

Socio-cultural and Spatial Metamorphosis

A Study of Public Open Spaces in Traditional Urban Centre and Sprawled  
Area of Kathmandu Valley, Nepal

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## **ABSTRACT**

This thesis investigates the socio-cultural and spatial transformations of public open spaces by comparing such changes in the public open spaces of the traditional urban centre (TUC) and the sprawled area (SA) of the Kathmandu Valley, individually and in respect to each other over time, particularly during the recent period of suburbanisation. The public spaces in the Valley not only shape the image of the Valley but also help maintain the quality of life that is associated with Nepalese society. The urban form of the Valley that exists today is the result of progressive growth in the traditional settlements over different historical periods: Lichhavi, Malla, and Rana. During each of these periods, particular forms of open space developed in the Valley linked to socio-cultural patterns. The low density spread after the Rana period developed into an unprecedented urban growth and expansion in the contemporary period. This thesis examines the extent to which this growth is introducing new meanings in the open spaces. Hence, a mixed methods approach is used that involves a five-phased systematic approach, including archival study, surveys (denominative, perceptive, photographic, and graphical), questionnaires, and interviews for the analysis of public open spaces and their transformations. For this purpose, three different types of open spaces based on different use functions were selected as the case study open spaces in TUC and SA that form part of a wider study. A comparative study of market squares, neighbourhood squares and community squares was carried out in each TUC and SA. Furthermore, the archival study and interviews were conducted with institutional bodies for the analysis of policies on urban growth and open spaces.

The research shows that public open spaces in both TUC and SA are undergoing socio-cultural and spatial transformations. The mono-cultural spaces of the past have become multi-cultural spaces. The significances of the spaces in both cases are associated with meanings attached to the physical settings (such as places of religious, commercial, social, and others) and their use, linked to their respective sensory perceptions (visual, smell, and sound) and the patterns of activities. The open spaces in both TUC and SA have structures that were added in recent years due to needs of society. Commercialization seems to be the predominant change in terms of activity in most of the case study open spaces, not common in the past (except market squares). It is also found that the cultures associated with most of the open spaces are still being preserved. The change in user groups, physical changes, and uses have affected the users of public open spaces either positively, negatively or both in TUC and SA. The interviews with

the users show that ethnic pluralism has a strong role in the sense of community in both cases. However, a stronger community attachment is found in the users of TUC than SA.

Open spaces in TUC and SA are given low priority in relation to infrastructural development in the government institutions. No clear and concrete guidelines or strategies have yet been introduced for preservation or management of existing as well as development of new open spaces at any level of the government due to ambiguous policies, weak co-ordination among different levels of government, and weak institutional capacity. Therefore, this thesis recommends an integrated approach that includes participation of all levels of government, CBOs including local clubs, and private sector for preparing plans and policies for managing open spaces. The method developed in this thesis also gives an opportunity for further research to explore whether similar findings prevail in public open spaces of other SAs of the Kathmandu Valley.

## DEDICATION

I would like to dedicate this thesis to my Late father **Bishnu Bahadur Shrestha**, who always had encouraged me to pursue higher degree education.

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## **LIST OF ABBREVIATIONS**

ADB	Asian Development Bank
BM	Bhaktapur Municipality
B.S.	Bikram Sambat
CA	Constitution Assembly
CBD	Central Business District
CBO	Community Based Organizations
CBS	Central Bureau of Statistics
CCCM	Camp Coordination and Camp Management
CDRF	China Development Research Foundation
CDS	City Development Strategy
CPTED	Crime Prevention through Environmental Design
DDC	District Development Committee
DETR	Department of the Environment, Transport and the Regions
DHBPP	Department of Housing Building and Physical Planning
DHUD	Department of Housing and Urban Development
DKKV	Deutsches Komitee fuer Katastrophenvorsorge e.V.
DoA	Department of Archeology
DS	Dharahara-Sundhara
DUDBC	Department of Urban Development and Building Construction
DWSS	Department of Water Supply and Sewerage
EEA	European Environmental Agency
EMI	Earthquakes and Megacities Initiative
ERS	Economic Research Service
HMGN	His Majesty Government of Nepal
ICIMOD	International Centre for Integrated Mountain Development
ICOMOS	International Council on Monuments and Sites
IMAP	Interactive Mapping and Archive Project
IOM	International Organisation for Migration
ITC	Independent Transport Commission
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
KM	Kirtipur Municipality
KMC	Kathmandu Metropolitan City
KSUTP	Kathmandu Sustainable Urban Transport Project
KVDA	Kathmandu Valley Development Authority

KVTDC	Kathmandu Valley Town Development Committee
KVTDPIC	Kathmandu Valley Town Development Planning Implementation Committee
KVUDC	Kathmandu Valley Urban Development Committee
KVUDPP	Kathmandu Valley Urban Development Plans and Programmes
KVWSMB	Kathmandu Valley Water Supply Management Board
LSGA	Local Self Governance Act
LSMC	Lalitpur Sub-Metropolitan City
MLRM	Ministry of Land Reform and Management
MoEST	Ministry of Environment, Science, and Technology
MoFLD	Ministry of Federal Affairs and Local Development
MoHA	Ministry of Home Affairs
MOPE	Ministry of Population and Environment
MP	Magargaun Pipalbot
MPIT	Ministry of Physical Infrastructure and Transport
MPPW	Ministry of Physical Planning and works
MSA	Metropolitan Statistical Area
MuAN	Municipality Association of Nepal
MUD	Ministry of Urban Development
NDC	National Development Council
NGO	Non-government Organizations
NNCU	Nepal National Commission for UNESCO
NPC	National Planning Commission
NUP	National Urban Policy
OECD	Organization for Economic Co-operation and Development
ONS	Office for National Statistics
ORR	Outer Ring Road
PMZ	Protected Monument Zones
POPS	Privately Owned Public Spaces
PPP	Public Private Partnership
PPS	Project for Public Spaces
RERC	Real Estate Research Corporation
SA	Sprawled Area
SAARC	South Asian Association for Regional Cooperation
SAC	Sainbu Awas Chhetra
SOA	Super Output Areas
TDC	Town Development Committee



TDCA	Town Development Committee Act
TDF	Town Development Fund
TM	Thimi Municipality
TPIC	Town Plan Implementation Committees
TUC	Traditional Urban Centre
UA	Urbanized Areas
UC	Urban Clusters
UGB	Urban Growth Boundary
ULG	Urban Local Government
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
URBED	The Urban and Economic Development Group
USDA	United States Department of Agriculture
VDC	Village Development Committee
WB	World Bank
WHS	World Heritage Site

## **LIST OF PRESENTATION/CONTRIBUTION**

International Association People-Environment Studies (IAPS) Conference, 2014, Timisoara, Romania 'A Pragmatic Approach towards Characterizing Public Open Spaces in the Traditional Urban Centre and Sprawled Area of the Kathmandu Valley'

A text box on, 'The Impact of Public-Private Partnership in Open Space Management in Dharahara-Sundhara, Nepal' contributed in Chapter 4 in Dempsey, N., Smith, H., and Burton, M. eds. (2014). *Place Keeping: Open Space Management in Practice*, New York: Routledge.

## Chapter 1 : Introduction

### 1.1 Introduction

Urban growth has emerged as a challenge for developing countries like Nepal. The Kathmandu Valley, which comprises three districts namely Kathmandu, Bhaktapur, and part of Lalitpur, has been experiencing unprecedented urban growth since the last few decades and is on a trajectory of urban expansion towards its periphery. Suburbanisation in the Valley is not a recent phenomenon; it can be traced back to different historical periods – ancient, medieval, and modern. The ancient Lichhavi period (440-750A.D.), the medieval Malla period (1200A.D.-1768A.D.), and the modern Rana period (1846 A.D.-1951A.D.) are the standard periods into which the history of the Nepalese civilization is divided. It is reckoned that the intermediate and satellite towns in the Valley emerged as early as the 18<sup>th</sup> century. However, there were no significant changes in the Valley's landscape. Only after 1950 A.D., the Valley experienced rapid suburbanisation, which started to stretch out in the form of urban sprawl. Today, this sprawl has drawn attention among planners, policy-makers, conservationists, economists etc. because of its perceived increasingly alarming consequences in society.

The Kathmandu Valley was always known in Nepal for its exceptional traditional settlements. Among these, the traditional settlements of Kathmandu, Bhaktapur and Lalitpur are considered as archetypical of the medieval period. Progressive growth in these traditional settlements over different historical periods, has given the Valley its present urban form. The Kathmandu Valley is greatly recognized for its public spaces. These spaces not only shape the image of the Valley but also help to maintain the everyday life that is associated with Nepalese society. In addition, the remarkable features of these traditional settlements are the form and functions of open spaces; both public and private spaces were articulated by socio-cultural and religious manifestations. The open spaces, be it at a city, community or neighbourhood level, all have become an integral part of the Valley that expresses the public life and culture and function as a mediator for integrating the communities. Today, the urban area in the Valley is growing and the trend of outward expansion from the core area is increasing. In addition to technological advancement, migration in the Valley is changing the needs and behaviours of people. As a result, these could further add new dimensions in public open spaces or initiate changes in the uses of these spaces.

## 1.2 Research justification

Urban growth has been an extensively discussed phenomenon worldwide. Urbanization has different phases – urbanization, suburbanisation, disurbanization, and reurbanization (Champion, 2001; Klaassen et al., 1981). Suburbanisation as characterized by Hirt (2007) (referring to Jackson (1985) and (Fishman, 1987b)) is an outward spread of urban decentralization by Western suburbanites from the urban centre to its periphery in order to escape the congestion of the centre, seeking a higher quality and family-oriented lifestyle in greener, private and socially exclusive environments. Suburbanisation and urban sprawl<sup>1</sup> are often considered as synonymous, but for Jaret et al. (2006), sprawl is more than just relatively low density living beyond the political boundaries of a city. They linked sprawl to racial segregation (between blacks and whites) and spatial mismatch (with reference to job-residence) in U.S metropolitan areas. Kolb (2008, p.4) considered suburban sprawl as full of random agglomeration of housing developments, shopping strips, offices, campuses and highways. The concept of sprawl is equivocal since it is very complex and broad (Brueckner, 2000; Galster et al., 2001; Johnson, 2001; Wilson and Chakraborty, 2013). It has been the focus of a major debate among urban planners, policy-makers, economists, and environmentalists and has become a policy concern that is contemplated at national, state and local levels (Wassmer, 2001). Sprawl has been explored differently in different countries and in different disciplines such as economics, planning, environment, and institutional/policy.

Through a wider review of the literature on sprawl in the Western (countries in the U.S. and Europe) and Eastern (countries in Asia) worlds, which is presented in Chapter 2, this research identifies a gap between sprawl related and open spaces-related discourses. In studying urban sprawl from across the world, most inquiries focused on its causes and consequences, with negative consequences of sprawl being especially the focus in the U.S context. Urban land fragmentation is a well-known phenomenon of 20<sup>th</sup> century urban sprawl (Hidding and Teunissen Andre, 2002) and has become a problem because of its increased dispersion of human settlements (Gulinck and Wagendorp, 2002). The sprawl that has occurred mainly into the surrounding agricultural areas (EEA, 2006) includes the depletion of farmland resources (Brueckner, 2000). As a result, the cheap undeveloped agricultural lands are converted into residential areas and sprawl alters habitat, degrades natural resources, and eliminates functional open spaces (Irwin and

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<sup>1</sup>Urban sprawl and sprawl have been used interchangeably throughout the research.

Bockstael, 2007). Research has shown the loss of open space is one of the key consequences of sprawl, but most of these studies are based on how agricultural land or ecological corridors are affected rather than the effect on communities. However, an additional important consideration is that as the city expands, the sprawled areas could possibly introduce new or contemporary urban spaces or modify the existing spaces from their original state. Research on public open spaces has been conducted by many authors in many disciplines (Carmona et al., 2003; Carr et al., 1992b; Gehl, 2004; Madanipour, 2010), but to what extent has the impact of sprawl on the nature and quality of open space been addressed? The section turns next to generally exploring key studies on (public) open spaces in relation to sprawl and to traditional and contemporary cities, the main purpose of which is to examine if there are any comparative studies on public spaces between the traditional urban centre and sprawled areas.

The concept of public space in the traditional cities is usually referred to streets or squares, where communal life occurred. The European squares historically provided spaces for people to gather, celebrate, and trade in the marketplace, whereas in the modern cities, plazas and squares have retained their significance, and remain essential spaces for people to exercise democratic rights, socialize and relax (Connor, 2013). Efrogmson et al.(2009) described that the modern city that is comprised of luxury apartments, shopping malls, highways, and gated communities encourages consumption and the old-fashioned city that is comprised of plazas, parks, markets, pedestrian-only walkways, and busy sidewalks encourages interaction. They further argued that the modern city does not address the basic psychological needs: to watch, be around, and interact with others at different levels of intimacy, of people, which help them feel part of a community and endorse human connections. Francis (1987) on the other hand discussed traditional open spaces and innovative open spaces<sup>2</sup>. His study only addressed the characteristics of each of these types of open spaces, but the users' dimension was not discussed. Thompson (2002) discussed the open space of the 21<sup>st</sup> century by exploring the social and spatial implications of new lifestyles, values, attitudes to nature, and sustainability, and also the models for the future city and patterns of urban open space that might accommodate these. According to her, 'the new technology will

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<sup>2</sup>According to Francis (1987), the innovative spaces had emerged because of the failure of traditional types of spaces to satisfy all recreational needs. The traditional open spaces include public parks, neighbourhood parks, playgrounds, and pedestrian malls whereas the innovative open spaces include community open spaces, neighbourhood open spaces, schoolyards, streets, transit malls, farmer's markets, waterfronts etc.

be used to satisfy old and unchanging needs, but also, new patterns of open space networks are being conceptualized which reflect new scientific and cultural understandings' (p.70). The open spaces in traditional cities and contemporary cities could differ from each other; this can be seen in the argument of Burgers (2000) cited in (Yucesoy, 2006) that 'the changing structure of cities and urban areas, economic, demographic and technological developments have significant effects on urban public space, from organization and design to use and experience, from function to maintenance and administration' (p. 31). There have been some attempts to revive the concept of traditional types of open spaces such as pedestrian public realm in cities as well as in suburban districts (Marcus and Francis, 1998).

The suburban open space according to Duany and Plater-Zyberk (1995) is defined by quantity, and usually disposed ornamentally in strips to extend the backyards of certain houses, where it is neither useable nor visible by the larger community. Suburban public space, according to them, occupied sporadically, usually during specifically organized activities such as festivals (p.4). For Gillham (2002, p.8), public open spaces lacks in sprawl areas. Sprawl is a form where the open spaces are either private yards or a particular development (playgrounds, parks) (Girling and Helphand, 1997). A desire for more private space is one of the causes of suburban flight, however for the U.S. context, Kresl (2012) argued that many alternative concepts of social spaces such as malls or commercial areas have emerged in the suburbs because the fenced backyards could not meet the needs of people in the same way as the public space does. The mall is the only space where one is able to be 'in public' (Patterson, 2011) and serves as the heart of the suburbs (Crawford, 2002) and community space (Parlette and Cowen, 2010). These mall cultures have mostly influenced the teenagers, who use them as gathering spaces. Miller (1995) stressed the family isolation that is promoted by the social and spatial structure of suburbia through a lack of public space and through an emphasis on home-centred entertainment. The lack of public space means a decrease in public life in these suburbs or in the sprawl area. Another study conducted in the American context by Cho et.al. (2009) focused on the tradeoff between the values households' place on shared open space and parcel size and the implications for housing development policies. Wu and Plantinga (2003) examined the relationship between publicly provided open space and urban spatial structure with the help of a spatial city model. They argued that the designation of open spaces on the edge of the city attracts high income rather than low income migrants. Lichtenberg (2011) on other hand investigated the conflict between

open space preservation and sprawl in Maryland. His study shows that policy measures such as zoning and preservation of forest (planting) can also contribute to sprawl.

Stahle and Marcus (2009) investigated ways to overcome the conflict between densification and the need for public open (green) space for the context of Stockholm. They defined the nature of sprawl as ‘the urban development that decreases compactness; the product of floor area accessibility and public open space accessibility’ (p.13). In the Australian context, Grose (2009) attempted to study the changing relationship in public open space and private open space in suburbs. She highlighted how old assumptions of providing public open space, referring to the Stephenson-Hepburn Plan for Perth which allocated 10 percent public space, may not be relevant to the times, and how the suburban expansion should avoid parcel-by-parcel land development. She also argued that the ‘ecological imperatives in biologically diverse regions might be regarded more highly than social and cultural concepts in terms of the spatial forms of public open space in new developments’ (p.62). Another study on the Australian context was conducted by Hall (2010) for the analysis of the size of backyard in old and new suburbs.

In order to deal with the new suburban communities in the US context, new urbanism<sup>3</sup> was introduced with an emphasis on public life. This concept was introduced by Duany, Plater-Zyberk & Company (1999) with the notion of a rural to urban ‘transect’ that provides a framework for identifying the types of streets, buildings, and public spaces in rural, suburban, or urban character of different settings, and a traditional neighbourhood structure consisting of central, general, and edge zones. Another approach to combat sprawl by Project for Public Spaces (PPS), is the concept of community-building places, which seeks to realize a vision around the places that are important for the community based on their community life and experiences. The approach looks into the need for streets (that increase pedestrian activity), parks, plazas and central squares, commercial districts enlivened with the local business opportunities, public markets, vending, libraries, and public buildings that serve as a centre of community life and activity (PPS, 2000). The URBED (2006) has also proposed a toolkit for making London’s

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<sup>3</sup>New urbanism, which was first established in the United States in the early 1980, has been discussed as the most influential movement in architecture and planning in recent decades. According to Bohl (2000), new urbanism is a movement that advocates design-based strategies based on traditional urban form to help arrest suburban sprawl and inner-city decline and to build and rebuild neighbourhoods, towns, and cities.

suburbs more sustainable, including improving the public realm through various measures such as paving, lighting, greenery, and public art.

In the context of the Eastern world, Sulaiman and Shamsuddin (2001) addressed the issues of vanishing streets in newly developed or redeveloped towns of Malaysia. Another study conducted by Kinoshita (2001) was also on the streets of Hong Kong, but with a different focus. This study examined the transformations in the lives of Hong Kong street markets, based on the relationships between the performances of the markets and socio-economic characteristics of patrons. The study showed that the high-rise multi-functional buildings had replaced the street market and had affected the everyday life of the less wealthy people who depend on the retail markets. Aikoh et al. (2012) studied the factors influencing visitors to suburban open spaces near a northern Japanese city, for which they employed social and meteorological factors such as the day of the week, school vacations, temperature and the weather. The study showed that the day of the week (Sundays and holidays) and the weather (less visitors on rainy and snowy days) are influential factor for determining the number of visitors. Davidson (2013) also investigated whether the public spaces of a Japanese suburb were conducive to individual freedom and expression and found that the spatial setting comprises elements that contribute to the friendly authoritarianism. Like in the Western world, there have also been some attempts to revive the concept of traditional types of open spaces in Asian cities. This can be seen in Taiwan, the traditional type of public places were revived in the modern memorials, for examples Sun Yat-sen Memorial, Chiang Kai-shek memorial etc. (Miao, 2001).

In the case of the Kathmandu Valley, a very few historical studies on open spaces of traditional towns exist. Tiwari (1989) briefly discussed the hierarchies of open spaces of Malla towns (this will be discussed in detail in Chapter 5). Furthermore, only a few brief studies on open spaces of the core area of traditional towns of the Valley have been conducted at the government level. DHUD and ADB (1991) provided a strategic vision for the core, but this was at a very superficial level and emphasis was given only to streets and courtyard access. DHUD (1995) prepared an inventory of major public open spaces as a part of preparing the master plans for public open spaces in order to improve environmental conditions in the areas surrounding these spaces, but these never came into implementation. MoHA and IOM (2011) identified 83 open spaces within



Kathmandu, but only for humanitarian purposes in the event of an earthquake. The prime interests in this case have only been in determining capacity of people, security, and access during the event of an earthquake rather than on the socio-cultural usage and benefits of open spaces in Kathmandu.

In conclusion, though there is much research on urban sprawl and open spaces, both in the Western and the Eastern World (also refer to Appendices 2.1 and 2.2), a few studies have attempted to explore the issue of the differences between open spaces in the traditional urban centre and sprawled areas. Moreover, the issues of public space in the field of sprawl studies seemed to be greatly ignored. In the context of the Kathmandu Valley, very little literature on urban sprawl exists and no research has been conducted regarding the transformation of public open spaces from the traditional urban centre to the sprawled areas and their impacts on society. Hence, this research attempts to fill the gap in the knowledge of public open spaces-related issues in the sprawl discourse as well as to contribute to the knowledge of the Nepalese context in this regard.

### **1.3 Why Kathmandu Valley?**

Kathmandu Valley, often referred to as Nepal Valley, is considered as the country's cultural centre, not just because of its geographical position and the presence of the capital but because its history is identified with the development of the whole of Nepalese civilization (Gabriele, 1997). The outstanding features of the Valley are that the settlements had developed as the product of gradual accretion over different political and cultural periods (Tiwari, 1989), and the layout of towns and settlements correspond to the mythical prototypes<sup>4</sup> (Micara and Attilio, 1984). The towns of the Kathmandu Valley are suitable for the study open spaces because they have ancient patterns of urban space use with a purity and intensity that has few equals anywhere in the world (Sekler, 1979). Furthermore, open spaces of the Valley comprised their own social and cultural principles, which are quite exceptional in relation to the rest of the world. Hosken (1974) argued that the streets and spaces display a symbolic spatial layout in relation to their adjacent communities that is not only rare but also limited to the

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<sup>4</sup>The settlements of the Kathmandu Valley were planned with the concept of the *Mandala model*, which is considered as the representation of divinities (refer to Chapter 5).

Kathmandu Valley and the Newar<sup>5</sup> artisans. Another distinct feature that makes the Valley unique in relation to other parts of Nepal and the world is the urban elements that are used in the open spaces. The urban elements such as Pati (rest house), Dhunge Dharas (water spout), temples etc. all represent the symbolic expressions of open spaces and are associated with the religion, culture, and social life of the Valley. Today, the Valley is changing due to rapid urbanization. It is experiencing a high influx of migration from different parts of Nepal. This may influence the traditional society of the past and further may affect the use of public space. Another reason for selecting Kathmandu Valley is that it has no concrete policies for controlling growth and managing open spaces. There is an urgent need for strategies for proper management of open spaces.

#### **1.4 Research aim, objectives, and questions**

There is no clear research on public open spaces concerning the physical, social and cultural issues and moreover, no studies about transformations of public open spaces in the context of the Valley. Based on this identified gap in our knowledge, the key question addressed in this research is: how have the public open spaces in the traditional urban centre and sprawled area of the Kathmandu Valley transformed individually and in respect to each other over time, particularly during the recent period of suburbanisation? Hence, this research aims to,

*Investigate the socio-cultural and spatial transformations of public open spaces by comparing such changes in the public open spaces of the traditional urban centre (TUC) and the sprawled area (SA) of the Kathmandu Valley.*

##### **Research Objective 1**

To analyse the historical morphogenesis of open spaces from TUC to SA in Kathmandu Valley based on their physical, social and cultural significances.

##### **Research questions**

###### **a) What is the morphological development of the Valley?**

How have the settlements expanded in different historical periods? What kind of planning principles were adopted in these periods?

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<sup>5</sup>According to the 2011 census, Newars are the sixth largest ethnic group representing 5% of the total population in Nepal. Newars are the indigenous groups of the Kathmandu Valley.

- b) What were the hierarchies of open spaces that existed in the Valley in the past?**

What types of open spaces evolved in TUC and SA in different periods? What were the influencing factors for the emergence of these spaces?

- c) What were the physical, social and cultural significances that were associated with different typologies of public open spaces of the Valley in the past?**

What kind of urban settings did the public open spaces exhibit in the past? What elements or activities facilitated the importance of these spaces?

### **Research Objective 2**

To investigate the transformations of public open spaces in TUC and SA in Kathmandu Valley individually and to compare and contrast these changes during the recent period of suburban growth.

### **Research Questions**

- a) What are the different typologies of open spaces that exist in the Valley?**

Are the typologies of open spaces at present different from those in the past?

- b) What characterizes the current meanings of public open spaces?**

What are the physical, social, and cultural meanings associated with the spaces?

What are the different elements and activities that help to represent the identities of these spaces? What types of sensory perceptions do these elements and activities possess that establish the identity of the spaces? What are the patterns of activities that characterize the spaces?

- c) How are the public open spaces of the TUC and SA being transformed in their physical form, social and cultural meanings? What similarities and differences are found between public open spaces in TUC and SA?**

How have the socio-cultural settings been changed in public open spaces in TUC and SA? How have the uses of these spaces been changed?

- d) What are the reasons for the transformations of public open spaces in TUC and SA?**

### **Research Objective 3**

To analyse the impacts of transformations of public open spaces in TUC and SA in Kathmandu Valley on users.

### Research Questions

**a) What perceptions do users of public open spaces in TUC and SA have?**

What are the characterizations of users of the public open spaces of TUC and SA? What features in the public open spaces of TUC and SA are liked and disliked by the users?

**b) How are the transformations of open spaces affecting the users of public open spaces in TUC and SA?**

Do the users think that the spaces are changing? What kinds of changes have affected the users? What are the responses of the users regarding these transformations?

### Research Objective 4

To investigate the visions of government bodies on the transformations of public open spaces in the Kathmandu Valley.

### Research Questions

**a) What are the existing policies regarding the transformations of public open spaces?**

What are the existing policies for regulating urban growth? What are the policies that have considered planning and management of open spaces?

**b) How do the government bodies perceive the transformations of public open spaces?**

Who are the responsible actors involved in planning and management of public open spaces? What further actions do these bodies think should be taken into consideration for the planning and management of public open spaces?

### Research Objective 5

To synthesize all the findings and draw conclusions on the evolving nature of open space in the Kathmandu Valley during the current period of urban growth and formulate recommendations based on the above discussed research objectives and questions.

## 1.5 Research methodology

Based on pragmatist philosophical assumptions, the aforementioned objectives were studied with an exploratory approach, for which a mixed method research approach that involved a combination of qualitative and quantitative data collections and analyses was used. The data collection was done in two different ways: a) archival study that includes reports, documents, cartographic sources, and photographs, and b) field study that includes direct observations, questionnaires, and interviews. The field studies were done in two phases: i) by the researcher in the year 2012, and ii) by professionals (urban planners, engineers and architects) in the year 2013. It must be noted here that only a small portion of the studies were conducted by the professionals other than the researcher, under the researcher's guidance; this is discussed in detail in Chapter 3.

The following sections discuss the methods used to achieve the research objectives.

### *Research Objective 1*

The morphological growth of the Valley, hierarchies of open spaces that existed in different historical periods, and the significances of open spaces in these periods were studied with the help of historic literature, maps, photographs, and documents.

### *Research Objective 2*

A Transect-Walk method was used for determining the typologies of open spaces from TUC to SA. This method was used to validate the types of open spaces in TUC, specified from archival study as well as to identify the types of open spaces in SA. Arc GIS and AutoCAD were used as a tool for data analysis and interpretations. To investigate the physical, social and cultural transformations of selected public open spaces in TUC and SA, a systematic method was used, which the researcher developed by simplifying the PlaceMaker method of Sepe (2009), and at the same time considering other vital parameters needed for the public open spaces based on the literature review. The developed systematic method consisted of five phases that included both archival and field studies. The five phases include direct observations (denominative survey, perceptive survey, graphical survey, and photographic survey) and questionnaires (include both open-ended and closed questions). Each of these phases produced their own outputs; these are in the forms of maps, descriptions, photographs, and statistics. The data analysis and interpretations for transformation of open spaces were done with the help of AutoCAD. The reasons for transformations

were analysed with the help of literature and questionnaires and semi-structured interviews on users.

### ***Research Objective 3***

The impacts on users due to transformations were addressed through the questionnaires and semi-structured interviews conducted on users in the selected public open spaces. The data analysis was done with the help of SPSS and Excel. The results were interpreted in the form of statistical data. Archival study was also undertaken in order to support the findings obtained from the questionnaires and semi-structured interviews conducted on users.

### ***Research Objective 4***

The policy documents on urban growth and open space were reviewed to identify open space-related policies in the context of the Kathmandu Valley. The perceptions of government bodies on public open spaces and their transformations were analysed through the semi-structured interviews conducted on several government members at central government and local government levels.

## **1.6 Contributions of this research**

In a wider perspective, the research aims to contribute to the knowledge in both sprawl-related and open space-related discourses. In the sprawl discourses, this research addresses the gap that exists in the comparative study of public open spaces between the city centre (specifically traditional settlement) and the sprawled area. In open space-related discourses, it contributes to the knowledge of methodology for studying transformations of public open spaces. Moreover, this research integrates a range of approaches in a simplified way to make comprehensive inquiries regarding the transformations of public open spaces and their impacts on users. In doing so, the research brings together several graphic methods used in the architectural, landscaping, urban planning as well as environmental psychology fields. The meanings of place (for physical elements and activities, and patterns of activities), the sensory perceptions that are attached to each place, and transformations of spaces are represented in mapping. Sensory perception is captured with the help of a Likert scale with five divisions – very pleasant, pleasant, neutral, unpleasant, and very unpleasant. A similar approach is taken

to the Nepalese context; this research will contribute to the knowledge on both sprawl and open space discourses in the area. The research not only provides a methodological framework for analysing the transformations of public open spaces, but also it is the author's hope that it will bring the significance of public open spaces to the attention of the public as well as the government in Nepal.

## **1.7 Structure of the thesis**

The entire thesis is divided into ten chapters. These are discussed in the following sections.

**Chapter 1** provides an introduction to the research, briefly reviews the existing literature from global to local perspectives, and identifies the gap in these literatures. It also provides a justification for selecting the Kathmandu Valley for the study, and establishes the research aim, objectives and questions accordingly.

**Chapter 2** reviews the theoretical backgrounds on urban sprawl and open spaces. It details the generic concepts of urban growth, sprawl as well as the consequences of sprawl. It also deals with the physical, social, cultural, perceptual, and management dimensions of public open space that help in developing the method for the analysis of all public open spaces.

**Chapter 3** discusses the philosophical assumptions, strategies of inquiry, and the methods used to achieve research objectives and addresses questions outlined in Chapter 1. It further discusses the development of a systematic method for analysing public open spaces based on the theoretical foundations as well as the pilot study.

**Chapter 4** starts with the general background study of urban development in Nepal followed by the specific study of Kathmandu Valley and their urban growth trends. It also studies the changing landscape of the Valley.

**Chapter 5** starts with the historical background of the Kathmandu Valley, the morphological growth of the Kathmandu Valley and the chronological development of the settlement and approaches to its planning interpretations. This is followed by a study of the development of open spaces in the Kathmandu Valley and their significance in the historical context.

**Chapter 6** focuses initially on the identification of open spaces from TUC to SA based on Transect walks. It then describes the general background on the TUC and SA, where the case studies are located. It further focuses on the physical, social, and cultural meanings of selected public open spaces. The meanings of the physical settings, activities and their sensory perceptions are explained and mapped. It also focuses on the transformations taking place in these selected public open spaces based on the method developed by the researcher (as discussed in Chapter 3) and the available documents. The comparative studies of patterns of activities are also analysed between the spaces of TUC and SA.

**Chapter 7** focuses on the comparative analyses of user perceptions between the public open spaces of the traditional urban centre and sprawled areas. The main aim is to investigate the perceptions the users of open spaces have in both TUC and SA and how these users are affected due to transformations of these spaces.

