incorporated together and recommendations are made to develop their resilience towards climate change. General recommendations are also made so that it could be equally applicable to the other existing cities and while planning new cities in our country, as till now no consideration of climate change is made at city level Thus, it has become imperative to integrate the issues of climate change in

urban planning process and achieve an urban development that is responsive to the changing climate.

The urban planning process consists of three staged process of analysis, synthesis and evaluation. Earlier, the urban planners around the world used to design and plan the cities based on strict zoning principles that only led to automobile dependent communities. So, in the present scenario of changing climate, it is necessary for the urban planners to design cities which emphasize mixed use zoning. To develop such climate friendly cities, urban policies in terms of landuse and zoning regulations, building/planning bylaws, energy and transportation policies are presented. Different mitigation and adaptation strategies along with different possible sound practices are also proposed. Special attention has been given to the use of technologies based on CDM and energy efficiency, harnessing renewable energies, sustainable and climate friendly transportation, and the urban planning approach to design a city for people rather than for vehicles is emphasized. In this regard the concept of “smart growth” for planning and designing of new and existing communities/cities is put forward. Smart growth is an urban planning approach that concentrates growth in the center of a city to avoid urban sprawl; and advocates compact, transit-oriented, walkable, bicycle- friendly land use and mixed-use/compact

development. Smart growth values long- range, regional considerations of sustainability over a short-term focus. It also emphasizes the changes in building and planning bylaws/ regulations to allow increased height and density thereby reducing the ground coverage and increasing open spaces/soft landscapes.

**Thesis Title: IMPACT OF SPATIAL
TRANSFORMATION DUE TO
EXISTING URBAN LAND
MANAGEMENT**

Submitted by: Yogesh Purna Chhetri

Supervisor: Dr. Mahendra Subba

ABSTRACT

This research entitled “Impact of spatial transformation due to existing urban land management a Case of Kathmandu Valley” is an attempt in the fulfillment of the academic requirement towards the completion of the Master of Science Course in Urban Planning of Tribhuwan University. The study attempts to disclose the state of 'Building Permit Administration and Enforcement (BPAE) System in Kathmandu Valley' and to study its association and relation with the urban development pattern.

The general objective of the proposed thesis is to identify the impact of the prevalent planning and building permit administration and enforcement system on the urban development pattern.

Through the household surveys in three different pockets with different hierarchy of urbanization, viz., Khurnaltar - the area

within the Lalitpur Sub-metropolitan City, Harisiddhi - the urban extension area (urbanizing VDC) and Taukhel - relatively farther VDC interviews with stakeholders, physical field survey, study of several maps of the locations, the empirical research tries to generate the extent of the prevalent planning and building administration and enforcement system affecting the urban development pattern.

Similarly, through the inferences of the literature survey and the view of several experts, the normative research tries to answer in the form of modality, the way to improve the current building permit administration system.

Through the literature surveys and study of the experiences of building permit administration and enforcement system in the foreign countries, the relationship between the complexity and the length of the approval process with the development pattern of the neighborhood and similarly, the relationship between the coordination of the responsible institutes and the development pattern are expected to come as an output of the research.

“BuildingPermit” in our context can be superficially defined as the legal permission to start the construction of the entire building project; extension of the building part or any construction over-ground including the construction of the plot

boundary wall. However, as a planner, the phenomenon had to be studied in broader perspective. Hence, the building permit system here is tried to study as a tool for enforcing plans and obtaining the output on land as expected. In the course of study, buildup permit administration and enforcement system is realized to have vital pre and post phases.

It is inferred that in order to address a wholesome urban transformation viz. the land fragmentation, residential development, landuse changes, infrastructure development within the entire Valley, we have several institutions with different level of capacity to deal with the single principle of Building Permit.

In case of Khumaltar (Case Study Area I) which is within the municipality jurisdiction, two different institution viz. Lalitpur Sub-metropolitan City (LSMC) office guided by Local Self Governance Act (LSGA), 2055 B.S., Regulation, 2056 B.S. and Kathmandu Valley Town Development Implementation Committee (KVTDIC), Lalitpur guided by Town Development Act (TDA), 2045 B.S. and both being guided by Building Byelaws, 2064 B.S. are actively involved in the BPAE.

The requirement of Building Permit for credit facility viz. bank financing and the Building completion certificate for the connection of basic infrastructure viz. water supply, electricity and for the loan facility against the building as collateral, for buying and selling building itself are also bracing the BPAE system.

Whereas in case of Harisiddhi (Case Study Area II) and Khumaltar (Case Study Area IE), immediately outside the municipality boundary, only Village Development Committee (VDC) office guided by LSGA, (in case of Harisiddhi also guided by Building Byelaws, 2064 B.S.) with very weak institutional capacity has whole sole responsibility of BPAE system Even in case of VDCs the requirement of Building Permit for credit facility is bracing the system.

Khumalheight (Arun Tole) reflects highly successful rate of building permit and accounts the development pattern of the neighborhood with developed GLD roads. Taukhel represents two different scenarios in two distinct pockets; one (the old ones) entirely without building permit and the other almost all with building permit. Here self awareness seems more responsible for the state rather than the formal BPAE system itself. Whereas Harisiddhi with almost all indigenous people reflects highly

unsuccessful rate of building permit being overconfidence on being aboriginal and accounts the illegal and underserved development pattern of the neighborhood.

Degree of urbanization tends to decline as we move away from the core. The institutions responsible for the development also change from municipalities to urbanizing VDCs and to the remote VDCs. With the changing hierarchy of the authorities, there is a decline in institutional capacities.

Within the inner fringe of the municipality, GLD plan is found demarcated in the cadastral map whereas as we move further apart towards the VDCs we do not find any extended plan. Proper implementation of BPAE system combined with the physical plan like GLD have resulted in the buildings with wider access and adequate setback adding the scope of farther widening in future in these areas, In the outer fringe next to the old settlements, the ownership pattern with dominantly includes Guthi land (social trust) tends to influence the development pattern. This has lead the people to construct their house illegally in the Guthi land that is without building permit.

Effective BPAE system in the inner fringe is also due the people's attitude towards it as the mandatory legal process. In the

outer fringe people including the authority do not take BPAE system as mandatory. However, new migrate communities are pursuing for the BP A system, more for the reason of ensuring ownership security. Especially the place where the migrant households dominate in composition, irrespective of the nonexistence of mandatory BPA system due to the social awareness and literacy, are coming up with the new development with wide enough roads consistent with the bye-laws standards.

**Thesis Title: AFFORDABLE HOUSING IN
 KATHMANDU: A STUDY OF
 IMPLEMENTED PROJECTS**

Submitted by: Ritu Raj Rai

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT

The growing trend in developing countries suggests that urban areas will account for most of the population rather than the rural areas. At an urban growth rate of 6.65 % a year, Nepal is one of the fastest urbanizing countries in South Asia, although by global standards, only about 14.2 % of the country is urbanized at present. The capital city of Kathmandu has been witnessing this huge rate of urbanization which has been taking its toll on the services and the environment of a city that is facing huge challenges, with ever-growing demands being made on it, in the areas of water-supply, sewerage, solid waste disposal, vehicular traffic, electricity supply, deterioration in the environment (air pollution and noise pollution), to name a few.

However, since urban centers are the hubs of national growth and production as well as consumption, and people will continually flock to the cities in search of better opportunities, we must accept the process of urbanization as necessary and inevitable.

The new migrants and the urban poor face tough challenges: they have to deal with very real problems of finding employment, suitable housing, and educational facilities for their family members. Man's basic three needs are fooding, clothing and shelter. One of the physical manifestations of population growth, which also is an indicator of urban growth, is the number of housing units in a given urban area.

In the last decade there has been an explosion of private housing in Kathmandu. However, these facilities cater to the middle and upper income groups. But for the urban poor, there are practically no formal housing schemes to avail of, and informal independent housing is fast becoming very expensive. This thesis has tried to study the less explored area of “affordable housing” and looks at the few examples of affordable housing (both group housing and independent housing) that have been done in Kathmandu valley in the recent past. The purpose of the study is to find out what lessons can be learned, so that viable and sustainable solutions can be replicated in other urban areas of Nepal.

**Thesis Title: INTEGRATED TRANSPORTATION AND
LAND-USE PLANNING FOR PLANNED
DEVELOPMENT: A CASE STUDY OF
KATHMANDU-BHAKTAPUR
CORRIDOR**

Submitted by: Rabin Shrestha

Supervisor: Dr. Padam Bahadur Shahi

ABSTRACT

Kathmandu metropolis, the commercial hub of the country, is witness to huge population growth particularly due to in-migration over the decade. There by the city is ever expanding to accommodate the increasing population. The city has expanding at a rapid pace without proper plan to guide the development. Therefore more and more land has been converted into built up areas. The growth puts more and more pressure on the existing transportation system of the Valley which can hardly cope with explosion in number of vehicles. Sprawl along the fringes also puts added pressure as people have to travel to and fro between their residential areas to commercial and work places mostly located at city center. This development trend stretched the public transport to its limits; hence, it became an earnest matter that solicits resolute action to sustain the development in the city where work requires substantial journey.

A transportation system can improve the economy, shape development patterns, and influence quality of life and the natural environment. Affordable and efficient transport is central to development as it facilitates access to different amenities, in the absence of which quality of life suffers. Moreover, without physical access to resources and markets the process of growth stagnates. Whereas, inappropriately designed transport policies and programs can aggravate the conditions of the poor and harm the ecosystem.

Also, land use and transportation are symbiotic: development density and location influence regional travel patterns, and, in turn, the degree of access provided by the transportation system can influence land use and development trends. Urban or community design can facilitate alternative travel modes.

An orthodox solution focuses on improving the physical infrastructure of the transport sector to enhance the service provision by constructing highways, extending road-networks and increasing the fleet number. However, despite the effort, the problem proliferated and reached a critical level as demonstrated by congestion, deterioration of air quality, etc. Therefore, this research takes a different approach than the traditional to sustain

the development by integrating land-use and transport policies of the city, thus, decisions are complementary rather than contradictory. After all, they are crosscutting issues since transportation decisions affect land-use patterns and land-use decisions affect travel demand and mode choice, Therefore, Horizontal, vertical and interterritorial integration of policies and co-operation among authorities help sustain the development process.

The general objective of the study is to identify the need for integration of transportation and land use for proper development of the Valley as well as emerging areas. Kathmandu- Bhaktapur transport corridor is experiencing rapid urban expansion and more and more people have migrated to these areas. The research explores situations in two areas along the corridor: Gathaghar and Suryavinayak Chowk. The research explores the impacts and changes through spatio-temporal data/maps and according to land holdings, prices and land use changes.

The main research instrument was household surveys conducted at these two locations to identify prevailing growth trends and impacts of transportation on land use and vice versa. Besides surveys, interviews were conducted with authorities involved in land use and transportation planning and policy formation, to

identify plan formulation, implementation and enforcement mechanism and policy gaps present in the system. Inferences were drawn from literatures to support the need for integration. The data was collected from the government record (secondary information), through primary survey and interviews. The collected data were tabulated, plotted and analyzed for the research. Past, existing plans and policies and practices were reviewed and related them with current practices in the Valley.

This research reveals there is lack of policies in both land use and transportation, particularly for urban areas. Absence of land use plan and proper documentation also aggravated problems caused by prevailing development trend which is more individualistic in nature than policy and plan driven. Authorities involved in strategic planning of roads, Department of Roads, and in land use, Town Development Committees have no information sharing mechanism and thereby plans do not identify and integrate land use or transportation element in plans/policies prepared by respective authorities. Poor institutional arranging and capacity is therefore evident which affects service delivery of the agencies.

Furthermore, the research also reveals that informality and market forces predominantly govern the spatial structure of the city. Availability of cheap land is followed by housing

developments. The construction is highly individualistic in nature. This is also demonstrated by development that can be observed along the whole length of the corridor. This has added pressure on two lane highway, resulted in an increasing travel demand that is beyond the capacity of the urban transport providers who are characterized by lawlessness and confusion.

In addition, there have been marked land use changes in the area. More and more land used for agricultural purposes has been converted into built use. There are no land use document and sub-division controls to guide the development. Sustainable use of land is therefore an issue that needs to be addressed properly.

Therefore, it can be concluded that there is no integration of transportation and land use in the Valley and their relationships is not recognized by the authorities, even though plans such as 2020 recognizes its importance and attempts to direct activities accordingly. Therefore there is an urgent need for integration of various departments of the government that shape the city scape. The integration helps the poverty reduction process in all aspects by promoting synergy, reducing duplication and inconsistency, and maximizing the effectiveness of policies and service delivery processes while stimulating economic development and social inclusion by creating different opportunities for the people,

empowering the poor and enhancing safety/security. This can be considered as a major force to realize a planned and sustainable development. For which the existing institutional setup shall be modified in such a way to facilitate integration. Also, there is a urgent need for policies relating to land use in terms of densities, mixed zoning, subdivision controls and economic incentives in such a way as to attain development in relation to the transportation linkages, and those relating to urban transportation.

**Thesis Title: SEISMIC VULNERABILITY
ASSESSMENT FOR URBAN
SETTLEMENT**

Submitted by: Raj Kiran Basukala

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT

This thesis attempts to know seismic vulnerability of people of Bhaktapur Municipality by- proposing different vulnerability assessment technique, and also attempts to recommend a general framework of mitigation measures including measures specific to Bhaktapur Municipality. The thesis therefore hopes to contribute to current understanding on seismic risk and vulnerabilities vis-a-vis also improve upon the current policies and practices pursued in seismic risk management and planning.

The research strategy sets out by examining both empirical and normative questions. The empirical investigation aims to generate understanding and create knowledge on various disaster associated terms such as hazards, risk end vulnerability. And the normative investigation tries to examine the policy context and the prevailing practices. The earthquake induced losses of both human and properties are estimated using computer model called RADIUS. For the analysis purpose, the earthquake scenario is

taken from the past study carried out by JICA. An attempt is made to see association of social and cultural vulnerability through the data analysis of household survey.

The main finding reveals that vulnerability of people against seismic risk is resultant of complex interplay among several causal factors namely physical, social, cultural, economic and locational factors. The Bhaktapur Municipality therefore regardless of its location is susceptible to seismic vulnerability, although magnitude of loss - whether that be building or infrastructure damages or human casualties appear to vary deep ending on the soil conditions, quality of buildings, income status and awareness level of households, and the institutional capacity of the municipality itself. Damage of physical assets - whether that be housing or municipal infrastructures tend to be higher in the case where soil type is soft alluvial, building constructions are taller or of low quality and households have lower education level and vice-versa. The thesis finally recommends a set of mitigation measures comprising of zoning, enforcement of building code and regulations, diversifying economic base and capacity building of the Bhaktapur Municipality.

**Thesis Title: COMMUNITY RENEWAL:
REVITALIZATION OF TRADITIONAL
TOWN (A CASE STUDY OF SIDDHIPUR
V.D.C., LALITPUR)**

Submitted By: Rajani Shakya

Supervisor: Dr. S.R.Tiwari

ABSTRACT

Revitalization, renewal and redevelopment of traditional community of Siddhipur are essential to celebrate its history, preserve culture, enhance environment, reinforce social harmony; and strengthen the economy. It is much needed to change the paradigm of present day's development practices, which emphasize individual actions with no relationship to the context of community to a format of development where each individual are motivated and inspired to contribute to a community context and life style.