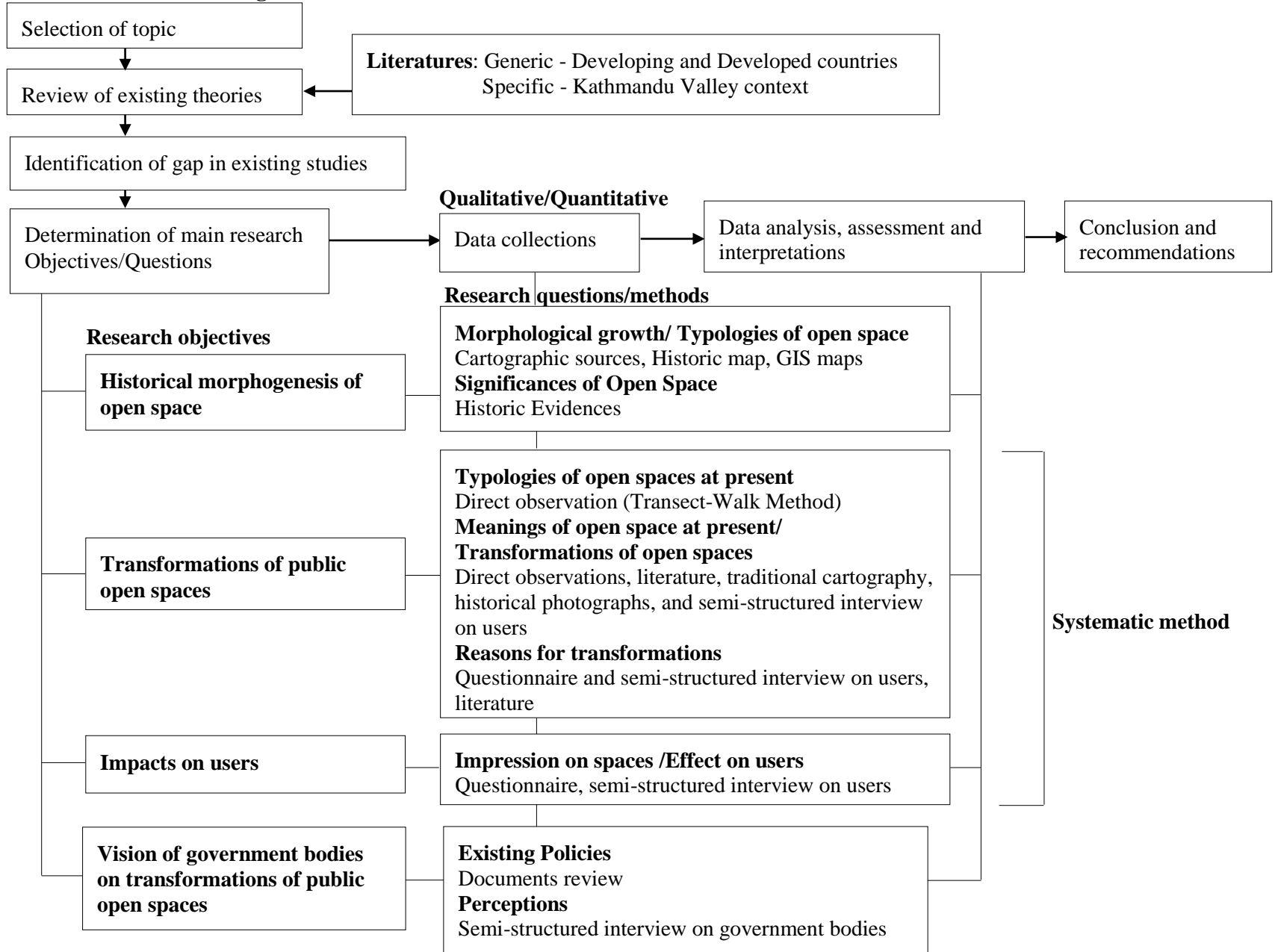
**Chapter 8** analyses the institutional frameworks for managing urban growth and open spaces of the Kathmandu Valley. It reviews the existing policies on urban growth, open spaces, and conservation of cultural heritages of the Kathmandu Valley. The visions of government bodies towards the preservation and transformation of open spaces are also analysed in this chapter.

**Chapter 9** synthesizes as well as validates the findings of this research with other literatures in respect of urban growth patterns, consequences due to transformations occurred in the open spaces, and the government roles in the open spaces of TUC and SA.

**Chapter 10** provides the overall summary of the findings, addresses the research questions, and provides some recommendations. It also discusses the opportunities for further research.



**Table 1.1: Research design**



## **Chapter 2 : Literature Review**

### **2.1 Introduction**

This chapter presents the theoretical backgrounds on urban sprawl and open space. The chapter is divided into two sections: i) sprawl-related and ii) open space-related literature. The chapter begins with the concepts of urban growth providing a clear distinction between urban and rural and suburb and exurb. It then reviews sprawl in different disciplines to investigate if open space issues have been addressed in sprawl related discourses. It further provides the theoretical foundations on public open spaces. For the open-space related literature, the chapter first provides clear distinctions on the concepts of space, urban space, and open space; public and private spheres; and space, place, and sense of place. There is always psychological connection between the people and the places; hence, this chapter also briefly reviews the sensory perceptions that help to establish the sense of place. It further discusses general perspectives about the physical, social, cultural, and management dimensions of open spaces and then reviews how the public spaces in the Eastern world differs from those in the Western world.

### **2.2 Theoretical foundations on urban sprawl**

#### **2.2.1 Background study on concepts of urban growth**

The long lasting urban settlements have existed for the past fifty five hundred to six thousand years (Kleniweski, 1997). Hartshorn (1992) added that the cities emerged between 3000 and 4000 BC. in the present day Iraq, in the fertile crescent formed by the Tigris and the Euphrates river valleys of Mesopotamia near the ancient shore of the Persian Gulf. These ancient cities were significantly small with a majority of rural people (Davis, 1965). Today cities are growing fast with the emergence of urban agglomerations and are going through transformation from rural to the urban.

#### **2.2.2 Understanding the ‘Urban to Rural’ typology**

‘What is urban has been a difficult task and there is no commonly agreed definition.....There are a number of approaches in which criteria are based to determine what an urban area is. An economic approach would be based on administrative units and would define using a threshold for labor force (economically active population rates) in agriculture. A geographic approach

would consider that density is the main indicator of urbanity’. – OECD and CDRF (2010, p.8) following United Nations, 1974.

From the above statements, it is clear that the term urban is not easy to define and there is no universally accepted approach to accredit it. In general, Demographia (2011) defines urban area as ‘an area with continuously built up land mass of urban development’, which are called ‘urbanized areas’ in the United States, ‘unites urbaines’ in France, ‘urban areas’ in the United Kingdom, ‘population center’ in Canada, ‘urban centers’ in Australia and ‘urban agglomerations’ in India. In contrast, rural area according to the national statistics of UK is the remainder or all land, which is not defined as urban. The attributes that define rural include tracts of open countryside, low population densities, a scattering of small to medium sized settlements, less developed transport infrastructure, and lack of access to services and amenities. According to OECD and CDRF (2010), a commune is classified as rural if the population density is below 150 inhabitants per square km. Different countries have their own criterion for the classification of the urban areas. The way of understanding urban and rural areas of one country may not be true for other countries. It may even not be same for the states within a country. A clear example can be the case of UK, where the definitions of urban area differ between the states-England, Wales, and Scotland.

According to ONS (2004), the rural/urban definition of England and Wales introduced in 2004 as a joint project between a number of Government Departments and delivered by the Rural Evidence Research Centre adopts several approaches (see Table 2.1).

**Table 2.1: Rural-Urban definition of England and Wales**

Approaches	Settlement types	Classes of settlement types (according to either ‘sparse’ or ‘less sparse’)
i) Settlement based approach	- Urban (population over 10,000) - Town and Fringe - Village - Hamlet and isolated dwellings	- Sparse: urban, town and fringe, village, hamlet and isolate dwellings - Less sparse: urban, town and fringe, village, and hamlet and isolated dwellings
ii) Super output areas (SOAs) and wards	- Urban (population over 10,000) - Town and Fringe - Village, hamlet and isolated dwellings	- Sparse: urban, town and fringe, and village, hamlet and isolate dwellings - Less sparse: urban, town and fringe, and village, hamlet and isolated dwellings

Source: ONS (2004)

On the other hand, according to the report on urban/rural classification prepared by the Scottish Government (2012) for Scotland, the classification is based on two main

criteria: i) population, and ii) accessibility that depends upon drive time to differentiate between accessible and remote areas (see Table 2.2).

**Table 2.2: Rural-Urban classification of Scotland**

Criteria	Classifications
i) Population	<ul style="list-style-type: none"> <li>- Large Urban areas: population greater than 125,000</li> <li>- Other urban areas: population between 10,000 and 125,000</li> <li>- Small towns: population between 3,000 and 10,000</li> <li>- Rural areas: population less than 3,000</li> </ul>
ii) Accessibility	<ul style="list-style-type: none"> <li>- Accessible: areas within a 30 minute drive time of a settlement with a population of 10,000 or more</li> <li>- Remote: areas that are more than a 30 minute drive time, or areas that have a drive time between 30 and 60 minutes from a settlement with a population of 10,000 or more</li> <li>- Very remote: areas that are more than a 60 minute drive time from a settlement with a population of 10,000 or more</li> </ul>

Source: Scottish Government (2012)

In the United States, the urban-rural classifications primarily represent geographical areas. Urban areas represent densely developed territory, and encompass residential, commercial, and other non-residential urban land uses. The Census Bureau identified two types of urban areas: Urbanized Areas (UAs) of 50,000 or more people, urban clusters (UCs) of at least 2,500 and less than 50,000 people. All population, housing, and territory not included within an urban area are incorporated in rural areas (U.S. Census Bureau, 2013).

### ***Between the urban and rural: suburb and exurb***

Many urban researchers believe that developments are also taking place between urban and rural boundaries. According to Theobald (2001), the urban landscape consists of urban, suburban, exurban and rural areas that are stretched out from the core to the periphery. The transition of these forms follows some pattern, from the stages of agricultural, early urban influence, small town growth/ exurbanization, and finally the urban stage (Pond and Yeates, 1993). There is confusion around where the suburban and exurban are located; hence, these terms must be made clear first. Suburbs, in general terms, are described as ‘outgrowths or dependencies of larger settlements, with a clear relationship with a city or town and with distinct character’ (English Heritage, 2007, p.2) that comprise of low-density residential areas outside the main city. The suburb is not a recent phenomenon. The stone carving of the Persian city of Madaktu that showed the suburban domiciles situated outside the city walls (Vaughan et al.,

2009) gives the evidence that it had been in existence since long time ago, but it became more common in the nineteenth and twentieth centuries. By 1970, the percentage of Americans living in the suburbs was almost exactly double what it was in 1940. More Americans lived in suburban areas (37.6%) than in central cities (31.4%) and in rural areas (31%) (Fishman, 1987a). This trend increased and in 2000, 50% of the US population lived in the suburbs (Hanlon et al., 2010). The same is the case in the UK context; ITC (2004) had stated that 84% of the population had lived in the suburb in 2000. On the other hand, exurban are the areas beyond the suburb of the city. The term 'Exurb' (extra urban) was originated by Sectorsky (1955) in his book 'The Exurbanites', to define the new form and function of residential settlements which function as a commuter town for the urban areas. It is conceptualized as a place of transition between urban and rural, located somewhere between the suburbs and truly rural areas and within the commuting zone of a large, urbanized area (Clark et al., 2006, p.2). It is a very low density region beyond the regularly built suburbs and is economically and socially tied back to the central cities (Bruegmann, 2005, p.80), a composition of many landscapes that includes farms, forests, isolated suburban subdivisions, small towns, acreage tract subdivisions and estates and does not include built up urban and contiguously developed suburban areas or rural areas beyond commuting range of major cities (Nelson, 1992, p.350). It is seen as the most pernicious form of urban sprawl (Nelson and Sanchez, 1999) that transcends the traditional dichotomy of urban versus rural and metropolitan versus nonmetropolitan (Theobald, 2001).

Furthermore, there always has been confusion between the boundary between suburb and exurb since the boundary between them is continuous (Nelson and Sanchez, 1999). The difference between them can be defined by density and the distance from the urban area. Following Blumenfeld (1983), Nelson (1992) explained that the exurban areas in the U.S. context are the counties - i) within 50 miles of the boundary of the central city of a metropolitan statistical area (MSA) with a population of between 500,000 and less than 2 million, or ii) within 70 miles of the boundary of the central city of an MSA with population of more than 2 million. They are 10 to 50 miles away from a major urban centre with at least 500,000 people or 5 to 30 miles from a city of with at least 500,000 people and the area within 25 minutes commuting distance and population density less than 500 people per square mile (Daniels, 1999) or 0.025 to 0.1 housing units per acre (Theobald, 2001).

### 2.2.3 Suburbanisation and its interpretation in classic models of urban form

The massive population movements from rural to urban areas have encouraged the urban growth throughout the world. This urban growth lead to suburbanisation (Klaassen et al., 1981) and can further develop into sprawl. Therefore, sprawl is related to urban growth. In U.S., urban growth and sprawl are almost synonymous and the latter has become the dominant urban form (Glaeser and Kahn, 2003). The majority of people move to the suburbs for better quality of living standard. The driving factors of the core areas such as dense population and insecure inner city life and that of suburbs such as close to the nature, abundant open space, and low housing price forces people to leave the central cores. Hence, there has been a debate that whether suburbs possess positive or negative characteristics. Bourne (1996) had tried to interpret suburbs in terms of their positive and negative aspect in ten different ways in terms of natural ecological extensions, means of escapism, macro-economic policy tools, vehicles for capital accumulation, means of social engineering, logical outcomes of rational locators, maps of consumer preferences and choices, socio-political strategies, as asylums and rural nostalgia. The physical growth and the expansion of the cities are dynamic. The study on urban growth that considered only urban and rural population went beyond and considered the relation between social growth and physical expansion of the cities after the introduction of Burgess concentric model that illustrates the relationship of the socio-economic status of the household with distance from the Central Business District (CBD) in a set of concentric rings (Bishi and Olajide, 2011). The more the residents become affluent, the more tendencies to move outward in an urban area and the centre is replaced by other less affluent residents. This model is best known as ‘invasion and succession process’ (Mckenzie, 1925). As defined in Pitzl (2004, p.224), another classic model, known as the Sectoral model, was developed by Homer Hoyt in 1939, which showed that cities stretch outward from the CBD in wedge-shaped sectors following major transportation routes. The high-income housing sector is first built on the most attractive land near the CBD, and in time, it grows outward towards the open space to accompany high-income residences in the suburban area. As the city size grows, the suburban areas tend to develop and function like smaller business districts or a satellite node or nuclei of activity around which land use patterns take their form (Bishi and Olajide, 2011). Therefore, another scientific model, “Multiple Nuclei Model” developed by geographers Chauncy D. Harris and Edward L. Ullman in 1945 considered how cities cluster similar activities based on land use and economical requisites adjacent to each other. Their study showed that the clustering of similar land use patterns influences

the immediate neighbourhood, for example hotels and restaurants developing around airports.

#### 2.2.4 Review of sprawl in different disciplines

This section reviews the literatures on sprawl to identify if any open space related issues have been addressed in this discourse. In doing so, inquiries are made in different disciplines, which are summarized as below (also refer to Appendix 2.1).

Sprawl has become the world's eminent issue in the 21<sup>st</sup> Century among urban planners, policy makers, economists, conservationist, environmentalist and politicians. In the 1990s, the expansion of urban spatial structures into the surrounding areas had become a regular and almost universal trend (Garreau, 1991); it took the shape of sprawl in most of US and British cities in the 20th century (Couch et al., 2005). Bruegmann (2005) articulated that the process of urban sprawl is much older than its discourse. He referred to *Suburbium*<sup>6</sup>, the pattern of sprawl of the Roman period, meaning what was literally below or outside the walls.

The term "Sprawl" was first used in a 1937 speech by Earle Draper of the Tennessee Valley Authority to a national conference of planners (Black, 1996), in which Draper said, 'perhaps diffusion is too kind of a word... In bursting its bounds, the city actually sprawled and made the countryside ugly... uneconomic [in terms] of services and doubtful social value.' According to Wassmer (2002, p.2), it was described by the sociologist William Whyte in 1958 in Fortune magazine,

'in the next three or four years, Americans will have a chance to decide how decent a place this country will be to live in, and for generations to come. Already, huge patches of once green countryside have been turned into vast smog-filled deserts that are neither city, suburb, nor country and each day - at a rate of some 3,000 acres a day - more country is being bulldozed over....'.

Whyte at first had characterized sprawl in terms of its adverse environmental impacts but later refocused it based on urbanization (Whyte 1958 cited in Miron, 2003) saying,

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<sup>6</sup>The citizens of Rome called Suburbium where the land uses that could not be accommodated in the city were placed outside the walls.

‘.....because of the leapfrog nature of urban growth, even within the limits of most big cities there is to this day a surprising amount of empty land. But it is scattered; a vacant lot here, a dump there - no one parcel big enough to be of much use’ (p.2).

Sprawl is a ‘low-density development beyond the edge of service and employment, which separates where people live from where they shop, work, recreate and educate, thus requiring cars to move between zones’ (Sierra Club, 1998) and areas without efficient land use (Vestbro, 2004). Ewing (1994) acknowledged sprawl as a matter of degree. It is a development process rather than a static situation (Ewing, 1997; Harvey and Clark, 1965), a *process* of development and changes in *patterns* of land use over time, particularly at the periphery (Galster et al., 2001). The use of the term in various disciplines from different perspectives, (mis)intepretations, confusing characteristics and consequences, and use as a situation as well as a process have made sprawl very difficult to define (Franz et al., 2006). Galster et al.(2001), reviewing the existing literature, declared that the concept of urban sprawl is ‘lost in a semantic wilderness’(p.682).

The economists consider it as the occurrence of excessive suburbanisation. Studies in the U.S context were conducted on private and social cost and benefits (Wassmer, 2002); cost and population growth (Wassmer, 2000), decentralization and density (Glaeser and Kahn, 2003); property tax (Brueckner and Kim, 2003; Song and Zenou, 2006); demand for land and flight from blight (Glaeser and Kahn, 2003); urban blight (Brueckner and Helsley, 2011); physical, monetary, temporal, and social/psychological means of cost of sprawl (Burchell et al.,1998); impacts on infrastructure, housing, transportation, energy, environmental and quality of life (RERC 1974); and cost of services (Carruthers and F.Ulfarsson, 2003).

In the planning discourse, studies were conducted on urban development (as scattered development, leapfrog development, ribbon development or continuous low-density development) (Ewing, 1994); patterns, processes, causes, and consequences of sprawl (Galster et al., 2001); and land use controls (Pendall, 1999). Density and accessibility have been widely discussed indicators in the economic and planning literatures; for example the works include residential density preferences (Gordon and Richardson, 1997), poor accessibility among related land uses (Ewing, 1994), and the automobile as



a means of accessing the individual land uses' (Burchell et al., 1998). Other accessibility related researches include: measurement of the distance of housing units to the nearest community nodes (schools, libraries, post offices, stores etc.) (Hasse and Lathrop, 2003), and road accessibility in leapfrog and segregated sprawl (Hasse and Kornbluh, 2004), role of automobile in dispersal of cities (Bruegmann, 2008; Newman and Kenworthy, 1989).

In the environmental subjects, sprawl is regarded as habitat loss, fragmentation, extinction of species etc. (Benfield et al., 2001); degraded quality of life (Kahn, 2000); air pollution (Ewing, 1994; Nechyba and Walsh, 2004; Ottensmann, 1977); and threat towards biological diversity (Babcock, 2008; Ewing et al., 2005; Squires, 2002). In the European context, studies include spending on services (Hortas-Rico and Solé-Ollé, 2010) and identification of the archetypal sprawled city<sup>7</sup>. Furthermore, in the European context several projects have been conducted – e.g. SCATTER and URB PANDENS, the first emphasizing policy measures for combating sprawl using a land-use/transport model (see Besussi et al., 2003), and the later focusing on the social, economic, environmental and spatial aspects of sprawl (see Couch et al., 2005).

In the policy- related literature, the fragmentation of planning systems and institutions are blamed for causing sprawl (Besussi et al., 2003). Many strategies have been proposed to combat sprawl in the western world, to name a few: urban growth boundaries (UGBs) in US (Anas and Rhee, 2006; Anas and Pines, 2008; Brueckner, 2007) and Europe (Gennaio et al., 2009), smart growth in U.S. (Benfield et al., 2001; Carruthers and Ulfarsson, 2008; Resnik, 2010; Squires, 2002), urban containment in (US) (Nelson, 2004) and in Europe (EEA, 2006), and green belt planning policy (UK) (Anas and Pines, 2008; Couch et al., 2005).

Contextualizing to the Eastern world, many studies have been conducted with reference to the physical aspects of sprawl as in the Western world. The research includes, the mobility patterns, the growth management, and the policy implications (Zhao, 2010), and uneven land reform and unintended consequences of political manipulation (Deng

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<sup>7</sup>With the study of 209 European cities using six dimensions (connectivity, decentralization, density, scattering, availability of open space, land-use mix), Arribas-Bel et al (2011) identified the archetypal sprawled city, where high commuting times; medium-high decentralization; low density, availability of open space and land use mix; and high scattering of the urban development were experienced.

and Huang, 2004) in Chinese cities, single-use developments/zoning, disconnected street network, low accessibility, and commercial strip development in the Iranian<sup>8</sup> context (Ebrahimpour-Masoumi, 2012); land readjustment in the Japanese context (Sorensen, 1999); financial cost guiding the economists and urban planners in decision making processes (Osman et al., 2008) and the shifts in socio-economic developments and cultural aspects due to sprawl (Abdullah, 2012) in the Malaysian context. Other research includes the work of Kelly (1999) that had focused on the shift in the culture of work and a change in expectations among the younger generations in the extended metropolitan area<sup>9</sup>, Tanza of Philippines; patterns of lifestyle and livelihood (of gardeners and rice farmers ) and landscape change in the fringe of Bangkok (Askew, 2000); inheritance of land over generations in the sprawled area (Bjonness and Subba, 2008); and identification of the pattern and nature of sprawl in India (Sudhira et al., 2004).

### **2.2.5 Review on socio-cultural issues of sprawl**

Sprawl has also become a socio-cultural issue; it signifies a completely different way of life (Gans, 1967), and specific representations and changing socio-economic conditions (Vaughan et al., 2009). The social values in the suburbs could be disappeared dramatically due to spatial separation of urban functions and less likelihood of people joining formal social organization (Putnam, 2000), which could further result in lack of sense of community and social segregation.

#### *Sense of Community*

Because of the car-oriented development in sprawl, travel by foot is less preferred by people, and thus reduces communication with the neighbours. That is why Jackson (1985) in his study stated that,

‘A major casualty of America’s drive-in culture is the weakened sense of community which prevails in most metropolitan areas’. I refer to a tendency for

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<sup>8</sup>Ebrahimpour-Masoumi further suggested a definition for Iranian sprawl as a ‘planned and unplanned automobile-oriented urban growth with lack of local public facilities and uses, public social open spaces, and relatively low population density that is caused by fast urbanization and poor growth control and automobile-oriented planning’ (p.16-17)

<sup>9</sup>The extended metropolitan regions in Indonesia are also called Desakota, an Indonesian word for ‘village’ and ‘town’.

social life to become privatized and to a reduced feeling of concern and responsibility among families for their neighbours and among suburbanites in general for residents of the inner city.... the real shift, however, is the way in which our lives are now centred inside the house, rather than on the neighbourhood or the community. With increased automobiles, the life of the sidewalk, and the front yard has largely disappeared, and the social intercourse that used to be the main characteristics of urban life has vanished' (p.272).

In addition, the lack of meeting places reduces the interpersonal contacts (Burchell et al., 1998). Therefore, these low density developments are responsible for weakening the sense of community. The sense of community according to McMillan and Chavis (1986) consists of four elements: membership, influence, integration and fulfilment of needs and shared emotional connections. Without consideration of these four elements in the community, it is difficult for the individuals to be a part of a community; this could reduce the social interactions further. Brueckner and Largey (2006) defined these social interactions as an increasing function of population density. For this, they provided the hypothesis for the U.S cities that the social interaction is stronger in denser areas because they facilitate interaction by putting people in close proximity, but the result they obtained was just the opposite. They explained this result in terms of three possibilities: firstly, people have more choices of entertainment in dense areas that lessen interaction with each other, secondly people draw themselves inward for their privacy against the dense areas, and thirdly high densities may be associated with criminal activity, making people suspicious of one another and reluctant to interact with each other. In contrast to the result obtained by Brueckner and Largey, Putnam (2000) and Anas and Pine (2008) had blamed low densities for the death of traditional neighbourhoods. Torrens and Alberti (2000) on the other hand had analysed how the density of urban activity declines along a gradient with growing distance from a designated centre. Sprawl not only weakens neighbourhood connections but also the connections between family members who live in the same residence (Burchell et al., 1998). They also added that it reduces the amount of time parents spend with their children because households must have at least two people working outside the home in order to pay for the multiple automobiles.

### ***Social segregation***

Franz et.al (2006) had related social segregation processes with the sprawl. According to them, higher income households will locate themselves at higher distance from the CBD than low-income households since they allocate more money for transportation. Therefore, there is an urban divide, which encourages social segregation. In addition, the concept of ‘flight from the blight’ pushes high-income groups to move from the degraded inner areas. The loss of high-income population in the inner areas means higher tax rates, higher crime rates, low-performing public schools, the inhabitation of the centre by poor and minorities. This enhances spatial differences in wealth and quality of life across the various parts of the cities (UN HABITAT, 2010).

Research on sprawl has been conducted in many disciplines but most of these are explicitly associated with its causes and consequences. No issues of (public) open space seem to be addressed in the fields of sprawl. Loss of open spaces, though are referred most as the consequences of sprawl, these are mainly linked to the agrarian fields or ecological corridors. The next step is to review open space-related literature to find if any sprawl related issues have been addressed in this field and also to understand the characteristics of public open spaces.

## **2.3 Theoretical foundations on public open spaces**

### **2.3.1 Space, urban space, and open space**

Before understanding open space, it is important to have a brief insight into space and urban space. The concept of space has been greatly researched by philosophers, scientists, geographers, urban designers throughout history. Space as a subject of philosophical inquiry appeared very early in Greek philosophy and was confounded with matter (Jammer, 1993) because ‘space right out of cosmogonic myth, was to the ancient Greeks pneuma apeiron (unbounded breath of gods) and occasionally kenon (void)’ (Schwartz, 1997 , p.75). A new dimension in the space was added by Newton and Leibniz. Leibniz believed that space is a product of mind or a mental entity while Newton envisaged it as a real thing that is independent of bodies and souls (Cassini, 2005, p.41). It was since the 1970s that the concept of space drew the attention of post modernists with an interest in material mass and its meanings (Van de Ven, 1993 cited in Madanipour, 1996). Lefebvre (1991) believes that besides the physical and mental

spaces, there is also a social space, the space of social life, of social and spatial practice (Madanipour, 1996; Mugavin, 1999). According to Lefebvre (1991, p.286), 'space is permeated with social relations; it is not only supported by social relations but it is also producing and produced by social relations'. This concept of Lefebvre's has provided the ground for many scholars to understand social space. Colquhoun (1989) reckoned space as *pre-existent and unlimited aspects* that contribute new ideas of *continuity, transparency, and indeterminacy* (p.224), and according to Hiller (1996) it is a fundamental facet of how societies and cultures are organized in the real world (p.20).

Concerning urban space, Colquhoun (1989) has defined it in two senses. The first is social space, which is characterized by geographers and sociologist and is the spatial implications of social institutions, from which the physical characteristics of the built environments tend to be epiphenomenal. The other is built space, which is characterized by architects and emphasis is given to physical space, its morphology, perceptions, use and the meanings it can generate. Urban spaces are associated with people, objects, and events (Madanipour, 1996), are physical and symbolic representations (such as, paths, edges, districts, nodes and landmarks) (Lynch, 1960), and are containers to accommodate, separate, structure and organize, facilitate, heighten and celebrate spatial behaviour (Lawson, 2005). Walzer (1986) cited in Francis (2010) has distinguished two types of urban space: single minded space that is designed for one particular usage or activity; and open minded space that is designed for a variety of uses including unforeseen and unforeseeable uses.

Generally, urban open space can be regarded as the matrix of vacant land, bridging it with the surrounding built environment and further interlinking to the rest of the city landscape. This can take the form of public/private gardens, plazas, streets, squares, parks etc. These spaces have their own morphological characters, symbolic representation, and are used for different purposes. Francis (1987) acknowledged these spaces as publicly accessible open places designed and built for human activity and enjoyment (p.76). He derived this definition from Lynch (1981), according to whom, open space is open when it is accessible. These are the material spaces that have social and cultural significances and help in social (re)production. Referring to Lefebvre's (1974) social production, there are three interconnected concepts. The first is perceived spatial practice, which is revealed through the deciphering of space. There is a close

association between daily routines and urban reality. Second is conceived representation of space, which refers to knowledge of planners, urbanists, technocrats, and social engineers. Third is lived representational space, which is lived through associated images, symbols and hence the space of inhabitants and users. Harvey (1989) has related these three dialectical propositions with accessibility and distancing, appropriation and use of space, and domination and control of space, which he titled as a grid of spatial practices (also see Table 2.6). Harvey referred spatial practices to physical and material flows, transfers, and inter-actions that occur in and across space in such a way to assure production and social reproduction. The representations of space according to him, encompass all signs and significations, codes and knowledge, and spaces of representation are social inventions (codes, signs, and even material constructs such as symbolic spaces, particular built environments etc.) that seek to generate new meanings.

### **2.3.2 Open space: the typologies defined**

The definition of open space adopted by the Council of Europe (1986, p.2) states that

‘it is an essential part of the urban heritage, a strong element in the architectural and aesthetic form of a town, plays an important educational role, is ecologically significant, is important for social interaction and in fostering community development and is supportive of economic objectives and activities’.

The Scottish Executive Central Research Unit (2001) has defined the typology of open spaces as encompassing two key types: civic spaces and green spaces. Civic spaces are predominantly paved areas, mainly in town and city centres, for example, urban squares, market places or any hard landscaped areas with civic functions. The green spaces on the other hand are a vegetated land or structure, water or geological features within urban areas; these include parks, gardens, green corridors, children’s play areas etc. Francis (1987) for the American context, defined open spaces as two different types: the traditional (neighbourhood parks, playgrounds and urban plazas); and the innovative (waterfront parks and redesigned neighbourhood streets). The concept of innovative open spaces emerged because of the failure to satisfy all the recreational needs by the traditional open space. Stanley et al. (2012), based on form and function, have constructed seven categories of open space: food production areas, parks and gardens, recreational space, plazas, streets, transport facilities, and incidental space with a spatial

scale continuum: city wide, intermediate<sup>10</sup>, and individual building. Woolley (2003, p.74-75) has defined the typology of open spaces on account of physical and social aspects, which she has categorised as domestic, neighbourhood, and civic; this is based upon the concept of home range<sup>11</sup>. This categorization indicates three social levels of familiarity, sociability, and anonymity. The domestic spaces include private garden, community garden; neighbourhood spaces include park, playgrounds; and civic spaces include squares, plaza, water features, office grounds etc.

### 2.3.3 Public and private sphere dichotomy

The public and private dichotomy has been the prime concern in the social research since the past. The debate on this dichotomy had become the fundamental subject during the 1970s (Sennett, 1977) and was one of the grand dichotomies of western thought (Benn and Gaus, 1983; Bobbio, 1989; Weintraub, 1997) in the key issues of social (ordering of everyday life) and political (of moral and political debate) analysis (Weintraub, 1997). Benn and Gaus (1983) expressed these as a complex structured concept that have ideological associations. Silver (1997, p.43 ) stated that personal is private, impersonal is public, both are antipodal with each other in society. They have opposite meaning; the existence of any of the words does not make any sense without the other. These sometimes compete, sometimes complement each other, and sometimes are merely part of a larger series of classifications that include, say, local, domestic, personal, political, economic or intimate (Warner, 2002, p.28). Despite their symbiotic relationships, each of these gives rise to other and is incommensurable with each other (Sheller and Urry, 2003). Moreover, different authors have made the comparison of public and private in different ways. According to Sennett (1977), public signifies open scrutiny of anyone whereas private signifies a sheltered region of life defined by one's family and friends. Weintraub (1997, p.5) distinguished public from private in two

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<sup>10</sup>The city level refers to open spaces associated with major institutions that are nationally or municipally symbolic or oriented to large segments of the population. The intermediate scale refers to spaces that serve multiple residences in a more localized portion of the city such as a district or neighbourhood (Stanley et al., 2012).

<sup>11</sup>According to Woolley (2003), the domestic urban open spaces are physically associated most closely with the home and socially are likely to be used mainly by the family, friends and neighbours. Neighbourhood urban open spaces are physically not directly related to the home but to the neighbourhood and community within which one lives. Socially these spaces will be used by not only family, friends and neighbours but also, predominantly, by others within the community who are likely to live within the vicinity of the space. Civic urban open spaces are those that are set within the urban context but which are, usually, physically farthest from home or are places at strategic or specific locations. Such spaces are more of a social mix where one is most likely to meet people from different walks of life and from different physical parts of the conurbation (p.75).

ways: first by visibility, what is hidden or withdrawn versus what is open, revealed or accessible; second on collectivity, what is individual, or pertains to an individual, versus what is collective, or affects the interest of a collectivity of individuals. Susen (2011) on the other hand related the public and private dichotomy to three discrete meanings: society versus individual (collective versus personal); visibility versus concealment (transparent versus opaque); and openness versus closure (accessible versus sealed).

The notion of public sphere is diverse and different scholars have conceptualized it in different perspectives. Madanipour (1996, p.109) has classified it with two different approaches: a descriptive approach, which is practiced in social anthropology, social psychology and sociology that ‘attempts to offer an account of human conduct in presence of and in interaction with others; normative approach, which is practiced in political theory and cultural approaches that attempts to offer a way forward in human interaction, i.e. how the interaction should be conducted’. Koçan (2008) has defined it in two streams of thought; one based on micro meanings, i.e. those who analyse public sphere as micro practices of interaction that occurs between individuals, between individuals and their social, political and economic environment in the context of shaping, criticizing and reproducing norms, meanings, values and identities; second based on macro meanings, i.e. those who focus on the public sphere as a whole with interconnections of actors, institutions and structures.

From a civic perspective, the public sphere involves public discussion, political participation and civic engagements, relations of state and society (Fraser, 1990; Habermas, 1992), and spontaneous public action (Arendt, 1958). From a social perspective, cultural, historical and dramaturgical theories are considered to describe public space as a stage where actors always perform different roles and private space as back stage regions where one feels free from being evaluated and scrutinized by others (Goffman, 1959). The economic perspective that includes governmental (state) and nongovernmental (market), involves jurisdiction for demarcating the sphere of the public authority of the state from the sphere of private individuals (Weintraub, 1997). In social science, the public sphere has been discussed very widely. Rather than a single public sphere, there exist multiple publics and there might be multiple privates (Sheller and Urry, 2003). Sheller and Urry also tried to conceptualize the public and private with different meanings and different ways that draw a boundary for public and private



interest, public and private sphere, public and private space, publicity and privacy (see Table 2.3). Roberts et.al (1999) in their study about the place and space in the networked city argued that the integrated metropolis may be implied as an expanded concept of the public realm and a shift in urban designers. They further added that the concept of integrated metropolis include key routes and places throughout the city structure<sup>12</sup>.

**Table 2.3: Public private distinction**

Public	Private	Meaning of the public/private distinction
Public interest	Private interest	It is presumed that states operate at least in part to fulfil the public interest (via public sector institutions) which would not be met by those pursuing private interest, whether they are individuals, families or large corporations (all private sector institutions).
Public sphere	Private sphere	The public sphere, where open and rational debate can take place, is the social space that lies between the state, on the one hand, and the private sphere of family life and economic relations, on the other.
Public life	Private life	Public life takes place within politics, the workplace, religion, education and other public spaces, as opposed to private life which is seen as occurring within the domestic realm.
Public space	Private space	Public spaces are those areas and locales, especially in towns and cities, outside the private spaces of the home and workplace, where people can congregate, socialize and organize in relatively unregulated ways.
Publicity	Privacy	Publicity involves the bringing of private relationships into the public domain, through 'exposure' in various media (radio, print, TV, internet); privacy implies a right to non exposure.

Source: Sheller and Urry (2003, p.110)

### 2.3.4 Defining public space

The literatures found on public spaces seem to be polysemic. Zukin (1995, p.45) has defined public spaces as 'places that are physically there, as geographical and symbolic centres, as points of assembly where strangers mingle'. Also, these are the spaces that are accessible to all (Madanipour, 2010), maintained by public authority for their use and enjoyment (Jackson, 1984). The accessibility here does not signify whether they are free for the public or not. Carmona et al. (2004) has related the notion of public space to all those parts of the built and natural environment where the public have free access<sup>13</sup>. Kohn (2004), in addition to accessibility, has also referred to ownership and

<sup>12</sup>According to Roberts et al. (1999), the concept of integrated metropolis would be made more physically legible, humanely managed and more closely integrated through the public transport system.

<sup>13</sup>It encompasses all the streets, squares and other rights of way, whether predominantly in residential commercial or community/civic use, open spaces and parks, and the public/private spaces where public access is unrestricted (at least during daylight hours).

intersubjectivity<sup>14</sup> as other core components of public space. Nemeth (2009) on the other hand referred to publicly accessible spaces. According to Nemeth, these are the physical settings<sup>15</sup> that can be categorized with respect to ownership, management, accessibility and publicness. The degree of publicness is a widely discussed topic in the literature on public realms. Varna and Tiesdall (2010) have identified five dimensions of publicness: ownership, control, civility, physical configuration, and animation. According to them, each of these dimensions has a range from ‘more public’ to ‘less public’ (refer to Table 2.4).

**Table 2.4: Five dimensions of publicness**

More public		Less public
Many social group regard the place as a public space (i.e. more public for more publics).	<b>Meaning</b>	Few social groups regard the place as a public space.
Publicly-owned space with public function and public use	<b>Ownership</b>	Privately owned space with private function and private use
Free use	<b>Control</b>	Overt and oppressive control presence-human and electronic surveillance; highly visible security presence
Cared-for; well-kempt; managed in the public interest; management balancing needs of different social groups	<b>Civility</b>	Over- or under-managed
Well connected and located within the movement system (on-the beaten-track); strong visual connection to external public realm beyond space; without obvious entrances and thresholds	<b>Physical configuration</b>	Poorly connected/ located within the movement system (off-the-beaten-track); poor visual connection with external public realm; with explicit entrances and thresholds
Wide range of supports for a wide range of potential uses and activities	<b>Animation</b>	Dead public space: narrow range of supports for a limited range of potential uses and activities

Source: Varna and Tiesdall (2010, p.581)

Loukaitou-Sideris and Banerjee (1998) have defined public space in different dimensions: political forum that functions for political actions, representations; neutral or common ground for social interaction, intermingling and communication; and a stage for information exchange, personal development and social learning. This shows that everyone participates in the public spaces in one way or another. That is why Francis (1989, p.148) has stated that,

<sup>14</sup>According to Kohn (2004), the public spaces are the places that facilitate unplanned contacts between people, which include interactions between strangers as well as chance meetings between friends and acquaintances (p.9)

<sup>15</sup>According to Nemeth (2009), the publicly accessible space includes both publicly and privately owned spaces. The physical settings can be from sidewalks to outdoor café's to urban plazas.

‘public spaces are participatory landscapes; through human action, visual involvement, and the attachment of values, people are directly involved in these spaces’.

It is the space where individuals see and are seen by others as they engage in public affairs (Mensch, 2007). Sibley (1995) has classified strong and weak spaces. Spaces classified as strong have clear boundaries, their internal homogeneity and order are valued and there is, in consequence, a concern with boundary maintenance in order to keep out objects or people who do not fit the classification. Spaces classified as weak will have weakly defined boundaries because they are characterised by social mixing and/or mixed land uses. Following this framework, Malone (2002) has differentiated open and closed spaces in terms of six characteristics: boundary; value system; response to difference and diversity; role of policing; position of public; and view of culture. Her study posits that open spaces have weakly defined boundaries, are characterized by social mixing and diversity. The diversity in culture, identity and activity in the open spaces are even shared. In contrast, the closed spaces have strong defined boundaries with their own internal homogenous values. They exclude the objects or people who do not fit in to their shared classification (or culture) prescribed by the insiders, and closed spaces are the dominated spaces that always have concerns about the boundary maintenance.

All the above-discussed notions of public spaces seem to be applicable to all cultures. However, in Asian cities such as Japan, the public space<sup>16</sup> used to be defined by a public event rather than any physical boundaries and permanent boundary that determine the extent of a public space at any given time (Hidaka and Tanaka, 2001, p.107). Kurokawa (1987) cited in Egli (2012) tried to differentiate the western and the Japanese concept of space in terms of spatial confrontation and spatial continuity, according to which, ‘the western architecture emerged from a philosophy of confrontation with nature and the impulse to conquer it.... The Japanese concept of space reaches out to embrace nature and to achieve unity and harmony with it’ (p.55).

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<sup>16</sup>In Japanese culture, the distinction of public and private that gained a great popularity in western countries did not exist until late 20<sup>th</sup> century. Public space has been a flexible notion by then. This notion has been diminished in the metropolitan areas like Tokyo (Hidaka and Tanaka, 2001).

### 2.3.5 Characterizing public open spaces

‘The word public space is deceptive; when I hear the words, when I say the words, I’m forced to have an image of a physical place I can point to and be in. I should be thinking only of a condition; but, instead, I imagine an architectural type, and I think of a piazza, or a town square, or a city commons’ (Acconci, 1990, p.901).

This is a very general impression of public space. As aforementioned, the concept of public space is very complex by definition, types, uses, management etc. The streets, squares, parks are the widely discussed open public spaces in all disciplines. These are the eyes of the city, revealing its genius loci, people, and culture in a tangible and condensed way (Miao, 2001, p.2).

Public spaces have played a significant role in defining the cityscape since ancient civilization. The evidence of courtyard gardens, hunting parks, city gardens, and temple gardens in ancient Mesopotamian cities indicates that there were hierarchies of private, public as well as religious spaces. The presence of the Agora in Greek cities used as the public square or market place for the political, commercial, religious, and social life in the city and surrounded by public buildings and temples with colonnades (Stoa) (Haverfield, 1913) shows that public life was greatly emphasized at that time. In addition, the communal life was also enhanced due to existence of acropolis; this had become the symbolic representation of Greek society and Greek sense of place. There was minimal concern given to private spaces and indoor spaces (Thakurdesai, 1974). The Romans’ Forum or Capitol where public meetings, markets, religious ceremonies, and burials were observed was located at the intersection of the main axes of streets, the public baths were located near the forum and the amphitheatre was normally located outside of the town (Morris, 2013). The public squares in medieval towns include the square located in front of the church (parvis) that was used for gathering congregations and for sheltering pilgrims, but not for worshipping (Wagner et al., 2013).

According to Morris (2013), new aesthetic dimensions were added by the Renaissance considering that each vista should include a monument, obelisks or statues at the end of the major streets. It is in this period that open space was established as an enclosed square. For the Baroque cities like Paris, the power and strength became the essential attributes of the open space. Therefore, these cities considered the boulevards and royal

plazas with their own social, economic and political ideologies. This ideology is described by Mumford (1961, p.369), ‘to achieve maximum appearance of order and power on parade to provide a body of soldiers either within an open square or a long unbroken avenue’.

Like in the West, open spaces in Kathmandu Valley also derived into different forms in different historical periods based on their physical, social, cultural, religious significances and political power (this will be discussed in detail in Chapter 5). Similar to Greek cities, public life was also greatly emphasized in open spaces of Kathmandu Valley in the past. The physical, social, and cultural significances and management help in the use of public open spaces. The design of a place is concerned with creating the high-quality places for people and its management is concerned with maintaining and enhancing its quality to increase the benefits for users (Dempsey and Smith, 2014). Hence, all dimensions previously mentioned are discussed in the following sections.

#### **i. The physical dimensions**

The public spaces are the mirror of the city. The design of the space as well as the linkage of space with the surroundings play an important role in shaping the city and this further influences social interactions of people in the spaces. Varna and Tiesdell (2010) had related these as the physical configuration and animation of the public space. They asserted that physical configuration comprises of particular geographical setting of public places and their design features, and can be distinguished in two levels: macro-design (the choice of locality, connectivity, visibility) and micro-design (sitting opportunities, walking opportunities etc.). For Lynch (1960), legibility on the basis of interconnected elements - path, edges, districts, nodes, and landmarks – helped to understand the image/layout of the place. The image of the place according to Lynch is determined by identity, structure, and meaning<sup>17</sup>. Lynch also defined imageability: according to which is ‘the quality in physical object, which gives it a high probability of evoking a strong image in any given observer’ (Lynch, *ibid*, p.9). All the notions derived by Lynch give a city a good image and it cannot be denied that it also influences public spaces since they shape the city.

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<sup>17</sup>Identity makes the object distinct from other, structure include the spatial or pattern relation of the observer and other objects, meaning is associated with practical and emotional aspect of the observer (Lynch, 1960).

Much research about physical aspects of public spaces includes morphological and typologies studies. Conzen (1960) considered land uses, building structures, plot pattern and street pattern for the morphological analysis. Moudon (1997) specified three principles: urban form (includes physical elements such as buildings and their open spaces, plots, streets); resolution of urban form (building/lot, street/block, city, and region); and historical understanding of urban form. Trancik (1986) used three theories<sup>18</sup> – figure-ground theory, linkage theory, and place theory – for analysing the space. According to him, all of these theories are necessary since the city consists of layering of elements in each theory. Regarding the typologies of public spaces, Krier (1979) identified three groups according to geometrical derivations (square, circle or the triangle). Sitte (1889) defined it with reference to visual and aesthetic character as enclosure, positive space, shape, and monuments. Zucker (1959) on the other hand studied five basic types of artistically relevant urban squares such as the closure square, dominated square, nuclear square, grouped square, and amorphous square.

Besides the physical perspectives, public space is also facilitated by other interrelated dimensions, which cannot be ignored. This can be made clear by the statement of Lynch (1981, p.48) ‘settlement form is the spatial arrangement of person doing things, the resulting spatial flows of persons, goods, and information and the physical features which modify space in some way significant to those actions, including enclosures, surfaces, channels, ambiences, and objects. Further, the description must include the cyclical and secular changes in those spatial distributions, the control of space, and the perception of it’. All of the discussed above have a great influence on social life and play a significant role to make successful public space. DETR and CABE (2000) have identified character, continuity and enclosure, quality of the public realm, ease of movement, legibility, adaptability, and diversity as the characteristics to make successful public space. PPS (2000) has also identified four key qualities in common: access and linkages, comfort and image, uses and activities, and sociability<sup>19</sup>.

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<sup>18</sup>The figure-ground theory studies the relative land coverage of buildings as solid mass (figure) to open voids (ground), linkage theory studies the lines (street, pedestrian ways, linear open spaces etc.) connecting one element to another, and place theory adds the components of human needs and cultural, historical, and natural contexts (Trancik, 1986).

<sup>19</sup>Access and linkage refers to convenience in using the space, its visibility and easy to get to and move within; uses and activities gives a reason to be in the space; comfort and image refers to a safe, clean, full of character and attractive space; and sociability refers to encouraging neighbourliness, friendship, interaction, and diversity (PPS, 2000).

It was already discussed that access has been the crucial characteristic that is widely used in public space discourse. As a general concept as seen earlier, public signifies that everyone is allowed to access a space. Carmona et al. (2003, p.124) noted that ‘various forces in society purposefully reduce accessibility in order to control particular environments, often to protect investments. Nevertheless if access control is practised explicitly and widely, the public realm’s publicness is compromised’. This may give rise to access denial and privatizing space. Johnson and Glover (2013) identified four categories of urban space based on ownership and accessibility. They are private public space that is privately owned space in which access can be easily denied, though it is regarded as public; common space that is privately owned space in which access cannot be easily denied; club space that is publicly owned yet designed in a way that access may be denied; and outwardly public space that is publicly-owned and access cannot generally be denied. This also reminds of the questions of Kevin Lynch (1972) cited in Banerjee (2001, p. 11-12): How open are our open spaces? Are they accessible physically as well as psychologically? Are they widely available and amenable to user control? Are they distributed equally or equitably in an urban region? If they are not, then are they all truly public or democratic?

Staheli and Mitchell (2008) identified three types of access: statutory access, physical access and mental or psychological access. The statutory access is established through property relationships, which is based on the ownership; the physical access includes both physical barring and feeling of receptivity of welcoming, comfort in the space; mental access refers to the way how people behave/perceive in a certain public setting, the larger the proportion of the public, the greater accessibility. Carr et al. (1992b) on the other hand identified access as visual access, symbolic access, and physical access. Physical access meaning that is physically accessible to all, visual access is visibility of that space so that people feel free to enter into that space or defines the safety of a space, and symbolic access is associated with the cues or symbols ensuring comfort, inviting or threatening effect of that space.

## **ii. The social dimensions**

It is difficult to conceive of space without social content and equally to conceive society without spatial component (Carmona et al., 2003). So the space and society are strongly related. Space plays constructive as well as receptive role in shaping the social forms of

social action in the cities (Hiller and Netto, 2002), and it has social values that renders the collective attachment to places that exemplify the meanings important to a community (Johnston, 1992). Public spaces are the ones where the social activities such as children at play, greetings and conversations, communal activities (Gehl, 1987) are performed and that delivers public life and provides the ground for social interaction, communication, personal development and information exchange (Loukaitou-Sideris and Banerjee, 1998, p.175). Gehl (1987) categorized activities of public spaces as necessary, optional, and social activities: necessary activities compulsory, optional activities take place if there is wish and time, and social activities are considered as a progress from necessary and optional activities. People watching, public sociability, the freedom to try on roles, public solitude considered as the pleasure can be other forms of public realms (Child, 2004).

Carr et al. (1992a) studied various needs of public spaces with regard to human functioning such as physical comfort that involve resting, sitting; social needs that address relaxation, engagements (passive/active); and discovery that provides opportunity to observe different activities of people. Realizing the public realm in the city means the success of the city and the successful public spaces are symbolic of wider social values (Worpole and Greenhalgh, 1996). For the public spaces to be real, they have to be used (Shaftoe, 2008), otherwise they will end as dead places which Worpole and Greenhalgh (1996) called spaces of null and void.

‘... Is something happening? Are people there? Or is the space vacant, dead?’ (White, 1999, p.193). This is the question of whether the public space is animated or not. The animation as defined by Varna and Tiesdell (2010) refers to the degree to which the design of the place supports and meets human needs in public space and whether it is actively used and shared by different individuals and groups. They also added that public space is characterised by a vibrant public life performed by a high diversity of users. According to Montgomery (1995), the animation can be encouraged through planned events (such as concerts, exhibitions, street theatre, music and festivals) so that people visit, use and linger in the places.



### ***Vitality and diversity***

Montgomery (1998) defines activity as ‘the product of two separate but related concepts: vitality and diversity’ (also refer Figure 2.3). According to him, vitality<sup>20</sup> generally connotes the liveliness of the space and is the prime aspect that makes spaces successful. He further added that vitality could only be achieved if there is a complex diversity of primary land uses and activity. Kohn (2004, p.2) also argued that vitality of public space originates from its diversity and heterogeneity. Jacobs (1961) identified two kinds of diversities: primary and secondary. The primary uses (Offices, factories, dwellings etc.) are those which in themselves bring people to a specific place because they are anchorages. Secondary diversity (shops that serve dwellers) are those that grow in response to the presence of primary uses to serve the people the primary uses draw (p.161-162). She also identified four conditions as the generator of diversity: combinations of primary uses, short blocks, mingling of buildings varying in age and conditions, and dense concentration of residents (p.150-151). Furthermore, she added that the close-grained diversity of uses provides constant mutual support. In totality, all these increase urban vitality. Jacobs and Appleyard (1987) argued that diversity and the integration of activities together bring life to an area and encourage local community identity.

### ***Sociability***

PPS (2000) notes that sociability is a difficult quality for a place to achieve, but once attained it becomes an unmistakable feature. When people see friends, meet and greet their neighbours, and feel comfortable interacting with strangers, they tend to feel a stronger sense of place or attachment to their community – and to the place that fosters these types of social activities. It is a quality by which people tend to affiliate and intermingle with others. Edles and Appelrouth (2010) referred to a sociability or play-form of association defined by Simmel (1910); ‘the impulse to sociability distils, as it were, out of the realities of social life the pure essence of association, of the associative process as a value and satisfaction. It takes on a symbolically playing fullness of life and significance’ (p.296). Warner (2002) has also referred to the public as a relation among the strangers, who need to be on a path to commonality. They have to negotiate

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<sup>20</sup>Montgomery referred vitality to the presence of people in the spaces across different times of the day and night, use facilities, cultural events and celebrations over the year, presence of active life, and the extent to which a place feels alive or lively.

and mediate face-to-face interactions (Weintraub, 1995). However, it cannot be denied that not all users may feel comfortable interacting with strangers. The proclivity of belonging to a member of a group or set of groups is only fulfilled after satisfying the needs of the users such as survival and security. The need of people's belonging is fulfilled by having supportive relationships and an identity as a participating member of a set of groups (Lang, 1994, p.252). The public performances/events such as public art, music, exhibition etc. can bridge the strangers together. For this, Whyte had defined triangulation, which according to him is 'the process by which some external stimulus provides a linkage between people and prompts strangers to talk to each other as though they were not' (Whyte, 1980, p. 94). 'People come where people are' (Gehl, 1987, p.25) and hence the diverse social groups and social classes appear together intermingling and interacting with each other in the public arenas (Low, 2000) thus enriching urban life. Castells (2005) on the other hand has discussed the prevalence of electronic communication as a new form of sociability. He referred to the studies by Wellman (2002) and Jones (1998) stating that 'density and intensity of electronic networks of communication, providing evidence to support the notion that virtual communities are often communities, albeit different from face-to face communities' (p.53).

### **iii. The cultural dimensions**

#### ***Culture conceptualization***

The term culture is derived from the Latin word *cultura*, which means *cultivation*, an expression for civilization in French, German, and English (Thompson, 1990). Today, the concept of culture is broad and has become a great concern among the anthropologists and sociologists. It is not easy to define as it embraces a large range of connotations (Wallerstein, 1990). This is quite clear in the concept of anthropologist Clyde Kluckhohn defined in Geertz (1973), according to which, culture has given different perspectives; it is a 'total way of life of a people, the social legacy the individual acquires from his group, a way of thinking, feeling and believing, an abstraction from behaviour, a mechanism for the normative regulation of behaviour, a set of techniques for adjusting both to the external environment and to other men, a precipitate of history and a behavioural map, sieve or matrix' (p. 5-6). According to Butcher (2011, p.3), culture is a dynamic set of procedures, experiences and understandings that influence behavioural choices including recitation of what is considered appropriate values and everyday practices, and the preference for particular

social roles and relationship networks. The anthropologist sees it as the common set of ideas, values, attitudes and norms that characterize a group of people (Haukelid, 2008). The sociologist sees it as mode of life of a society. Culture embraces a broad interpretation to symbolic aspects of human society such as beliefs, rituals, customs and values, as well as work patterns, leisure activities and material goods (Barnes and Mercer, 2001). It is also a particular way of life (Williams, 1961 cited in Carmona et al., 2003), the values the members of a given group hold, the norms they follow and the material goods they create (Giddens, 1989). Moreover, it is the guidelines, means aesthetic, historic, scientific or social value for past, present or future generations (International Council on Monuments and Sites, 1999) that binds people together, interpret their experience and guide their actions (Geertz, 1973). It has become the ubiquitous synonym for identity, an identity marker and differentiator (Benhabib, 2002, p.1). Hall (1994) had distinguished cultural identity with two different concepts, first ‘that reflect the common historical experiences and shared cultural codes as one people, with stable, unchanging meaning’ and second, ‘a matter of becoming as well as of being and undergo constant transformation subject to the continuous play of history, culture and power’ (p. 223-225).

The city, defined as ‘space in physical dimension and as activity in social dimension’ (Carmona et al., 2003), is always stimulated by the culture and has influence on every aspect of life. Each city consists of societies of diverse culture owing to differences in occupation, social class, religion (Barnard, 1969) and the values, ideologies and the way people behave differ from individual to individual (Geertz, 1973). Hence, in sociological studies, there is always attention towards the integration of people from different cultural backgrounds in a society. This ‘integration’, by which the people are linked together is stimulated by a ‘double process, one relates the institutionalisation that clarifies what movements and practices are normal in the space and the other, relates the habits, values, hopes, norms, knowledge, social roles and relationship that constitute cultural diversity’ (Moncusi Ferre, 2007). The meaning of culture is not homogenous. It differs in every part of the world. The western culture is not similar to the eastern culture in the sense of lifestyles, norms, beliefs and values; there might not be substantial influence of religious rituals. However, in the eastern culture, especially south and south East Asian countries, one of the dominant features that have influence on culture is religion. Religion has an effect on the people’s way of life and dictates their activities.

Cultural change has been a key concern in today's globalising world. Globalisation has positive as well as negative impacts on culture. According to Tomlinson (2003, p.269), globalisation has been associated with the destruction of cultural identities, victims of the accelerating encroachment of a homogenized, westernized, consumer culture. Tomlinson further asserted that cultural identity is at risk everywhere with the depredations of globalization, but the developing world is particularly at risk. On the contrary, it is also a significant force in creating and proliferating cultural identity (p.270). Wang (2007) discussed that cultural identity provides the global significance of local knowledge and the sense of community and nation. He also added that globalisation enhances cultural identity; people become much more concerned about the uniqueness or the particularity of their culture. Waters (1995) on the other hand sees globalisation as a creative process that leads to homogenization or standardization of culture. Waters also stated that cultural hybridization is the most exciting and liberating face of globalization whereby new cultural forms are created through the fusion of diverse elements. The globalising media and communication technologies such as television, mobile phones, emails, internet etc. have also largely played role in cultural changes. There have been increasing social relations and social organisations on the internet (Wellman, 2002). According to Movius (2010), online communities and social networks have caused the discussions about the emergence of new patterns of social interaction. She further asserted that with new technology, individuals are reorganising patterns of social interaction to create a new form of society, which is conceived as the network society; the emergence of new forms of sociability enabled by technology has decreased spatially bounded social interaction. The juxtaposition of new technology, global media, trans-national investment, and free trade imply a new kind of city-building that could disrupt or even destroy the strong neighbourhood identity, the dynamic street life and pedestrian scale of much of the central urban core, and the active and convivial public spaces that have survived modernization in the last century (Herzog, 2004).

### ***Public culture in public space***

Urban spaces are always affixed to the culture. They reflect the cultural order, not through a one to one correspondence between spatial arrangements and meaning but through a complex culture making process in which cultural representations are produced, manipulated and understood (Low, 2000). He defined plazas as the centres of

cultural expression and artistic display (p.33). This is also true for other public spaces, where the diverse social groups participate and express their emotions and values. This participation is the ‘cultural matter’ that according to Moncusi Ferre (2007) brings social life in the city. Zukin (1995) has associated social life with public spaces.

‘Public spaces are the primary site of public culture; they are a window into the city’s soul. As sight, moreover, public spaces are an important means of framing a vision of social life in the city, a vision both for those who live there and interact every day and for the tourists, commuters and wealthy folks who are free to flee the city’s needy embrace’ (p.259).

Zukin further adds that,

‘As site and sight, meeting place and social staging ground, public spaces enable us to conceptualize and represent the city – to make an ideology of its receptivity to strangers, tolerance of difference, and opportunities to enter a fully socialized life, both civic and commercial. We can understand what is happening to our public culture today if we look at what is happening to public spaces’ (p.260).

Zukin also perceives public culture as

‘socially constructed, produced by the many social encounters that make up daily life in the streets, shops, and parks – the spaces in which we experience public life in cities. The right to be in these spaces, to use them in certain ways, to invest them with a sense of ourselves and our communities – to claim them as ours and to be claimed in turn by them – make up a constantly changing public culture . . . Yet public space is inherently democratic. The question of who can occupy public space, and so define an image of the city, is open-ended’ (p.10-11).

It should also be noted that the public space brings intercultural groups together and provide a forum for active dialogue and recognition between cultural groups and identities (Velden and Reeves, 2010). It is the place for all social groups, all ages, genders, and ethnic groups for sharing their cultural values. This cultural values according to Low et al. (2005) is related to the shared meanings associated with people’s lives, environments and actions that draw upon cultural affiliation and living together. However, the concern arises about the cultural domination or misconduct in

public spaces, for which, Amin (2008) argued that these can be avoided if the public spaces are reinforced with the quality<sup>21</sup> of multiplicity, conviviality, symbolic solidarity, and technological maintenance.

#### **iv. The management dimensions**

Public space management is ‘the set of processes and practices that attempt to ensure that public space can fulfill all its legitimate roles, whilst managing the interactions between, and impacts of, those multiple functions in a way that is acceptable to its users’ (Carmona et al., 2008, p.66). Varna and Tiesdell (2010) have outlined control and civility (also refer Table 2.4) as the managerial dimensions. According to them, more public is established if there is free use and less public is established if there is presence of controls (such as human and electronic surveillance). Again, according to them, civility denotes management and maintenance of public place that further creates convivial ambience. More publicness is achieved if there is a management of balancing needs of diverse social groups, well-kempt and cared for, whereas less public is achieved if the public space is over or under managed. Carmona et al. (2008) have also referred to over-management and under-management; the first reflects commodification and homogenisation of space, and the latter reflects the poor design and insecurity of the space (p.6).

Control resembles the panoptic approach that includes control of public space, privatization of space, explicit police presence, presence of security guards, presence of covert surveillances systems etc., and civility resembles the regulatory approach that includes management of public space, explicit rules and regulations, spatial regulations, employee surveillances etc. (Oc and Tiesdell, 1999). For Lynch (1981), spatial control involves various rights<sup>22</sup>: rights of presence, use and action, appropriation, modification and disposition; all of these have psychological consequences: feeling of anxiety, satisfaction, pride, or submission (p. 205). Following this proposition, Francis (1989)

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<sup>21</sup>According to Amin (2008), multiplicity is an urban good in its own right as well as a source of urban sociability and emergence, symbolic solidarity relates to the social togetherness that rely on symbolic uses, conviviality connotes the social inclusion and cultural recognition, and technological maintenance acknowledge the civic inculcation through the uses of public space.

<sup>22</sup>According to Lynch (1981) right of presence is the right to be in a place, right of use and action is behaving freely in a place or use of facilities without appropriating them, rights of appropriation is use of facilities that prevents their use by others, rights of modification is the right to change a space to accelerate its use, right of disposition is the capability to transfer the own right of use to others.

defined control as ‘the ability of an individual or group to gain access to, utilize, influence, gain ownership over, and attach meaning to a public place’ (p.158) and is ‘also a process through which conflicts are identified, negotiated, and resolved when there is conflict between groups/individuals with competing interest’ (p.159). Control can have both positive and negative strands; it may either enrich or empty a place. According to Lynch (1981), the control may be allocated and secured by physical means such as marking boundaries (fencing, signs, and landmarks) and increasing visibility in to the space. Nemeth (2010) used three control variables for the security assessments in U.S. cities: access, behaviour, and surveillance. Access includes bollards, planters, gates, or fences located at the entry of space; behavioural controls include posted signs prohibiting activities like photography or loitering, or design features to discourage actions like sitting or gathering in a small group; and surveillance measures include only security guards and other human surveillance. One of the approaches of crime prevention through environmental design (CPTED) includes natural surveillance (Crowe, 2000), which according to Sorensen et al. (2008), keeps the intruders under observation and undesirable behaviour under control (p.61). Loukaitou-Sideris and Banerjee (1998) have defined hard and soft controls. According to them, hard control eliminates certain undesirable elements by using vigilant private security officers, surveillance cameras, and articulate regulations by either prohibiting certain activities from occurring or permitting them with conditional permits. Soft control emphasizes symbolic restriction; it focuses on the lack of facilities that could entice certain people or encourage functions deemed undesirable and design features that seek to achieve a subtle closure, and screening of the undesired elements (p.183-185).