In developing countries like Nepal, the process of community renewal is still relatively new. The weak economic situation and political instability may be considered as one of the major drawbacks for the renewal process. Through the passage of time the history is progressing and the traditional town of Kathmandu are in a process of transformation. The quality of historic cities is

degrading and declining in terms economical, social, environmental and cultural aspects. Hence, community renewal is necessary for the revitalization of traditional town for the sustainable future.

For this thesis research a traditional town of Siddhipur V.D.C., Lalitpur, a small sleepy town just outside the bustling city of Kathmandu is taken as an area for community renewal and redevelopment. Community renewal has been operative since humans first built permanent settlements. Following the progress of history and through the passage of time, this tradition town Is in a constant process of metamorphosis and unavoidably has to face the necessity of continuous regeneration so that sustainable community can be established for sustainable living with focus on socio-cultural, economic and environmental sustainability.

A case study of traditional Siddhipur Community reveals that the Siddhipur is degenerating due to the economic, socio-cultural and physical problems. ‘Community Renewal: Revitalization of Traditional Community (A Case Study of Siddhipur)’ can be interpreted as a valid attempt to implement community redevelopment to create sustainable communities/places to bring the historicity back into the life. All in all, this brings healthy life choices and a quality of life in national Siddhipur with improved

environment, reinforced socio-cultural atmosphere, with appreciation for the age-old cultural tradition and enhanced economical conditions.

Graduation Year 2010

**Thesis Title: INTEGRATION OF PEDESTRIAN
 PLANNING INTO URBAN
 TRANSPORTATION SYSTEM: (A CASE
 STUDY OF TUDIKHEL AREA OF
 KATHMANDU)**

Submitted by: Naresh Giri

Supervisor: Dr. Pdma Bahadur Shahi

ABSTRACT

Introducing the context, the emergence of pedestrian planning in the global back drop has been associated with the growth of transportation technology vis-a-vis urban form. The current trend of urban form at reurbanization stage has accentuated the need for the pedestrian oriented planning. Although there is remarkable progress in this regard in the developed world, it is often ignored in developing countries. In this context, the scenario of Kathmandu has been elaborated and found much to be desired for effective pedestrian planning. The diversity of pedestrian problems for better walking in Kathmandu has given rise to the major research questions for evaluating the existing pedestrian facilities in a major transport hub of the city and seeking ways to strengthen the integrated pedestrian planning

into urban transport system. For selecting study area, criteria like the major transport hub, nearness to the commercial area and pedestrian vulnerability have been considered and Tudikhel has been found to be suitable site for the purpose.

The conceptual frame work has been formulated by identifying three variables; Walking environment, Pedestrian characteristics and Flow characteristics. The literatures related with these variables have proved further validation of the research questions. An analytical framework has been drawn followed by formulation of a research design which provided identification of different variables in the research questions and data sources necessary to arrive at conclusion. The research methodology suggested carrying out the evaluation work by collecting qualitative and quantitative data at the field. Qualitative data has been mostly linked with assessing walking environment and expectations from the pedestrians where as the quantitative data provided the flow characteristics associated with LOS, Capacity and Degree of Saturation of pedestrian space.

A brief background of study area of Tudikhel has been provided with change analysis incorporating Changes in Land use, Transport use and Pedestrian use. Funneling down to pedestrian planning, the study has been focused at the site collecting primary data through questionnaire survey and observations.

The retrieval of qualitative and quantitative data have been surveyed and observed at the major stations like NAC, Ratna Park, Bir Hospital - Ratna Park segment, Old Bus Park, Shahid gate, Pedestrian way between Bir Hospital and Old Bus Park, Pedestrian overhead bridges at Bhotahiti and NAC.

**Thesis Title: TREND STUDY OF CHANGES IN A
TRADITIONAL TOWN: A CASE STUDY
OF "NAGADESH"**

Submitted by: Nhasala Sayami

**Supervisor: Prof. Dr. Jiba Raj Pokharel, Mr. P.S.
Maharatha**

ABSTRACT

There are many such settlements in Kathmandu Valley and in its surrounding area like Sankhu, Lubhu, Khokana, Nagadesh, Kirtipur etc. which has undergone dramatic change as effect of Urban Transformation. The main cause of urban transformation in Kathmandu Valley is rapid population growth. Alarming high pace of urbanization- causes negative cyclic effect.

City or town in the past has linkage with agriculture. This is because; it made denser human population possible thereby supporting city development. With time, transformation is natural process. Transformation/change is complex and multidisciplinary aspect. Transformation in physical entity is tangible aspect and does not appear alone. It is always linked with intangible aspect (Socio-economic and cultural aspect).

Nagadesh is one of such towns which are on the process of urban transformation. It is medieval town located in the western part of Bhaktapur district under Madhyapur Thimi Municipality. It is Newar settlement and vegetable farming is the main occupation. In the case of Nagadesh, vanishing of cultural heritage and rapid and uncontrolled depletion of agricultural land into built up areas can be taken as possible negative effects of rapid population growth in the valley. Essence of traditional ambience is still there which is marked by existing traditional urban elements and spirit of the place. But change has started there but in small scale.

Transformation is natural phenomenon in every settlement. It has causes and effects. Negative effects of transformation can be regulated if it is timely managed with compatible intervention and preventive measures. This thesis has tried to find out trend of possible change and its causes and effects in Nagadesh. Objectives of the thesis are achieved through questionnaire survey as primary data and other relevant secondary data.

Analysis regarding responses from primary and secondary data shows the relation between agro based socio- economy and existence of traditional ambience. Physical transformation in the study area is found to be guided by transformation of cultivable

land into residential plot development and other development intervention.

**Thesis Title: REVITALIZING NALA THROUGH
COMMUNITY BASED TOURISM**

Submitted by: Gyanendra Maharjan

**Supervisor: Mr. Padma Sundar Joshi, Ms. Sudha
Shrestha**

ABSTRACT

Old Newari towns are earlier settlements of Kathmandu Valley and its surroundings are usually compact and dense. Traditional characters and functions of such old towns are declining these days as a result of rapid changes in technical development, population growth and new life styles. In case of Nala, it was once a major inn on the trade route to Tibet and India. Later Kalingpong linkage and the construction of *Arniko highway in 70s'* reduced trading activities from Nala to Tibet, resulting severe damage on town's economic viability. The town started to degenerate resulting poor condition of the existing traditional stock of housing, monuments, heritages. It has given the town an untidy look.

Socio-cultural activities, historical Cave, unique temples, unique Jatras and tradition of Newar community etc. are some of the major attractions not only to domestic and international tourists but also to historians and anthropologists. On the other hand, it is

located in close proximity to the famous tourist spots such as Nagarkot and Bhaktapur. This helps the area to be developed as a 'Tourist destination' and could be a source of income for the local people after revitalization.

From the analysis of the major issues of Nala, it is clear that tourism and agriculture are two sectors that have major potential in the area. These two sectors will create various economic opportunities which will consume many local people and obviously, level of unemployment will decrease. Better economic opportunities will lead to increased income and hence increased affordability. This ultimately leads to the increased contributory capacity of the local people through which conservation can be done. In this regard the prevailing and emerging trend has been analyzed and concluded that community based tourism is one of the sectors that have high potential for generating income in Nala. Similarly for the revitalization of the town based on community, institutional development and women's participation are also the inevitable factors. So, women should be empowered through conduction of skill development trainings particularly in hospitality and accommodation sector to the local community. Furthermore, local entrepreneurs have to be well trained on operations and management of their businesses.

Thesis Title: **A COMPARATIVE STUDY OF
TRADITIONAL AND EMERGING
URBAN SPACES (A CASE STUDY OF
BHAKTAPUR MUNICIPALITY)**

Submitted by: **Bishow Ram Prajapati**

Supervisor: **Prof. Dr. Sudahrshan Raj Tiwari**

ABSTRACT

Kathmandu valley has been undergoing rapid urbanization during the last three decades. As much of the land is privately owned, the process of urbanization is adhoc basis development. To supply the planned urban land demand in the valley, KVTDC and municipalities started various housing and land development activities. Similarly, the private sector has been crucial involvement in urban land development. In Land Pooling technique, access to each plot and regular geometrical shape of plots are only considered. Generally, every road and nodes are repetitive in design that's why there is the absence of identity of that node and street.

In traditional town, streets were classified on the basis of its socio-cultural function rather than on the basis of width, and signified the hierarchy of streets as per its functional use. The square particularly signifies the ways of the public open spaces

for the social interaction. A distinct set of squares with a clear hierarchy of social and cultural activities can be ordered as per public use.

The street and square of traditional neighborhood is somehow successful to respond identity of place through the characteristics of urban forms, activities taken in urban spaces and people's perception on street and square. The urban street and square has unique features which makes the street and square distinguishable from the neighboring urban spaces. Characteristics of physical urban form is characterized by figure-ground relation, form of building typology, hierarchy of urban spaces, shape, size and scale of urban spaces. Similarly, the activities taken in urban spaces are evaluated on the basis of linkage, public-private space relationship, socio-cultural and economic activities. The perception of place is basically studied on the basis of sense of place and image-ability of place. So, the comparative study of traditional and emerging urban spaces is substantial to understand the issues for identity of place in neighborhood. Identity of place is the qualitative milieu of space to live.

Thesis Title: **IMPACT OF HIGH-RISE RESIDENTIAL
APARTMENT ON URBAN
ENVIRONMENT (A CASE STUDY OF
KATHMANDU VALLEY)**

Submitted by: **Yujala Bajracharya**

Supervisor: **Mr. Ajay Chandra Lal**

ABSTRACT

The rapid pace of urbanization in Kathmandu valley today is greatly increasing the demand for shelter, infrastructure, employment opportunities and social services. Of all the activities carried out in urban areas, housing activities cover the maximum land use. The private sectors are involving to grab the opportunities and are developing a numbers of housing and high-rise apartments in the Kathmandu Valley.

This thesis research is more focused on the social and physical environment of present high- rise apartment in the Kathmandu Valley. For this, three separate high-rise apartments are taken as a study area. The people of the apartment, their profession, education background etc are studied. The common facilities like community hall, fitness area, health treatment facilities etc are the essential factors which constitutes and support the social environment in the high-rise -apartment. Further the design

concept, layout and spatial relation between family level, neighbor level and community level are essential factor which indicates the level of social environment.

In the same way, physical environment is indicated by the water supply, drainage system, solid waste and traffic congestion which can be impact in near future by the haphazard development of the apartment in the urban city. The main aim to study on physical environment is to find a relationship between indiscriminate construction of high-rise residential apartments, existing infrastructure and the environmental condition of a city as in the present context apartments have been allowed to be built anywhere and everywhere without prior study of their immediate or long-term effect on the urban environment.

**Thesis Title: PARKING MANAGEMENT FOR CBD
 PLANNING (A CASE STUDY OF
 KATHMANDU, NEPAL)**

Submitted by: Prem Bahadur Thapa

**Supervisor: Mr. Padma Bahadur Shahi, Mr. Ajay
 Chandra Lal**

ABSTRACT

Urbanization and motorization are occurring simultaneously for the cities like Kathmandu. Haphazard urbanization and lack of sufficient physical infrastructure, urban life is becoming more and more difficult. Specially, urban centers are heavily congested by the growing vehicular traffic. One of the problems created by road traffic is parking. Space is most scarce and valuable in central business districts of any city. Planning and management of such scarce space is most important issue for the urban planner. A systematic study of parking characteristics and demand and regulatory measures that are possible for controlling parking is a great need for the city planners. Some of the ill effects of parking are traffic congestion, accidents, obstruction of emergency-vehicle, environment. Managing parking, we could overcome these ill effects and get social, economical and environmental benefits by making city centers livable and user friendly in terms of space management.

While stating the problem of parking it is necessary to mention the shift of paradigm. It is the shift of old by new paradigm. The parking problem according to old paradigm is 'inadequate parking supply' however, according to new paradigm insufficient management of parking. For the parking, study proposes the city centre (New Road area) of Kathmandu has been taken as the case study. The area is considered as the heavily congested place in Kathmandu. Besides this, newly opened shopping complexes are other places of the high demand for parking. Lack of sufficient parking spaces and unmanaged services has significant impact on the business impact of the CBD.

Based on the above theoretical framework and the policy and practices and the parking demand characteristics, and its impacts on business and other activities on and around our CBD the research question for the study purpose has been set in two ways; first the policy and practice and the second the matter of management. Thus, the research questions for the study propose are;

How to integrate parking policy with urban space management at CBD? And; What would be the parking management strategy for CBD?

The parking location; the study shows that, the highest share for the parking is on street parking in and around the study area. It takes 41% share, whereas 17% shares are taken by the public spaces and another higher share for parking spaces used is Heritages sites.

The parking time; As the CBD is crowded day by day, the problem of parking is also increasing day by day. After the study it is concluded that the concentration of parking in a business center is between 12:00 to 15:00 hours. It shows that the peak time parking is at that time. Therefore, the main peak parking demand is in between 12:00 to 15:00 hours for motorbike. Further, the maximum of Bike parking is done in between 12:00 to 15:00 hours.

As the case study different business complexes were studied and concluded that the Motor Bike is the major used vehicles of the Kathmandu city. It takes a high share (79 % at Kathmandu Mull and 84% at UWTC) out of all type of vehicles at a basement parking of Kathmandu mull and UWTC.

This thesis reveals that the parking problem of the CBD area against the Transport management is resultant of complex interplay among several factors namely location of the parking area, time of the parking, type of the vehicles for parking, the in

and out hours and numbers of the vehicles for parking, the peak demand for parking and the parking duration behavior of the vehicles. The Newroad CBD area, whether it is on street parking or off-street parking; the parking behavior pattern of the vehicles are the complex phenomena. The parking duration of the vehicles are directly related to the weekdays, lesser the parking duration for working days while longer the parking duration for weekend and holidays. Similarly, the peak demand hours for Parking is almost same for all type of private vehicles, where as it is different for goods carrying vehicles.

**Thesis Title: PRIVATE LAND DEVELOPERS AND
THEIR CONTRIBUTION TO URBAN
LAND MANAGEMENT (A CASE STUDY
OF PRIVATE LAND DEVELOPMENT
PROJECT IN KATHMANDU VALLEY)**

Submitted by: Hiral Lal Mahato

**Supervisor: Prof Dr. Jiba Raj Pokharel, Mrs. Sangeeta
Singh**

ABSTRACT

Kathmandu Valley is a rapidly urbanizing capital region of Nepal. The urban population 1.5 million is growing at the rate of 4.67 per year. As a result land plot demand in the valley is increasing. Main causes of demand pressure are migrants from outside, household member decreasing in valley and large number people living in rent. These are the most potential buyer of Private land transaction and huge amount of remittance is also invested in land.

Land needed for population density 300 person/hectare and required land is 3600 hectare for 20 years 2057-2078 B. S. (source-TDC) in Kathmandu valley and public sector alone can't succeed in fulfilling the demands because till date government has provided serviced land only 150.28 hectare which is a very

few quantity. The remaining needed land is fulfilled by the private developers (may be registered co. or may not). There are two types of land development systems in private sector. They may be registered company or real state and individual. Private groups are found to be active in this business in the Valley. Public sector alone can't succeed in fulfilling the demands. They have to work as a facilitator to promote private sector rather than self-being the implementer. Thus private land developers are playing big role to develop urban land.

This study has made an attempt to study private land developers. During discussion they have mentioned the procedure, problem and suggestion to improvement the work.

Main problem of the private land developers were demarcation of land, donation from people, lack of Act. There has been some technical weakness in subdivision quality. Plots without basic infrastructure demands more investment to rectify the problems. The work is more profit motive in short period. There exist financial and legal problems in business. Some legal problems in land development are , private sector have no right to land acquisition, no legal encouragement to real estate business and no legal status of advance payment and agreement before

transferring ownership. There is no institutional support to land developers.