### ***Actors involved in management of public spaces***

Public space management, though it normally denotes the public sector, specifically with local government, the responsibilities lie across a varied range of stakeholders (both public and private) that might be split into four groups: private, including private property owners and developers; public/private, including the range of pseudo-governments; local government, including a wide range of services across one or more tiers of local government; community, including residents and special interest societies and local groups (Carmona et al., 2008, p.19). For public space management, they further defined four key dimensions of management that apply to all the four groups: the regulation of uses and conflicts between use that are regulated formally through

byelaws, and other prescriptive instruments; the maintenance routines to ensure the ‘fitness for purpose’ of the physical components of public space; new investments into and on-going resourcing of public space; and co-ordination of interventions in public space. Zube (1986) cited in (Francis, 1989) had distinguished the actors differently. According to him, the three types of publics involved in public landscape are: ‘professionals’, who are involved in the development of plans and policies; ‘interested public’, who perceive the plans as directly benefiting them; and ‘general public’, who do not participate in making the plans or policies. Three different models – state-centred model, market-centred, and community-centred – are envisaged for the public space management.

‘State-centred model depends on public-sector institutions to plan and deliver the services of public space management with minimum use of external input from either private contractors or the voluntary sector; market-centred model involves transfer of management responsibilities to private entities either through straightforward service delivery contracts or as part of development agreement in which private provision and/or management of public space results from negotiations around the conditions for, and outcomes from, private property development; and community-centred model includes the devolution of responsibility for the provision and/or management of public spaces and related service to community organisations, including associations of users of public spaces, interest groups organised around public space issues’ (Carmona et al., 2008 , p.72-80).

### ***Informal trading in public open spaces***

The informal sector<sup>23</sup> is a complex as well as vulnerable issues driven in the public spaces (Dewar and Watson, 1990). Street vending<sup>24</sup>, one of the most visible and economically important manifestations of the informal sector (Nitisudarmo, 2009), seems to be the most common issue especially in developing countries. The location plays a great role in attracting informal vending. Marketplaces, bus stops, major thoroughfares and streets are the preferred locations for informal sector activity (Cohen

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<sup>23</sup>According to Nitisudarmo (2009), ‘informal is anything that is conducted without formality or ceremony. Sector is a subdivision of society. Hence informal sector is any business activities in the community that is conducted without formality aspect relating to the government, such as tax, regulation, location permit, license, etc.’

<sup>24</sup>The terms market vendor, street vendor and vendor are frequently used interchangeably.



et al., 2000). There is disagreement whether these informal trading activities have positive or negative impacts on the use of public spaces. Moctezuma and Anaya (1997) cited in Lezama-Lopez (2006) for the study of Mexico City, assert that street vendors are a 'factor in the deterioration' of the historic centre because they obstruct pedestrian flow, and cause theft and aggressive behaviour (p.96). These are even perceived as 'eye sores' and are evicted from city centres for 'public cleanliness and orderliness' (Perera and Amin, 1996). However, Lezama- Lopez (2006) argued that Mexican urban areas generate acceptable forms of street activity, such as newspaper vendors and shoeshine boys, trolley men selling snacks, balloon traders, ice cream sellers and indigenous people selling their crafts, who are perceived as a part of the picturesque image of the zone by visitors (p.96). The other positive aspect is that street vending provides the largest source of employment, investment and government revenue (Timalsina, 2011).

### *Privatization of public space*

The appearance of municipalities, beautification and purification measures have gradually turned public spaces into controlled spaces, thus reducing the unlimited accessibility and openness of public spaces (Zukin, 1995). The privatization of public spaces has been studied by many authors for its causes and consequences. Loukaitou-Sideris (1993), in the American context, conducted a study about privatization based on three factors: desire to utilize private resources to ease burdens on government budgets; the willingness of private developers to provide public open space in private developments; and the increasing demand of privately managed open space based on the crimes and the presence of undesired groups in conventional public open space. According to Ellin (1996, p.167), the increasing impoverished public realm causes a decline in meaningful public space and desire to control one's space, or to privatize. While according to Madanipour (1999) the public realm is being promoted as the response to the privatisations trends; the public authorities find themselves unable or unwilling to bear the costs of developing and maintaining public places, hence urban spaces are often developed and managed by private investors. Daneshpour and Mahmoodpour (2009) in their study for Tehran discussed two aspects of privatisation of public spaces: one that is observed in societies where the socio-cultural impediments restrain people to use their leisure time in the private domains; and other a tripartite categorisation of policies – privatisation, commodification, and commercialisation. The privatization of public spaces ceases the existence of a public forum, characterized by

open access, unmediated deliberation, and shared participation of the public spaces (Nemeth, 2012). It leads to increased control over use, behaviour, and access with the use of surveillance and policing techniques as well as design measures (Nemeth and Schmidt, 2011). The privatization of public spaces is not only seen in the West, but also in the East. Xing and Siu (2013), in Hong Kong, discussed two privately owned public spaces (POPS): indoor, spaces inside shopping centres; and outdoor, spaces attached to private buildings such as shopping centres, office buildings and residential units. The traditional communal public spaces were replaced by outdoor POPS after the urban development in the 1960s, and these have become the dominant form of public space in everyday life. A few significant model projects in Kyoto have emerged, which demonstrate the possibility to design more meaningful POPS in cooperation with the surrounding local community (Dimmer, 2013).

#### **v. Differentiating public spaces between the West and the East**

In many developing countries, daily functions occur outdoors in city space with culture, climate and economic conditions having great impact in outdoor life (Gehl, 2010). Miao (2001) differentiated public spaces between the east and the west under nine characteristics: high population density, large cities, mixed uses, government-centred and pro-development culture, the east-versus-west bipolarity, small amount of public space, absence of large nodes and overall structure in public space, intensive use of public space, and ambiguous boundary between the public and the private. The following sections will mainly be based on the criteria discussed by Miao (2001).

With an Asia Pacific city as the case study, Miao generalized the characteristics of Eastern public spaces. Miao asserted that density plays a critical role in shaping the location, form, and intensive use of public space (p.7). Because the Asian cities are denser than the Western, the Asian public places are more used than the Western. Besides, the larger population agglomeration makes the land area of a city bigger and its hinterland green space more remote from urban residents' daily life, which when combined with density, aggravates the need for more public spaces inside the built up area (p.9). The Asian cities are well known for the mixture of different uses whereas the Western cities employed zoning for different functions. Due to this, Asian public places have multifunctional characteristics, often bringing together religious, commercial, and recreational uses. Yeoh (2003) in his study on public spaces in Singapore from the late

nineteenth century also writes that the multifunctional use emphasizes the diversity, minimizes travelling and maximizes versatility of each individual locality; hence, the Asian urban landscape has favoured flexibility and the juxtaposition of different activities in close proximity (p.246-247). The development and management of public space is largely dominated by the government in the Asia, with less or no improvement of public spaces, and with limited public participation. The government policies are inclined towards economic prosperity and corporate interest, often at the cost of environmental quality, historic preservation, and socially vulnerable groups (p.10). According to Mateo-Babiano and Ieda (2007), various policies should focus towards encouraging the revival of ignored cultures such as the pasar<sup>25</sup> culture.

The changes taking place in public spaces between different periods in Western cities are perceived as expressions of different stages in their own transforming culture, whereas in eastern cities, they are taken as the by-products of industrialization forcefully brought in by foreign powers (colonial invasion to the current globalization) (p.11). The resident of major Asia Pacific cities has only one-tenth of the public space for a person in similar Western cities (p.12). The Asian cities, despite being dominated by linear forms, have smaller nodes than the traditional Western squares; for example, the courtyards and garden in temples, the pocket parks in leftover space between buildings, and tiny open areas in front of important public buildings or at points where traffic converges (p.14). Even the smaller quantity of public space of Asia Pacific cities will usually serve far more users than will those in a western city. Window-shopping, eating, park going, and other recreational uses of inner-city public places are among the most favoured leisure activities of Asian urbanites (p.15).

Asian urbanites and government seem to pay less attention to the concept of public and private domain. The public spaces are often encroached by private activities, for example, the shop owners use the sidewalk by displaying their merchandize, and the restaurants use the alley outside their back doors for work and storage purposes. Wang (1998), in his study about Chengdu, a capital of Sichuan province in south west China that holds a historical and cultural tradition, mentioned that the shops tried to expand their limited space by putting up signs, banners, stalls, and tables on the streets (p.38).

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<sup>25</sup>According to Mateo-Babiano and Ieda (2007), the flea markets and bazaars in Asian city spaces, more often in streets, reflect the strong Indic-Chinese influence that has evolved into a distinctive pasar culture (p. 1922).

Yeoh (2003) in his study about the public space in Singapore in the late nineteenth century, mentioned that the verandah that constituted a distinct feature on the narrow street frontage of most terraced shop houses and tenement blocks was neither rigidly public nor private. He further asserted that the owners of warehouses and shop houses considered the verandah as an integral adjunct to their houses, to be used for stowing boxes and bulky goods. The shopkeeper utilized them to display merchandise, trade names and signboards (p.247). Similarly, the sidewalks and streets in Vietnam are also used by shops for economic activities, by families for domestic activities such as washing clothes, cooking, and eating which take place on the sidewalks, and by children and adults for recreational activities such as playing soccer and badminton (Pham, 2005). Miao (2001) referred the approach of Fumihiko Maki about the ambiguous boundary of public space in a different way, according to which, spaces in crowded traditional Japanese cities are often differentiated according to the concept of *oku*, a layered structure at the boundary that avoid the direct contact between the space and outside viewers, half-hidden or momentarily thus giving a sense of depth to relatively narrow spaces rather than the plaza in front of a mansion like in a western city (p.31-32). Miao further argued that the ambiguous boundary allows a flexible approach for provision of more and better public space in congested cities. For this, he gave an example of time-sharing uses of street as a traffic corridor during business hours and as something less at night and weekends such as a space for travelling night markets (*pasar malams*) in Southeast Asia or festival parade routes (p.16). The *pasar malams* in Singapore are usually organized on public roads closed for the evenings to vehicle (Chang, 1997). Puspitasari et al. (2012) on the other hand has mentioned about the cyclical changes of space - hourly *penadong* (beggar) activities in the morning and afternoon, daily trading such as flowers, incense and holy water, the weekly *pasar malam* occurring every Friday, and the annual bazaar in the mosque of Kampung Luar Batang in Indonesia.

### **2.3.6 Place and sense of place**

In general understanding, space and place appear to be analogous, but if these are comprehensively examined, the undistinguishable space becomes place if it is conferred with the value (Tuan, 1977, p.6), or in other words it is what place becomes when the unique gathering of things, meanings, and values are sucked out (Harvey 1996 cited in Gieryn, 2000 , p.465). In architectural theory, space is not a new phenomenon, it simply

encompasses several meanings, but Norberg-Schulz (1971, p.12) has distinguished it as three dimensional geometry and perceptual field. While designing, architects consider spatial relations for maintaining locational qualities of space (Tuan, 1977). Geographers used the pairs as abstract vs. concrete, public vs. private, primitive vs. sophisticated (Sack, 1981 cited in Couclelis and Gale, 1986). Couclelis (1992) has classified spaces as mathematical, socioeconomic, behavioural, and experiential space<sup>26</sup>. Therefore, space has been conceptualized in the form of absolute, relative and relational<sup>27</sup>. Place mediates a social life, is interpreted, narrated, perceived, felt, understood and imagined (Soja, 1996 cited in Gieryn, 2000). Harrison and Dourish (1996) have asserted space as the opportunity and place as the understood reality. Place has been notably esteemed after the works on *genius loci* (Norberg-Schulz, 1980), *sense of place*, and *place and placelessness* (Relph, 1976)<sup>28</sup>, *topophilia* (Tuan, 1977)<sup>29</sup>, and *place attachment* (Altman and Low, 1992)<sup>30</sup>. According to Norberg-Schulz (1980, p.8), ‘a place is a total phenomenon which cannot be reduced to any of its spatial relationships, without losing its concrete nature out of sight’. Ryden (1993, p.38) asserted that ‘a place is much more than a point in space. To be sure, a place is necessarily anchored to a specific location which can be identified by a particular set of cartographic coordinates, but takes in well the landscape found at that location and the meanings which people assign to that landscape through the process of living in it’. Relph has emphasized the identity of place in his work. Quoting Relph (1976, p.45), the identity of a place depends on ‘persistent sameness and unity which allows that place to be differentiated from others’. He has defined place identity in terms of three dimensions: place setting; activities; and individual/group meanings constructed through people’s experiences. Place identity

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<sup>26</sup>Each of these four spaces further are defined with different terminologies; mathematical includes point, line, area, plane, and configuration; socioeconomic includes location, route, region, plain, and distribution; behavioural includes landmark, path, district, environment, and spatial layout; and experiential includes place, way, territory, domain, and world. These terminologies given by Couclelis seem to be correlated, meaning the points could signify the location or also the place.

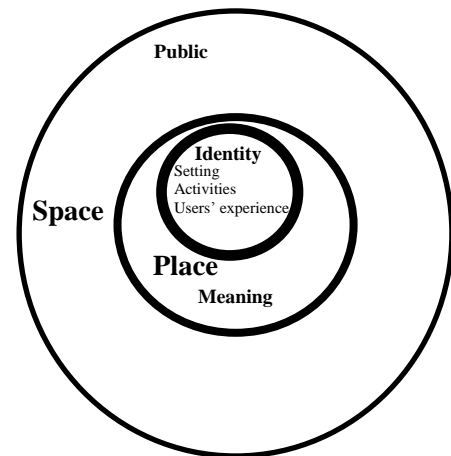
<sup>27</sup>Absolute space represents a distinct, physical and imminently real or empirical entity. Relative space has the location of, and distance between different phenomena as the focus of geographical inquiry. Relational relates space and place, which are intrinsic parts of our being in the world, defined and measured in terms of the nature and degree of people’s values, feelings, beliefs, and perceptions about locations, districts, and regions (Couclelis, 1992).

<sup>28</sup>Relph (1976) in his work on place and placelessness has elucidated the insiderness and outsiderness, and existential insiderness and existential outsiderness for the understanding of place and its meaning in human life.

<sup>29</sup>According to Tuan (1977), Topophilia is the affective bond between people and place or setting.

<sup>30</sup>According to Altman and Low (1992), place attachment is the symbolic relationship formed by people giving culturally shared emotional/affective meanings to a particular space of piece of land that provides the basis for the individual’s and group’s understanding of and relation to the environment.

according to (Proshansky, 1978, p.155) involves those dimensions of self that define the individual's personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals and behavioural tendencies and skills relevant to this environment. Likewise, Creswell (2009) has also related place as a meaningful site that combines location, locale, and sense of place<sup>31</sup>. The sense of place also has been used widely in all disciplines, by geographers, architects, anthropologist, psychologist, artists, and poets etc. (Relph, 1997).



**Figure 2.1: Space and place**

Source: Interpretation based on Relph (1976) and Proshansky (1978)

There are many literatures defining place and sense of place. The term sense of place is used differently in different discourses. According to Johnston (1992, p.10), design disciplines have defined place and sense of place as ‘a way of integrating the location and the meanings attached to it through the interaction of people and place. Places are seen not as primarily physical but rather as experiential and are widely conceived of as having an essential component of character, identity and spirit’. Gibson (1981) has defined sense of place<sup>32</sup> as a subjective phenomenon, a feeling of belonging in and having a deep emotional attachment to a place of personal significance and meaning, but Low (1992) has argued that besides the emotional and cognitive experience, there are also cultural beliefs and practices that connect people to place that help in maintaining sense of place. The tangible and intangible cultural characteristics also give places their distinctiveness, identity, and authenticity (Robinson, 2006). Sense of place is a set of complex and distinctive human interactions with large or small scale environment (Hepburn, 1999) congruent with local identity (Yan, 1995). Jorgenson and Stedman (2001), for the theory of sense of place as an attitude, have related three dimensions – cognitive, affective, and conative process – with place identity

<sup>31</sup>According to Creswell (2009), location refers to where of place, locale refers to the material setting for social relations- the way a place looks, and sense of place refers to the more nebulous meanings associated with a place: the feelings and emotions a place evokes.

<sup>32</sup>Gibson (1981) had associated sense of place with the compositions of six interrelated components: sense of history; sense of identity; sense of community; sense of environment; sense of control; and sense of change.

(Proshansky, 1978), place attachment (Altman and Low, 1992), and place dependence<sup>33</sup> respectively (Table 2.5). Hummon (1992) made distinctions of different types of senses of place in the study on community sentiment. These include rootedness, alienation, relativity, and placelessness. Hummon also argued that people's satisfaction, identification, and attachment to communities caused sense of place.

**Table 2.5: Comparison of theories**

		<b>Jorgenson and Stedman, 2001</b>	
<b>Proshansky, 1978</b>	Place identity	↔	Cognitive
<b>Altman and Low, 1992</b>	Place attachment	↔	Affective
<b>Stokols and Shumaker, 1981</b>	Place dependance	↔	Conative

Source: Proshansky (1978), Stokols and Shumaker (1981), Altman and Low (1992) and Jorgenson and Stedman (2001)

### 2.3.7 Sense of place - experience of place through sensory perceptions

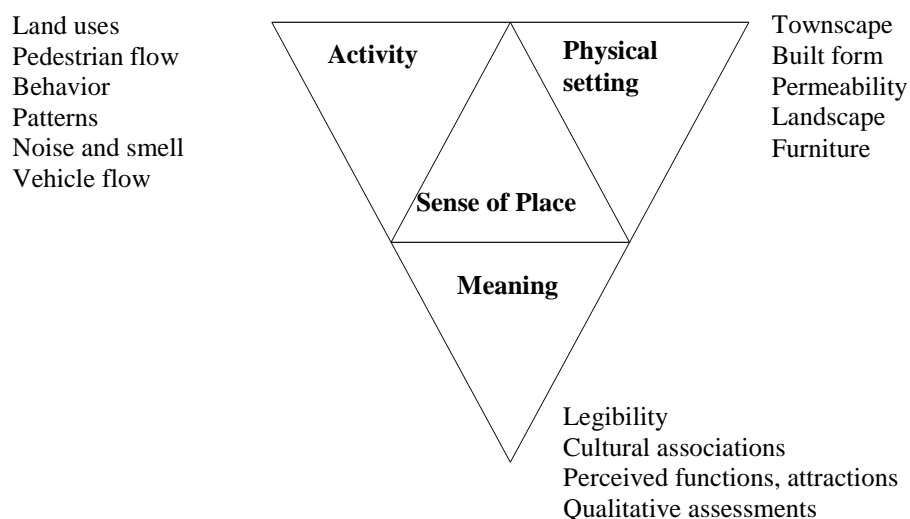
It is clear by now that the sense of place is attached with emotional experiences. These experiences are derived as the result of psychological connections between people and the places and are subjective. The modes of these experiences, according to Gibson (1981) could be visual impressions, auditory, olfactory, tactile, kinaesthetic and even taste. She also mentioned that sense of place is derived not only by direct perception but also by memory, imagination, and vicarious experiences (p.10). Carmona et al. (2003) also referred sensation to four human sensory systems: vision, hearing, smell and touch. According to Porteous (1996), visual perception depends on space, distance, light quality, colour, shape, textural and contrast gradients; sound tends to emphasize space itself rather than objects in space and provides dynamism and a sense of reality; smell is more information-poor and emotion rich, stimulating feelings of pleasure, well-being, nostalgia, affection, and revulsion; touch is related to the senses of kinaesthesia temperature and air movement. Carmona et al. (2003), on the other hand differentiated perception from sensation. According to them, perception 'is the process of gathering, organizing, and making sense of information about the environment' (p. 87). The intensity of perception may vary from immediate sensory delight to long lasting and deeply rooted attachment (Tuan, 1974). Steele (1981) discussed the sense of place with subjective feelings such as stimulated, excited, joyous and expansive as the particular

<sup>33</sup>According to Stokols and Shumaker (1981, p.457), place dependence is an occupant's perceived strength of association between him or herself and specific places.

experiences of a person in a particular setting. Buttner (1980, 172-173) cited in DeMiglio and Williams (2008, p.17) also has perceived sense of place using a combination of the five human senses.

‘... I recall the feel of grass on bare feet, the smells and sounds of various seasons, the places and times I meet friends on walks, the daily ebb and flow of milking time, meals, reading and thinking, sleeping and walking. Most of this experience is not consciously processed through my head– that is why words are so hard to find– for this place allows head and hear, body and spirit, imagination and will to become harmonized and creative’.

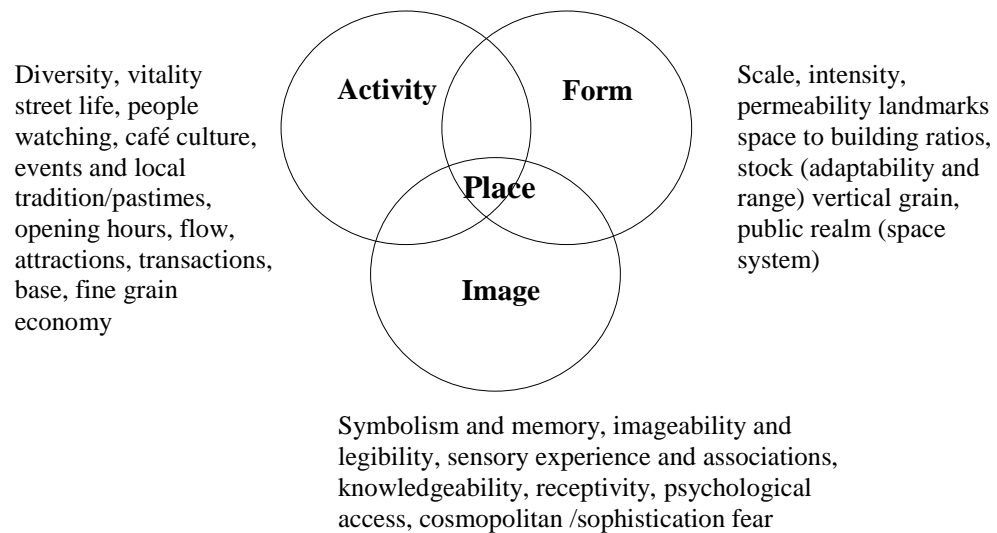
The five senses here means visual, smell, sound, touch, and taste. These feelings can be experienced only upon the presence in the place. That is why Casey (1996, p.18) has also mentioned that ‘there is no knowing or sensing a place except by being in that place, and to be in place is to be in a position to perceive it’. The psychology of place helps in creating urban quality (Montgomery, 1998). By urban quality here, Montgomery means the architectural form, scale, landmarks, vistas, meeting places, open space, greening etc. Also, according to him, the amalgamation of three fundamental elements such as physical space, the sensory experience, and activity propel the success of urban place. On the basis of the three dimensions (place setting, activities and meaning) of place defined by Relph, Punter (1991) interpreted the sense of place that is exploited in everyday use (Figure 2.2). Montgomery (1998) also has derived a composite model combining principles associated with the activity, image, and form (refer Figure 2.3).



**Figure 2.2: Components of a sense of place**

Source: Punter (1991)





**Figure 2.3: Urban sense of place**

Source: Montgomery (1998, p.98)

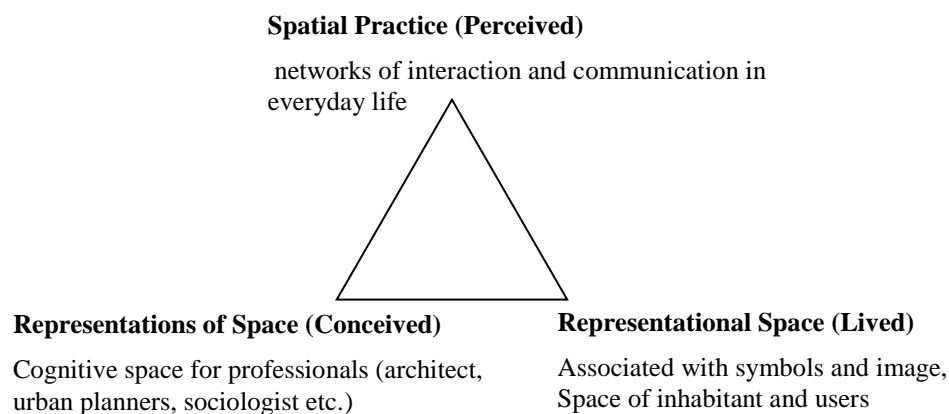
Lynch (1960) mentioned that the environmental image can be analysed according to three attributes: identity (distinction as a separable entity), structure (spatial relation to the observer and other object), and meaning (practical and emotional attachments of the observer). To provide the meanings for each object either practically or emotionally, is equally important as classifying the identity and structure for the workable environment (Lynch, *ibid*). According to Punter (1991), the meaning of any place is derived from cultural associations, people's perceptions on functions, and qualitative assessments (Figure 2.2). Also, Punter outlined that the meaning together with physical setting and activity define a sense of place. Again referring to Gibson (1981), a sense of place is also established by memory, imagination, and experiences. Taking into consideration of all these concepts, this research will also explore the sense of place by looking at physical setting and activity in combination with their associated meaning.

#### **2.4 Developing a framework for the study of open spaces and their transformations**

Space is the *material support* (that bears symbolic meaning) of *time sharing social practices* (space brings together those practices that are simultaneous in time) (Castells, 2010). A place is 'a locale whose form, function and meaning are self-contained within the boundaries of physical contiguity' (Castells, 1996, p.423). According to him, not all places are socially interactive and spatially rich; it is because their physical/symbolic qualities make them different that they are places. Lefebvre (1974), has defined space as

a triad of *spatial practice* (*perceived space*), *representations of space* (*conceived space*), and *spaces of representation* (*lived space*). According to Goonewardena et al. (2008, p.29) this is a ‘parallel series that points to a twofold approach to space: one phenomenological and the other linguistic or semiotic’.

For Lefebvre’s triad of space, Schmid (2008) related *spatial practice* to the networks of interaction and communication in everyday life; *representations of space* to a space that give an image to a space, which is conceptualized by scientists, architects, urban planners, technocratic subdividers and social engineers with a scientific bend; and *representational space* as directly lived through its associated images and symbols and hence is the space of inhabitants and users. These symbols of space could be taken from nature such as trees or prominent topographical formations, artifacts, buildings, and monuments or combinations of both (eg. landscapes).



**Figure 2.4: Triad of space**

Source: Interpretation based on Lefebvre (1974) and Schmid (2008)

Harvey (1989) related this triad of space with other dimensions. His interpretations has focused on ‘accessibility and distanciation’, ‘appropriation and use of space’ and ‘domination and control of space’. These dimensions of Harvey are also used by Stahle (2006) for his study on open spaces for Stockholm that adopts sociotope mapping (see Table 2.6). It is quite evident that spaces, which are perceived, conceived, and lived and that shape urban environment are always identified by access, use, and control and are associated with three different dimensions: forms, functions and their meanings. In other words, these three dimensions are representing the physical settings, activities and their meanings that give the identity to the place. Relph (1976) also defined place identity in terms of place setting and activities. Seamon (2014, p.17) on the other hand related place identity to ‘the process whereby people living in or otherwise associated with a place take up that place as a significant part of their world’.

**Table 2.6: Interpretation of space**

Lefebvre's triad		Accessibility and distanciation	Appropriation and use of space	Domination and control of space
Material space	Harvey (1989)	Flows of people, transport system	Urban built environments, social spaces of the city, social networks of communications	Private property in land, state and administrative division of space, exclusive communities and neighbourhood, social control
	Stahle (2006)	Flows of people	Promenade	Fencing
Representations of space	Harvey (1989)	Social, psychological and physical measures of distance, map making, central place and other forms of location	Personal space, mental maps of occupied space, symbolic representation of spaces	Forbidden spaces, territorial imperatives
	Stahle (2006)	Traffic analysis	Building typologies	Property map, city plan
Spaces of representation	Harvey (1989)	Media, modes of spatial transaction (radio, paintings, photography), diffusion of taste	Popular spectacles-street demonstrations, places of popular spectacle (streets, squares, markets), iconography	Organized spectacle, monumentality and constructed spaces of ritual, symbolic barriers and signals of symbolic capital.
	Stahle (2006)	Internet	Civic square	Religious square

Source: Lefebvre (1974), Harvey (1989), and Stahle (2006)

The wider literature on open spaces discussed in the earlier sections shows that the success of place also depends on sensory perceptions. Healey (2010, p. 34) cited in (Sepe and Pitt, 2014) defined 'sense of place and place quality as some kind of coming together of physical experiences (using, bumping into, looking at, hearing, breathing) and imaginative constructions (giving meanings and values) produced through individual activity and socially formed appreciations' (p. 219). The perceptions such as visual, hearing, smell, and touch (Carmona et al., 2003) can be cognitive, affective, interpretative, and evaluative<sup>34</sup> (Ittelson, 1978). Lucas (2012) used sensory notation for six perceptions – visual, kinetic, chemical, aural, thermal, and tactile – for the urban environment that includes characteristics of each of the six perceptual systems. The visual perception is characterized as dark, bright, saturated, neutral etc., aural perception is characterized as, high pitch, low pitch, quiet, loud etc., tactile perception is characterized as static, mobile, rough, smooth etc., kinetic is strong, light, free, bound etc., thermal hot, cold, dry, wet etc., chemical as weak, intense, stagnant, fresh etc. The notation is in the form of a radar chart and studies about which senses are dominant and excited and which are lacking in stimulation.

<sup>34</sup>Cognitive involves thinking about, organizing and keeping information. In essence, it enables us to make sense of the environment. Affective involves our feelings, which influence perception of the environment. Interpretative encompasses meaning or associations derived from the environment. Evaluative incorporates values and preferences and the determination of good or bad' (Carmona et al., 2003)

For any successful public space, protection, comfort and enjoyment are essential parameters (Gehl, 2004). The protection of spaces should be against traffic and accidents, crime and violence, and unpleasant sense experiences. The comfort should comply with the possibilities for walking, standing/staying, sitting, seeing, hearing/talking and play/unfolding/activities whereas enjoyment should relate to scale, climate, and aesthetic quality/ positive sense-experience. In other words, all parameters that Gehl considered are social and perceptual dimensions of the environment. Likewise the Spaceshaper toolkit developed by CABESpace (2007) has considered perceptions of space with eight dimensions: *access, use, other people, maintenance, environment, design and appearance, community and you*. *Access* is finding a way and getting about, *use* is activities and opportunities of the space, *other people* means how the space caters for different needs, *maintenance* is the clean and care for the space, *environment* is the safety and comfort in space, *design and appearance* is the look of space, *community* is the importance of space to local people and *you* is the feeling of yourself towards the space. From these discussions, the researcher draws that both quantitative and qualitative assessment for physical, social and cultural dimensions of space are essential to achieve a successful place.

Places in the contemporary city are changing as the result of globalization, technological advancement as well as the needs of new generations. The methods for analyzing transformation of space are ignored in most of the literature. Sepe (2009) however, had developed a method, known as ‘PlaceMaker method’ to identify the elements that are not shown in the traditional maps and that are particularly ‘belonging to the place’ for the case of Ramblas in Barcelona. Though the method is a systematic approach, it fails to provide a clear understanding about the place. The map produced as the final output is very complex, making it even confusions to read and interpret. Although, Sepe studied all physical, social, and perceptual dimensions of the urban environment both quantitatively and qualitatively, her method does not clarify the meanings associated with these dimensions. Furthermore, Sepe’s study has no considerations of relationships of access with other elements. Another study conducted by Zendehdelan et al. (2013) have identified the main factors contributing to the feeling of sense of place in the design of the square in Iran. The senses of sight, hearing, smelling, touch, and taste were analyzed by taking into consideration physical factors such as scale and proportion in the spaces and buildings, form of buildings, their colours and placements; and the economic, religious, political, and scientific activities of people

that bring dynamism in the square. However, their study only provided a quantitative analysis of the factors that affect different sensory perceptions and no analysis regarding how the users perceive the physical forms and the functions have been considered.

Based on the above discussed literatures and the gap identified in the existing methods, a systematic method was developed that includes the study of key elements – denominative and perceptive surveys of physical settings and use/activities, access, perceptions of space by users, and analysis of space at urban scale (these will be discussed in detail in Chapter 3).

## **2.5 Conclusion**

Reviewing the sprawl and open space-related literatures, both discourses lack of studies in relation to each other. No studies have been found regarding the impact of sprawl on open spaces. Only a few studies have examined about a socio-cultural issues of sprawl, according to which, sprawl is blamed for causing less sense of community compared with the core and increasing social segregation between the people living in the core and sprawled area. Review on the physical, social, cultural, and management dimensions also shows that the impact of sprawl on the nature and quality of open spaces are not dealt with. The literature shows that a sense of place integrates physical setting, activity, and the meanings that are derived from cultural associations, people's perceptions on functions, and qualitative assessments. For this purpose, a systematic approach is needed that studies the physical settings, activities, and meanings of the public open spaces of the traditional urban centre and sprawled area of the Valley, and perceptions of users on spaces; this is discussed in the next Chapter.

## Chapter 3 : Research Methodology

### 3.1 Introduction

This chapter aims to define the research philosophy, methods and techniques used to achieve the research objectives and questions outlined in Chapter 1. In doing so, the chapter first provides an overview of the theories about research paradigm – with knowledge claims, strategies of inquiry and research methods – and locates this study in relation to these. It further provides the justification for the chosen research strategy. It then develops a methodology to study public open spaces based on the literature review, appropriate to meet the aims and objectives of this research, and explains the iterative process involved in developing the method and its implementation in the pilot studies. The data collection techniques used in the field study, data interpretations, and analysis are discussed. Finally, it also discusses the limitations of this research.

### 3.2 Theoretical backgrounds

#### 3.2.1 Research paradigm

For a social researcher, before undertaking any kind of research it is important to understand recent social science practice. Therefore, the researcher begin with the concept of research given by Hitchcock and Hughes (1995), according to which, research is the ‘*systematic inquiry*, inquiry that is characterized by sets of principles, guidelines for procedures and which is subject to evaluation in terms of criteria such as validity, reliability and representativeness. In this sense social research refers both to the collection and analysis of information on the social world, in order to understand and explain that world better’ (p.5).

The choice of research philosophy contains important assumptions about the way in which we view the world (Saunders et al., 2009). Depending upon the research problem, social scientists adopt various research paradigms. ‘Research paradigm’ has become a central and popular concept in social science research methodology after the work published in Thomas Kuhn’s book, *The Structure of Scientific Revolutions* (1962/1996) (Morgan, 2007). Research paradigm has been famously defined as a system of beliefs and practices that influence researchers to select both the questions and methods for study (Morgan,ibid), a basic belief system or world view that guides the investigation

(Guba and Lincoln, 1994), and worldviews and beliefs about the nature of reality, knowledge and values (Schwandt, 1989 cited in Morgan, 2007). According to TerreBlanche and Durrheim (2006), research paradigm encompasses three dimensions<sup>35</sup>: ontology, epistemology, and methodology. ‘The ontological assumptions give rise to epistemological assumptions, these, in turn give rise to methodological considerations and these in turn give rise to issues of instrumentation and data collection’ (Hitchcock and Hughes, 1995, p.21). Michael Crotty’s (1998) concept considers four elements in research: epistemology, theoretical perspective, methodology and methods. The ontology is not included in the framework, because according to him ‘ontology and epistemology emerge together informing the theoretical perspective, for each theoretical perspective embodies a certain way of understanding *what is* (ontology) as well as a certain way of understanding *what it means to know* (epistemology) (p.10)’. These four elements always go in parallel, the assumptions embedded in one element determining the assumptions in other subsequent elements. For example, research conducted using participant observation as a research method, is derived from the *methodology* of ethnography and this ethnography is derived by the *theoretical perspectives* known as symbolic interactionism, which is the philosophical stance of constructionism in *epistemology* (refer Table 3.1).

**Table 3.1: Four elements of research**

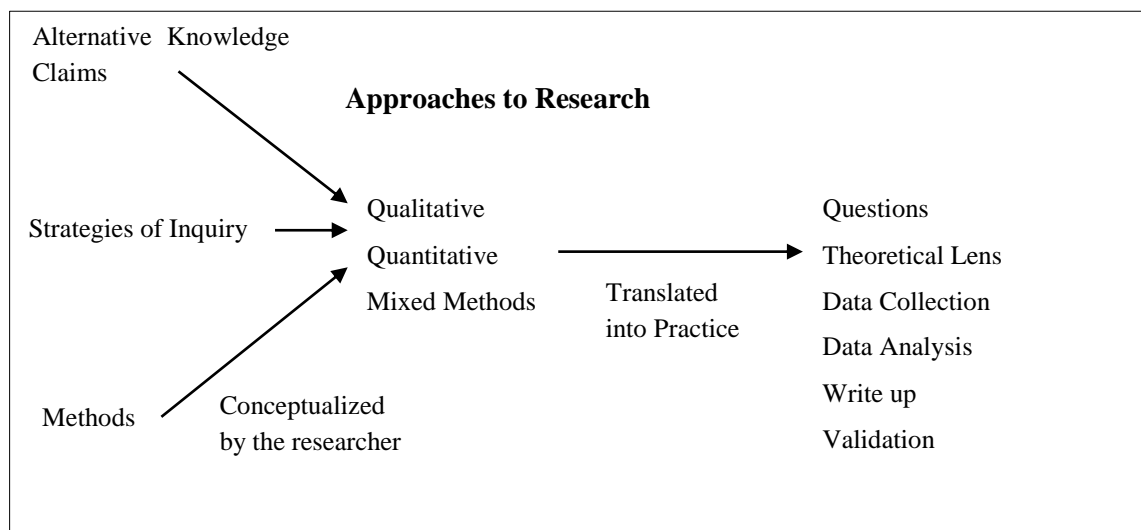
Epistemology	Theoretical Perspective	Methodology	Methods
<ul style="list-style-type: none"> <li>- Objectivism</li> <li>- Constructionism</li> <li>- Subjectivism</li> </ul>	<ul style="list-style-type: none"> <li>- Positivism, (Post-Positivism)</li> <li>- Interpretivism               <ul style="list-style-type: none"> <li>• Symbolic Interactionism</li> <li>• Phenomenology</li> </ul> </li> <li>- Critical Inquiry</li> <li>- Feminism</li> <li>- Postmodernism etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Experimental Research</li> <li>- Survey Research</li> <li>- Ethnography</li> <li>- Phenomenological Research</li> <li>- Grounded Theory etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Sampling</li> <li>- Measurement and Scaling</li> <li>- Questionnaire</li> <li>- Observation               <ul style="list-style-type: none"> <li>• Participant</li> <li>• Non- Participant</li> </ul> </li> <li>- Interview</li> <li>- Document Analysis</li> <li>- Visual Ethnographic</li> <li>-etc</li> </ul>

Source: Crotty (1998, p.5)

<sup>35</sup>The three dimensions are inextricably related. Ontological claims, according to Blaikie (2000, p.8) are ‘the claims and assumptions that are made about the nature of social reality, claims about what exists, what it looks like, what units make it up and how these units interact with each other’. Epistemology, one of the core branches of philosophy, is concerned with the theory of knowledge, especially with regard to its methods, validation (Grix, 2001, p.177) and ‘the possible ways of gaining knowledge of social reality, whatever it is understood to be (Blaikie, 2000, p.8). Methodology is ‘concerned with the logic of scientific inquiry; in particular with investigating the potentialities and limitations of particular techniques or procedures’ (Grix, 2001, p. 179).

Greene (2006)'s concept is different for social inquiry. It includes four distinct domains: *domain 1*, the philosophical assumptions and stances that include ontology and epistemology; *domain 2*, the inquiry logics, that include methodology; *domain 3*, the guidelines for practice that translate the philosophical assumptions and logics of inquiry of domain 1 and 2 respectively; and finally *domain 4*, the sociopolitical commitments in which the location of inquiry in society is articulated and defended. The most used and strong domain of social inquiry according to her is *domain 2*, which identifies and justifies the broad methodological framework for a given tradition. Another philosophical study by (Creswell, 2003) defines three elements: philosophical assumptions about what constitute *knowledge claims*, general procedures of research called *strategies of inquiry* and detailed procedures of data collection, analysis and writing called *methods* (Figure 3.1). Though there are many perspectives of philosophical research frameworks given by different scholars, they all frame either qualitative, quantitative or mixed methods approaches. Each of these approaches have different elements of inquiry (from knowledge claims to strategies of inquiry and methods) (Bryman, 2004; Creswell, 2003).

### Elements of Inquiry



**Figure 3.1: Knowledge claims, strategies of inquiry and methods**

Source: Creswell (2003)

### 3.2.2 Paradigm shifts and the emergence of mixed methods research

Quantitative researchers believe that social inquiry is objective and its philosophical stem is positivist (Creswell, 2003), whereas qualitative researchers believe that social inquiry is either subjective or constructive and its philosophical stem is naturalist



(Lincoln and Guba, 1985) cited in Guba and Lincoln (1994). There was a major debate, *paradigm wars*, between quantitative and qualitative researchers for more than a century (Johnson and Onwuegbuzie, 2004), based upon the differences in assumptions about what reality is and whether or not it is measurable (Newman and Benz, 1998). Many attempts were put forward to settle down the disputes between these two methods. According to Rossman and Wilson (1985) cited in (Onwuegbuzie and Leech, 2005), three major schools of thought have emerged from the quantitative – qualitative paradigm wars, namely: purists, situationalists and pragmatists. Purists believe in either a quantitative or qualitative approach and pragmatists believe in integrating quantitative and qualitative approaches. Situationalists locate themselves in between quantitative and qualitative and ‘maintain the mono-method (paradigmatic) stance held by purists but also contend that both methods have value’ (Onwuegbuzie and Leech, p.7). There are many examples of merging qualitative and quantitative data for studying communities (Johnson et al., 2007). The mixed method has been gaining popularity among anthropologists and sociologists and is ‘recognized as the third major research approach along with qualitative and quantitative research’ (Johnson et al., *ibid*, p.112), and as ‘an attempt to legitimate the use of multiple approaches in answering research question rather than restricting or constraining researcher’s choice’ (Johnson and Onwuegbuzie, 2004, p.17). In contrast to quantitative research which is deductive, theory/ hypothesis testing, explanation, prediction, statistical analysis, and qualitative research which is inductive method, discovery, exploration etc., the mixed method includes an abduction method for its social inquiry (Table 3.2). Rossman and Wilson (1985) cited in (Johnson et al., 2007, p.115) ‘identified three reasons for combining quantitative and qualitative research. First, combinations are used to enable confirmation or corroboration of each other through triangulation. Second, combinations are used to enable or to develop analysis in order to provide richer data. Third, combinations are used to initiate new modes of thinking by attending to paradoxes that emerge from the two data sources’.

**Table 3.2: A pragmatic alternative to the key issues in social science research methodology**

	<b>Qualitative approach</b>	<b>Quantitative approach</b>	<b>Pragmatic approach</b>
Connection of theory and data	Induction	Deduction	Abduction
Relationship to research process	Subjectivity	Objectivity	Intersubjectivity
Inference from data	Context	Generally	Transferability

Source: Morgan (2007)

Creswell and Clark (2011) identified four key decisions involved in choosing an appropriate mixed methods design to use: i) the level of interaction between the quantitative and qualitative strands, ii) the relative priority of the strands, iii) the timing of the strands, and iv) the procedures for mixing the strands. The level of interaction is the extent to which the two strands are kept independent or interact with each other<sup>36</sup>. For the priority of the strands, Creswell and Clark have given three possible weighting options: i) equal priority where both methods play an equally important role in addressing the research problem, ii) quantitative priority where a greater emphasis is given to the quantitative methods, and iii) qualitative priority where a greater emphasis is given to the qualitative methods. The timing (a temporal relationship) between the quantitative and qualitative strands, has been classified in three ways: concurrent, sequential, or multiphase combination<sup>37</sup>. The mixing of two strands occurs during interpretations, data analysis, data collection, or at level of design. Creswell and Clark further discussed the characteristics of six mixed methods research designs: the convergent parallel design, explanatory sequential design, exploratory sequential design, embedded design, transformative design, and multiphase design. The philosophical assumptions for each of these research designs are outlined in Table 3.3.

### 3.2.3 Pragmatism as a mixed methods research

Based on Creswell's (2003) model on elements of inquiry to answer- i) what knowledge claims are being made by the researcher (including a theoretical perspective), ii) what strategies of inquiry will inform the procedures and iii) what methods of data collection and analysis will be used, the following explanations have been made.

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<sup>36</sup>According to Greene (2007) cited in Creswell and Clark (2011), the interaction can be independent and interactive. An independent level of interaction occurs when the two strands are distinct and the researcher keeps the quantitative and qualitative research questions, data collection, and data analysis separate. The researcher only mixes the two strands when drawing conclusions during the overall interpretation at the end of the study. In interactive level, the two methods are mixed before the final interpretation. This interaction can occur at different points in the research process and in many different ways. The design and conduct of one strand may depend on the results from the other strand, the data from one strand may be converted into the other type and then the different data sets are analyzed together, or one strand may be implemented within a framework based on the other strand type.

<sup>37</sup>According to Creswell and Clark (2011), concurrent timing occurs when the researcher implements both the quantitative and qualitative strands during a single phase of the research study. Sequential timing occurs when the researcher implements the strands in two distinct phases, with the collection and analysis of one type of data occurring after the collection and analysis of the other type. Multiphase combination timing occurs when the researcher implements multiple phases that include sequential and/or concurrent timing over a program of study.

### Knowledge claim

As the name suggests, mixed methods research is the mixing of different methods together. Philosophically, it makes use of the pragmatic method (Johnson and Onwuegbuzie, 2004). Johnson et al.(2007) believe that pragmatism has proved to be the

‘most useful philosophy to support mixed methods research and is a well developed and attractive philosophy for integrating perspectives and approaches. It offers an epistemological justification (via pragmatic epistemic values or standards) and logic (i.e. use the combination of methods and ideas that helps one best frame, address and provide tentative answers to one’s research questions) for mixing approaches and methods’(p.125).

Morgan (2007) also considers that pragmatism provides new opportunities to address methodological issues in social sciences. It relies on abductive reasoning that moves back and forth between induction and deduction, emphasizing intersubjectivity and use of transferability of data (refer Table 3.2).

**Table 3.3: Mixed research designs and philosophical assumptions**

Research design	Definition	Philosophical assumptions
Convergent parallel design	Concurrent quantitative and qualitative data collection, separate quantitative and qualitative analyses, and the merging of the two data sets	Pragmatism
Explanatory sequential design	Methods implemented sequentially, starting with quantitative data collection and analysis in Phase 1 followed by qualitative data collection and analysis in Phase 2, which builds on Phase 1	Postpositivism in Phase 1, Constructivism in Phase 2
Exploratory sequential design	Methods implemented sequentially, starting with qualitative data collection and analysis in Phase 1 followed by quantitative data collection and analysis in Phase 2, which builds on Phase 1	Constructivism in Phase 1, Postpositivism in Phase 2
Embedded design	Either the concurrent or sequential collection of supporting data with separate data analysis and the use of the supporting data before, during, or after the major data collection procedures	Primary approach (Postpositivist or constructivist), or pragmatism if concurrent Constructivist for the qualitative component and postpositivist for the quantitative component if sequential
Transformative design	Framing the concurrent or sequential collection and analysis of quantitative and qualitative data sets within a transformative, theoretical framework that guides the methods decisions	Transformative world view
Multiphase design	Combining the concurrent and/or sequential collection of quantitative and qualitative data sets over multiple phases of a program of study	Pragmatism if concurrent Constructivist for qualitative component and postpositivist for quantitative component

Source: Creswell and Clark (2011, p.73-74)

The history of pragmatism is not new. It was first introduced into philosophy by Charles Peirce in 1878. The term pragmatism is derived from the Greek word meaning action, from which the words practice and practical come (James, 2008, p.23). This approach concentrates ‘actions, situations and consequences rather than antecedent conditions and looks in to the ‘what’ and ‘how’ to research based on its intended consequences’ (Creswell, 2003). For this type of research, the problem is more vital than the methods. It can use different methods to solve the problem (Creswell, 2003; Tashakkori and Teddlie, 1998). The researcher is free to choose, integrate and transfer any methods, techniques and procedures of research depending upon the nature of the problem, which is restricted in both quantitative and qualitative methods.

### **Strategies of inquiry**

Creswell (2003) defined three strategies of inquiry for the mixed methods: sequential procedure, concurrent procedure and transformative procedure. Sequential involves beginning with a qualitative method for exploratory purposes and following up with a quantitative method with a large sample so that the researcher can generalize results. Alternatively, the study may begin with a quantitative method in which theories or concepts are tested, to be followed by a qualitative method involving detailed exploration with a few cases or individuals. Concurrent involves converging quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. The researcher collects both forms of data at the same time during the study and then integrates information in the interpretation of overall results. It is also possible to nest one form of data within another in order to analyze different questions. In a transformative procedure, the researcher uses a theoretical lens as an overarching perspective within a design that contains both quantitative and qualitative data. This might involve sequential or a concurrent approach.

### **Research methods**

Since the research includes both qualitative and quantitative methods, diverse data can be collected depending upon the nature of the problem. Therefore, it can have both open ended and closed questions, both predetermined and emerging approaches and both quantitative and qualitative data and analysis (Creswell, 2003).

### 3.2.4 Case study research strategy

Case study has been ‘a common research method in psychology, sociology, political science, anthropology, social work, business, education, nursing, and community planning’ (Yin, 2009, p.4). A case study according to Yin,

‘is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident’ (p.18).

Robson (2002) defines case study as,

‘a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence’ (p.178).

Yin (2009) had also made differentiations between five methods – experiment, survey, archival analysis, history, and case study – based on purposes (exploratory, descriptive, and explanatory), extent of control over behavioral events, and degree of focus on contemporary as opposed to historical events (refer Table 3.4).

*Purposes of study:* according to Yin, if research questions focus mainly on ‘what’ questions, then any of the five methods can be used as an exploratory study. If a ‘what’ question is raised in the form of ‘how many’ or ‘how much’, it is more likely to favor survey or archival methods than others; a case study would not be an advantageous method in this situation. If the research question is in the form of ‘who’ and ‘where’, it is likely to favor survey methods or the analysis of archival data. If the research question is in answering ‘how’ and ‘why’, it is likely to lead to the use of case studies, histories, and experiments as the preferred research methods.

*Extent of control over behavioral events:* according to Yin, when there is no access or control over actual behavioral events, histories become ideal method that deal with the “dead” past – that is, when no relevant persons are alive to report and also when an investigator must rely on primary documents, secondary documents, and cultural and physical artifacts as the main sources of evidence.

*Degree of focus on contemporary as opposed to historical events:* Yin argued that histories could be done about contemporary events; in this situation, the method begins to overlap with that of the case study. The case study is preferred in examining contemporary events when the relevant behaviors cannot be manipulated and depend on

many of the same techniques as a history, but it further adds two sources of evidences: direct observation and interviews of the person involved in the events.

**Table 3.4: Relevant situations for different research methods**

Method	Form of research question	Requires control of behavioural events	Focuses on contemporary events
Experiment	how, why?	yes	yes
Survey	who, what, where, how many, how much?	no	yes
Archival Analysis	who, what, where, how many, how much?	no	yes/no
History	how, why?	no	no
Case Study	how, why?	no	yes

Source: COSMOS Corporation cited in Yin (2009, p.8)

Yin also had differentiated between single, holistic case studies and multiple-case studies. The single case design can be used: (i) when a single case represents the *critical case* in testing a well-formulated theory, (ii) where the case represents an *extreme case* or a *unique case*, (iii) where a single case is the representative or typical case. Here, the objective is to capture the circumstances and conditions of an everyday or commonplace situation, (iv) when a single case is the *revelatory case*, and (v) where a single case is the *longitudinal case*. Multiple case studies on the other hand aim to replicate findings across cases, hence each case must be carefully selected so that it either i) predicts similar results (a literal replication) or ii) predicts contrasting results but for anticipatable reasons (a theoretical replication). Stake (1995) on the other hand categorized types of case studies as intrinsic, instrumental, or collective. Intrinsic is when a researcher has intrinsic interest in the case, instrumental is when the case is used to understand other than what is obvious to the observer, and collective is when a group of cases is studied, establishing a coordination between the individual studies.

The case study is a flexible design process (Robson, 2002). Runeson et al. (2012) has summarized its characteristics as: i) it copes with the complex and dynamic characteristics of real world phenomena; ii) conclusions are based on a clear chain of evidences, whether qualitative or quantitative; iii) data is collected from multiple sources in a planned and consistent manner; iv) and it adds to existing knowledge by being based on previously established theory, if such exist, or by building theory. There is also need of triangulation when relying primarily on qualitative data. The triangulation according to Stake (1995) can be done in four ways: i) data triangulation –

using more than one data source or collecting the same data at different occasions; ii) observer triangulation - using more than one observer in the study; iii) methodological triangulation - combining different types of data collection methods; and iv) theory triangulation - using alternative theories or viewpoints.

### **3.3 This research**

#### **3.3.1 Justification of adopting a pragmatic approach**

It was already defined in Chapter 1 that the focus of this research is to investigate physical, social and cultural transformations of public open spaces of Kathmandu Valley. The research includes a diverse range of study from historical morphological development of Valley to social, cultural, and political issues of open spaces of the Valley. When comparing to the pragmatist approach, firstly, the approach also agrees that research always occurs in social, historical, political, and other contexts. Secondly, the pragmatists do not see the world as an absolute unity and truth is what works at the time. Thus investigators use many approaches to collecting and analyzing data rather than subscribing to only one way (Creswell, 2003, p.13-14). In this research also, to have better understanding of research problems the researcher makes use of diverse approaches (include both quantitative and qualitative methods) for data collection as well as analysis that best meet the needs and purposes of the research. Thirdly, by definition, pragmatism is problem-centered and consequences oriented and this research also reflects the same. Hence it is logical to adopt this approach for the research and the researcher strongly agrees with Johnson and Onwuegbuzie (2004) that,

‘the mixed methods research movement that consideration and discussion of pragmatism by research methodologists and empirical researchers will be productive because it offers an immediate and useful middle position philosophically and methodologically; it offers a practical and outcome-orientated method of inquiry that is based on action and leads, iteratively, to further action and the elimination of doubt; and it offers a method for selecting methodological mixes that can help researchers better answer many of their research questions’ (p.17).

This approach provides a better understanding of a phenomenon by combining the reliability of empirical counts with the validity of lived experience through multiple

stages and methods of data collection and/or analysis as defined by Wheeldon and Ahlberg (2012).

### **3.3.2 Justification of adopting a case study strategy**

The research aims to investigate the complex and dynamic characteristics of real world phenomena, i.e. physical, social, and cultural transformations of the public open spaces in the TUC and SA of the Kathmandu Valley and their impacts on the users. These kinds of investigations best favour the use of a case study strategy that allows selecting multiple case study areas, and from which the generalized conclusions could be drawn by comparing and synthesizing the qualitative as well as quantitative evidences. Moreover, this strategy gives flexibility in selecting methods and techniques for data collections and analysis that help in understanding all case areas. This research addresses ‘how’ and ‘why’ questions for which Yin (2009) argued case studies as the preferred research methods.

### **3.3.3 Data collections, interpretations, and analysis of public open spaces in Kathmandu Valley**

The research used an exploratory approach, grounded in the evidence to study the transformations of public open spaces of the TUC and SA of the Valley. It adopted a mixed methods strategy; hence, diverse ranges of quantitative and qualitative data were collected to meet the objectives of the research as defined in Chapter 1. The data were collected in two different ways: one was archival study that includes reports, documents, drawings, maps etc.; and the other was field study that used different techniques. A systematic method (which will be discussed later) was used to conduct the field study.

#### **i. Research objectives 1 and 4**

##### ***Archival Study***

Prior to conducting field study on selected public open spaces of the Valley, it was important to understand the morphological growth of the Valley; different typologies of open spaces that existed since the historical periods; and the significances associated with these open spaces (objective 1). For this, archival studies were conducted that include the historic literature, maps, photographs, and documents. Furthermore, the

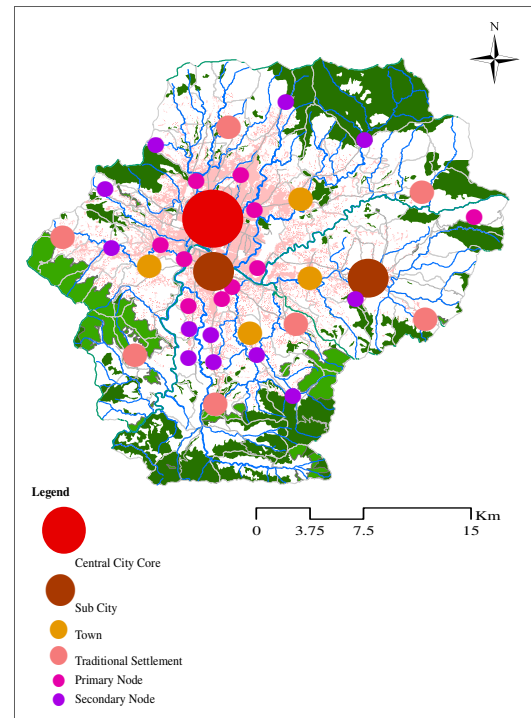


existing documents on policy of Nepal were reviewed to identify whether there are any policies related to open spaces (objective 4). Other archival studies were also undertaken as part of the justification in the selection of case study public open spaces in TUC and SA.

### Justification for the selection of traditional urban centre and sprawled area for study

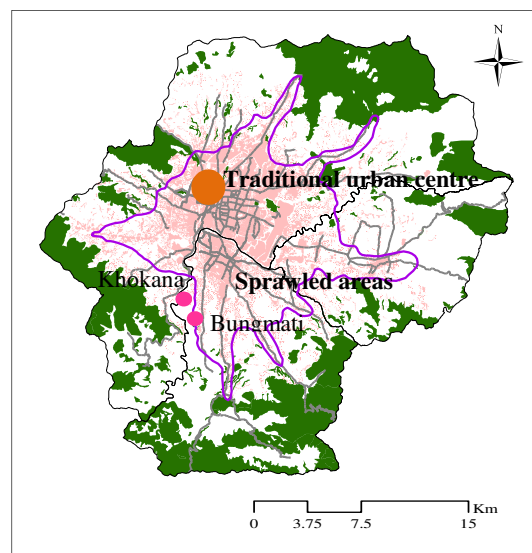
For the delineation of the TUC, the vision of the Long term Development Plan, 2020 for the Kathmandu Valley published by Kathmandu Valley Town Development Committee<sup>38</sup> was considered. This plan acknowledged the Kathmandu Valley as a single physical unit and proposed different functional hierarchies for the municipal cities and the villages. It also designated Kathmandu Metropolitan City (KMC) as the central city core and other areas as sub city, towns and traditional settlement (Figure 3.2).

Since Kathmandu is the capital of the country, consists of most of the administrative, business, and commercial districts of the country, and also includes traditional settlement (the Malla period), it is logical to consider the central area of KMC as traditional urban centre. For the sprawled areas, the areas in 'Sainbu' along the arterial road of Ekantakuna-Tikabhairab Road were selected. Taking into consideration of the available documents, GIS maps and Google maps from 2003-2012 A.D., the areas along



**Figure 3.2: Functional hierarchy of Kathmandu Valley**

Source: Map based on GIS data of KVTDC (2002)

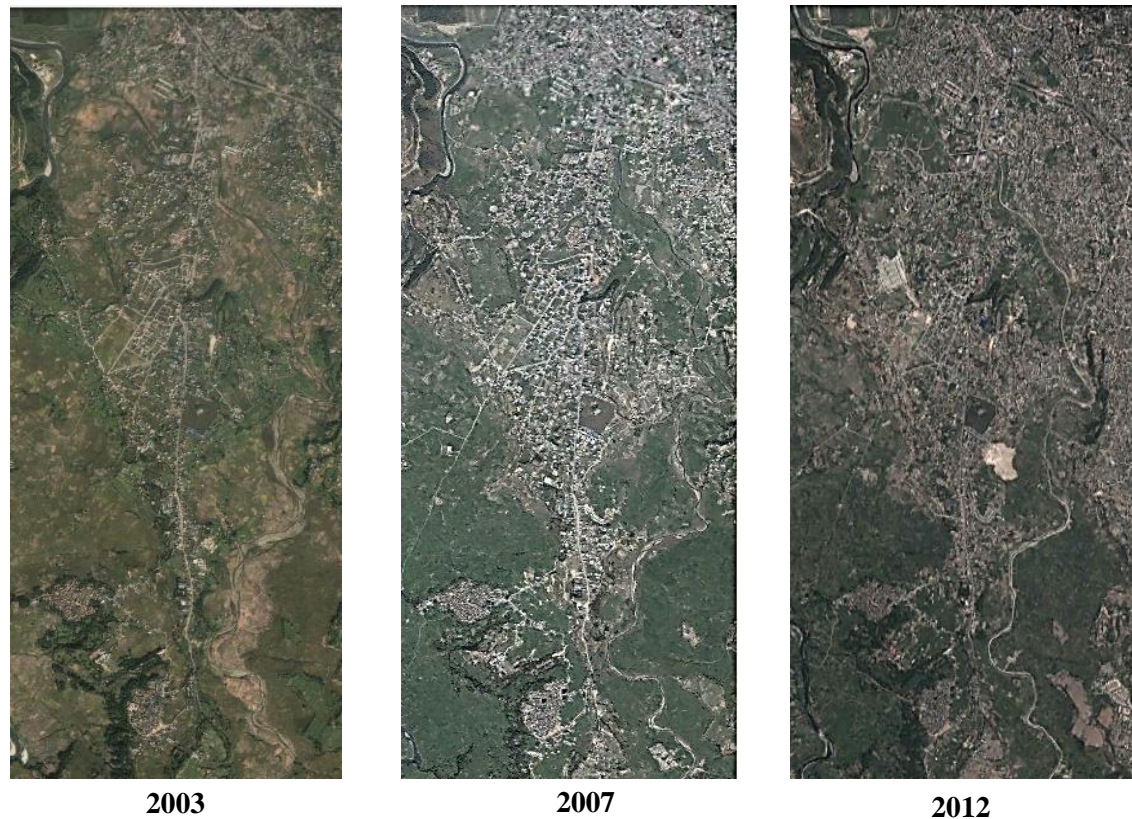


**Figure 3.3: Traditional settlements and sprawled areas**

Source: Map based on GIS data of KVTDC (2002)

<sup>38</sup>Kathmandu Valley Town Development Committee changed into Kathmandu Valley Development Authority in 2012.

this arterial road were identified as being the most extensive sprawled areas in the Valley (Figure 3.4). The selected SA consists of government to private sector initiated housing programmes. In addition, the arterial road connects other traditional settlements such as Khokana and Bungmati (Figure 3.3).



**Figure 3.4: Sprawled areas along Ekantakuna-Tikabhairab arterial road**

Source: Google Earth, 2003-2012

## ii. Research Objective 2

### *Field Study*

The direct observations were conducted to investigate the typologies of open spaces in TUC and the SA and to examine the meanings associated with the selected public open spaces and transformation of these spaces.

### **Transect-Walk method for identifying typologies of open spaces**

The Transect<sup>39</sup> walk method was used as a tool for determining typologies of open spaces from TUC to the SA. This method according to World Bank (2012, p.1) is an

<sup>39</sup>The first appearance of the Transect as an intellectual construct was the Valley section conceived by Sir Patrick Geddes early in the 20th century from upland to river and is a result of the compilation of the *Lexicon of the New Urbanism* in 1994-1998 (Duany, 2002). One of the principles of Transect is that certain forms and elements belong in certain environments.