Thesis Title: GROWTH DYNAMICS OF URBAN SUB-CENTERS (A CASE STUDY OF GREATER KATHMANDU)

Submitted by: Shashindra Ghimire

Supervisor: Prof Dr. Sudarshan Raj Tiwari

ABSTRACT

Nepal is one of the least urbanized countries in the world. In 2001, the last year for which reliable statistics are available, 14% of the population lived in urban areas. However, the rate of urban growth has been fast in recent decades: the rate of urbanization increased markedly from the 1970s onward and is among the highest in Asia and the Pacific. Between 1952 and 2001, the number of formally designated urban centers grew from 10 , to 58, with a corresponding increase in urban population from 0.2 million to 3.2 million; a sixteen-fold increase.

Urbanization has not occurred evenly throughout the country. Kathmandu, the capital city, is the main urban center and dominates in terms of concentration of population and economic activities; it has been growing at a very high annual rate in excess of 7%. Within this greater urban region which comprises five municipalities and ninety-seven village development committees, have many sub-centers. Within this political

demarcation, the urbanization is continuously expanding from the city core region to the adjoining VDCs. This expansion of city has been crossed the boundary of municipalities. This can better understand in the case of two municipality viz. KMC and LSMC, where two cities are almost joined and have closely linked with different urban functions. So the concept of Greater Kathmandu evolved in 1985, is now being contextual that it shows the large agglomeration of urban pockets.

Within this urban center (Greater Kathmandu), many sub-centers lower in hierarchy than the center (CBD or city center) are increasing in numbers and growing in size also. This thesis examines the causes and process of growth of sub-centers within the Greater Kathmanu. The growth dynamics (causes and process of growth) has been examined in three ways; physical growth, functional activities and linkages among sub-centers. The growth dynamics of sub-centers, which is interwoven within these three parameters, has been tested on eight sub-centers viz. Kalanki, Balkhu-Sanepa, Lagankhel, New Baneswor, Bhatbhateni, Narayangopal Chowk, Gongabu bus park area and balaju Chakrapath area.

Physical growth reveals on the spatial expansion of city boundaries, its densification and vertical growth of buildings. In the same way the growth of urban functions has been examined

with the increase in functional activities, retail and wholesale business, banking, government and non government institutions, transport etc. the interlink ages among sub-centers has been tested with connectivity, the mobility of vehicles and people, flow of goods and services within the urban region mainly within sub-centers.

The growth of a particular space as and urban sub-center has been initiated by road connectivity, surrounding population growth, proximity to the center and presence of large institutions and politically powerful persons. The size of the sub-centers Gongabu, Narayangopal Chowk, New Baneswor and Bhatbhateni are larger than other fours. Within which the New Baneswor has more diversity in functions and growth of business complexes is higher. The Gongabu, which is also has compact and larger is size has less diversity of functions. Narayangopal Chowk is also growing introduction of large business houses has been started and urban functions are increasing. The Kalanki, Balkhu- Sanepa, Bhatbhateni and Balaju show the younger stage than others. The introduction of new functions is increasing, the built form is just changing and the specialized commercial buildings are either just introduced or are waiting for that. The commercial complexes and office buildings gives the idea of increasing economy and potential of the area. As the business

activities become more specialized, the new shopping activities bring the costumers within the single roof having large and variety of items. The vanishing of residential activities within the center, vertically increasing of retail businesses and space for parking within the boundary of complexes gives the picture of modern trend of growth of urban centers. Similarly, the connection of sub- centers within the city region and also with the rural area adds the growth potential with the area. The more connectivity and mobility of the center makes the more accumulation of costumers. The opening of new brands show rooms, super complexes and different facilities within the shopping area has attracted more costumers with large hinterlands. The theories of sub-centers growth has been tested with these case studies. The theory of urban growth, developed in the west is also partially true in the case of Kathmandu. The different socio-economic condition of Nepal than the west reveals the growth pattern. The urbanization caused by push factor rather than pull in Kathmandu have more social and economic implications rather than physical infrastructures and urban amenities. The retail location theory, comprising central place theory, spatial interaction theory, land value theory and principle of minimum differentiation are equally prominent in our cases also.

Graduation Year 2011

**Thesis Title: IMPACT OF INFORMAL STREET
 VENDORS ON MIGRANT POOR (A
 CASE STUDY OF STREET VENDORS IN
 THE URBAN CORE OF KATHMANDU)**

Submitted by: Anu Kushma

Supervisor: Dr. Mahesh Shrestha

ABSTRACT

Lack of gainful employment coupled with poverty in rural areas has pushed people out of their villages in search of better existence in the cities. Because of the economic backwardness in rural areas coupled with the insurgency in the country, massive influx population- largely to most of the Terai urban centers and in Kathmandu is apparent. This urban population is not fully integrated to the formal economy in the absence of specific policies towards migrant population; therefore, the informal sector has become the only rescue boat for the endurance of this population. Studies show that there is a strong association between incidence of urban poverty and number of people working in informal sector and that the poor people have a high probability for being engaged in this sector.

Cities are primarily considered as engine of economic activities and generator of employment. In the urban sector most of these informal sector population is urban poor. Street vendors are important part of informal sector. Vendors seek their subsistence through either utilizing unused public or private places or encroaching public spaces. They choose strategic locations where their potential buyers pass through. In case of Kathmandu, informal sector, including street vending activities are increasing with increasing rural to urban migration. But Issues are contested whether informal economy is an opportunity to urban poor or challenge for urban governance. On the one hand informal economy in the cities of developing countries has become an opportunity for work and employment to poor, on the other hand it has created several problems for urban governance. In spite of its crucial role for providing employment and livelihoods to both urban and rural poor, its economic importance is rarely recognized either in national poverty reduction strategies or in city governance initiatives. But if vendors are managed in a place or to appropriate location depending upon the type and the location of the centre there will be managed market system and dignified vendors. Formalizing these informal attempts demands some policy changes and strategic interventions informal sector activities like street vending should be considered as a part of city planning and management and can act as a supporter to

facilitate the overall well-being of the urban population and economy.

Key words: Informal economy, Informal sector, livelihood, Kathmandu, urban poor, urban governance, street vending

**Thesis Title: CONSERVATION AND DEVELOPMENT
OF GREATER JANAKPUR AREA FOR
THE PROMOTION OF TOURISM**

Submitted by: Avimanyu Lal Singh

**Supervisor: Prof. Dr. Jiba Raj Pokharel, Mr. Ajay
Chandra Lal**

ABSTRACT

Janakpur, historically called Baidehi is the centre of the ancient Maithil culture, which has its own language and script. Janakpur is an important pilgrimage site for Hindus: it is located in the Terai. Alluvial, forested and marshy terrain at the base of the Himalaya mountain range. It is famous for its Temples (207). Ponds (441) and numerous Historical places, which carry significant religious importance. Almost all temples are situated near the bank of Pond. The religious relationship of pond and temple can be used to promote and improve the Greater Janakpur area as religious tourist place as well as to improve the environment by constructing garden, providing open space for community.

Nepal is universally known not only for its natural beauty but also for its historical, cultural and religious values, particularly. Greater Janakpur assumes much significance in this respect. The

Greater Janakpur however, is unable to exploit its potential and trap the incomes. The inadequate and un-systemized infrastructure and services are unable to retain the influx of pilgrims/tourists here. The pilgrims from Nepal and India come in lakhs in different religious festivals but most of them return the same day due to lack of facilities and services. The revival of religious and cultural assets is the need of the moment, which will prosper pilgrimage as well as tourism in Greater Janakpur. The incomes generated, could be used for physical development and in the conservation of Temple, Ponds, and Heritage sites of the area. The development of physical infrastructure and conservation of historical heritages in a planned way can enhance the tourism development of Greater Janakpur.

Problem and Issues:

There is a Lack of policy, plan, programme and regulation about Conservation, Management and Development of infrastructure for the promotion of tourism. The condition of basic infrastructures like Road. Link road. Bridge, Guest-house, Restaurant. Toilet, Public transportation, W/S, Electricity & Communication are very poor. There are no concrete plan to promote Mithila arts and crafts and lack of policy about the regulation of resources like Pond and Land. There is no plan for the preservation of Archaeological sites & awareness about

historical assets. The inventory survey & detail survey of area is not done hence it has no land use plan for the conduction of developments activities. The facilities like education and health is satisfactory in urban area of greater Janakpur but its condition is very poor in rural area. The repair & maintenance work for the existing structure & infrastructure are lagging. The documents (tourist map, informatory booklets, books related to religious importance of Temples, Ponds & Places etc) required for the promotion of tourism are lagging. There is lack of publicity and promotion programmes about the GJA at national and international level. There are no research centers, museums, libraries for the study & research works. The implementation side is very weak due to lack of coordination among the concerned agencies and domination of party politics in the conservation & development activities.

Prospectus of Tourism:

This research is primarily done to understand the existing government's policy and role to promote tourism through the Conservation and development of Temples, Ponds & historical Places lying within Greater Janakpur Area. The primary & secondary dates are collected from different sources. The collected data will be processed and analyzed within the

objective framework to arrive at logical conclusion for the promotion of tourism in GJA.

The GON is placing high priority on tourism sector in its new economic development policy. In this connection, government of Nepal in consultation with Nepalese Tourism Industry, concerned organizations and experts decided to launch a national tourism campaign "Nepal Tourism Year 2011". This announcement reflects the government's anticipation to bring into at least one million international tourists in Nepal by the year 2011 and spread the benefits of tourism to the people at large. With the glittering badge of adventure destination and the adage "Atithi Devo Bhava" that reflects "Atithi Satkar, Nepaliko Sanskar" deeply rooted in our culture, the tourism products of Nepal never cease to mesmerize the visitors. The cultural geographical, ethnic and bio-diversities of the country allure international visitors to Nepal time and again which truly substantiates the spirit of Nepal tourism brand: 'Naturally Nepal, once is not enough. The government has planned a 'one-district, one-destination' identification program. For the promotion of NTY 2011, the government will prepare a one-district, one-destination identification program with infrastructure development and promotion of particular places. In this regards

tourism can be promoted in GJA through conservation of historical heritages and developing required infrastructures.

**Thesis Title: THE ROLE OF URBAN AGRICULTURE
IN URBAN PLANNING; A CASE STUDY
OF KATHMANDU**

Submitted by: Bhagawat Bhakta Khokhali

**Supervisor: Prof. Dr. Jiba Raj Pokharel, Prof. Madhura
Karki**

ABSTRACT

Kathmandu, the capital of Nepal is rich in its geological, social, cultural and environmental diversity. It is a valley rich with alluvial soil which is good for agriculture purpose. The development of Kathmandu is not following any planned pattern. However, this thesis is done to study the role of urban agriculture into urban planning in case of Kathmandu. Planned development, sustainability, food security, urban productive greening, waste management, water management, ecological footprint are some important points which are analyzed in detail in this dissertation. The traditional agro based cities in Kathmandu and today's business based cities in Kathmandu and their transition due to change and development are also discussed herewith.

The various cases of teklu, lubhu, kalimati vegetable market, and thimi are studied to find the role of urban agriculture in these cities and people living there. Teku river belt area is taken to

study the agriculture and production done on those areas by local people on institution land. Lubhu, site of balgriha is taken to study the organic farming and the sustainability practices which they are doing for past 15 years in lubhu in their own farm. Kalimati vegetable market is studied to understand the food demand and supply of Kathmandu valley and its ecological footprints. Thimi municipality site is studied for its agriculture reserve in landuse plan and how it was conserved and how different factors affect the preservation and conversion of agriculture reserve into urban expansion zone. This dissertation has successfully identified the key role of urban agriculture to address the haphazard development for making it planned and developed urban area for its sustainability. The ecology of the city like Kathmandu must be preserved and there must be certain sustainable approaches to make it a beautiful habitable city; for that urban agriculture has very vital role for sustainable urban development and planning.

**Thesis Title: LAND USE CHANGES IN URBAN
FRINGES, LOOKING THROUGH FOOD
SECURITY PERSPECTIVES (A CASE
STUDY OF HARISIDDDHI AND
IMADOLE VDACS)**

Submitted by: Brinda Shrestha

Supervisor: Mr. Ajay Chandra Lal

ABSTRACT

For a country like Nepal, where due to the geographic terrain constrains, the existing limited flat agricultural lands are of utmost importance. The importance of agricultural land is also related with the fact, that majority of people of Nepal are still dependent on the agricultural based economy. While in the other hand the prime agricultural lands of the country mainly the Kathmandu valley, which produced the staple food, is decreasing at the cost of urban growth. With more than 1 million people living, Kathmandu valley is the most important urban centre and the historical settlement of Nepal. Religious and social manifestation was the part of legal land use zoning in traditional urban form of Kathmandu valley, which emphasized the compact growth in order to preserve and protect the agricultural hinterlands of the valley. But in contrary to this, the ongoing urbanization has affected on the most of the urban fringes of the

valley decreasing the local staple food supply, in which the case of Harisidhhi and Imadole has been studied in detail in the report.

The study mainly emphasizes on the descriptive problem formulations with major aim to find the answer of the research questions set in the problem statement and thus, it has tried to present these answers in the extensive research based to find the descriptive answers of the implications of threats to food security in case of urbanising urban fringes in Kathmandu valley. Literatures studies, followed by the Case specific study is the major research methodology followed and the rationalism of the theoretical study of the problem is deduced through case specific studies. The findings of the study show that the haphazard urbanisation has resulted to the decrease in local staple food production potential of both Imadole and Harisiddhi VDCs, in urban fringes.

Thus, the availability issues in terms of local staple food production within the valley, relating its major importance in the historical perspectives and the ongoing urbanization, are studied, to explore to the issue of food security in context of Kathmandu valley.

Thesis Title: **PARKING POLICY FOR KATHMANDU
METROPOLITAN CITY (A CASE
STUDY OF CENTRAL AREA OF
KATHMANDU)**

Submitted by: **Chetan Kandel**

Supervisor: **Prof. Padam Bdr. Shahi**

ABSTRACT

This thesis attempts to go through the necessity of the parking policy in the Kathmandu Metro Politian City (KMC) as it is not effectively applied within the Kathmandu Valley. The report, in its attempt shows that parking policy is necessary in Kathmandu Metropolitan City and the policy will plays vital role in the traffic management and parking management as well. The main aim of this report is to analyze the present parking situation within KMC, to analyze the parking demand and to formulate the parking policy for the KMC.

Daily growth of the vehicle users and lack of proper parking management resulting the congestion in the Central Business District (CBD) impacting the economic activities, which result people to divert from the Central area to the Fringe. Kathmandu Metropolitan City Office and Kathmandu Valley Town

Development Committee have some byelaws and regulations addressing the Parking Management but practically it is not seen.

On-street Parking seen in the Kathmandu Metropolitan City, the provided parking spaces are not enough to hold the parking demand in the peak hour and hence it creates the congestions in the road. The Parking contract is seen but not implemented properly.

This report concerns with the present parking situation, role of KMC, KVTDC and Traffic Police on parking management. The policy issues, options, and recommended parking policy for the KMC are also discussed in this report.

All together the thesis contains Eight Chapters. First Chapter covers background, objectives, scopes of the study and research problems. Second Chapter is for literature review and includes theoretical model and principles to generate the parking policy. Third chapter deal with Methodology similarly fourth chapter includes problem issues .Fifth chapter is for the study of the present scenario of the parking situation in the central area of the Kathmandu. Sixth Chapter covers the Result analysis and discussion of the collected information. Chapter Seven includes the need of parking policy, its purpose, its issues and options on

different policy scenarios. Eight and Last Chapter includes the summary of the findings and conclusions with the recommendations of the parking policy for the KMC.