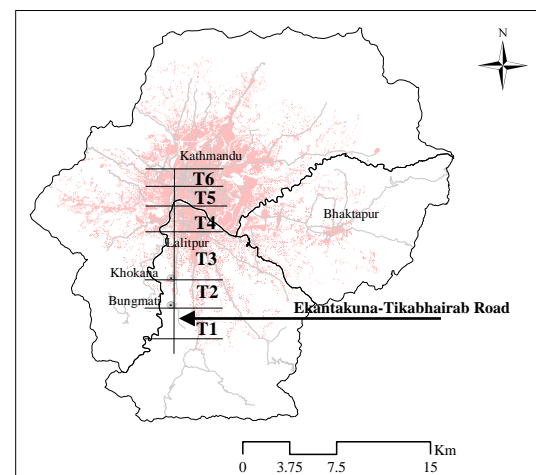
information-gathering exercise for describing natural resources, present land use, vegetation, changes in the physical features and cropping systems in villages and public resources, land use, social differentiation and mobility in urban communities. It is a simple tool that is easily adopted and replicated at the community level, involves outdoor activities, on-field observation, discussions, and diagramming. The only prior information required is key informant advice on identifying the transect line routes and to purposively select local analysts. In this research also, the transect-walk was conducted with the participation of a key local individual who was familiar with the locality in TUC and SA respectively. Though the typologies of open spaces in TUC were determined from the archival study, this method was also used to validate their existence. The Transect Walk was conducted from the TUC to the SA along the arterial road of Ekantakuna-Tikabhairab Road (as shown in Figure 3.5) which had been selected

as explained on p.71. In order to build a classification of the types of urban space the transect cut through, the codes developed by American urbanists Duany and Plater-Zyberk were adapted in this exercise. Such codes are used in New urbanism for design purposes. In this research they were found to be of use to understand the character of area along the transect walk. They represented T1 as Natural zone, T2-Rural zone, T3-Sub-urban zone, T4-General urban zone, T5-Urban Centre zone, and T6-Urban core zone. In this study, the codes were assigned

with their respective name based on what exist on ground. The outer traditional settlement was assigned for T2, sprawled area was assigned for T3, and traditional urban centre for T6. Based on the archival study and transect walk, the typologies of open spaces of Kathmandu Valley were selected. Each transect was drawn using AutoCAD (also refer to Figures 6.2, 6.3, 6.4, 6.5, and 6.6 in Chapter 6).

### Justification for the selection of case study open spaces

Two distinct types of open spaces – mono-cultural and multi-cultural – have been recognized since the Malla period with their own identities. Each of these types is



**Figure 3.5: Transect of Kathmandu Valley**

Source: Map based on GIS data of KVTDC (2002) and Transect Codes adopted from Duany (2002)

further classified into different hierarchies. The first order of mono-cultural space include private courtyard and second order includes neighbourhood square, well, and rest houses. The first order of multi-cultural space includes temples, raised platform for cultural activities; second order includes market squares; and third order includes palace squares. Based on the literature and field study, different hierarchical orders of open spaces (the detail descriptions of which will be discussed in Chapter 5) have been selected as case areas for TUC of the Valley. These include a market square, a second order multi-cultural spaces; a neighbourhood square, a second order mono cultural spaces; and the landmark space of the Rana period. It must be noted here that the traditional concept of all these spaces may not exist at present year. As an example of market square, Ason square is selected because it is one of the oldest market squares, it is at the junction of six outspread roads including trade route to Tibet and India, and has become a commercial and ceremonial hub in the Valley. As an example of neighbourhood square, Tebahal is selected because it is one of the oldest bahal<sup>40</sup>, which is located between the old busy and new commercial centres. Dharahara-Sundhara is selected as a community square because it is the most widely used urban space by the users from several communities for meetings, shopping, and gatherings and is one of the prodigious landmarks that are approachable from different transportation nodes of the Valley.

For the sprawled areas, since there is no literature regarding typologies of open spaces, the identification of hierarchies of open spaces was a part of the field study, which was done by the Transect-walk method. This showed that there are spaces in SA which can be understood by applying the hierarchy developed by Tiwari (2012) for TUC. This allowed for direct pairwise comparison of case studies in TUC and SA. Other new types of open spaces were also found by the transect walk, but did not offer a basis for comparison. This is explained further in 6.2. Bhaisepati Chowk and Magargaun Pipalbot are selected as examples of market square and community square respectively. Bhaisepati Chowk is popular as a market space among the locals, though public gathering is the dominant function in that space. For neighborhood square, an open space situated in Sainbu Awas Chhetra was selected. This space, which was undeveloped in the past and the deity in the space belonged particularly to a specific

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<sup>40</sup>Bahal is the Nepali name for Buddhist monastery, which is an enclosed courtyard surrounded by residences, and have their own socio-cultural significances.

caste group, Acchami<sup>41</sup> as their lineage deity, is developed today and also used by most of the people of the neighbourhood. Besides, it also has some religious significance. Magargaun Pipalbot is a social and religious landmark space, which is used by several communities as a meeting, shopping, and gathering space.

### **Investigating the meanings and recent transformations in the case study open spaces from TUC to SA**

To investigate the meaning of six public open spaces and their socio-cultural and spatial transformations, a systematic method (this is discussed in the later section) has been used. The fieldwork was conducted by the researcher in the year 2012, including all surveys. Noting that the perceptive survey undertaken by the researcher was subjective after the fieldwork had been completed and the researcher had returned based in Edinburgh, it was realized that there was a need to include the perceptions of other users to reduce subjectivity in the assessment. For this purpose, seven other professionals (architects, urban planners, and engineers) were selected to conduct the denominative and perceptive surveys in the same month in the year 2013, under the researcher's guidelines. The main aim of conducting the study in the same month was to obtain similar kinds of data in the selected public open spaces. The data obtained by the researcher in the year 2012 and by the professionals in the year 2013 were then compared for the physical settings as well as activities to find out if the same structures and similar activities existed in both years. The outputs of perceptive surveys for physical settings and activities were then prepared by combining the data observed by the researcher and the professionals.

For graphical surveys, the drawing grid was prepared based on the digital maps of 2007 and 2011 obtained from the Kathmandu Valley Town Development Authority. The structures, which were not shown in these maps, were drawn by the researcher during field observations. It is to be noted that since this research aims to investigate the relationships among different spaces rather than exact positioning of each of the structures, approximate measurements were taken with the help of simple surveying techniques such as pacing. The comparative studies of three different types – market squares, neighbourhood squares, and community squares – were conducted selecting

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<sup>41</sup>Acchami is one of the caste groups that belonged to Dalit, who were considered as the marginalized groups and restricted in the use of any public amenities in the past.

one each from TUC and SA; these include physical settings and activities with their sensory perceptions, reoccurrence of activities between 2012/2013, patterns of activities, access, urban scale analysis and urban transformations. The study of transformations was also supported by the questionnaires and interviews conducted on the users.

### **iii. Research Objectives 3 and 4**

#### ***Questionnaires and interviews with the users***

The questionnaires were administered to 25 users on average for each space. The participants were selected randomly regardless of gender, age group or any ethnicity. The main purposes of the questionnaire were to find out how the users are affected by the transformations taking places. In addition, this also determined their impression of the spaces, the purpose of using the spaces, and the perception of safety levels in the spaces (refer to Appendix 7.1 for the questionnaire). A comparative analysis between TUC and SA for these aspects was undertaken with the help of Excel and SPSS. The outputs were in the form of graphs supported by the descriptions. Different statistical significance tests such as Chi-square, Kruskal Wallis, Fishers exact test, were conducted to determine the significant relationships between several variables wherever this was thought relevant (also refer Chapter 7). To have better in-depth study of how the users are affected, the semi-structured interviews (refer to Appendix 7.2) were conducted among at least 15 users in each space, who completed the questionnaire. The interviewees were selected based on their area of residence and purpose of their visits to selected case study public open spaces. The interviews in all cases of TUC (Ason, Tebahal, and Dharahara-Sundhara) were easily conducted because there was no difficulty in finding the users as a follow up to the questionnaire; but in case of the sprawled area (Bhaisepati Chowk, Sainbu Awas Chhetra, and Magargaun Pipalbot), it was difficult to find the users and those who were present were not willing to participate. Hence, a different strategy was adopted; both questionnaires and interviews were conducted at the same time. The results of the interviews were also explained.

#### ***Interviews with the government bodies***

The semi-structured interviews (refer to Appendix 8.1) were conducted with key staff in government bodies at central and local level. At the central government level, the

Director General of the Department of Urban Development and Building Construction (DUDBC) and Town Controllers for Kathmandu and Lalitpur districts were interviewed. At local government level, the Department Head of Urban Development of Kathmandu Municipality and Head of Building and Heritage Division of Kathmandu Municipality were interviewed. The governmental bodies at district development level and village development committee were also approached for the interview, but they were newly appointed in the government that time and were not yet aware of much of their responsibilities. Hence, they were not interviewed for the purpose of this research.

### **3.3.4 Developing a methodology for the study of open space and their transformations**

Based on the discussion in Chapter 2, the researcher has developed a method by adopting some of the phases of PlaceMaker method (since there is an overlapping aim between Sepe's research and this research, i.e. investigating urban identity and transformations of spaces) and at the same time simplifying and introducing the parameters that are vital for any successful space based on the earlier literature review. This research explores the sense of place by looking at physical setting and activity in combination with their associated meaning. The physical settings are the structures that exist in and around open spaces, uses are the activities performed in those open spaces. The method also focuses on access as it is also a prime aspect that needs to be considered in identifying the identity of place. For access, the researcher again considers three different concepts defined by Carr et al.(1992b): physical access, visual access and symbolic access. Physical access of the space means that the space is physically accessible to all. Visual access means providing visibility to that space so that people feel free to enter in to that space. Visual access also indicates if the space is safe or not; the increased visibility of the space resembles more safety than with the less visibility. Symbolic access is associated with the cues or symbols that ensure comfort, inviting or threatening effect of the space.

The method makes use of all possible research methods depending upon the purposes of the inquiries. The method, though was developed by the researcher before the work of Zendehtelan et al. (2013), still fills the gap in their work in relation to the sensory perceptions of the physical forms and the functions. The recent work of Carmona and Wunderlich (2012) highlighted the user patterns of several typologies of open spaces

based on the surveys. However, their study focused on the typical local movement (very intense, frequent, and less frequent pedestrian movement) and density of activity (few, moderate, intense, and highly concentrated) at different times in a day, which is a different approach from what the researcher had used.

### Developing a systematic approach

The systematic method developed here consists of five phases with outputs of maps, descriptions, photographs, and statistics (Table 3.5). The process for developing a method has undergone a number of steps, from initially a very complex to a simplified approach. These are discussed in detail in the following sections. This method involves all the steps: preliminary preparation for data collection, data collection in the field, data analysis, and data interpretations. The mappings are prepared using the drawing tool AutoCAD.

**Table 3.5: Phases of the method**

Phases	Objectives	Actions	Outputs
1.	Construction of the analysis grid	- Choice of parameters - Choice of significant days - Choice of time slices	-Database grid -Drawing grid
2.	Denominative and or Perceptive analysis for physical settings, use and access	- Denominative survey - Perceptive survey - Graphical survey - Photographic survey	Maps, texts, photographs
3.	Perceptions of space by users	- Questionnaire and interviews for the visitors of the place	graphs, statistics, texts
4.	Urban Analysis	- Analysis at urban scale	Maps, photographs, texts
5.	Identification with traditional cartography, photographs, and document	- Analysis physical settings, and use	Maps, photographs, texts

Source: Adapted from Sepe (2009)

### Phases of the systematic method

#### *Phase 1- preliminary preparation for data collection*

The first phase is the construction of analysis grids. The construction grids for *physical settings, use, and access* are prepared, these grids include the choice of parameters, significant days, and time slices (see, Table 3.6, Table 3.7, and Table 3.8 for each of the grids). The grid for physical settings consists of location, denominative survey, and perceptive survey (using Sepe's terminology). The main purpose of the denominative survey is to identify the physical structures in the spaces. The purpose of the perceptive survey is to determine the sensory perceptions of each of these identified physical



structures. The location column records the places where the physical structures are; the denominative survey records the descriptions of these structures with their associated meaning; and the perceptive survey records the sensory perceptions (visual, smell, sound, and touch) of these structures with their respective qualitative assessments (based on a Likert-scale such as very pleasant, pleasant, neutral, unpleasant, and very unpleasant) with their reasons. The qualitative assessments are based on the guidelines that the researcher prepared based on the literature review (refer to Appendix 3.1).

**Table 3.6: A database grid for physical settings**

Physical Settings						
City:						
Place:						
Date:						
Location	Denominative Survey		Perceptive Survey			
	Descriptions	Meanings	Sensory perceptions	Types	Perceptions	Reasons
			Visual (v)	-Very pleasant (vp)		
			Smell (s)	-Pleasant (p)		
			Sound (so)	-Neutral (n)		
			Touch (t)	-Unpleasant (up)		
				-Very unpleasant (vu)		

**Table 3.7: A database grid for uses/activities**

Uses/Activities							
City:							
Place:							
Date:							
Time	Location	Denominative Survey		Perceptive Survey			
		Descriptions	Meanings	Sensory perceptions	Types	Perceptions	Reasons
Morning				Visual (v) Smell (s) Sound (so) Touch (t)	-Very pleasant (vp)		
					-Pleasant (p)		
Afternoon					-Neutral (n)		
					-Unpleasant (up)		
Evening					-Very unpleasant (vu)		

The database grid for the use/activities is similar to the physical settings, with the exception that a time (morning, afternoon, and evening) is added. The activities and their sensory perceptions (refer to Appendix 3.2 for the rating guidelines for qualitative assessment) at three times during the day help to identify if there are any changes in activities and their sensory perceptions throughout the day. The physical structures and activities with their respective sensory perceptions help to represent the identity of

spaces (see Lynch, 1960; Proshansky, 1978; Relph, 1976). The database grid for access records the evaluative survey (based on observation) of the physical access to determine if the structures are physically accessible or not, with remarks where necessary. After the construction of database grids, drawing grids (refer to Appendix 3.3 for the example) are constructed for each of the physical settings, use/activities, and access. Both database and drawing grids are used for recording the field data.

**Table 3.8: A database grid for access**

Access			
Location	Evaluative Survey		
	Accessible	Non-accessible	Remarks

## *Phase 2*

### **Data Collections**

The second phase consists of four surveys: denominative, perceptive, graphical, and photographic. It must be noted here that this phase underwent several trial and error processes (refer to Appendix 3.3). This section describes the finalized steps only. The observations of physical settings, activities and access are done in a clockwise direction and are recorded in database and drawing grids correspondingly.

For the *physical settings*, only those structures that represent the space are recorded. The denominative survey includes permanent and temporary structures for both constructed as well as natural elements. The *locations* of each structure are recorded using numbers (like 1, 2, 3....and so on) on the database grid and drawing grid simultaneously. The *description* of the structures (for example tree, shop, etc.) and the *meanings* associated with these structures (in this research, four categorizations are made: social, commercial, religious, and structures with other functions) are recorded on the database grid. Simultaneously the perceptive survey records the following: visual (v), smell (s), sound (so), and touch (t) for the physical structures with their qualitative assessments assigned as very pleasant (vp), pleasant (p), neutral (n), unpleasant (up), and very unpleasant (vu) and the reasons for these assessments on the database grid. The structures may not have all of these senses. In this case, only those perceptive surveys that the structures have are recorded. It is also possible that the structures have no

sensory perceptions; hence, no perceptive survey is done for those structures. It must be noted here that the sense for which a neutral perception is recorded differs from that with no sensory perception. The first means there is a sensory perception but it is perceived as neither pleasant nor unpleasant. And the latter means there is no sensory perception at all. The visual sense epitomizes the individual characteristics of the structures and their integration in the square, smell creates enticing environment, sound exemplifies lively environment, and the touch exemplifies the comfort of using the structures.

Likewise, similar steps are considered for another parameter, *use/activities*. The study considers three different time slices: morning (6:00 am-8:00 am), afternoon (12:00 pm-2:00 pm), and evening (5:00 pm-6:00 pm). These time slices are selected based on the activities<sup>42</sup> of daily life of Nepalese people. The numbering of the activities at different times of the day involves several steps. First, the activities in the morning are listed. If the activities take place in the previously identified locations as those in the structures, then the same numbering is given. If the activities take place in any other spaces, then a continuing numbering is given. The afternoon and evening activities are also listed in the same way<sup>43</sup>. The perceptive survey of visual (v), smell (s), and sound (so) with their qualitative assessments – very pleasant (vp), pleasant (p), neutral (n), unpleasant (up), and very unpleasant (vu) – and the reasons of these assessments are also recorded in the database grid simultaneously. Only those activities are recorded that have sensory perceptions (visual, smell, and sound). The touch perception is determined by the physical structures rather than the activities; hence, it is not considered for the assessment of the activities.

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<sup>42</sup>These can be social, religious, cultural or commercial. The morning activities such as fetching water from water spouts/ taps, reading morning newspapers, religious activities, and market activities; the afternoon activities such as people relaxing and chatting with others, basking in the sun, drying grains; and evening activities such as adults relaxing and chatting with friends after their work, children playing after their schools, are significant activities in everyday life of Nepalese people. However, these activities are dependent on typologies of open spaces.

<sup>43</sup>For example if the activities in the morning are taking places in the location of the physical structures that are recorded as numbers 1 and 2, then the numbering of activities are also given as 1 and 2. If the activities are taking place at other than these locations, then that activity is given a number 3. For the afternoon activities, if the activities are taking place in the same locations recorded as 1, 2 (physical structures), and 3 (place) for morning activities, then the same numbering is given, but if the activity takes place other than these, then the activity is given a number 4.

For *physical access*, only an evaluative survey based on observation is used to identify if the structures are physically accessible or not. Besides, a graphical survey is used to show the relationships between different activities and the traffic movement. The *visual and symbolic access* is based upon the survey defined earlier and the analysis is of a descriptive type. In addition, a photographic survey is also done in order to support all the surveys discussed earlier. Since the perceptive survey is quite subjective, there is a concern of biasedness of the researcher. Hence, in order to avoid this, the perceptive survey also involves other users or professionals (with architectural, engineering, or planning background). To make it easier to record and average the perceptions of the users, the qualitative scales were changed into a numeric scale ranging from 1 to 5 from very pleasant to very unpleasant (see also Appendices 3.6 and 3.7).

### **Data interpretations, analysis, and outputs**

The outputs of the analysis of above described surveys for physical settings, use, and physical access are maps supported by the texts and the photographs. This phase has also underwent a process of refinement through trial and error (refer to Appendix 3.3). The map that is generated for the denominative survey of *physical settings* consists of different symbols for permanent and constructed structures, depending upon whether their locations represent a point or a surface. A thicker line weight is considered for the permanent structure and thinner for the temporary ones. Also, different colour codes are given to the structures for different meanings (also refer to Figure 6.42 in Chapter 6). For the perceptions of these structures that involve the observations of researcher and the users, the average perceptions are taken and then represented on four different maps, one for each of the four senses (visual, smell, sound, and touch). The qualitative assessment (very pleasant, pleasant, neutral, unpleasant, and very unpleasant), is also mapped using different colour codes. The final output map is then generated by overlaying the maps produced based on denominative and perceptive surveys (also refer to Figure 6.44 in Chapter 6). The main aim of overlaying is to have a clear understanding of sensory perceptions of the physical structures.

Similarly, the denominative survey of *activities* is represented in the activity maps, one each for the morning, afternoon, and evening. Each activity is graphically presented with an oval shaped symbol, but with different colour codes for different activities. It must be noted here that the sizes of the symbol only represent the extent of space that has been used rather than showing the intensity of the activities. The perceptive survey

is mapped in the same way as the physical settings. The map helps to identify the perceptions of activities throughout a day. Also, assuming that the study carried out by several users or professionals may not be on the same day, the reoccurrences of same types of activities on different days helps determine the activities that contribute to the identity of the space. This has also been expressed by Relph (1976) that ‘identity of something refers to a persistent sameness and unity which allows that thing to be differentiated from other’ (p.45). For the purpose of this research, all the activities that are categorized under ‘commercial’, ‘social’, ‘religious’ and ‘others’ are given a number that indicates how many times they have been observed. The highest count means that the identified activity is reoccurring more (see also Appendix 3.5). The use of space by activities in the morning, afternoon, and evening may remain the same or differ throughout a day. In other words, the pattern of activities may be same or different throughout a day. For this purpose, the characterization of patterns is done by classifying the number of occurrences of activities throughout a day as 1-instance; 2-instances; and 3-instances. The 1-instance consists of activities taking place at only one time (morning, afternoon or evening), 2-instance includes activities taking place at two times (morning and afternoon, afternoon and evening or morning and evening), and 3 instances include activities taking place at three times (morning and afternoon and evening) throughout a day with respect to the four different categories of activities: commercial; religious; social; and others. The output is also a graphical representation; a consistency in using colour for each of the categories of activities is maintained. That means the same colour assigned for the places of commercial, religious, social, and others is used. However, a varying colour tone is assigned to each of these classifications of the activities (1-instance; 2-instances; and 3-instances). This process also underwent a process of refinement through trial and error (see Appendix 3.3). The graphical survey for the *physical access* is represented in a map that shows the linear relationships between different activities and the traffic movement (such as pedestrian, vehicles etc.). The line weight is considered according to the intensity of the traffic movement, thicker for high intensity and thinner for low intensity. Colour codes are also used for different modes of traffic. A separate map is prepared showing if the structures are physically accessible or not.

### ***Phase 3***

The third phase of this method is the questionnaire and interviews administered to the users of the selected open spaces. The questionnaire consists of both open-ended and

close-ended questions (refer to Appendix 7.1). The questionnaire helps to determine the users' perceptions with respect to the impression, uses, and safety of the public open spaces. An in-depth study of how the users are affected is not possible with a questionnaire. Hence, semi-structured interviews are conducted among those who completed the questionnaire.

#### ***Phase 4***

The fourth phase of the method includes the analysis of open spaces at the urban scale. The main purpose of this phase is to determine the relationships of the case study public open spaces with other spaces at the urban scale level. The analysis depends on the significances of open spaces identified in the previous phases. The output of this phase is also a map supported by descriptions and photographs.

#### ***Phase 5***

The final phase of the method is the analysis of the case study public open spaces by comparing the previously prepared output maps and photographs with the available traditional cartographic sources, historic documents, and old photographs. This phase aims to determine the transformations of public open spaces. The analysis is done based on the urban settings and use values. The output results are the maps and descriptions.

In summary, the researcher developed the above simplified and systematic approach to conduct the study of the public open spaces with the help of different techniques. However, the sequential set of techniques required testing. For this, pilot studies were conducted in three ways. First, the study of a public square, St. Andrew Square in Edinburgh was conducted. Only phases 1, 2, and 4 of the method were tested since the aim was only to check if the proposed surveys were practical or not, and if some parameters needed to be altered in the method (see Appendix 3.4). Then the study of one of the selected case studies of Kathmandu, which the researcher is familiar with (visited the site frequently when based in Kathmandu), was done. Only a few steps of the study (mainly denominative survey) was conducted before a field visit with the help of available documents, available photographs because the researcher was based in Edinburgh during the process of developing the method. The researcher only wanted to ensure that the proposed method was applicable to Nepalese context or not. Third, to ensure that the questionnaires were easy to understand by the local users, four users of

the same case study of Kathmandu were administered with the questionnaire in a pilot phase. From all these pilot studies, the researcher was confident that the method was practical before embarking on the main field study.

### **3.4 Limitations of the research**

This section describes a number of limitations in this research. First, this research discusses only the public open spaces of the Kathmandu Valley. No private spaces were studied. Nepal lacks sufficient and updated information. The digital maps obtained for the observations are of 2007 and 2011 and do not include any detailing such as physical structures in the open spaces. This caused the researcher to draw the details with approximate measurements for the physical structures during field study. Other limitations include a short period of field study due to which a longitudinal study over a full year could not be conducted, lack of documentation and old photographs of public open spaces in sprawled area making difficulty to comparing the past and the present situations, and the subjective surveys of limited number of professionals. However, the researcher has attempted every possible study and validated the research to minimize the problems associated with the above mentioned constraints.

### **3.5 Conclusion**

The research locates itself within the pragmatic epistemological paradigm, under which the mixed method that combines both quantitative and qualitative research strands was adopted in this research. Following Creswell and Clark (2011), the research adopts convergent parallel design, in which the researcher used concurrent timing to implement the quantitative and qualitative strands during the same phase of the research process, prioritized the methods equally, and kept the strands independent during analysis and then mixed the results during the overall interpretations. The data collection, interpretations, and analysis were discussed in this chapter. The Transect Walk method was used to identify the typologies of open spaces in both TUC and SA. The development of a systematic method was discussed in detail, based on which the analysis of selected case study public open spaces is presented in Chapter 6. In addition, the documents review and interviews with the government bodies were done to understand if any policies regarding open spaces exist and the perceptions towards the open spaces and their transformations.

## **Chapter 4 : Introduction to the urban development of Kathmandu Valley**

### **4.1 Introduction**

This chapter aims to introduce the urban development of Kathmandu Valley. It reviews the urbanization and urban growth trends in Nepal and the Kathmandu Valley. It then follows the brief study on the changing landscape of the Valley due to urban growth. This chapter is mainly based on the archival study.

### **4.2 Urban area definition in Nepal**

In Nepal, the urban area refers to the town designated as the municipality incorporated by the government. It includes all the settlement within the municipal jurisdiction boundary; however, the small market towns and market centres that lie outside of the municipal boundary or within the administrative boundary of a Village Development Committee (VDC)<sup>44</sup> are not included (Pradhan, 2004). According to Sharma (2003), the definitions of urban area in Nepal have been defined and redefined over the years and lack consistency in their definitions. The changes in definitions, shift in urban boundaries, and incorporation of new areas in the existing urban area have complicated the study of urban areas. The 1952/54 census provides data on prominent settlements with a population of over 5,000 but had no definition of an urban area. The 1961 census provided the formal definition of urban area (sahar) as an area with a population size of 5,000 and over and with additional features such as college, high school, administrative offices, communication facilities, mills and factories (CBS, 1995). The Nagar Panchayat Act 1962 defined urban area, ‘Nagar Panchayat’, as the local level urban administrative unit or municipal area with a population size of not less than 10,000 (Sharma, 2003). In 1976, the population size of an urban area was reduced to 9000. Again in 1992, the Municipality Act 1992 changed the criteria of designated urban areas, according to which ‘any area in the Kingdom<sup>45</sup> of Nepal with minimum population of 20,000 and having electricity, road, drinking water and telecommunication facilities shall be declared as municipality by HMG with specifying the boundary areas of the municipality’ (Basyal and Khanal, 2001) and changed the

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<sup>44</sup>VDC in Nepal are considered as rural areas and are the smaller units of districts. In Nepal, there are total 3915 VDCs.

<sup>45</sup>The current name of the ‘Kingdom of Nepal’ is Federal Democratic Republic of Nepal.



name ‘Nagar Panchayat’ to ‘Nagarpalika’ or Municipality. According to CBS (2001), the definition for urban area was found from 1994 based on population, infrastructure, and revenue. The Ministry of Urban Development in 2013 classified urban areas into five classes based on the population: Metro city, Sub Metro City, City, Sub City, and Market Centre. These are summarized in Table 4.1.

**Table 4.1: Urban area designations in Nepal**

Year	Criteria	
Before 1960	Population size:5,000	
1961	Population size: 5,000	<i>Facilities:</i> College, high school, administrative offices, communication facilities, mills and factories
1962	Population size: 10,000	
1976	Population size: 9,000	
1992	Population size: 20,000	<i>Facilities:</i> Electricity, road, drinking water and telecommunication facilities.
1994	Metropolitan City: minimum population size of 300,000	<i>Annual revenue:</i> NRs 400million <i>Facilities:</i> electricity, drinking water, communication, paved main and subsidiary roads, provision of specialized health services; essential infrastructure for international sports events; adequate opportunities for higher education in different fields; at least one established university; adequate urban facilities <i>Status:</i> already received the status of Sub-Metropolitan
	Sub Metropolitan City: minimum population size of 100,000	<i>Annual revenue:</i> NRs 100 million <i>Facilities:</i> electricity, drinking water, communication, paved main roads, education and health services of high standard; general infrastructure for national and international sports events, provision of public parks, a city hall, and similar urban facilities <i>Status:</i> already received the status of a Municipality
	Municipality (Terai): minimum population size of 20,000	<i>Annual revenue:</i> NRs 5 million <i>Facilities:</i> minimum urban facilities such as electricity, roads, drinking water, and communications
	Municipality (hill/mountain): minimum population size of 10,000	<i>Annual revenue:</i> NRs 500,000 <i>Facilities:</i> minimum urban facilities such as electricity, roads, drinking water, and communications
2013	Metro City: population above 300,000	
	Sub Metro City: population above 100,000 and equal to or less than 300,000	
	City: population above 40,000 and equal to or less than 100,000	
	Sub City: population above 10,000 and equal to or less than 40,000	
	Market Centre:	50 shops or outlets within 100m from the centre

Source: CBS (1995), CBS (2001), Basyal and Khanal (2001), Sharma (2003), and MUD (2013)

### 4.3 Urbanization and urban growth in Nepal

Nepal, one of the least urbanized countries among the developing countries in Asia and even among the SAARC<sup>46</sup> countries (Pradhan and Perera, 2005) excluding Bhutan, is undergoing a rapid pace of urbanization. The total population of 22.7 million in the 2001 census grew to 26.4 million in 2011 (CBS, 2012). The pace of urbanization in Nepal, according to Joshi (1999), increased sharply from the seventies and remains at an annual average of nearly 7%.

**Table 4.2: Growth in urban population and urban areas in Nepal from 1961-2011**

Year	Number of Urban Areas	Total Population	Urban Population	% Urban
1961	16	9413	339	3.60
1971	16	11558	462	4.00
1981	23	15142	947	6.30
1991	33	18600	1745	9.60
2001	58	23832	3716	15.90
2011	58+41*	264945	4523	17.00

Source: Joshi (1999), CBS (2012)

\*pending approval

The rapid rate of urbanisation (up to 7% per annum, which is considered as one of the highest urban growth rates in the world) has increased the number of urban centres<sup>47</sup> from 16 in 1961 to 58 in 2001 (MOPE, 2002) with the increase in urban population<sup>48</sup>. The government had declared 41 new municipalities across the country in 2011, but they were not approved. Again, in 2014, the government declared 72 municipalities making the total of 130 municipalities in the country (The Himalayan Times, 2014). The urban population of Nepal was 9.6% of the total population in the 1991 census, increasing from 3.6% of the total population in 1961 and reaching 17 % in 2011 (Table 4.2).

<sup>46</sup>South Asian Association for Regional Cooperation (SAARC) consists of eight south Asian countries Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Srilanka.

<sup>47</sup>According to Sharma (1990) cited in Pradhan and Perera (2005) urban centres in Nepal are categorized into six types. (1) Trading towns: (land port and primary gateway to India) characterized by India-Nepal trade functions. (2) Growth towns: located in the foothills or at the cross-roads which link the hill economy with that of the Terai and serve as potential sites for industrial development. (3) Central places and Regional development centres: performing administrative and distribution and agro processing functions. (4) Market centres: including small town providing local market, sub-regional and possibly selective regional service functions. These centres often provide a forum for occupational mobility from rural to low-order to high-order non-farm jobs. (5) Service centres: judiciously located service centres provide a range of low-order services to its hinterland. (6) Capital town of the Kathmandu Valley: a unique town by itself because of inherent historical location, economic, administrative and political qualities.

<sup>48</sup>The urban population of Nepal refers to the inhabitants residing in the designated municipal areas, but every definition of this has changed several times, as described in this Chapter.

### ***Urban growth and migration***

The urban population growth rate has remained always higher than rural population growth rate because of three main reasons: the influence of migration from rural areas to urban areas; natural increase; and reclassification of rural areas (Pradhan, 2004; Subba, 2003). The latter occurs in two patterns: a) the extension of urban areas into rural hinterland and b) the upgrading of rural into urban settlements (Yap, 2003). Migration has a major role in urbanization of Nepal and is specifically due to net in-migration (Tiwari, 2008). Migration in Nepal dated back to ancient times; however, the major influence in Nepal's modern history was in eighteenth century. The trusted collectors were sent to various centres by the royal to collect revenue; they were given a parcel of tax free land as a salary or remuneration (Regmi, 1988). This has encouraged migration of people. Migration in Nepal generally takes place from rural to rural areas, rural to urban areas, urban to rural areas, and urban to urban areas. The rural migrants are pushed into the urban areas because of great mounting population pressure in the rural areas as well as in search of employment opportunities (Basyal and Khanal, 2001).

### ***Migration and socio-cultural change***

Migration helps in mixing people from various cultural backgrounds in society, thus resulting in cultural assimilation. Cultural assimilation becomes more true when the host society is multi-ethnic in itself and when in-migrants share the same social, cultural, linguistic and religious backgrounds (Chhetri, 1986). Chhetri also added that there may be cultural adaptation, a two way process that involves an interaction between the immigrants and the host society. Both parties go through adaptation changes; however, one may change more than the other.

## **4.4 The urbanization of Kathmandu Valley**

### **4.4.1 Physical background**

The Kathmandu Valley, which is located in the Central Development Regions<sup>49</sup> and Bagmati zone of Nepal (Figure 4.1), covering an area of 667 sq. km (24 km east-west and 19 km north-south), comprises Kathmandu district, Bhaktapur district and part of Lalitpur district (Figure 4.2). The Kathmandu district consists of Kathmandu

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<sup>49</sup>Nepal is divided in five Development Regions which are classified as Eastern, Central, Western, Mid-Western and Far western, 14 Zones, and 75 Districts.

Metropolitan city (KMC), Kirtipur Municipality (KM) and 57 VDCs whereas Bhaktapur district consists of two municipalities, Bhaktapur, Thimi and 16VDCs, and Lalitpur district consists of Lalitpur Sub-Metropolitan city (LSMC) and 41VDCs. Among all these VDCs, only 26 VDCs are included within the Valley boundary. Kathmandu is considered the largest in terms of area and population (Table 4.3 and Table 4.4). It is the capital and main political and administrative centre of Nepal.

#### 4.4.2 Urbanization and suburbanisation trends in the Valley

The urbanization of Kathmandu valley has undergone rapid increase during the last two decades, which led to a population influx, an increase in motorized transport, a loss of agricultural land, and ultimately an alteration to the land use patterns in the valley (Thapa and Murayama, 2010). The Valley has witnessed relentless growth and remains the most urbanized region in Nepal (Sharma, 1989). The main reason for this growth is due to in-migration and natural growth. Kathmandu Valley is characterized by high and sustained population growth in the urban core, fast urban sprawling at

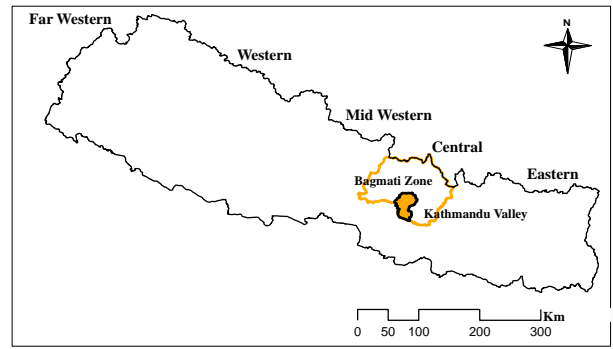


Figure 4.1: Location of Kathmandu Valley

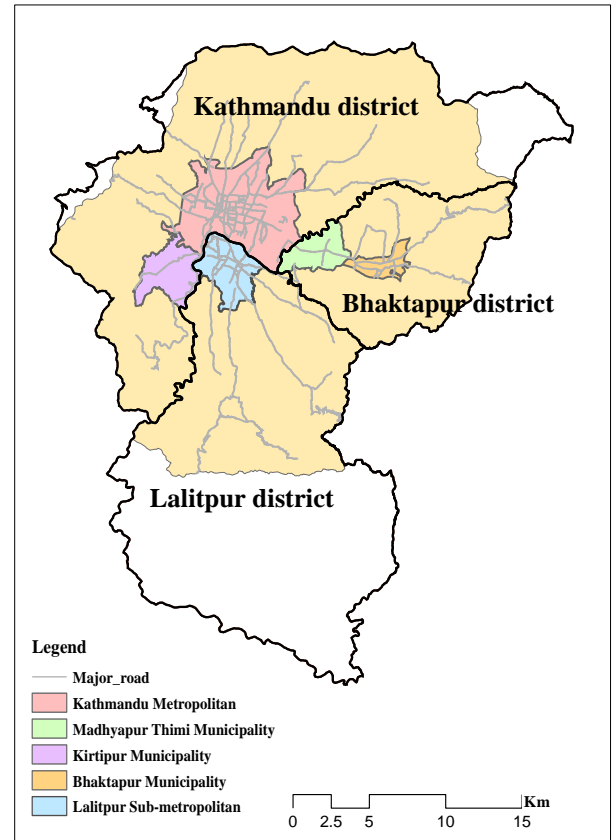


Figure 4.2: Kathmandu Valley administrative boundaries

Table 4.3: Area of Kathmandu Valley

S.N.	Districts/Municipalities	Total Area (Km <sup>2</sup> )
<b>Kathmandu District</b>		
1.	Kathmandu Metropolitan City	50.76
	Kirtipur Municipality	14.00
<b>Lalitpur District</b>		
2.	Lalitpur Sub-Metropolitan City	15.47
<b>Bhaktapur District</b>		
3.	Bhaktapur Municipality	6.88
	Madhyapur Municipality	11.47
4.	All VDCs	568.42

Source: KMC and World Bank (2001)

the periphery (Muzzini and Aparicio, 2013). It has become the most prominent urban centre and accounts for about one-third of the country's urban population and continues to sustain a fast pace of population growth at about 4.3% (Table 4.4).

Kathmandu is the largest urban settlement and has 40% of the Valley's population. The boundaries of the Kathmandu Valley's urban agglomeration are also expanding fast because of sprawl at the periphery. The annual growth rate of the peripheral areas during 1990s was 4.93% whereas it was 4.51% in the municipalities (Subba, 2003).

**Table 4.4: Population of Kathmandu Valley, 1991-2011**

	Average annual growth rate (%)		Population (thousands)	
	1991-2001	2001-11	2001	2011
Kathmandu	4.7	4.0	672	1,007
Lalitpur	3.4	3.3	163	223
Bhaktapur	1.6	1.4	72	84
Kirtipur	2.4	5.0	40	67
Madhyapur Thimi	4.1	5.7	48	84
<b>Kathmandu Valley (total)</b>	<b>4.0</b>	<b>4.3</b>	<b>1,645</b>	<b>2,517</b>

Source: CBS (1991, 2001, and 2012)

Migration is one of the dominant features of urban growth in the Valley. During the 1990s, migration contributed 40% to urban growth in Kathmandu, which is the largest net inflow of migrants (Choe and Pradhan, 2010). Because of the concentration of political and administrative functions, tourism, industrial activities and investments in Kathmandu, it has become the favourite destination for migration of the rural

people (Pradhan and Perera, 2005). According to CBS (2004), 54% had family reasons for migration, 18% looking for a job, 14% easier life style and 9% education and training. In addition, the Maoist insurgency had also led the people from rural hinterlands to migrate to the cities. The population density of Kathmandu Valley has

**Table 4.5: Population density of Kathmandu Valley, 2001 and 2011**

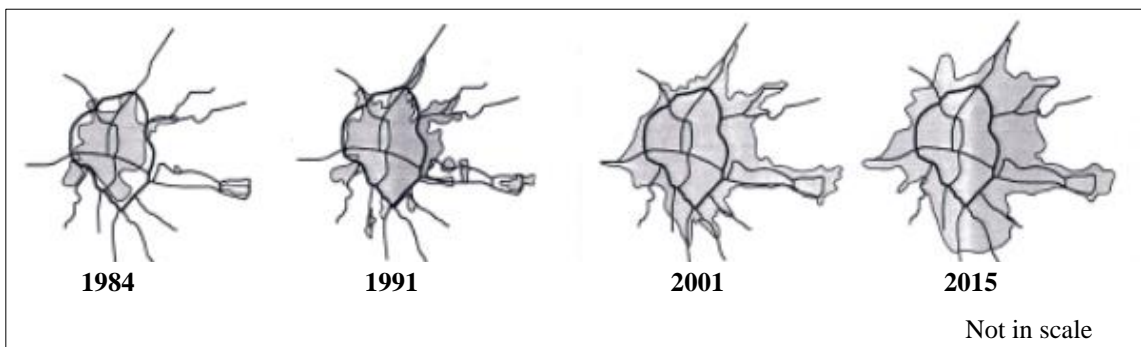
	Population density (average number of population per square kilometer)	
	2001	2011
Kathmandu	13,586	20,289
Lalitpur	10,758	14,966
Bhaktapur	11,058	12,753
Kirtipur	4,298	4,551
Madhyapur Thimi	2,767	7,574

Source: CBS (2006 and 2012)

also increased from 2001 to 2011. Kathmandu Metropolitan has a higher population density than the others (Table 4.5).

#### 4.4.3 Urban growth and changing landscape of the Valley

Among the five municipalities of the Valley, Kathmandu Metropolitan is fast growing towards the periphery. Although urban expansion outside the compact historic city core area (this will be discussed in Chapter 5) of Kathmandu had begun in the 19<sup>th</sup> century during the Rana regime when large palace complexes were built away from the city, rapid urban growth of the city occurred only after the political changes of 1950 (KMC and WB, 2001). The Valley again took an advantage of easy accessibility and good drainage of highland along the major arterial roads after the construction of the ring road during the 1970s and 1980s, and as a result expanded towards east, northeast, north and then further and took on a tentacle shape (Figure 4.3). The agricultural land near the road transformed into built-up areas. A significant amount of agricultural land (3.9%) was changed to urban built-up lands with urbanization following the road networks and existing built-up peripheries (Thapa and Murayama, 2009).

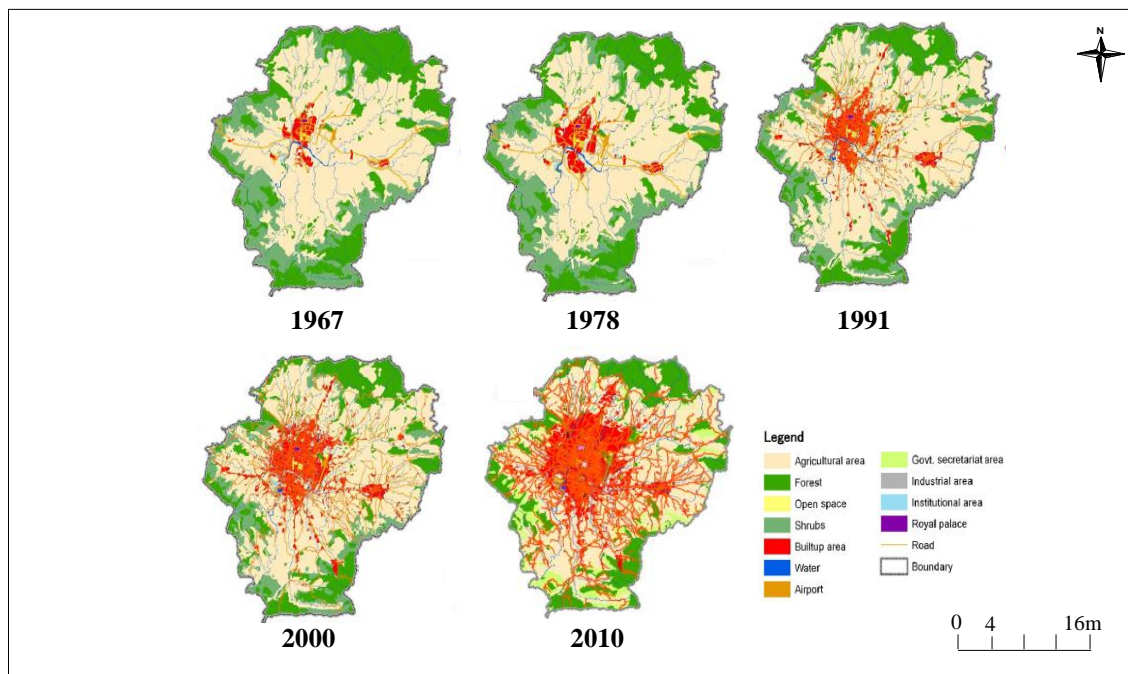


**Figure 4.3: Urban expansion in Kathmandu Valley from 1984-2015**

Source: JICA (1993) in KMC and WB (2001)

In addition to the fact that the urban growth is highly influenced by the population growth, Thapa and Murayama (2010) studied the urban growth of the Valley looking at seven different driving factors (physical conditions, public service accessibility, economic opportunities, land market, population growth, political situation and plans and policies) considering their weighted influence in core, fringe and rural area of the Valley. Their study showed that the economic opportunities have a major influence on the urban growth of the core area, population growth in the fringe area, and the political situation in the rural area ultimately has influence on the changing land use pattern of the Valley.

Agricultural land was predominant in the Kathmandu Valley over 35 years ago (Pradhan and Perera, 2005). The Valley land was more of rural nature than urban. Some of the land was converted into the built-up areas after the construction of the ring road that connects Kathmandu and Lalitpur municipalities. According to Thapa and Murayama (2009, p.542), the urban/built-up areas in the Valley increased from 3% (2,010 hectare) of the total land (68,458 hectare) in 1967 to 14% (9,717 hectare) in 2000, showing spatial patterns of urbanization with consistent (5%) growth in 1991 and 2000. The agricultural land decreased slightly by 1978 (due to conversion of agricultural lands to built-up), but increased to 56% of the total land by 1991 (due to change of shrubs and forest to agricultural land), and had again decreased to 54% in 2000. These growths mainly expanded towards the periphery (Figure 4.4).

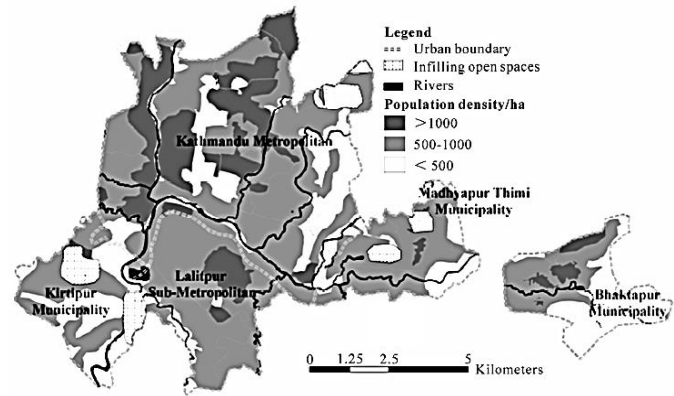


**Figure 4.4: Landuse in Kathmandu Valley from 1967-2010**

Source: Thapa and Murayama (2009 and 2012)

In 2010, most of the agricultural lands were occupied by the built up areas. If the same trend continues, then the urban growth will agglomerate the suburban villages and the urban centres by 2020 (Thapa and Murayama, 2012). According to KVTDC (2002), the agriculture land will be equivalent to zero by 2020. Among the three districts of the Kathmandu valley, Kathmandu has undergone immense change in terms of growth in built up areas from 1995-2000 compared to Lalitpur and Bhaktapur districts (Pradhan and Perera, 2005).

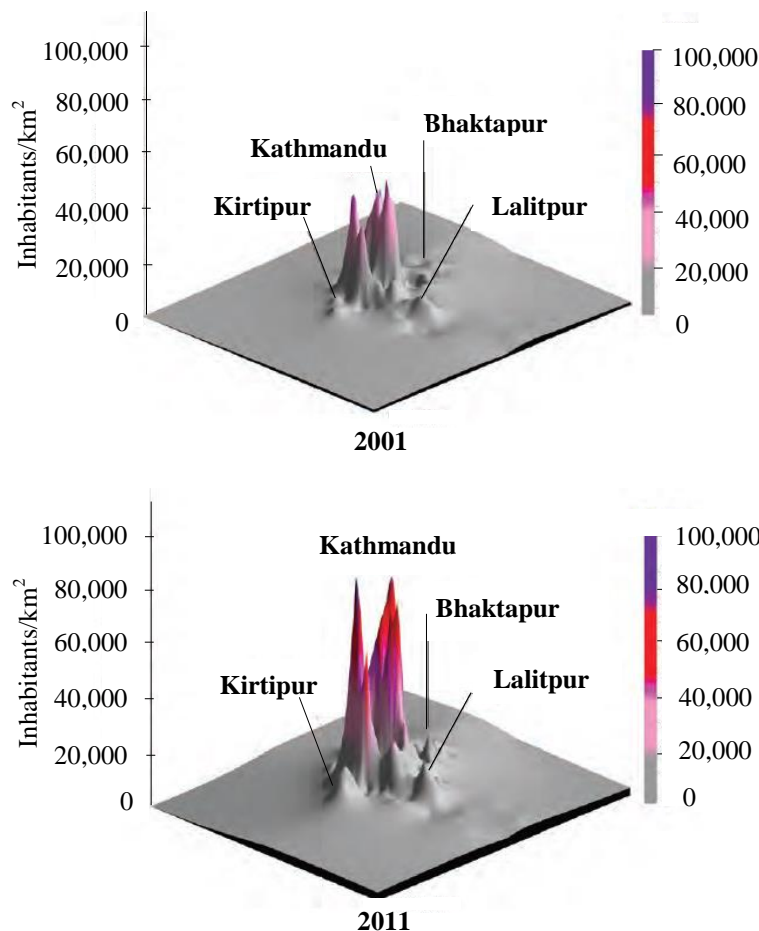
Muzzini and Aparicio (2013) also expressed that the historic spatial patterns of land change indicate the rapid rate of conversion from non-built to built areas, with scattered patches of urban development in peri-urban and rural areas that characterizes urban sprawl in the valley. Residential density of the valley is increasing (Figure 4.6). In the core area of the valley, it was very high (80000 person per square kilometre) compared to that of the periphery (2500 person per square kilometre) in 2002 (KVTDC, 2002). The increase in



**Figure 4.5: Infilling of built structure in Kathmandu Valley**

Source: Bhattarai and Conway (2010)

population has in-filled many open areas of Kathmandu valley (Figure 4.5) and as a result, the residential density of Valley has also exceeded 100,000 people per square kilometre with many new three and four story buildings are constructed on farmland and small open spaces to accommodate the increasing population in densely built structures (Bhattarai and Conway, 2010).



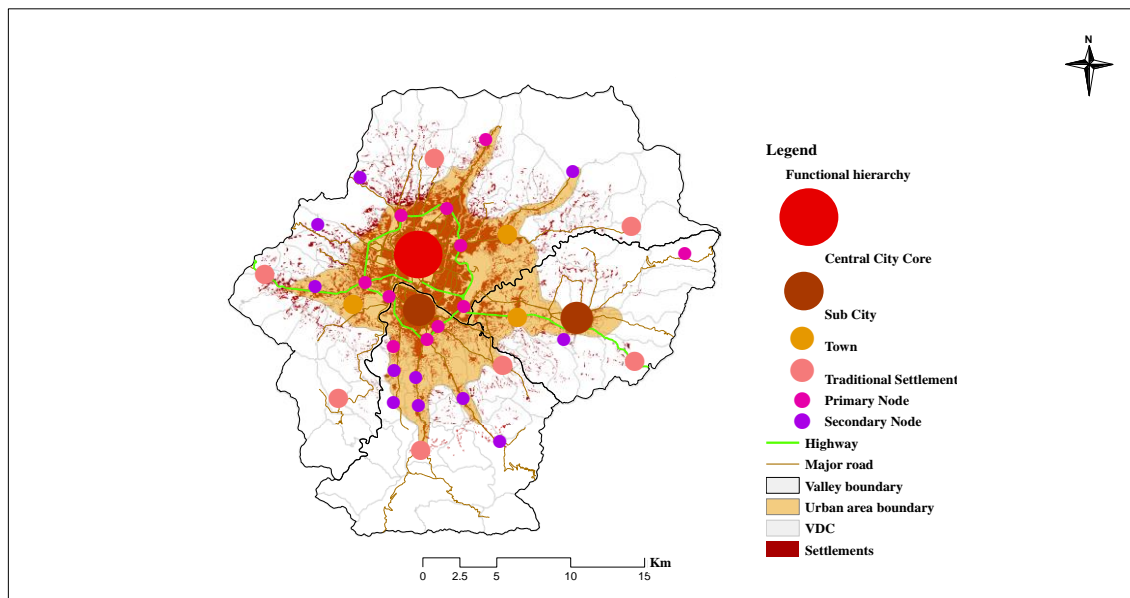
**Figure 4.6: Population density of Kathmandu Valley, 2001 and 2011**

Source: Chreod Ltd (2010) in Muzzini and Aparicio (2013)



#### 4.4.4 Urban area delineation for the Valley

The Kathmandu Valley is experiencing a haphazard urban growth (KVTDC, 2002). The Long Term Development Concept for Kathmandu Valley-2020 emphasized densification of the existing urban settlements to combat urban sprawl in order to protect the natural environment and the agricultural land. For this purpose, the concept proposed the delineation of an urban-rural boundary (Figure 4.7). The delineation of urban area is approximately 150 sq.km. The ratio of built up and non-built up area that was 28:72 in 2000 will be 40:60 after the delineation. The plan also proposed hierarchies of development centres – central city core, sub city, town, and primary and secondary nodes to accommodate the future population pressure. The hierarchies are categorized depending upon population, economic opportunities, services, facilities etc. The plan considered the Valley as the single physical unit and the central city core in the KMC. However, this plan has not yet been implemented.



**Figure 4.7: Proposed urban area delineation in Kathmandu Valley**

Source: Map based on GIS data of KVTDC (2002)

#### 4.5 Conclusion

The rapid urban growth of the city occurred after the political changes in 1950. Again, after the construction of arterial roads during the 1970s and 1980s, the growth spread towards east, northeast, north, and then further and took on a tentacle shape. As a result, the agricultural land converted into the built up areas. The urban core of the Valley is characterized by relentless growth and the periphery by fast urban sprawling. Migration has become the prime factor for driving urban growth. It not only helps in intermixing diverse cultural groups, but also initiates socio-cultural change in the society.

## **Chapter 5 : Morphogenesis of open spaces of Kathmandu Valley**

### **5.1 Introduction**

This chapter discusses the historical background of the human settlement in Kathmandu Valley, its morphological growth emphasizing the historical periods – Lichhavi, Malla, and Rana, – and the chronological development of the settlement with interpretations of each period from the perspective of urban planning. It is then followed by the study of open spaces that existed in the historical periods. The hierarchy of open spaces is described with the respective socio-cultural and spatial orders and significances of categories with this hierarchy.

### **5.2 Historical background on the origin of Kathmandu Valley**

Kathmandu Valley, according to the legend, was originally a lake, which was drained by the supernatural intervention of Bodhisattva Manjusri, a Chinese saint, who created the first settlement in the valley (Sandy, 1979). The historical documents ‘Vanshavalis’ show that Kathmandu valley was ruled by ‘Gopal Bansi’ (cow herders) from 900 to 700 B.C.; Mahispalas (buffalo herders) from 700 to 625 B.C; and by Kirat kings from 625 B.C to 100 A.D. (ICIMOD et al., 2007) but there is no historical or archaeological evidence to support the remains of these settlements. There are no material remains prior to the rule of the Lichhavis (440-750A.D.) (Tiwari, 2001a). It is only through the stone inscriptions of 5<sup>th</sup> and 6<sup>th</sup> centuries that the authentic dates and facts describing Nepalese people and Lichhavi dynasty of Kathmandu Valley were known (Korn, 1976). Korn (1976) also mentioned that these Licchavi rulers are believed to have hailed from Vaishali in northeast India in 2<sup>nd</sup> century. The dynasty started to decline towards the end of the 8<sup>th</sup> century, which ended with conflicts and the country suffered a ‘dark period’ until the early 13<sup>th</sup> century. Then at the beginning of the 13<sup>th</sup> century, the new dynasty, the Malla, which started to rule the Valley, lasted for almost 600 years. It is in this period that the Valley was divided into the three sister kingdoms – Kantipur (today commonly known as Kathmandu), Lalitpur and Bhaktapur. The rest of Nepal had several kingdoms. The Shah King from one of these kingdoms unified many kingdoms into a single nation with Kathmandu as the capital of the new state in 1769 A.D. About eighty years later, the Rana seized power and became de facto rulers of Nepal for the next 100 years. After the democratic movement in 1951 the Shah regained their power which had been removed from 1846 A.D. (Korn, *ibid*) and Nepal was opened to the

outside world. The power of Shah also ended in 2006 and the new federal democratic republic of Nepal was declared in 2008. Since then Nepal is struggling to establish peace and democracy throughout the country.

<i>Gopala/ Mahispala</i>	<i>Kiranti</i>	<i>Lichhavi</i>	<i>Malla</i>	<i>Shah</i>	<i>Contemporary</i>
900-625 B.C.	625 B.C- 100 A.D.	440-750 A.D.	1200-1768 A.D.	1769-2006 A.D.	2006 A.D. -
				<i>Rana</i>	
				1846-1951 A.D.	

**Figure 5.1: Chronology of dynasties in Kathmandu Valley**

The Kathmandu Valley was often termed as ‘Nepal valley’ in the past. According to Shrestha and Singh (1972), the term Nepal<sup>50</sup> in pre-historic times generally referred to the Valley of Kathmandu. The three cities Kathmandu Lalitpur, and Bhaktapur also emerged with different names in different historical periods. Lalitpur, popularly known as Patan, is the most ancient city and was the capital of the Valley for some time. The city is believed to have been founded in 299 A.D. by the Kirat and later expanded by the Lichhavis. It was called Yupagrama during the Lichhavi period, Yala (Newari name), Lalitpur (meaning beautiful town) and Lalitbruma, Lalitakrama, and Patan in the Malla period (Regmi, 1970). The city today is commonly known as Patan and Lalitpur (an official name). Bhaktapur, another city of the Valley, which is smaller than Kathmandu and Lalitpur and became the capital in the 14<sup>th</sup> century (Shrestha and Singh, 1972), was also historically known by different names such as Khopringrama in the Lichhavi period, Khwopa (newari name), Bhaktapur (meaning city of Devotees), Bhadgaon (meaning ‘city of rice’ in Nepali language) in the Malla period. Today, the city is known as Bhaktapur or Khwopa. In the Lichhavi period, the southern part of the Kathmandu was called ‘Dakshinakoligrama’ and the northern part was called ‘Koligrama’ (Korn, 1976) (also refer Figure 5.3). It was given the name ‘Yan’ by Newars, ‘Kasthamandapa’ (meaning wooden covered shelter), ‘Kantipur’ (meaning place of goddess Lakshmi) and Kathmandu in the Malla period. Today, it is widely known as Kathmandu.

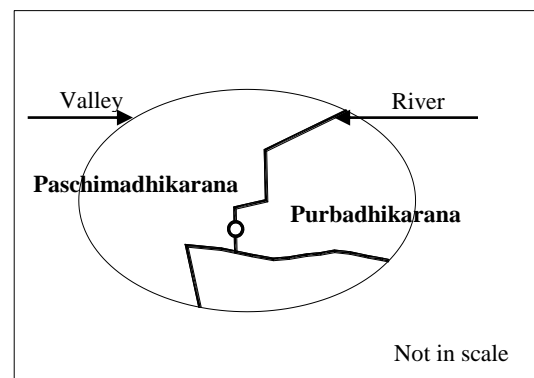
<sup>50</sup>There are different viewpoints on the origin and meaning of a word Nepal. It was during 700 A.D, *Ni-po-lo* was mentioned, whose Tibetan meaning is ‘transport of wool’ (Riccardi.Jr., 1975). The Valley was economically flourishing at that time as it became a ‘centre for trade and handicraft between India and Tibet’ (Shaha, 1989). Hence, it is possible that the word had Tibetan origin. Other references suggest that Nepal is a composite word of ‘Nipa’ and ‘ala’, ala being an abbreviation of ‘alaya’ meaning ‘abode’ and ‘nipa’ strengthened to ‘nepa’, together signify the foot of a mountain (Riccardi.Jr., 1975).

### 5.3 Tracing the morphological growth of Kathmandu Valley

Kathmandu valley has experienced a number of shifts in its urban form and use of spaces. The urban form of Kathmandu valley today is not a result of an abstract planning during a particular period, whether Lichhavi, Malla or Rana, but the product of gradual accretion over these political and cultural periods (Tiwari, 1989). This section focuses more on the Kathmandu city core since it is the area selected as TUC for the study, and sets out the chronological development of Valley settlement.

#### 5.3.1 Lichhavi settlements

The settlement patterns of the Lichhavi period were diffuse and sparse. Most of the settlements in Nepal were situated in the Kathmandu Valley. The settlements were divided into different administrative zones: Purbadhikarana, Pashchimadhikarana, Daxinarajakula adhikarana<sup>51</sup> etc. (Tiwari, 2001a) (Figure 5.2). These divisions possibly were demarcated based on major river courses following a pattern. The rivers also delineated the settlement limits. The key determinants for locating Lichhavi settlements were the basic needs of people like food, water and transportation. The townships were located on the ridges and high lands of the valley floor (Tiwari, 1996; Tiwari, 2001a) which are inappropriate for cultivation and areas with low subsurface ground water (Tiwari, 2002).



**Figure 5.2: Administrative divisions of the Lichhavi Settlements**

Source: Drawing after Tiwari (2001a)

Before the Lichhavi period, Kathmandu was believed to be a small village called 'grama', but in Lichhavi period, the grama<sup>52</sup> developed into commercial centres known as 'dranga' (Bajracharya, 2025 BS cited in Ranjitkar, 2000). The Kathmandu city

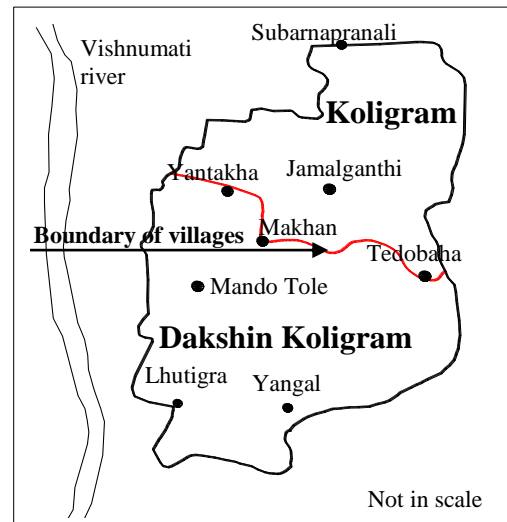
<sup>51</sup>Adhikarana refers to an administrative zone in the valley. These appear to divide the valley into three sections the East, the West and the South, by the run of the river Bagmati from its source to the exit (Tiwari, 2001a).

<sup>52</sup>The settlements were generally called 'Gramas'. If the settlement spread on crests of hillocks uniformly, it carries the suffix 'Pringga', if it is located on slopes of hillocks, it carries the suffix 'Dula' which today is called 'Dol' and the low lying agricultural areas extending down to the river from 'Dula' were called 'Tala'. The suffix 'Bru' used to indicate the flat land at a higher level than Tala and usually formed the central parts of 'Pringga' (Tiwari, 2001a).

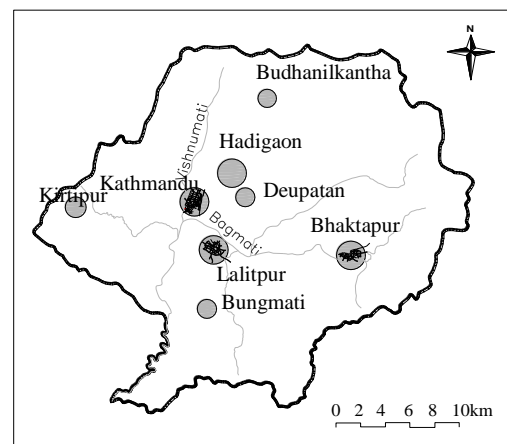
expanded into an urban settlement after the amalgamation of two gramas (Ranjitkar, 2000) (Figure 5.3). In Kathmandu city, the two villages, ‘Koligrama’ (village of ‘Kolis’<sup>53</sup> or ‘Yambu’ in Newari) and ‘Dakshinakoligrama’ (south of ‘Koli’ village or ‘Yangala’ in Newari) originated around a trade route.