**Thesis Title: CREATION OF ARCHITECTURAL
IDENTITY IN NEW DEVELOPMENT
INITIATIVE (CASE STUDY IN
NAIQUING TOWN, LHASA, TIBET,
CHINA)**

Submitted by: Cideji

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT

Urbanization refers to the process of formation and development of cities and towns. It displays multiple characteristic from the environmental and development aspects, including physical, and social, institutional and demographic parts. The urbanization involves changes in the human life and the life style, as a result of fertility rate change society.

The main study is that metropolitan Lhasa is surrounded by many villages. Most of the land in those villages is agricultural. Those villages bear their own cultural activities, physical character and social aspect. It is seen that they lack basic infrastructure and have less economic income. The locations of those areas are best for expansion of urban city. But it will -make few impacts on local area from different aspects like physical, culture, economic and social.

Nai qiong town is one of the most beautiful Tibetan traditional towns. Though, the population there is not much and infrastructure facilities are not enough, we can see that lots of traditional housing and culture are present in the town. With development works underway in Tibet. Many new areas have been developed. But this new development lacks the local identity. This thesis seeks to somehow local identity can be created in the design of new buildings and settlements.

So main recommendations are those find identity of traditional building and settlement and give design to the new area with traditional elements.

**Thesis Title: REHABILITATION OF SQUATTER
 SETTLEMENT (A CASE STUDY OF
 MANOHARA SQUATTER
 SETTLEMENT, NEPAL)**

Submitted by: Kanchan Nyaicgyai

Supervisor: Mr. Ajay Chandra Lal

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

**Thesis Title: ASSESSMENT OF BYE-LAWS AND ITS
IMPLEMENTATION IN KMC**

Submitted by: Kiran Man Joshi

Supervisor: Mr. Surya Bhakta Sangachhe

ABSTRACT

Kathmandu being a primate city is growing rapidly while also inducing the growth to its surrounding areas and municipalities. From the medieval period, the construction of the building and non-building structures were guided by social and cultural belief like. Today we have ⁴'Bye laws' in place for the KMC and the other municipalities of the valley as a way to regulate the growth of Urban Areas in Kathmandu Valley.

The first modern 'Building bye laws' for municipalities in Kathmandu Valley was introduced in 1973AD by Kathmandu Valley Town Development committee. This 'building bye law of 2034' was extensively modified in 2050 and revised subsequently in 2063 by KVTDC.

Today any construction within the municipal boundary of Kathmandu Valley and surrounding VDCs are required to follow this bye law. Concerned agencies including Municipality, TDC, and line agencies are provided with power to ensure the

application of bye laws by the owners. These agencies can prohibit and regulate the construction of buildings and are authorized to penalize and demolish the buildings that violate the bye laws. But the violations of the bye laws are wide spread and this is one of the major problem hindering the growth of Kathmandu. The irony is that even buildings around KMC are being constructed without following rules and regulations. This fact alone somehow sums up the existing situation of bye laws implementation in Kathmandu.

The research tries to access the existing issues and limitations in bye laws and its implementation process and attempts to address them, taking existing ground problems in consideration rather than through theoretical approach. This has become a very critical issue because as long as the flaws and limitations in the bye laws implementation are not addressed there are no way any physical plans or visions for Kathmandu are going to be materialized or meet its desired target. It is necessary to understand that bye-laws are a major component for guiding the physical aspect of the urban planning.

**Thesis Title: COMPARATIVE STUDY OF LAND
 POOLING AREA IN GONGABU, LIWLI
 AND NAYA BAZAR, KATHMANDU
 VALLEY**

Submitted by: Khushi Ram Adhikari

Supervisor: Prof. Dr. Sudha Shrestha

ABSTRACT

Land pooling is a widely practiced and successful land development technique. It provides housing parameters which have varying standards according to locations.

Different countries are making policies favoring low income groups through land pooling. Korea takes high percentage of contribution from land owners to provide land to low income groups for housing. Land pooling in public land to supply serviced land to poor can be very effective in our case.

Comparative study shows that feasibility study before deciding a project is necessary for its success. From the research problem of road is regarding its strength which cannot bear heavy load which needs proper attention. Services provision should be according to forecasted population and join to main city networks. Deep boring is against the right of other neighbors

who cannot install. Unless and until policies are not in favor of poor, land pooling with 50% agreement is not scientific.

**Thesis Title: MID HILL HIGHWAYS AS A
STRATEGY FOR BALANCED
REGIONAL DEVELOPMENT IN NEPAL**

Submitted by: Mahesh Bahadur Singh

Supervisor: Mr. A.C. Lal

ABSTRACT

This thesis aims at proving that MHH will be the Strategic regional road infrastructure in Nepal, contributing to the balanced regional development. There is imbalanced development in Nepal resulting poor economic linkages between hill to hill growth centers and development potentials and resources along the mid hill region are less utilized. The objectives of this study are to review the regional development efforts and imbalanced development pattern in Nepal, to identify potential growth centers along the MHH corridor and their linkage with hinterland villages and terai town, to identify the economic potentials in the region of the study area. This study is based on the post positivist and interpretive philosophy and triangulation of inductive and deductive logic. The case study area is selected with random sampling method i.e. mid and far western development region.

This MHH .will enable to locate major market centers like Doti-Dipayal, Patan, Da- srathchand municipality, Mangalsen, Dullu, Chaurjhari, and Musikot etc. These centers will act as major sub regional market centers, population centers, collection centers of mountain agricultural products, processing centers, tourist entry gate and economic hub with terai town. The national and feeder roads will also enhance linkage with Indian towns like Jhulaghat, Dharchula, Gaurifanta, Rubedia etc. The MHH belt consists of tremendous tourism potential places like Khaptad, Rara national park, Se- phoksundo pond and trekking route to Kailash etc. With the easier access to the potential hydropower developing location it will add immensely to the hydropower development harnessing the important natural sources of water. The exports of agricultural and industrial products and increased employment of local labor in agriculture and industries will bring a lot of cash money in this region. The market centers along the highway corridor are potential for future extension and growth so, infrastructural development program and systematic planning activities in these towns should be launched. Private sectors should be motivated in tourism and small industry development along the region. The increased trade and business will boost local economy thus providing impetus to the local economic development and overall regional balanced development, so based on the above case study results of mid western and far

western development region we can generalize that MHH will play vital strategic role for decreasing the imbalanced regional development pattern in Nepal.

**Thesis Title: UPGRADATION OF URBAN CORE (A
CASE STUDY OF KATHMANDU
METROPOLITAN CITY**

Submitted by: Meeta Suwal

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

The issue of livability of urban core is the growing problem in the developing countries like Nepal.

The inquisitiveness that has developed this research is that what are the key factors affect livability of a city and how does livability relate to sustainability. A general study has been made of what are the livability issues for the sustainable development of the urban core by encouraging the local communities.

Along with the theoretical aspects of the study, general idea of Kathmandu's Urban Core is studied. Existing plans and programs in context of the central core of Kathmandu has also been reviewed so that we get familiar to the earlier attempts of developing the area. Case study of Bhaktapur Development Project of Nepal was made because it is the only completed projects that have been carried on with the consideration of the living conditions of the inhabitants. The model of Venice

Renewal has been studied because it is considered one of the best practiced renewal projects in the world and that it exemplifies the concept of gentle urban renewal keeping the owners and tenants in the foreground. The case of Vesterbro, Copenhagen has been inspiring developing physical development plan.

Detailed site study is made as per requirement and taking in consideration the livability issues in mind. For any area to be sustainable it has to incorporate community participation in its programs and this study has made an attempt to discuss on involvement of community in development process.

Recommendations are given as reflection to the literature review made; cases studied and the existing study of the site. And the priorities of implementation are according to the aspirations of local inhabitants.

**Thesis Title: PUBLIC PARTICIPATION IN URBAN
COMMUNITY DEVELOPMENT (A
CASE STUDY OF TOLE SUDHAR
SAMITI (TSS) IN LALITJPUR
MINICIPALITY)**

Submitted by: Monica Manandhar

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTACT

Human beings are social animal so they seek desire to live in a society or a community so that all their needs are fulfilled as far as possible. From the beginning of the civilization people have been wondering from place to place in search of better living and better opportunities. Urbanization in Kathmandu Valley is increasing constantly with time. With increase in population, Kathmandu Valley is facing problems like degrading environmental condition, overcrowding of places, lack of infrastructures and services in housings and unregulated growth of town. As public participation in urban community development, many community development organizations in the name of Tole Sudhar Samiti are emerging for need based community works in last few years for urban development activities in Kathmandu Valley, many TSS are also seen in Lalitpur Municipality too.

A local body formed Tole Sudhar Samiti with the responsibility of mobilizing the community approving and planning project and activities and monitoring the projects as well. The enactment of Local Self Governance Act 1998 in Nepal has empowered the local governments to mobilize their own resources' and carry out the development works by themselves. In this context TSS will have more responsibility to play for its own development and sustainability. The specific objectives of the research are to understand the evolution of TSS as a tool for community participation in urban planning practice, to outline strength, weakness of this area and to see what can be done in the future to make these kind of organizations sustainable.

Thesis Title: **IMPACT OF IMPROVED ROAD ON
LANDUSE ALONG THE KATHMANDU-
BHAKTAPUR ROAD**

Submitted by: **Nani Maiya Makaju**

Supervisor: **Prof. Dr. Padma Bahadur Shahi**

ABSTRACT

Road network are back bone of the economic development of any country. In context of Kathmandu, the development is boost up along the radial road. The improved road networks are the key element of the urbanization as it increase the population pressure, city economy, household and personal income , travel demand, automobile ownership and its uses. On the other aspect of urbanization more and more land has been converted into built up areas. The growth puts more and more pressure on the existing roads network and land availability. Sprawl along the fringes also adds pressure as people have to travel to and fro between the residences and work places. The development activities have been taking place in a ribbon pattern along the road network. The land and rental value has also increased with the commercialization of the areas. On the other hand, the land fragmentation has also increased at same speed. This study is so focused to examine the impact of improved road on change in land use with the developmental effort.

Improved road plays vital role to reduce the travel time. Affordable and efficient transport is central to development as it facilitates access to different amenities. Land use and improved road network are inevitable for the sustainable development so there should be proper policy to integrate road network with the land use. At present our country lack such policies which can be observe through this research.

The general objective of my study is to have overview of improved road on Kathmandu- Bhaktapur road. The improvement project have already been handled to Nepal government and few issue of improved road has been raised at present are discussed in some extent in this study. The study is mainly based on primary data while secondary data are also used to understand the development trend. The observation, interview and site survey are done to examine and find the answer to the objective of study. The research explores the current situation along three sections from Gathaghar to Suryabinayak in detail considering the physical, social and economic aspect. The research reveals about the lack of land use and transportation policy and urgent need of such policies relating to mixed zoning, subdivision controls and land taxation. As well as about the consideration of road safety measures for the sustainable human comfort should also be considered.

**Thesis Title: URBAN SPRAWL OF BHAKTAPUR
 CITY**

Submitted by: Nhasala Tuladhar

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT

Nepal still has a relatively low urbanization rate. Urban population in nepal has reached 14.2% from 9.25% in 1992 and is expected to reach 18% by 2015. The urban population is mainly concentrated in 58 municipalities and some emerging towns. Internal migration to municipalities is increasing due to several reasons such as deficiencies in the basic social and physical infrastructure and economic opportunities in rural areas. Correspondingly, some major cities and towns of Nepal, including the ones in Kathmandu Valley, have experienced higher population growth than the national urban growth rate of 3.5 %. Due to inadequate policy and programmatic responses to rapid urbanization, the urban growth has been haphazard resulting in various problems. There have been problems in access to urban land for housing and related basic urban services such as drinking water, sanitation and solid waste management. Numerous informal settlements have developed on publicly owned land along rivers and in forests, and existing Informal settlements have expanded. The number of squatters has risen from only 17 squatter communities in Kathmandu in 1988 to 63

in numbers at present. This increasing concentration of population in the urban areas have created new problems concerning housing the urban poor.

In this context this study tried to examine the government's policy and its possible role in providing developed land for housing the urban poor and the various measures or efforts taken in the developing countries to make land for housing available to the urban poor. To access the characteristic and the phenomenon of housing in the urban communities of the valley, the case study area of the Panchayanghat Squatter settlement was identified and surveyed. The survey revealed that the urban poor were unable to access the institutional housing mechanism. They were not able to access the housing finance on their own because of the requirement of the conventional collateral. It was found the formal financial sector in Nepal has not been able to provide housing loans to the lower income households. The study revealed that given the formal assistance, they are able to lessen the problems to some extent. It is recommended that the micro financing system for housing loans be implemented to increase the access of the poor to the finance for housing. The suggests the use of NGOs as the mediator between the formal financial sector and the low income households. The study also

recommends the frameworks and prospective options for increasing access of land and housing for urban poor.

**Thesis Title: COMMUNITY BASED ENVIRONMENT
MANAGEMENT STRATEGIES FOR
THE IMPROVEMENT OF BAGMATI
RIVER CORRIDOR (A CASE STUDY OF
TILGANGA - THAPATHALI SECTION)**

Submitted by: Nirjal Dhakal

Supervisor: Ms. Sangeeta Singh

ABSTRACT

The Bagmati river flowing from the core of the city has very high environmental, social, cultural and historical value. However haphazard and tremendous urban growth of the valley results in the increase in volume of waste water discharge and solid waste disposal in the river corridor causing the environmental degradation of the river and its territory. The encroachment of the river banks for various reasons such as agricultural plots, squatter settlement, sand mining, solid waste dumping etc. are few other causes for the degradation of Bagmati River. Due to degradation of the holy river flowing from the core of the city, the aesthetic beauty as well as the environment of the city core is worsening which ultimately affect the health of the people living in the city.

In this aspect, this research tries to identify the existing situation and environmental problems of the river. It examines mainly on environmental and sanitation aspect. A descriptive approach including several field observations, key informant survey and literature review was applied in the study.

The study focused to detail the exact existing situation with the main focus in the condition of sewerage, drainage, solid waste and the community residing in that area. An extensive study of the existing communities and their participations in the different stages of the environment management of the river corridor was done through interviews and field observations.

Lack of seriousness on the environmental issues of the river corridor in local and central government was found and thus as per the community identified and the problems and issues of the community in environment management of the river corridor, various community based management strategies was brought forward for the proper and adequate management for the up gradation of urban environment of Bagmati river corridor as community based projects were found very effective and sustainable.

An umbrella organisation is recommended in policy level with the basic function to coordinate the different communities

identified and to manage resources and budgets for the implementation of the management strategies.

**Thesis Title: PUBLIC OPEN SPACE OF
KATHMANDU CITY (A CASE STUDY
OF TUDIKHEL)**

Submitted by: Prajwal Hada

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

Kathmandu Valley is world renowned for being one of the heritage cities in the world with a number of key landmarks pop up in the mind whenever the city is mentioned such as the Durbar square, Boudhanath, Swaymbhu. But where does Kathmandu's public open space come into this with so many notable ones such as Tundikhel. It is often stated that public open space is the foundation of urban livability. In Kathmandu valley we can find more open spaces as neighborhood courtyard but largest open space at the city center is not attracting people as it can hold.

A brief background of study area of Tundikhel has been provided with change analysis incorporating Changes in land use, Transport use and Pedestrian Flow. Since Tundikhel has lot of edge activity, the study has been done to its periphery structure and development, though the focused is the site collecting data through questionnaire survey and observations.

Since the Tundikhel has a long history, the historical background is studied and found out the use of the Tundikhel from past to the present and it also contains lot of important landmarks which also had own identity and importance. Like Bhadrakali, Dharahara, Mahankalsthan, Bir Hospital, Darbar High School, Rani Pokhari, Tri Chandra college, Ghantaghar, Ratnapark etc. The Historical study of the site and periphery shows that it represents our political change and those changes can be seen around the Tundikhel area land use change. One of the important changes is the development of Bus Park which helps to change the area development. It help rapid development of the eastern area.

The literature review of the public open space is done which basically guide for the standard development of the space and also understood the successful public open space. However the Tundikhel is being different from all those types of space, NATIONAL PUBLIC OPEN SPACE PRINCIPLES is studied with the 9 principles and the site is observed on the basis on these principles. The qualitative survey has supported in identifying the underpinning problems and issues for better open spaces. These identified problems and issues have again examined by field observation and analysis. The analyzed problems and issues have been included as accessibility of site,

Facilities, Lighting, Legibility, Memorabilia & Experience, Sustainable Open Space and public art and attractive character of the place.

These problems and issues have been addressed as the recommended process of Tundikhel as redefine it as National Open spaces. The integrated process has been divided into two categories: one with case specific another with general policy oriented as there is no policy for public open space found in Kathmandu valley.

The report concludes with seeking answers of the research objectives. It has been found that the periphery of the Tundikhel is highly pedestrian area and flow of per day is more than two lakhs whereas the inside population of Tundikhel is near to thousand only. Which clearly indicate that Tundikhel is not attracting people as much as it can hold.

The recommendation have categorically stated that Tundikhel can be redefined as National Public open space, where Nepali can stand for lot of memory that is related to historical events. Even this space hold lot of national holiday events like Democracy day, Fulpati, Ghoda Jatra, Loktantra diwas etc. Behind this the physical change that required is to manage the

traffic which need to be carefully design so that it help to preserve all the open spaces with all its valuable active edge, and open to pedestrian movement. One suggested is the underground facilities for the vehicles parking or movement and pedestrian level free where the flow is maximum. There should be facilities like toilet and light to hold the public.

**Thesis Title: DISASTER RISK MANAGEMENT IN
 HISTORIC CORE THROUGH
 REGENERATION**

Submitted by: Pradip Acharya

Supervisor: Mr. Surya Bhakta Sangachhe

ABSTRACT

Historic city core of Nepal bear a unique testimony, with the phase of time, it exhibits numerous change but with the pace of development, it loses its glory and characteristics. Urbanization and influx of population is increasing which brings opportunity with risk if proper management and planning is not given in due time. The thesis hopes to contribute to current understanding on seismic risk and vulnerabilities also improvement upon the preparedness plans.

This thesis attempts to assess the vulnerability of people in term of disaster (earthquake and fire) of Kathmandu Metropolitan of certain area of ward 21 and 23 taking the certain physical indicator as prime importance also the social and cultural indicators are incorporated. The area is studied by dividing it into two zones, commercial viable area and dense core area. The physical vulnerability weightage for two different areas are given in the qualitative basis of existing scenarios and Hazard matrix is

developed and the risk is quantified for the areas. And social and cultural vulnerability weightage is carried out on the basis of area selected for the study.

The research strategy sets out by examining both empirical and normative questions. The empirical investigation aims to generate understanding and create knowledge on various disaster associated terms such as hazards, vulnerability and risk and the normative investigation tries to examine the existing situation and prevailing works carried out in the Kathmandu Metropolitan City. For the analysis purpose, the Earthquake scenario is taken from the past study carried out by JICA on 2002.

The main findings reveals that the vulnerability of people against disaster is the resultant of complex interplay among several casual factors namely physical (mainly taken in the study), social (Occupation) and Cultural (Guthi) factors. The two different zones of the selected sampled area out of total study area are assessed with quantifying the total risk in each area.

The historic city core- Basantapur is very susceptible to seismic vulnerability, although the magnitude of loss whether that be building or infrastructure damage or human casualties and injuries appear to vary depending on the soil condition, quality of buildings, income status and awareness level of households and

the institutional capacity of the municipality itself. The Guthi and Tole Sudhar Samiti should be the focal point for the awareness and increasing the preparedness level of the communities.

The thesis finally recommends a set of mitigation measures comprising of planning for earthquake disaster management, immediate preparedness and the regeneration planning scheme for the historic city core which should be conducted in phase wise manner. Likewise the enforcement of building code and the vulnerability indicators can be further added which needs further research as well as the weightage given to them can be examined more critically to determine vulnerability state of any place.

**Thesis Title: WASTE WATER MANAGEMENT FOR
BETTER ENVIRONMENT IN THE PERI-
URBAN AREA (A CASE STUDY OF
HARISIDDHI AREA)**

Submitted by: Pramesh Hada

Supervisor: Ms. Sangeeta Singh

ABSTRACT

Urban sanitation has become one of the alarming issues in Nepal and rest of the world. Urbanization in Nepal is facing serious problems in addressing this issue due to lack of comprehensive approach. Many of our interventions are incomplete as they are limited to conveyance of the waste water. Out of many, the most important issues are awareness of the people, political commitment to address the issue, technical solution that suits the socio-economic environment of the Urban Areas.

In this aspect, this research tries to identify the existing situation and sanitation system of the peri urban area i.e Harisiddhi area as a case study. It examine mainly on waste water management. A descriptive approach including several field observations, key informant survey and literature review was applied in the study.

The study focussed to detail the exact existing situation in different sector of Harisiddhi area with the focus in the condition of sewerage system and the management of waste water. The general study of the sewerage management system of the study area was done through interviews and field observations.

The findings of the research is that there is no sewerage system in the Study area and the quality of river water is contaminated mainly from the discharge of sewerage via surface drains , hence there was a lack of seriousness on the environment pollution due to waste water. Various waste water management techniques are needed in the community level for the up gradation of peri urban area like Harisiddhi.

Hence the management plan and policy to be implemented so that sustainable solution can be obtained for the Peri urban area.

Thesis Title: **STUDY OF THE IMPLEMENTATION OF
MUNICIPAL PERIODIC PLAN (A CASE
STUDY OF LEKNAHT
MUUNICIPALITY)**

Submitted by: **Pramod Krishna Karmacharya**

Supervisor: **Mr. Ajay Chandra Lal**

ABSTRACTS

For the improvement of the people's living, working and environmental conditions, community participation and good governance, the Local Self Governance Act, 1998 and Local Self Governance Regulation, 1999 clause 111 required the 5-7 years Periodic Plan in the Municipality. The Act outlined Municipal Periodic Plan is participatory consistent with long term vision and physical development plan of the municipality. However, those municipalities have already in the process of PP, stage of implementation is not satisfactory and result oriented even it has provision of clear monitoring and midterm evaluation, it is ⁴ unable to find out the usefulness and effectiveness of the PP.

This research work is the initial stage finding the various issues and constrains which directly influencing the implementation of Periodic Plan of the municipality. Due to the various factors such as low municipal revenue, weak institution capacity, weak co-

ordination between different line agencies working in the municipality and unclear linkage with legal and policy framework. Apart from this it is found that requirements of refinement the overall planning process to make inclusion and more participation of marginalized people. In terms of contents covered in periodic plans, important environmental and social aspects as well as "global" issues (climate change, MDGs, DPMAs) have been mentioned as not being included to plans. So the Periodic Plan Manual also needs to revise.

Therefore, this study aims at analyzing municipality periodic planning and implementation processes so that the findings of the study will help to make policy recommendations for improvements in such processes.

**Thesis Title: COMMUNITY PARTICIPATION
 SUSTAINABLE WASTE MANAGEMENT
 - DHARAN**

Submitted by: Puja Shrestha

Supervisor: Ms. Sangeeta Singh

ABSTRACT

Management is one of the greatest problem, that whole earth is facing, especially, the developing countries and Nepal is no exception. The management of solid waste has become huge issue today in Nepal. The improper management of waste has lead to numerous problems as of health as well as environment. Management of solid waste was not a great deal of issue to be dealt with just a decade ago but today the problem has increased tremendously now. This is mostly -due to the rapid increase in population in a haphazard manner and change in people's lifestyle. Also, the waste generated today is different than waste generated a decade ago. Previous most of the waste generated was organic and most of the people were engaged in agriculture so waste generated thus was used in the fields. Traditionally people in Kathmandu had the concept of saaga which reused the organic waste generated.

Solid waste management is a costly service and most municipalities are struggling for the resource to meet there

regular expenses. The role of the municipality in the waste collection as well as disposal is very huge. If the waste is not managed in proper way and enough manpower are not engaged then, waste collection becomes a hectic as well as inefficient.

This study mainly focuses on community participation and sustainable aspects of waste management. The haphazard dumping of waste not only makes the city look filthy but also gives rise to environmental issues. Dharan is a small city rushing towards the foot trails of development. If problems are not looked upon from initial phase it might create problems in the future. Dharan municipality collects waste generated from individual households at certain intervals. Private sectors are not involved in the collection of waste, to lessen pressure on the municipal city. Community participation could be of great help in the reduction, reuse and recycle of waste. Awareness among the people for the management of waste and how the waste can be reduced and recycled in their own compound is a thought discussed here which would be a blessing for the people as well as the city.

**Thesis Title: PUBLIC TRANSPORTATION SYSTEM
AND ITS RELATIONSHIP WITH URBAN
MOBILITY (A CASE STUDY OF
KATHMANDU**

Submitted by: Rabindra Dawadi

**Supervisor: Prof. Padam Bahadur Shahi, Dr. Sudha
Shrestha**

ABSTRACT

A review of relevant literatures covering the issue of public transport and its relationship with mobility suggests that, a heavy reliance on this mode of transport increases the efficiency of urban mobility while at the same time easing the level of congestion. The literatures reviewed also suggest that the presence of an efficient public transport system creates a safe, sustainable and equitable urban mobility.

This study evaluates the extent to which the public transport in Kathmandu has an impact on the urban mobility of the city. It also assesses the possible strategies and approaches that can be devised to enable this mode play a significant role in mitigating the worsening level of congestion that we see in the city today. The study mainly relies on secondary data for its analysis and findings; however primary data has also been generated and

analyzed with the help of sample surveys and structured interviews.

The overall findings of this study revealed that despite the fact that an efficient public transport system is the best way to maximize urban mobility, in reality this mode of transport is in a critical condition to begin with in Kathmandu. Furthermore it has been observed that increasingly heavier reliance on vehicles with small passenger carrying capacity, such as private automobiles and taxi, is resulting in congested junctions, with heavy traffic. Other factors such as the existence of only one dominant core area in the city, demand overlap that emanates from the similar working hours that are observed for almost all institutions in the city have also been identified to be the main drawbacks that need to be addressed to create an efficient public transport system in Kathmandu. While assessing ways that can make this mode become more efficient, it was further noted that there are other factors at play, namely, the existing transport infrastructure, the socioeconomic realities, the prevalent traffic management practices, that call for an integrated approach so as to create a multi layered exhaustive proposal.

**Thesis Title: EFFECT OF LAND DEVELOPMENT
 APPROACHES IN MADHYAPUR THIMI
 MUNICIPALITY**

Submitted by: Ram Shrestha

Supervisor: Mr. Suray Bhakta Sasngachhe

ABSTRACT

Kathmandu Valley has been going under rapid urbanization in last few decades. The pressure of urbanization is intense in Kathmandu valley and it has been spilling over the surrounding municipalities and VDCs. Madhyapur Thimi Municipality (MTM) lying in close proximity to urban center of Kathmandu and Bhaktapur has also been influenced by the urbanization.

The study focus on Land development effect in Madhyapur Thimi Municipality. It aims to (1) To understand trend of land development approach in Madhyapur Thimi Municipality (2) To investigate the impact of land development in last few decades and relate it with the urban context.(3)To identify and analyze various policies of land development.

In this research, study of formal and informal land development has been done. In formal land development: land pooling, site and services and GLD is included. Whereas In informal land development, broker are main principal actors.

Using data collection methods such as interviews, secondary data analysis, the second research objective, which is to explore effect of land development in Madhyapur Thimi Municipality.

By combining the research conducted at the community level and the many influencing factors the study intend to explain effect of land development in Madhyapur Thimi Municipality.

Finally this study "Effect of Land Development in Madhyapur Thimi Municipality" Dntributed quite significantly to local Government's land development.

**Thesis Title: LAND AND HOUSING POLICY ISSUES
FOR URBAN POOR**

Submitted by: Rajeeta Shakya

Supervisor: Prof. Dr. Mahesh Shrestha

ABSTRACT

Urban population in Nepal has reached 14.2% from 9.25% in 1992 and is expected to reach 18% by 2015. The urban population is mainly concentrated in 58 municipalities and some emerging towns. Internal migration to municipalities is increasing due to several reasons such as deficiencies in the basic social and physical infrastructure and economic opportunities in rural areas. Correspondingly, some major cities and towns of Nepal, including the ones in Kathmandu Valley have experienced higher population growth than the national urban growth rate of 3.5%.

Due to inadequate policy and programmatic responses to rapid urbanization, the urban growth has been haphazard resulting in various problems. There have been problems in access to urban land for housing and related basic urban services such as drinking water, sanitation and solid waste management. Numerous informal settlements have developed on publicly owned land along rivers and in forests, and existing informal

settlements have expanded. The informal settlements have risen from only 17 squatter communities in Kathmandu in 1988 to 63 at present. This increasing concentration of population in the urban areas have created new problems concerning housing the urban poor.

In this context this study tried to examine the government's policy and its possible role in providing developed land for housing the urban poor and the various measures or efforts taken in the developing countries to make land for housing available to the urban poor. To access the characteristic and the phenomenon of housing in the urban communities of the valley, the case study area of the PanchayanGhat Squatter settlement was identified and surveyed. The survey revealed that the urban poor were unable to access the institutional housing mechanism. They were not able to access the housing finance on their own because of the requirement of the conventional collateral. It was found the formal financial sector in Nepal has not been able to provide housing loans to the lower income households. The study revealed that given the formal assistance, they are able to lessen the problems to some extent. It is recommended that the micro financing system for housing loans be implemented to increase the access of the poor to the finance for housing. The study suggests the use of NGOs to the intermediate between the formal

financial sector and the low income households. The study also recommends the frameworks and prospective options for increasing access of land and housing for urban poor.

**Thesis Title: URBAN INFRASTRUCTURE
DEVELOPMENT THROUGH PUBLIC
PRIVATE PARTNERSHIP (A CASE
STUDY OF NEPAL)**

Submitted by: Reeju Shrestha

**Supervisor: Dr. Jagadish Chandra Pokharel, Mr. Ajay
Chandra Lal**

ABSTRACT

The urbanization trend is rapidly increasing all over the world. In Nepal too, the process is speeding up. According to the initial result of Nepal Census 2011, the population of Nepal is Twenty Six Million and Six hundred thousand (26,600,000) and the population annual growth rate at 1.4% whereas the urban population has increased to 17%. It is estimated that 30% of the population in Nepal will be staying in urban area by the next 25 years. This increasing population is putting a huge stress in the urban infrastructure demand. Infrastructure has remained a backbone to the economic and social development of the country. Efficient infrastructure services help to generate job opportunities as well as create an environment for additional income generation. Due to insufficient infrastructure, cities and towns are turning into spaces competing for facilities such as health, education social security and others. Hence, it is essential

to find ways to maximize services and facilities for the urban population with increased investment through attractive means. Lately, Public Private Partnership (PPP) has emerged as an alternative financing mechanism for filling this resource gap in development of urban infrastructure.

In Nepal these are a few concrete example of PPP model used to construct urban infrastructure. In many countries, this has been used successfully, for example in Thailand, Malaysia, Pakistan, Canada etc. It would be rational to examine on how PPP can be used effectively for urban infrastructure purpose in Nepal as well. It becomes necessary to assess whether the practice is helping the urban areas to improve quality of urban spaces and how much the people are benefitting from such practices.

Four case studies have been taken which include service delivery and construction projects in PPP and focus has been made on how these projects were prepared and implemented and also, what the main reasons were for their success or failure.

**Thesis Title: DEVELOPMENT PATTERN IN THE
 URBAN FRINGE OF KIRTIPUR TOWN**

Submitted by: Roma Amatya

Supervisor: Prof. Dr. Sudha Shrestha

ABSTRACT

The urbanization in Kathmandu Valley in the last few decades has picked up with an alarming rate leading to an unprecedented rural urban migration in the Valley. The pressure of urbanization is intense in Kathmandu and it has been spilling over to the surrounding municipalities and VDCs in the fringe areas of Kathmandu. Due to lack of proper planning and growth management policy to absorb the housing demands for the growing population, the residential development has spread to the edge of the Valley. This is leading to a haphazard growth and urban sprawl resulting in the loss of agricultural land and high infrastructure cost. The unregulated urbanization has also contributed to the breakdown of the religious and cultural framework and the spatial structure that has prospered for more than 1500 years. Kathmandu valley comprises not only of bigger urban settlements like Kathmandu, Patan and Bhaktapur, but also consists of relatively smaller settlements/ township, with largely agro - based economy. They have close relationship with

agriculture, socio cultural activities, built heritage and its urban form.

Kirtipur is historic city which was the outpost of Patan during 12th Century. It has a physical, social and cultural linkup with adjoining Kathmandu metropolitan and Lalitpur sub-metropolitan. Presently, the urbanization pressure in the Kathmandu valley has brought up the rise in built-up area in Kirtipur.

Major findings indicated that the development is happening fast in an unplanned way. The major impact is on the land use pattern. Buildings are emerging on the agriculture land without proper infrastructure I services are other characteristics of urban fringe. The development patterns are categorized into three main components namely, physical, social and environment. The physical development is through the change in the land use and is marked by rise of land division, development of roads and availability of infrastructure service. In the social development, it is the change in the tradition and rise in heterogeneous society. The vicinity of the only university of Nepal, Tribhuwan University, then shows one of the factors in developing trend of fringe of Kirtipur from last few decades. The political insurgency in country and the policy of housing loan are other factor of

fringe development. Basically, the scenario indicates that municipality has not able to monitor uprising built form so far and implement the bye laws and regulation. People themselves are developing the area on their own ways. Consequently there are unregulated plots, deteriorating infrastructure services, lack of social interaction, social integrity etc.

Thesis Title: **Impact of road construction in Himalayan settlement (a Case Study of Marpha, Mustang)**

Submitted by: **Ranjit Lalchan**

Supervisor: **Prof. Dr. Pushkar K. Pradhan**

ABSTRACT

This Thesis is a study of the change process undergoing in a Himalayan settlement. Marpha. Marpha , is a traditional Thakali Settlement which lies along the trekking route to Round Annapurna , Round Dhaulagiri and Jomsom Trek. The settlement has a beautiful natural setting along with its own Physical. Social and Cultural dimensions.

Now the new road Beni- Jomsom Highway has bypassed the settlement. Impact is being felt in tourism business as the tourist are reducing their travel time and reaching their destination by vehicle. Local people who make their money from tourism are firmly against road but there are others w ho depend on Agriculture and horticulture and other activities too. For them road is a long cherished dream.

There are certain indicators outlined in the study which are marked as main component to know that the change process has

occurred. They are the physical aspects, social aspects . economical aspects and the environmental aspects. The physical change are marked through the change in built form, change in landuse pattern and increase in the core Marpha. The socio-economic indicators are the decrease in the basic household commodities increase in demand of local products in the southern part and change in visitor's portfolio.

Analyzing these indicators, the immediate intervention for the balance of conservation and development of the area has been outlined. Introduction to proposed land use map has been developed, provision of training on hotel management, tourism and hospitality to the local residents and hoteliers, similarly introduction and training on modern method of agriculture for the production with diverse crops specially cash crops has been recommended for the overall development of Marpha in a balance manner.

**Thesis Title: IMPROVING LIVING AND
ENVIRONMENTAL CONDITION OF
SHANKHAMUL SQUATTER
SETTLEMENT, KATHMANDU**

Submitted by: Sangita Shrestha

Supervisor: Prof. Dr. Mahesh Shrestha

ABSTRACT

Urban population in Nepal has increased 14.2 percent from, 25 percent in 1992 and is expected to reach 18 percent by 2015. The urban population is mainly concentrated in 58 municipalities and some emerging towns. Internal migration to municipalities is increasing due to several reasons such as deficiencies in the basic social and physical infrastructure and economic opportunities in rural areas. Along with urbanization urban areas are also experiencing growing incidence of poverty. An increase in poverty level causes the increase of number of squatter settlements in urban areas. Numerous informal settlements have developed on publicly owned land along rivers and in forests, and existing informal settlements have expanded. Causes of squatter settlements are not only due to lack of financial resources but also due to lack of proper policy. The number of squatters has risen from only 17 squatter communities in Kathmandu in 1988 to 63 in numbers at present. This report portrays the conditions of life in the squatter

settlements in particular and shows how residents are facing problems. The report also attempts at improving living and environmental condition of Shankhamul squatter Settlement, Kathmandu with a view to also highlights the socio economic life of the urban squatter society. Review and policies for Slum and Squatter Settlement is also presented here. It is hoped that data and description included in this report will prove useful and overall scenario of conditions in squatters. It cannot be claimed that data are comprehensive; they simply show what is happening in particular Squatter Settlement at Shankhamul. The report serves as a source of reference and information for policy makers and other persons involved in finding solutions to the fast growing problems. The result of case study is thus an image of ongoing life in Squatter settlements. 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 area has high commercial value, Land Sharing is one of the models recommended by sharing the land with private developer and develops the land with low rise high Density apartment.

**Thesis Title: SOCIO-ECONOMIC IMPACTS OF
TOURISM IN BHAKTAPUR (A CASE
STUDY OF BHAKTAPUR DURBAR
SQUARE WORLD HERITAGE
CULTURAL SITE)**

Submitted by: Samir Byanjankar

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT

This Study focuses on Bhaktapur Durbar Square World Heritage Site (WHS) and , tl surrounding area. It aims to (1) investigate socio-economic impacts of tourism and (2) explo factors, which are affecting the generation of above impacts for the community.

It classified these factors into three different contexts, i.e. local, national, and internation context. The local context consists of the local environment (socio-demography and an characteristics) and management of WHS and tourism (organizations involved in tl management and their inter-relationships, management process); the national conte encompasses tourism policy and the existing legal frameworks on tourism and WHS; and tl international context consists of the role of relevant organizations, such as UNESCO and tl dynamics of World Heritage discourse, i.e. evolving concepts relevant to local

development: the past years and how they are implemented so that WHS can give more benefit to development at the local level.

Using data collection methods such as interviews with organizations involved in management of WHS and its vicinity, expert interviews, secondary data analysis, the sector research objective, which is to explore factors affecting the generation of socio-economic impacts for the community will be carried out.

By combining the research conducted at the community level and the many influencing factor the study intend to explain the socio-economic impacts at the community level in light of the management or governing process of the WHS and its vicinity, the institutional arrangement well as the interactions between organizations, and in the context of policy which reflected in the current legal framework influencing the site.

This study finds that tourism in Bhaktapur Durbar Square had contributed quite significantly to local government's tax revenue and to growing services and tourism related sectors' shares into Gross Regional Domestic Products within Bhaktapur District. Tourism has also stimulated the development of infrastructure in the area and has provided business opportunities over the years.

**Thesis Title: OPEN SPACES IN PRIVATE AND
PUBLIC HOUSING OF KATHMANDU
VALLEY**

Submitted by: Suchita Bajracharya

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

The capital and only metropolitan city of Nepal, Kathmandu, has changed from lake- bed to paddy agriculture to present day urban society. The rapid pace of urbanization in Kathmandu today is greatly increasing the demand for shelter, infrastructure, employment opportunities and social services. Of all the activities carried out in urban areas, housing activities cover the maximum land use.

Open space is one of the main elements for a large housing estate. In Kathmandu, the housing estates do provide some amount of open space. This thesis is focused on the study of provision of these open spaces and their characters. Open space provides a social environment as well. It enhances social interaction within the users. Along with various infrastructures and facilities, open social spaces are also vital in any housing estate.

Creating social environment through proper designing of the open spaces make the users more satisfied in terms of usage of the provided amenities. The various public spaces needs cover many aspects of human functioning. They include the physical comforts involved in relief from the elements, rest and seating. People need to relax, to enjoy the relief offered by public places and have opportunities to enjoy natural elements with public places functioning as oasis.

The study suggests that the creation of an open environment which allows different possible ways of interaction is required for the successful relation-building of the visitors at the community facilities for people of various age groups. Properties and attributes of green infrastructure and its networks determine people's progressive responses from physical, social and cognitive functioning and well-being, hence, enhancing the sense of attachment and belonging for their community.

Overlooking at the present scenario, many loopholes in the rules and regulations of the housing can be seen which affects the social factors as well as the social environment. This thesis work is carried out to understand the reasons where these regulations seem to be lacking.

**Thesis Title: PUBLIC TRANSPORTATION SERVICES
FOR URBAN ACCESSIBILITY AND
MOBILITY (A CASE STUDY OF
NARAYAN GOPAL CHOWK TO
BUDHANILKANTHA)**

Submitted by: Shruty Shrestha

Supervisor: Prof. Dr. Padma Bahadur Shahi

ABSTRACT

Transportation is the most important urban service which exerts extreme influence on the overall urban growth. The desire of people to move and their need for goods create the demand for transportation. Transport problems are often related to urban areas and take place when transport systems, for a variety of reasons, cannot satisfy the numerous requirements of urban mobility. Public transportation in Kathmandu is mostly by low occupancy vehicles and the level of dissatisfaction with public transport in Nepal is very high. Public buses are normally very crowded, comparatively expensive, and uncomfortable to stand as well as to sit in. They do not have travel time schedule and proper bus stops and if public transport is made too unattractive, users will be discouraged from using it, and those who can afford it, will use private transport.

It is certain that-what happens to public transportation in the future will significantly influence urban development and the quality of life in urban area. That's why services provided by public transport should be according to the users' requirement. Public buses are the main form of ground transport in Nepal and high occupancy vehicles saves fuel as well as transport large number of people at once.

To know more about the public transportation services, study was carried out in the public transportation route from "Narayan Gopal Chowk to Budhanilkantha". From the case study, different problems as well as possible solution were found out. Such as: for the public transportation service, location of stops plays a major role because it affect the travel time. During the loading and unloading of passenger, braking to a stop and accelerating back to the running speed, there is a time loss. That's why to reduce the travel time; bus stop point should be in proper position. For the better service, non motorized transportation also plays a great role because until and unless there is a good environment for walking, people will not prefer to walk though it is a small distance. Likewise, congestion charge and high taxation should be implemented to avoid the growth of private vehicle and vehicles should be deployed as per the road condition. Apart from this, there should be a strict rules and

regulation. The study concluded with the above recommendation because improvement in public transportation service might encourage people to change mode of travel.

**Thesis Title: EFFECT OF ROAD NETWORK
DEVELOPMENT ON LAND USE (A
CASE STUDY OF CORRIDOR OF
THAPATHALI INTERSECTION TO
JAWALAKHEL INTERSECTION OF
KATHMANDU VALLEY)**

Submitted by: Surendra Mohan Shrestha

Supervisor: Prof. Dr. Padma Bahadur Shahi

ABSTRACT

The trend of urbanization in Kathmandu valley is growing continuously since long time back. In recent years, several plans have been made for urban development of Kathmandu valley. But effects of good planning have not been seen and different kinds of problems are arising day to day. Especially for Kathmandu Valley, problems regarding transportation and road network have been addressed in planning document since long. But, effects on overall development, especially in socio culture and economic sectors, due to road network have not been seen. Land use change due to this development of road network, also not been sufficiently studied. To fulfill that short coming, this study has been done as a tiny effort and to meet the requirement of the course of Master in urban Planning. This study has been presented in nine different chapters, as follows:

Chapter first deals with basic information on the topic along with research objective and limitations.

Chapter second is on literature review. The past plans of Kathmandu Valley have been reviewed in first section and issues and relevance to the study are also discussed. Similarly, second section is a review of theoretical literatures to bring those issues of relevance to the study.

Chapter third deals with Research methodology, including several design and different methods for research work.

Chapter fourth has been used for classification of land use. Scenario of different land uses of the study area on the basis of various literatures from 1965 AD to 2004 AD have been dealt in its first part. The second part is on the scenario of different land uses of the study area on the basis of primary data separated from digitization of aerial photographs.

**Thesis Title: ASSESSMENT OF DISASTER
RESILIENCE OF URBAN
COMMUNITIES (A CASE STUDY OF
LALITPUR SUB-METROPOLITAN
CITY)**

Submitted by: Sudeep Sharma Paudyal

**Supervisor: Prof. Dr. Jiba Raj Pokharel, Dr. Jishnu
Subedi**

ABSTRACT

About 23 million people in Nepal are distributed as 86 % (of total population) in 3915 V.D.C and 14 % in 58 municipalities. As cities are considered as engines of economic growth, urbanization is inevitable and the trend of influx of population is increasing which brings opportunity with risk if proper management and planning is not given due consideration of urban areas.

This thesis attempts to assess the disaster resilience of urban communities of Lalitpur & Sub-Metropolitan of certain area of Ward 16, 21 and 22 taking the certain physical indicators as prime importance although the social and cultural indicators are incorporated. The area is dividing in to three parts with zone 1-10 as Core, Transition and Fringe. The physical vulnerability

weightage for three different areas are given in the qualitative basis on the base of existing scenarios and the Hazard matrix is developed and the risk is quantify for all these areas.

The research strategy sets out by examining both empirical and normative questions. The empirical investigation aims to generate understanding and create knowledge on various disaster associated terms such as hazards, vulnerability and risk and the normative investigation tries to examine the existing situation and prevailing works carried out in the Lalitpur Sub-Metropolitan City. For the analysis purpose, the Earthquake scenario is taken from the past study carried out by JICA on 2002.

The main findings reveals that the vulnerability of people against disaster is the resultant of complex interplay among several casual factors namely physical (mainly taken in the study), social (occupation) and Cultural (Guthi) factors. The three different areas are assessed with quantifying the total risk in each area. The traditional buildings which consist of alleys and connect the courtyard and entry points should be retrofitted and for new buildings construction on these areas there should be strict byelaws and further addition of floors on these points should be restricted. The Guthis and Tole Sudhar Samitee should be the

entry points for awareness and increasing the preparedness level of the communities. The thesis finally recommends that the methods adopted could be only the point of departure. The vulnerability indicators can be further added which needs further research as well as the weightage given to them can be examined more critically in addition.

**Thesis Title: PLANNING FOR CONSERVATION AND
CULTURAL TOURISM IN HERITAGE
TOWN: A CASE STUDY IN LUODAI
HERITAGE TOWN IN CHENGDU,
CHINA**

Submitted by: Xiaoqing Shi

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

With the progress of society, tourism has become a very popular new industry in the world. Various natural and cultural destinations are attracting more and more tourists. However, facing the huge number of tourists, there always is an imbalance between tourism development and cultural conservation, especial in heritage sites.

Luodai, as a particularly heritage town of china, has profound culture. It was regarded as the "the first Hakka town in western of china". However, there are many serious problem related to the current tourism development, especially the excessive commercialization of tourism destination has seriously reduced the heritage value of the town.

Therefore, considering features of urban planning in china, on the basis of studying development of Lijiang, in china and Bhaktapur, in Nepal, the report considers about the relationship between the tourism development and cultural conservation to search new tourism approaches to achieve sustainable development of the heritage towns.

Graduation Year 2012

Thesis Title: **ASSESSING THE SOCIO-ECONOMIC
STATUS OF APARTMENT IN
KATHMANDU VALLEY**

Submitted by: **Archana Bade Shrestha**

Supervisor: **Dr. Mahesh Shrestha**

ABSTRACT

Nepal is urbanizing at a rapid pace. According to CBS 2011 the urban population accounts for 17% and Kathmandu valley shares the highest urban population. The growing population has put immense pressure on land and housing situation in Kathmandu Valley. Apartments came into picture to accommodate the growing population in the less horizontal space of land but all income groups of people could not afford and access to the facilities and space provided in the apartments. There are no clear policies and schemes in our country which addresses the concerns and shelter needs of low income groups.

The objective of the thesis is to understand the practicality of the apartments in Kathmandu valley for the entire income group of people in Kathmandu valley, to review the policies of housing in Nepal and examine the socio-economic status of people.

Case study approach has been adopted for this research. Three apartments viz; Guna Colony, Sunrise Towers and Rio Apartments were chosen for the case study. The survey findings from the case study revealed that only HIG and MIG were residing in the apartment and most of them were businessmen with majority of age group 15 to 39. The current scenario in Kathmandu valley depicts that the developers make investments in construction of apartments as a commercial activity rather than to upgrade housing scenario. Despite, due to the high interest rate, formal collateral in the form of land and house and high income of people to repay loans preferred by commercial banks, the economically weaker section and lower income group of people are not eligible to proceed for the loan. The high cost of units in apartments is beyond affordability of EWS and LIG.

Apartments are in one way the solutions for providing shelter to the maximum number of people and the effectiveness can be visible if all the income group of people can afford it. Cross subsidy schemes as well as encouraging private developers by providing incentives can maximize the EWS and LIG dwelling units.

**Thesis Title: PLANNING FOR ECOLOGICAL
CONSERVATION OF PATAN: A CASE
STUDY OF PHYSICAL, SOCIO-
CULTURAL AND SOCIO-ECONOMIC
STAT OF NEW URBAN AREA WITHIN
RINGROAD AND BAGMATI RIVER**

Submitted by: Archana Khatiwada

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

Ecological conservation of cities includes a number of objectives to enhance the quality of environment. Lots of factors are acting simultaneously as excessive wastage generation, decreasing water table, pollution of water, atmospheric pollution, etc that degrade the environment of cities. Through proper urban and environmental planning, we can reduce the load of these pollutants and improve the quality of nature being intervened by humans.

Rapid urbanization is an up growing trend of Kathmandu valley. With the rise in population growth; city keeps on absorbing resources from surrounding environment. At a certain point of time, the resources get deficit, which can arise an awful moment in human civilization. This state of deficit has already alarmed in many places with limited access to drinking water, rapid rise in

atmospheric temperature, loss of river life, heavy solid waste accumulation, etc. Thus in order to preserve the areas from these kinds of disturbances ecological planning of the area should be considered.

Ecological planning is a broad type of planning prospect in which many ecological issues as conserving soil, water, energy, air, greenery etc. are incorporated to develop the actions necessary to preserve the ecological cycle and balance the nature. The main objective of this thesis paper is to identify the ecological disturbances of the site area and plan for its maintenance. Since ecology is a very broad topic; the thesis is limited to the aspect of soil conservation, water conservation, air preservation, greenery and biodiversity maintenance and energy management. In order to analyze the ecology, there should be an in-depth knowledge on what was there in the site and what changes has been brought up. As such socio-cultural, land use, infrastructure and ecological changes of the site in three time frames of 20 years each (1960's, 1980's and 2000) were analyzed. This showed the clear picture of the development trend, socio-economic transformation and ecological transformations in the site area. Further, analysis led to the identification of the major issues of the site and plan for its ecological solutions.

Patan is the second largest sub-metropolitan after Kathmandu municipality. The rapid rise in population has disturbed its ecological settings in many ways: the Bagmati River is no more useful to the people, there is acute shortage of water and electricity, the accumulation of solid waste is getting higher and higher day by day. As such, the city is getting dryer and hotter with lack of permeable surfaces, loss of greeneries and biodiversity. To cope with the recognized problems set of actions are planned to intervene the city to regenerate it effectively. This includes pressure point analysis in which main pressure points area of the site are identified and analyzed. The research deals up with planning for actions to acupuncture these pressure points and forming the priority for planning procedures of the scope area of thesis which includes solid waste management, waste water management, greenery and biodiversity preservation , energy management and control of air pollution.

Thesis Title: **IMPACT OF BAGMATI CORRIDOR
DEVELOPMENT ON LOCAL LAND
USE AND ENVIRONMENT (CASE
STUDY FROM JWAGAL TO BALKHU
SECTION)**

Submitted by: **Asha Shree Rajbhandari**

Supervisor: **Prof. Dr. Sudarshan Raj Tiwari**

ABSTRACT

Urban river corridors are considered to be prolific areas for development. They not only have numerous commercial potential but also are usually considered potentially attractive and ecologically interesting urban spaces. They have become prime targets for redevelopment in Western and European countries, offering the opportunity to create mixed use, high-density and high-quality communities and further adding to city beautification and environmental protection.

The Bagmati River flowing through the core has very high environmental, social, historical and cultural value. However haphazard and tremendous urban growth as a result of improper planning, management and numerous problems has resulted in the degradation of the river converting it into virtually an open

sewer. This has degraded not only the environment but also affected the economic opportunities of the surrounding land.

In this aspect the research tries to identify the existing situation of the study area in relation to road development and the land use and environmental problems encountered as a result. This research examines the changes that have occurred in the study area over a period of four decades mainly focusing on the land use and river environment aspect, ultimately analyzing the present scenario. A descriptive approach including several field observations, questionnaire survey of buildings along the river corridor road and analysis of aerial and satellite images through digitization was applied in the study.

In the existing situation commercialization is inevitable in the area and so should be further promoted in a planned manner together with keeping the river environment in mind. Ultimately the main aim of this study is to help in guiding future urban river corridor road development in order to realize their full potentials, to learn from the existing problems encountered by the Bagmati River Corridor Road and so to provide the necessary guidelines and recommendations for proper development in future cases.

**Thesis Title: FRAMEWORK FOR EFFICIENT
 RESOURCE MOBILIZATION IN THE
 MUNICIPALITY FOCUS ON
 INFRASTRUCTURE DEVELOPMENT**

Submitted by: Gita G.C.

Supervisor: Dr. Jibgar Joshi

ABSTRACT

The rapid pace of urbanization of municipalities of developing countries like Nepal has put tremendous pressure on provision of Infrastructure and basic need services in the city. Municipalities as a local body with a self-governing institution were established for infrastructure development along with responsibility of providing social services for the people and urban development as a whole. To the context, municipalities have been highly depending on central government finance transfers rather than looking forward for efficient revenue collection. The status of infrastructure development seems to be way far from the arena of municipal concern as well as municipal institutions show no interest entering into the capital market. Thus, it is a need to address the wide range of problems that municipal authorities face in financing urban development as they respond to the challenges of major shifts in their economic base. To sustain the

municipality with own income generating mechanism, the social infrastructure development is necessary.

Dharan Municipality, as one of the major urban centre of Nepal is uprising municipality in the context of revenue generation, infrastructure development and MCPM rating as well. From the past 5 years record, the municipality has been much successful in various sectoral developments like participatory approach, implementation of Integrated Property Tax development of infrastructural services etc. But still the municipality bear some generalised deficits as other in sectors like poor organizational structure and institutional capabilities, inaccessibility of capital marketing and efficient revenue generation.

This research intended with an objective of development of a generalized framework of resource mobilization for infrastructural development of a municipality for efficient service delivery has proposed some major recommendations in the sector of own source revenue generation, loan procedure from TDF, Participatory approach, capital market and cost recovery. The produced recommendations are expected to be a generalized framework for better performance of the municipality, efficient resources mobilization and sustainable development of infrastructural services within a municipal boundary.

Thesis Title: **BOTTLENECKS IN THE
IMPLEMENTATION OF OUTER RING
ROAD PROJECT**

Submitted by: **Leena Koirala**

Supervisor: **Dr. Kirti Kusum Joshi**

ABSTRACT

The infrastructure development projects are always prompt to many land conflicts/disputes due to unawareness on the benefits, limited access to information with relevant policies in constructing of roads. Nepalese Government plan to construct "Outer Ring Road" in Kathmandu valley is highly ambitious project. Success of such large projects depends on many factors and these factors stands as bottlenecks for non- implementation of the project. This research aims to identify the risk factor that has delayed the project and to some extent implementation of ORR project has now just been a theoretical approach. The methodology adopted here is more qualitative using the perspectives of 4 stakeholder's namely organizational staffs, Expertise (Planners), Local people (Landowners) and Politicians. These perspectives are than used to identify the bottlenecks. This identification is also based on the review of various papers and articles been published out which reflects the opinion of different stakeholders.

Analysis from all perspective reveals that the ORR project is more process oriented rather than result oriented. Public participation has neither been cooperative nor mobilization. Level of access to information by local citizens is found to be very poor. Such discrepancy attributes to the lack of institutional framework and coordination of ORR project with local government and public. While reviewing the institutional framework and performance, the study shows that the legal framework and the mandates of ORR project office and local governments are not sufficiently developed, rather there should be separate plans and policies prepared for such huge and ambitious project like ORR. The institutional reform is needed to build trusts on implementing agencies by public.

Finally, planning approach, process and the budget utilization along with public participation is not satisfactory and this shows the failure of organization in planning approach and proper planning process from identification to its design phase.

**Thesis Title: HOME BASED ENTERPRISES IN
TRADITIONAL SETTLEMENTS FO
KATHMANDU VALLEY (STUDY OF
TEXTILE ENTERPRISES IN THAIBA)**

Submitted by: Nisha Shrestha

Supervisor: Prof. Dr. Sudha Shrestha

ABSTRACT

Kathmandu Valley comprises of not only larger cities like Kathmandu, Patan and Bhaktapur but also consists of numerous small towns and villages which are scattered. These settlements were also well known for their specialized production. Thaiba also reveals an excellent example of the unique clustered traditional Newari settlement of Mai la period. Textile has always been an option for secondary occupation since Malla Period in Thaiba apart from agriculture. These Home Base enterprises have been major source of absorbing large numbers of workforce and for generating income.

The purpose of this study was to find out the contribution of home based enterprises (HBEs) in house hold economy and its role in providing economic opportunities to poor migrants and identify the problems and issues related. Finally the growth potential of HBEs and their role in urban development was

examined in the study. Both qualitative (in-depth interviews) and quantitative (with the aid of questionnaire) research methodology was utilized in this study.

The results and findings indicate that all big enterprises have developed from small family businesses and are inherited. As inherited profession, only family members were employed in work but now more migrated hired workers are used to increase the production. The enterprises are labor intensive. Though the people involved in the business both owner and workers mostly have low level of education and training, they are able to earn living with sustainable livelihood. Employment size is a major criterion to define these enterprises. Most of the lower income groups of people are engaged in these types of enterprises and hence are benefited through employment and income generation. And these are providing direct and indirect contribution to national economy. In spite of its crucial role for providing employment and livelihoods to both urban and rural poor, its economic importance is rarely recognized either in national poverty reduction strategies or in city governance initiatives.

Most of the problems lie with marketing management, loans, credit, corruption, large scale rampant smuggling of Indian and Chinese textiles, insufficient trained manpower. With the proper

management strategies and policies, rules and regulations, co-ordination between different line agencies, these enterprises can be developed and encouraged, which further helps in urban development.

**Thesis Title: POST OCCUPANCY EVALUATION OF
SAIBHU BHAINSEPATI LAND
POOLING PROJECTS**

Submitted by: Niyanta Shrestha

Supervisor: Prof. Dr. Sudha Shrestha

ABSTRACT

Kathmandu Valley has been going under rapid urbanization and the pressure of urbanization is intense in Kathmandu valley in last few decades and it has been spilling over the surrounding areas. Thus land development schemes have been conducted to control it. Among these Land development, LP plays a very vital role to control the haphazard growth. But Monitoring and post evaluation has not yet formed as a part of any land pooling projects in Kathmandu Valley despite their successful implementation. So, not much is known about the occupancy rate, nature and pace of development and also to what extent the general objectives of land pooling has been realized is yet to be established.

In this thesis, an attempt has been made to access Saibhu land pooling project and some important aspect are being looked such as what is going on in the project after the implementation, what development need to be considered such as nature and pace of

development, occupancy rate, infrastructure and services provided, their use and condition, land value before and after the project, characteristics of people living in and their perception on the LP project. This research gives a comprehensible picture of the development trend which will be helpful in adding a clear concept about the development pattern and also, how far Saibhu land pooling project implemented have been successful, in the realization of its broader objectives such as providing planned housing plots, sufficient open space and provision to accommodate more people in few land.

But no mechanism for monitoring, control and regulate the development exists. As a result slow development rate, rampant escalation of land value, etc is a common phenomenon. Thus, through identification of the issues, problem and its impact, policies and action for mitigation of urban problems will be proposed. It also includes suggestion and recommendation for incorporation in project implemented at present as well as for future and land pooling projects through this research thesis.

Thesis Title: **HOUSING FINANCE FOR THE URBAN
POOR (ASSESSMENT OF URBAN CORE
AREAS OF KATHAMDNU)**

Submitted by: **Pratigya Manandhar**

Supervisor: **Prof. Dr. Jiba Raj Pokharel**

ABSTRACT

Nepal has been urbanizing rapidly with 17% of urban population and 3.38% growth rate in urban areas i.e. 2.4 times that of the national growth rate. The high inflow of migrants in seek of better livelihood opportunities, due to centralized development process, made the valley to be out of its threshold capacity resulting into emergence of increasing numbers of slums and squatters in the urban market. The poverty level is 3.3% for all urban areas of Kathmandu as per NLSS II. The contribution of the urban areas to the national economy in Nepal is 60.68 percent, with 1/4 of G.D.P collected from Kathmandu, whereas the annual investment in the urban areas is only 2 per cent.

The research is based on: i) Lessons learnt from the best practices adopted in national and international context in developing access to housing finance for low income groups, ii) Sample survey of study areas to know their attributes and gap seen in housing supply in the market. The studies revealed that

urban poor are unaffordable to access housing finance on their own because of need of the conventional collateral, which they do not have, and their low income source which is insufficient to pay the down payment and repay the interest of the bank loan. Further, the government and the formal financial sector have not played a significant role in delivering access to housing finance for the urban poor. Majority of the study conducted by different agencies is focused on the squatters (illegal tenure ship), hardly any study on slum areas (legal tenure ship) is found. Besides, the National Shelter Policy 2068 is also directed towards squatter settlements.

The government should provide cross subsidized housing pricing policy and should take the guarantee of the costs borne by the private sector and persuade the financial institutions for necessary micro finance on lending soft loans to low income groups. Hence, there is a need of an interface between the formal financial sector and low- income households, utilization of community resource, where the government should act as the facilitator and good governance in managing the access of housing for urban poor. The poor needs not only charity but needs transformations. A mindset shift on the part of decision makers is necessary to see urbanization as a powerful tool rather seeing it as a problem.

Thesis Title: **MANAGEMENT OF CULTURAL
HERITAGE SITE (A CASE STUDY OF
KATHMANDU DURBAR SQUARE,
WORLD HERITAGE SITE)**

Submitted by: **Pratigyan Shakya**

Supervisor: **Prof. Dr. Sudarshan Raj Tiwari**

ABSTRACT

Cultural Heritage is the identity and pride of the nation, an asset handed to us by our past generation which we have to preserve for our future generations. World Heritage status adds responsibilities to the site and at the same time make them known to the world. In our case, Heritage is not just a separate entity but people's daily life, ritual and activities are associated with it. Both the tangible and intangible aspects of the heritage add up to its livingness value. Heritage management is to manage change. It involves management of people and values rather than just materials and space.

The objective of this research is to analyze the extent of implementation of Integrated Management Plan in terms of Development, Conservation and Disaster risk reduction; to identify the Constraints for effective management of Kathmandu Durbar Square, World Heritage Site, for maintaining the identity

and value of the Place; to analyze the prevailing issues & risk in the study area; to formulate guidelines and suggestion for proper management of the study Area.

Integrated Management Framework is the document prepared for the management of Kathmandu Valley World Heritage Site which has defined the approach and strategies for the preservation of the outstanding universal value of the property through the improvement of existing institutional, legal and economic frameworks.

Lack of strict Implementation of Guidelines, inability in managing uncontrolled development, saving Vernacular Architecture for preserving Authenticity and integrity are the major failure. This has created many problems like, congestion, excessive commercialization, and loss of historic value of buildings due to encroachment and reconstruction, neglect to old ruined structures, incompatible use etc. Such problems can endanger value of World Heritage sites. The effort of managing institutions cannot be denied but preference for economic return and institutional weakness acts as a major barrier for effective implementation.

Thesis Title: **CONSERVATION AND DEVELOPMENT
OF TRADITIONAL TOWN - LUBHU**

Submitted by: **Shova Thapa**

Supervisor: **Prof. Dr. Jiba Raj Pokharel**

ABSTRACT

Lubhu is a small Newari settlement which is about 6-Km east of Mangal Bazar, Patan. The settlement still shows the strong historical and cultural characteristics. Presently the settlement is facing problems characteristics of other traditional settlement of Kathmandu Valley. The settlements have various cultural as well as architectural elements which are today degrading due to modernization, negligence and lack of awareness regarding its importance. Apart from that settlement is in a serious degeneration due to decline in economic bases such as agriculture and weaving. Also it is under threat of diminishing service center role. In other words the settlement is under the grip of limited economy. The degrading living condition is reflected by the lack of water supply, sanitation and poor housing.

So in this context the conservation and Development of Lubhu is carried out to preserve the historical and architectural importance and at the same time analyze the possible approaches for its

Development. The situation analysis on physical, cultural and economic areas helped to know the settlement from different aspects. Similarly participatory planning process of conservation brought different areas and stakeholders into policies and conceptual plans for and interrelationships. Finally, the study arrived at the policies and conceptual plans for conservation and development covering capacity building of VDC and plans regarding socio-cultural, economic areas and infrastructures. It is hoped that the study will be beneficial to the community and those who want to undertake further research in the area.

Thesis Title: **INFORMAL SECTOR AT NODAL
POINTS SPATIAL COMPETITIONS AND
COMPLEMENTARITIES**

Submitted by: **Shradha Toshniwal**

Supervisor: **Prof. Dr. Sudha Shrestha**

ABSTRACT

Increasing population pressure, disparity in urban and rural areas in socio economic level are the major reasons affecting the decision of migration. The heavy influx of migrants is not fully integrated to formal economy and are forced to earn through informal sector. Street vending have been found increasing and has impacted positively on people's livelihoods in urban areas and Kathmandu in particular. Informal sector has been a source of conflict between authorities, pedestrians, formal sector, vehicular traffic, urban infrastructure development as vendors demand for space in urban area. In this context the present study explores how space as a major factor links different sectors and how public sector's intervention on space changes informal sector livelihood. It further looks at policy implication towards the issues.

The study focuses street vendors at nodal points, as these are the strategic locations. As theories help in defining a research problem central place theory, migration theories and graph

theory are adopted to look at the issues to get insights about the relation of nodal points and vendors, and how traffic network adds up to the competition of space and to know causes of increasing informal sector. The study reflects vendors of three areas which are Sundhara-Newroad stretch, Bhotahity-Ratnapark stretch and Jamal junction. The study was conducted through 70 samples of street vendors, pedestrians and key informant interviews. Demographic, socioeconomic and spatial characteristic and policy situations has been analyzed with regard to competition and complementarities between vendors and other actors.

This study has come up with the conclusions that, street vending provides positive contribution to the urban economy by catering the urban poor, reducing unemployment, poverty, providing opportunity for those with low level of skills and education, even to the specially able people and helps in reduction of social crime. They create certain negative impacts through waste generation, slum promotion, encroachment but if regularized with appropriate policy and regulatory measures, they can be an asset to the urban setting generating municipal economy and creating vibrancy in urban areas and therefore such measures has also been recommended by this study.

Thesis Title: **SITUATIONAL ANALYSIS OF RENTAL HOUSING (A CASE STUDY OF URBAN CORE OF KATHMANDU)**

Submitted by: **Smriti Rajbhandari**

Supervisor: **Prof. Mahesh Shrestha**

ABSTRACT

Rental Housing is an important housing option for many household across the globe for the people who are not ready or are not able to afford a house. For the increasing stream of migrants in Kathmandu valley, rental space provides their first accommodation. In Kathmandu valley about 55% of residents live on rent. The rental market has developed and is functioning on informal basis with no intervention from public or private sector. National housing policies have failed to take the issues of rental housing into account.

The objectives of this research are to examine the living condition of tenants and owners residing in urban core, understand their issues and problems and suggest measures for upgradation.

Case study approach has been adopted for this research. A substantial rental market exists in Kathmandu especially in the

inner core area. Indrachowk and Bangemudha are selected as case study areas on the basis of criteria like their location in traditional core, near prime market center and their poor housing environment.

Urban core has been prime attraction for the tenants because of its locational feasibility. The buildings along the street lines are rented for commercial purpose and the inner pockets are mainly rented for residential purpose. The renting pattern is high in old, load bearing structures because of the cheaper rent. For tenants who cannot afford better renting space try to adjust their living condition to match their affordability. Hence in low income household overcrowding index is high with many people adjusting in a single room and low quality of infrastructures.

Rental housing is closely linked to the way a city's overall housing market functions. If the housing sector is underserved and level of infrastructures is inadequate, it affects the overall urban environment similar to case of urban core area of Kathmandu. Rental housing is a neglected sector and requires more attention from the concerned authorities because it is an integral part of housing sector.

**Thesis Title: POST DISASTER SHELTER RESPONSE
PLANNING**

Submitted by: Sulav Nepal

Supervisor: Prof. Dr. Sudha Shrestha

ABSTRACT

Disaster is a state of serious disruption of the functioning of the community causing widespread losses which exceeds the ability of the affected community or society to cope using its own resources. Developing countries like Nepal bears massive number of human casualties due to various disastrous events that includes disaster itself and post disaster strategies and response. Post disaster Shelter response planning (SRP) is one of the major prerequisite in disaster Preparedness program. It emphasized on provision of temporary shelter with minimum living standard for those affected victims from disaster. To our context earthquake could be major probable disaster for the need of shelter response and planning.

Institutional planning and their implementation framework along with the spatial planning of shelter sites are the vital task for post disaster shelter response. This research intended with an objectives of Development of framework of shelter response plan for a major earthquake disaster in Kathmandu Valley, attempts a steps towards building a sound framework and necessary

guidelines and required strategies for post disaster shelter response. Nepal being one of the developing nations has much more to learn from the disaster management structure of developed countries like Japan and the foreign experiences like shelter response after Haiti and Gujrat earthquake.

Analytical reviews of the major documents related to disaster response of Kathmandu valley and interactions with the related institutions and disaster response agencies has resulted into the requirement of singular framework structure and guiding principles for shelter response after a major disaster event. Similarly there seems a need of refinement in organizational structure of related institutions, proper resource allocation system, land use planning, coordination mechanisms among the institutions and the related standards adopted for shelter response.

Thus viewing the entire status of post disaster shelter response of the nation and the valley, the research produces major sectoral recommendation that includes Policy and Strategy, guiding principles, shelter response activity plan, coordination mechanism, organizational structure and scope boundary of cluster institutions, time line framework, related standards for

shelter response and a prototype shelter layout plan for one of the open space of Kathmandu Valley.

**Thesis Title: TOWARDS AN EARTHQUAKE SAFER
 CITY - A RISK REDUCTION
 APPROACH FOR DHARAN
 MUNICIPALITY**

Submitted by: Suraj Shrestha

Supervisor: Prof. Dr. Jiba Raj Pokharel

ABSTRACT

Earthquake is a major threat to Nepal. Historically, Nepal has experienced many earthquakes with huge losses. Dharan Municipality also has experienced such kind of losses in 1988 Earthquake. The major causes of these losses are the unsafe city elements- Buildings and Lifeline Infrastructure. Landmasses mainly that in Sardu Khola, Seuti Khola, Nirajan Basti are prone to landslides and may form Quake Lakes. Fire is also a potential hazard after earthquake. However, the preparedness level in mitigating those risks does not exist in institutional level. The concept of Earthquake safety does not seem to receive much priority. There are considerable numbers of people who are not willing to retrofit. There have been some efforts towards Earthquake safety from different sectors. The compliance of Building Code is found to be good. But these works are done only in a piecemeal approach. A holistic and comprehensive planning and result based approach is lagging.

From the evidences, analysis and findings, six vulnerabilities for the city of Dharan are identified viz. unsafe buildings, unsafe lifelines and critical facilities, unstable landmasses, poor urban planning, weak socio-economic base and less prepared organizations/ Agencies. The Earthquake Risk Reduction Approach that has been proposed in this research is "Community Based Multi Disciplinary Approach." This approach focuses on many disciplines that has been identified but centered on community people. This approach has three basic risk reduction measures viz. Regulatory Measures, Promotional Measures and Lifeline Infrastructure Improvement Measures. Land Use Planning Tools, Building Code and Resettlement, Readjustment and Urban Renewal are three tools of Regulatory measures. Likewise, Education and Information Dissemination, Tax credits and other incentives, Institutional Capacity Development, Research and Study and Advocacy are five tools of Promotional Measures while High Cost Improvements, Medium Cost Improvements and Low Cost Improvements are the three tools of Lifeline Infrastructure Improvement Measures. These tools have altogether 65 different activities of earthquake risk reduction.

**Thesis Title: URBAN STRUCTURE OF FAR
WESTERN DEVELOPMENT REGION,
NEPAL: SETTLEMENT SYSTEM AND
INVESTMENT PERSPECTIVE**

Submitted by: Yek Raj Adhikari

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

Nepal is a developing country and regional disparities within the nation are also high. Despite more than three decades of regional planning attempts, the policy is never supported by development packages and investments. So that there is not qualitative change in spacio-economic development though there is progress on road connectivity. The plans were lagging in exploitation of comparative resource advantage, to have a regional political structure, intra-sectoral coordination mechanism and power devolution.

Urbanization level is supposed as a proxy of development. Nepal has fifty eight formally designated urban centers with only 17 % urban population. Urbanization is concentrated in Kathmandu Valley and some part of eastern Terai. Far Western Development Region (FWDR) is one of the most deprived among five regions

in the country. The region has highest level of poverty, service/infrastructure inadequacy, and low level of human development.

National urban policy, 2007 and similar strategy documents has clearly mentioned the issue of regional imbalance, and sought for balanced urban structure. In this milieu, the main purpose of the research is to assess settlement system and major development interventions that have taken place in FWDR, and to recommend appropriate policies for promoting balanced urbanization in the region.

The research design is made conceptualizing with help of chosen topic, objectives and literature review of regional and settlement planning theories. Both qualitative and quantitative methods have been adopted. Secondary data are collected through library study of national plans, policy documents, study reports, and maps. Key informant's interview, professionals' view, media coverage and self-experience have been used as source of primary data. Projects with more than five million size executed in last ten years are listed and analyzed as an indicator of major intervention. Population, higher order settlements with investment pattern is examined.

Some remarkable findings have obtained from the research. FWDR obviously have physiographic and other constraints; in the meanwhile, there is enormous areas of comparative advantages. However, the planning and investment approaches are more sectoral/ ad hoc basis, and not integrated and complementary with regional objectives. The decadal capital investment from government is very low compare to other regions. Similarly, prevailing laws and policies are not supportive for growth of urbanization in deprived region.

The research keeps some originality and value itself. Most of the earlier researches have either shown concern about rural development or management of growing urbanization. Many countries have gain experience in managing their high populated capital region with creative spatial planning. But, the case of FWDR is reverse one; seeks innovation so that backward region gets momentum with urbanization model.

Key words: settlement system, balanced urban structure, Services/infrastructure (functions), investment\ backward region, area of comparative advantages, etc.

Graduation Year 2013

**Thesis Title: DEVELOPING URBAN AGRICULTURE
FOR BUILDING AN ECO-CITY**

Submitted by: Shreema Rana

Supervisor: Prof. Dr. Sudarshan Raj Tiwari

ABSTRACT

With the constant increasing population being concentrated in cities, there has been more food transportation. Much of the land fertile for agriculture around cities is now bought up for residential and other urban uses. Often social, environmental and economic impacts are not factored into the conversion decision. Due to conversion more food is brought in to replace food that is no longer produced locally. The significance of agricultural land is linked with the fact, that majority of people of Nepal are still dependent on the agricultural based economy and agricultural mainly in Kathmandu valley has high yield due to its fertility. This Study discusses the concept of the eco city being an evolutionary process and its relationship with urban agriculture.

Urbanization has affected most of the urbanizing fringes of the valley decreasing the local staple food supply; here the case of Lubhu has been studied in detail in the report. The study

recognized the food issues behind the conversion and urban agriculture (UA) activities that are still being practiced which can be scaled up. To understand the context, the focus group discussion and specific case studies were carried out which assisted in in-depth analysis on best practices of UA, its impacts and the rationales behind the developing UA in building an Eco-city. The literature review and analysis facilitated to generate recommendations for guiding the ongoing chaotic development of urbanizing areas like Lubhu into planned way. It has tried to present these answers in the extensive research based to find the descriptive answers of the implications of threats to food security in case of urbanizing urban areas in Kathmandu valley. Literatures review, followed by the Case specific study is the major research methodology followed.

This paper highlighted the common principles of urban agriculture which can help to achieve "Eco- community" so as to leap from the unconscious development into a sustainable development. The production and distribution of food in urban areas through urban agriculture can potentially address problems of food security at the same time making the city ecologically, economically and socially sound. So "eco-city" can be seen as a visionary goal towards which urban agriculture contributes. This could also be the most desirable direction for future

development; the urbanization should be managed especially in the urbanizing areas of developing countries where urban poor are struck with food price inflation.

Key words: Urbanization; urbanizing areas; food security; urban agriculture and Ecoc it y