According to Tiwari (2001a), the Lichhavi towns were spread all over the Valley and commonly situated along a number of trade routes transversing the Valley. Inside the Valley, settlements were at the junctions of the Bagmati and Vishnumati river, at Deupatan around Pashupatinath, at Hadigaon on the Dhobikhola, north around Budanilkantha and at the western end of the Valley around Thankot (Figure 5.4). The decentralised settlements

were linked through a hierarchy of roads: marga, mahapath, brihatpath, and hastimarga. The intersections of streets were often marked by temples. Water conduits (Dhunge Dharas) and gardens were common inside or around settlements. The planning of Lichhavi towns was mainly determined by the position of palaces and temples. Hence, two types of town planning principles were followed: palace-centric and temple-centric<sup>54</sup>. Palace-centric towns were the capital city with the palace at the centre whereas temple-centric towns were built around important temples. The palace gates of palace-centric towns served as tax collection points and as a location of water conduits.



**Figure 5.3: Ancient Kathmandu city**  
Source: Drawing after Ranjitkar (2000)



**Figure 5.4: Lichhavi settlements of Kathmandu Valley**  
Source: Drawing based on Gutschow (1982)

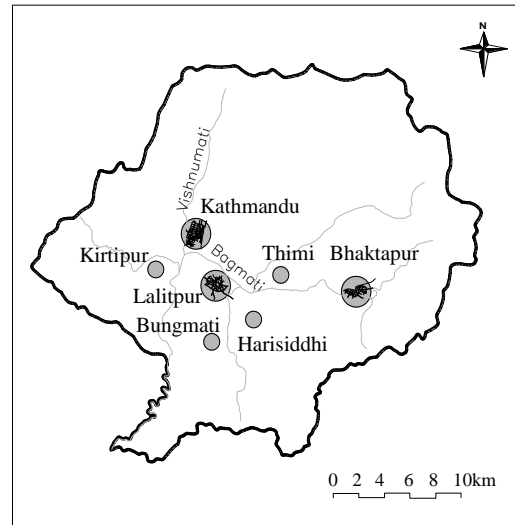
<sup>53</sup>Kolis are the Indo-Aryan ethnic groups.

<sup>54</sup>Maneswar (Hadigaon) was the first palace-centric town. Some of the early temple-centric towns were Bungmati, Deupatan and Narasimhagrama (near Budhanilkantha) (Tiwari, 2001a).

### 5.3.2 Malla settlements

The Malla settlements, also known as the Newar<sup>55</sup> settlements, are believed to have developed gradually, lasting for more than a thousand years. Like the Lichhavi towns, these towns were also sited on the ridges, which are not suitable for agriculture and along rivers (Tiwari, 1989). According to Bajracharya (1972), the principal reason for choosing a ridge is political, as it gives a high level of defence from the enemy of different states.

The city development, prosperous economy, arts and architectures have helped this period to become one of the remarkable periods in the history of Nepal. The urban form was even defined by a matrix of rituals.



**Figure 5.5: Malla concentrations in Kathmandu Valley**

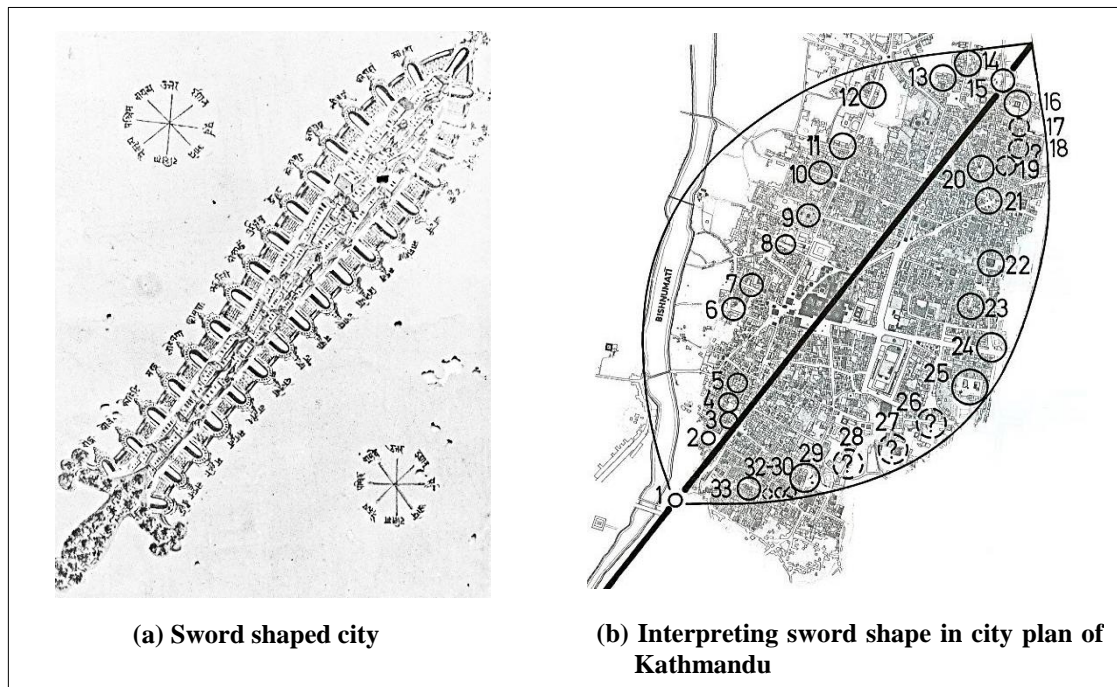
Source: Drawing based on Gutschow (1982)

Unlike Lichhavi settlements, the Mallas preferred larger centralized towns (as shown in Figure 5.5). Hence, the settlements were compact in nature. The expansion of towns was limited by walls with provision of gates. This gave the sense of inclusion and exclusion in town for the local residents if they were within (Dune) or outside (Pine) the walls. The medieval settlements were primarily concentrated in three principal cities (which were kingdoms during this period), Kathmandu, Lalitpur and Bhaktapur and other secondary cities like Thimi, Kirtipur, Bungamati, Harisiddhi etc. The urban developments were centred at the capitals of each kingdom. Kathmandu is believed to have been built in the shape<sup>56</sup> of a sword 'Kharg' with several gates<sup>57</sup> at the boundary (Figure 5.6). The urban spaces and neighbourhoods are still known by the names of these gates. The number of gates corresponded exactly with the squares within the city (Oldfield, 1880).

<sup>55</sup>Newars are the Indigenous group of Kathmandu Valley. According to the 2001 census they are the sixth largest ethnic group.

<sup>56</sup>Like Kathmandu, the other cities such as Lalitpur and Bhaktapur also represent different shapes based on the religious aspects. The shape of Lalitpur represents the wheel of god Bishnu (Sudarshan Chakra) or wheel of piety of Buddha (Dharma Chakra) and the shape of Bhaktapur represents the holy conch shell (Sankha of god Bishnu) or the double drumlet (Damaru) of god Shiva.

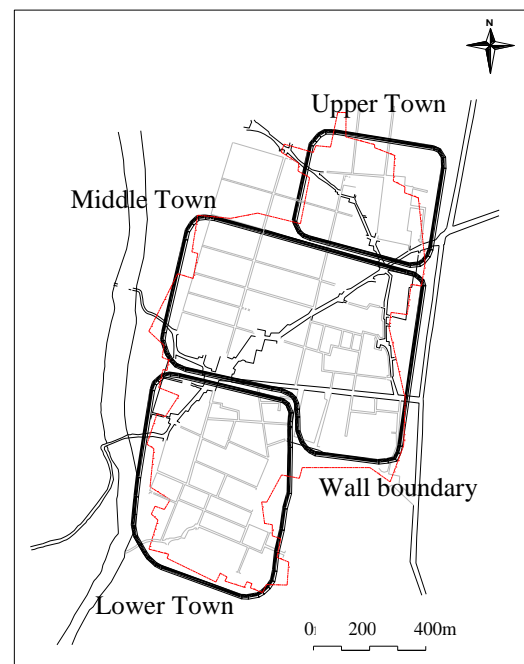
<sup>57</sup>There were 33 gates in the walled town of which 15 were in the northwest, 17 at southeast and 1 at the northeast (top of the sword) (see Figure 5.6). At present, only a few of these gates exist in the city.



**Figure 5.6: Sword shape of Kathmandu city**

Source: Gutschow (1982)

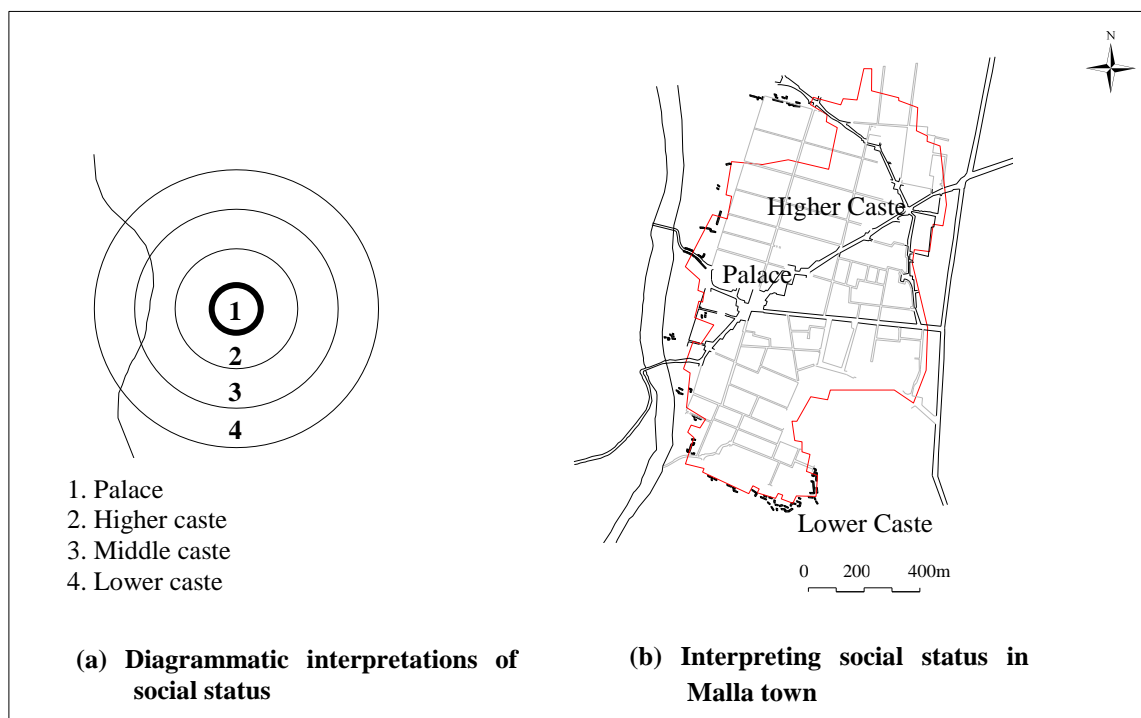
Most of the settlements were designated in to two halves, expressed as upper, ‘Thahne’ or ‘Cvay’ and lower, ‘Kvahne’ or ‘kvay’ based on the flow of adjoining river. ‘Cvay’ means upstream whereas ‘Kvay’ means downstream (Toffin, 1996). Kathmandu is an exception with three divisions: ‘Kva tvah’, ‘Dathu tvah’ and ‘thah tvah’, meaning lower, middle and upper town respectively (Figure 5.7). This pattern of Kathmandu might have maintained three configurations of the city: upper city as suvarnapranali/Yambu, middle city as Kantipur, and lower city as Kasthamandap (Locke, 1986). The Malla kings were fascinated by larger palace cities compared to Lichhavi towns. The Mallas had their own principles for locating palaces, according to which the palace should be the focal point of a town. However, the palace square of Kathmandu is an exception; this is because the area is divided into several smaller squares making it difficult to obtain a general overall view of the complex (Korn, 1976). The Mallas expanded the city by adding gridiron



**Figure 5.7: Divisions of the Malla settlements**

Source: Drawing based on Gutschow (1982) and Korn (1976)

streets to the ancient trade route of the Lichhavis, making the settlement more compact. The towns were composed of neighbourhood quarters, known as 'Tole' and were interlinked by different hierarchical streets. Each segment of streets was visually defined by a temple or a religious landmark (Tiwari, 1989). Tiwari also added that the points of intersections of streets were used as a nodal point and usually developed into a square bringing more visual play. Since the towns were compact, no greenery was established inside. As the town grew in size, the large open green space known as 'Khyo' developed, but on the perimeter of the town (Tiwari, 1999). The settlement patterns were derived from daily rituals: religious or social. Bathing in rivers, worshipping various gods, going to market had become essential parts of life. The use of rivers, ponds, temples, markets and residences by the locals in a town followed a system of movements: the movement during festivals and the movement after death. Hence, towns were well defined by the routes for gods and the routes for carrying dead bodies. The routes for gods follow the nodes or square marked by religious landmarks and these nodes were designed only for gods and not for the dead (Tiwari, 1989). The routes for the dead terminated in the cremation sites, 'funeral Ghats', which were located away from the centre and along riversides.



**Figure 5.8: Social structures of the Malla Settlements**

Source: (a) Interpretation based on literature, (b) Interpretation based on Gutschow (1982) and Korn (1976)

Another distinct characteristic of Malla towns is the composition of neighbourhoods and their spatial location. The neighbourhoods were delineated with caste-based principles (Figure 5.8). It was during the 14th century that the Malla kings introduced caste



principles and conducts in Kathmandu Valley (Bista, 1994). The four major caste 'Varnas' known as Brahmin, Kshatriya, Vaishya and Shudra were founded, with a further scheme of sixty four occupational sub castes based on traditional skills and services. The Brahmins, who are considered as the higher caste, were appointed as the priests, Kshatriyas were appointed as kings and warriors, Vaishyas as skilled merchants and Shudra as unskilled workers. The concept of lower, touchable and untouchable status had also emerged. This caste grouping system was also noticeable in the town planning of the Mallas. The sectorization of the groups was dependant on their status in a society; this system, according to Tiwari (2006, p.33) is 'Zoning by Jaat'<sup>58</sup> based on proximity priority related to frequency of consultation by the palace or the state. The palace is always at the centre, Brahmins and high Hindu caste 'Shrestha', always reside around the royal palace and lower castes progressively dwell further away. The untouchables ('Shahi': butcher, 'Pode': sweeper) live mostly on the periphery of the town (Toffin, 1996), i.e. outside of walled Malla town. 'Jaat' specific community neighbourhoods (Tole) based on economic activity were established such as butcher Tole, oil mill Tole, carpenters Tole, and pottery Tole etc. This system of arranging towns along caste principles in some way signified the socio-economic structure of a society and seems to have helped in maintaining a harmony among family clans and profession at same time.

### 5.3.3 Rana settlements

The Rana rulers introduced a new urban landscape with new principles but at the same time giving continuation to the traditional settlement. The rebuilding of the valley cities, boulevards, and palaces were the major interventions of the Rana period. The other civic improvements included monumental riverside complexes with temples and rest houses (Dharmashalas) (Theophile, 1995). The shaping of the city extended mainly to the north, east and north east of Kathmandu. In this period, extravagant palaces and gardens (Figure 5.9 b) started to emerge, especially on the outskirts of towns because of lack of space in the old city. The Singha Darbar (Figure 5.9 a) compound, the largest of the Rana Palaces and the present seat of the Nepal Government, is an example of such that covers an area about half the size of the old town of Kathmandu (Korn, 1976).

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<sup>58</sup>According to Tiwari (2006), the term 'jaat', which the Nepalese, often, mistakenly associate to religion and 'touchability/untouchability' or purity/impurity involved in the Hindu caste system, just means born to a hereditary trade or profession.



(a) Singha Darbar

Source: Madan Puraskar Pustakalaya



(b) Rana garden

Source: Dirgha Man Chitrakar in Proksch (1995)

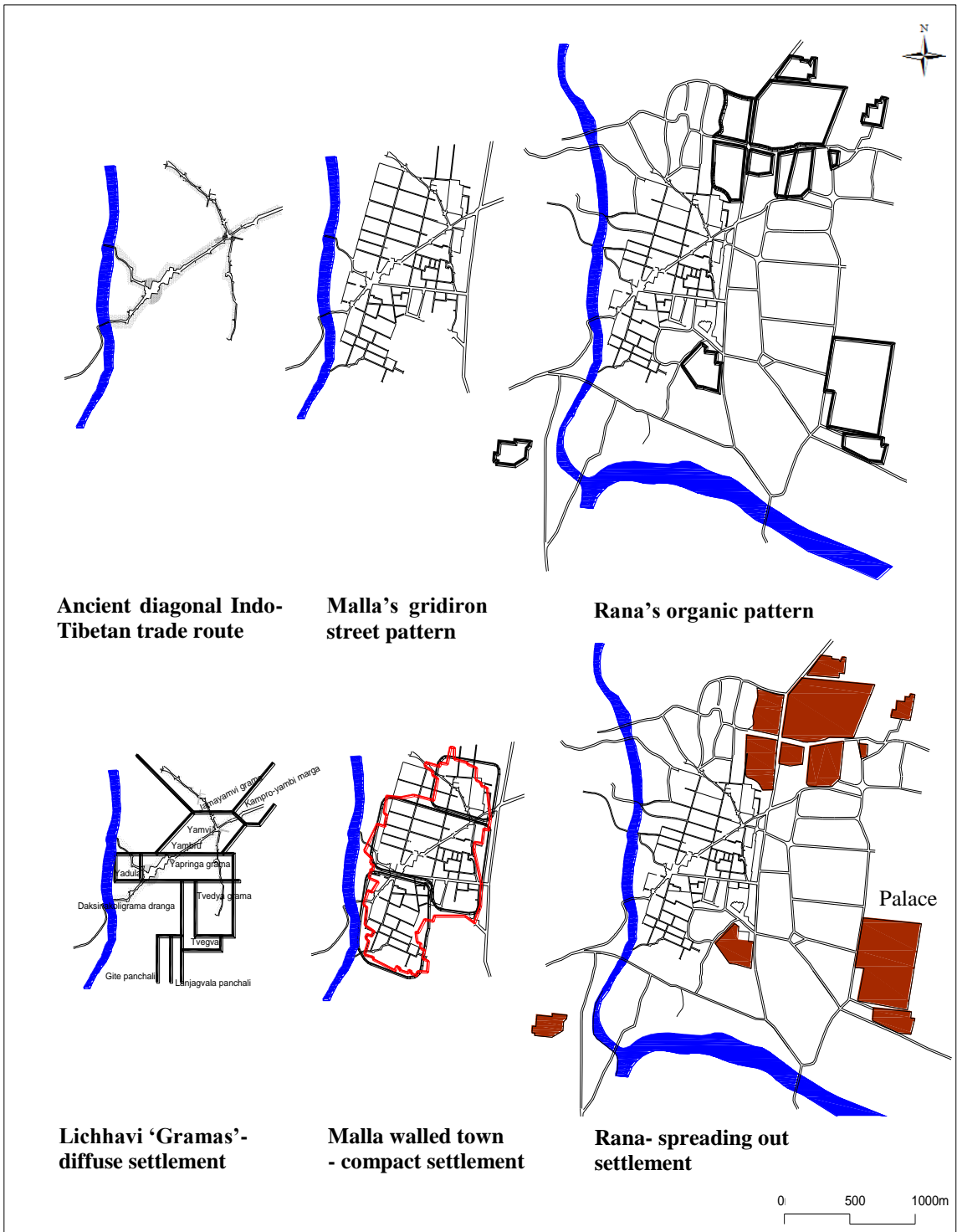
### Figure 5.9: Interventions during the Rana period

Unlike in the previous eras, the temples were not the dominant features of a town. However, they erected temples near their palaces, which were rarely used by the ordinary people. The Ranas did not follow the previous land use pattern. Because of the high influence from Europe, they adopted most of the European systems of planning in the Valley (Korn, *ibid*). The devastating earthquake of 1934 provided them with more opportunities to restructure the city. They established thoroughfares linking the old city to the palaces outside. ‘New Road’ (also known as Juddha Sadak), is an example of such thoroughfare. According to Thapa et al. (2008), new settlements were developed around the palaces and periphery with facilities including drinking water, electricity, and good roads and thus the process of suburbanisation by encroaching productive agricultural land started in Kathmandu.

#### 5.3.4 Settlements after the 1950s

The establishment of democracy in 1950 caused migration into the capital from the countryside. To meet the demands of housing for the migrants, agricultural lands preserved over centuries started to be encroached upon. As a result, suburbanisation stretched across the Valley. The Valley was taking a different shape with fragmented housing plots and narrow streets. According to ICIMOD et al. (2007), Kathmandu city in the 1950s and 1960s expanded mainly towards east and northeast. The periphery had low intensity growth leaving large areas of undeveloped land within the city. But with the industrial growth during the 1970s and 1980s, low density urban expansion spread to outlying ‘tars’ with easy road access. To stabilize this urban expansion, a 28 km. Ring Road was constructed around the settlement of Kathmandu and Lalitpur in 1975, but the city expanded more extensively and the valley experienced the phenomenon of urban sprawl. By the 1990s, much of easily accessible land had been consumed and

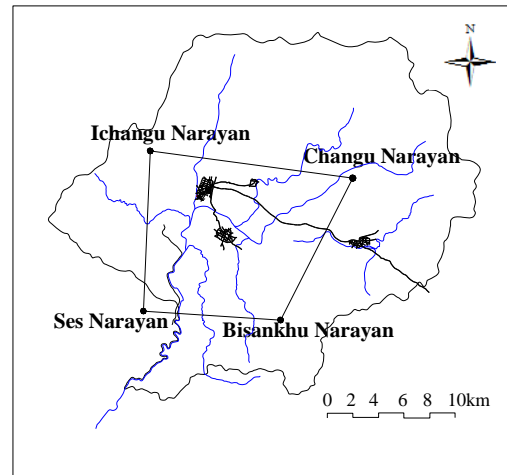
ribbon development occurred along the principal arterial roads of Lalitpur and Bhaktapur. The lack of urban infrastructures, particularly roads, had initiated a tentacle growth pattern following roads that link towns and villages of the Valley (Figure 4.3 in Chapter 4). The low outlying agricultural lands between Kathmandu and Lalitpur were encroached upon. No major contributions were made in terms of public open spaces. Instead, most of the symbolic spaces of the traditional periods have either disappeared (replaced with buildings or roads) or deteriorated.



**Figure 5.10: Morphological growths of settlements from the Licchavi to Rana period**  
 Source: Drawing based on Tiwari (2001a), Proksch (1995), Gutschow (1982), and Korn (1976)

### 5.3.5 Cosmic interpretations in Kathmandu Valley settlements

The Lichhavi settlements must have ‘followed the Sanskrit ritual literature rules for creating a town just as they practiced the social mores and life pattern’ (Tiwari, 2001a, p.15). Tiwari (2001a) also outlined that the town pattern had strongly related Hindu mythologies. It considered cosmos, according to which the cardinal points of the city represent the corners of universe and the whole city as a celestial city. The city plans were also represented by Hindu cosmos principles<sup>59</sup>. These include various town models that defined precise rules



**Figure 5.11: Gods at cardinal directions - Lichhavi period**

Source: Drawing after Gutschow (1982)

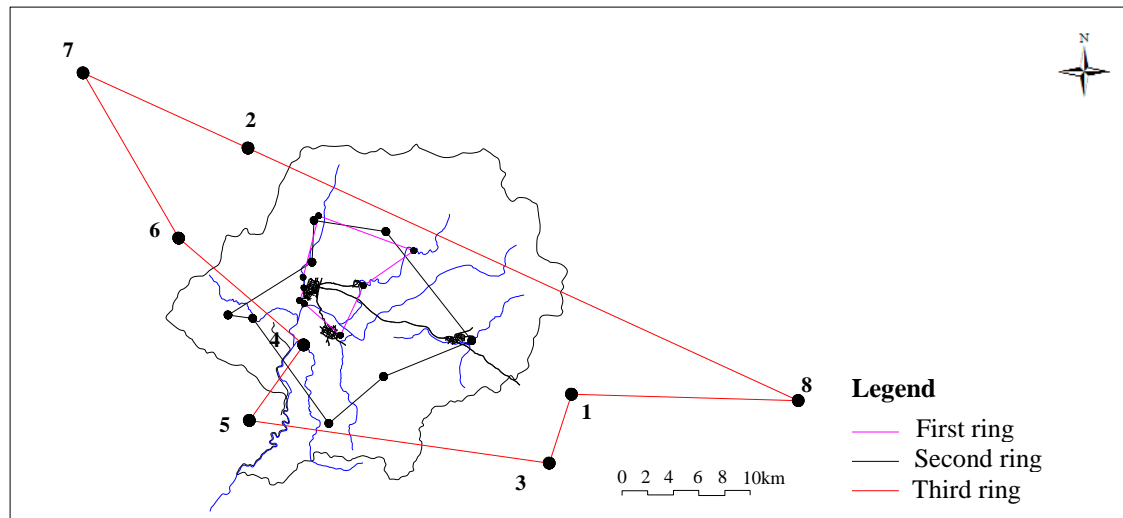
for locating temples and inter linkage between different parts of city. The Lichhavi towns were interpreted with reference to Saiva, Buddhist or Vaisnav cosmic images that were based on religions<sup>60</sup>. One of the distinct features of Valley is the placing of Hindu gods at four cardinal directions<sup>61</sup> (Figure 5.11). Malla settlements also followed the principle of cardinal directions, which are ritually structured. In order to delineate the city expansion, following the concept of Astamatrikas, eight mother goddesses at different cardinal directions were located on the existing city with the belief that these goddesses will protect the city from the evils. The Kathmandu Valley seemed to have three layers consisting eight mother goddesses (Figure 5.12); the first includes the

<sup>59</sup>According to Manasara (an ancient text), the Hindu city was developed according to a plan, which could be based on any of eight possible patterns: i) Dandaka, in this plan, streets are straight and cross each other at right angles at the center, running west to east and south to north. It consists of one to five parallel streets (running west to east) and two more streets are planned forming the right angles; ii) Sarvatobhadra, its shape is oblong or square and houses are arranged along the streets; iii) Nandyavarta, this plan resembles wither a square or an oblong shape, its circular plan has also been mentioned to have been based on a mystic figure; iv) Padmaka, this plan refers to the lotus-shaped form, the number of easterly streets may be seven, while the number of northerly streets may vary from three to five; v) Svastika, it resembles the mystic figure of Svastika where the streets are planned in conformity with the figure of Svastika; vi) Prastara, the plan is either square or oblong in shape and other details resemble the earlier patterns; vii) Karmuka, its shape reveals a semi-circular or semi elliptical form like a bow and hence its name; viii) Chaturmukha, this plan having four gates, forms a square or oblong shape with wards, in which different castes are advised to live in their particular sites (Tiwari, 2001a) (also refer to Appendix 5.1).

<sup>60</sup>The Lichhavis were very liberal in choosing their religion. They could choose their personal religion among Vaisnavism (worship of God Vishnu or Narayan), Saivism (worship of God Shiva) and Buddhism (Tiwari, 2001a).

<sup>61</sup>The four cardinal directions have Changu at the North-East, Ichangu at the North-West, Bisankhu Narayan at South-East and SesNarayan at South-West.

Kathmandu and Lalitpur, second includes Kathmandu, Lalitpur, and Bhaktapur, and the third includes the entire Valley.



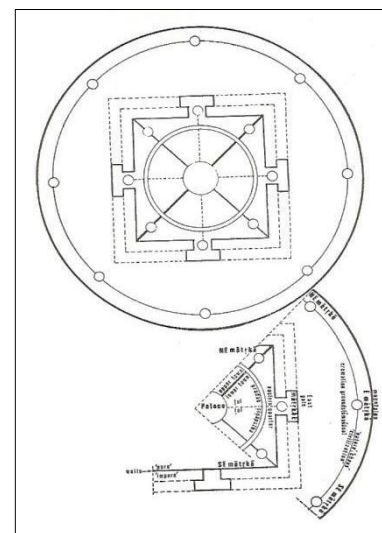
**Figure 5.12: Eight mother goddesses in the Valley**

Source: Drawing after Gutschow (1982)

### *Mandala Model Concept*

The “Mandala” (as an arrangement of deities conceived in sets of four, eight, or sixty-four) laid out along the axes of the cardinal points around a centre (Gellner, 1992) is the symbol used by priests for complex rituals and representations of divinities (Gurung, 2000). Zanen (1986) examined the concept of Mandala model with the layout of Sankhu<sup>62</sup> town and interpreted the following six aspects (also see Figure 5.13):

- i) The palace at the centre.
- ii) The division of the town into two halves.
- iii) The Astamatrika, an eightfold division of the town, each unit with a Mother Goddess.
- iv) A fourfold division of the town, each attached to one of four gates.
- v) An outer circle of Eight Mother Goddess and eight cremation grounds, surrounding the town.
- vi) A festival route (Paradaksina Patha) within the town.



**Figure 5.13: Mandala model**

Source: Shrestha (2002a)

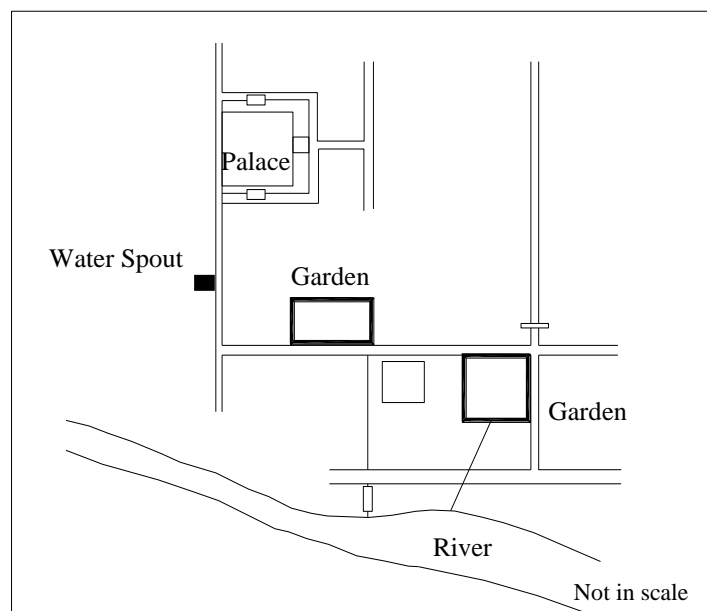
<sup>62</sup>Sankhu is a Newari settlement in the northeast of the Valley.

Gutschow and Bajracharya (1977) have described that the Mandala pattern in reality is modified by two factors – topography and history – that is by the structure of the terrain and by a tendency to use shrines of older gods and goddesses that were reinterpreted and consecrated to fit into the new system. According to Gabriele (1997), the urban layout of Kathmandu is very close to a mandalic grid that is ideal, which does not correspond in actual fact to the structure of the city. For Bhaktapur, the mandala model proved to be an ideal. It includes eight mother goddesses in the shrines situated at the boundaries of the city. These shrines have relationships with the temples inside the city, where the goddesses are worshipped. This establishes a spatial symbolic alignment between the exterior and interior of the city reflecting the cosmos and the outside.

## 5.4 Development of the hierarchy of open spaces

### 5.4.1 Open spaces of the Lichhavi period

It is clear from the earlier discussion that the Lichhavis had introduced numbers of water conduits and gardens in town (Figure 5.14). This shows that they were aware of the significance of open spaces. These water conduits were not only the urban service elements of the town but also a medium for providing opportunities for social interactions. However, there is not any evidence that the Lichhavis had established any hierarchical order of public open spaces except for the streets.

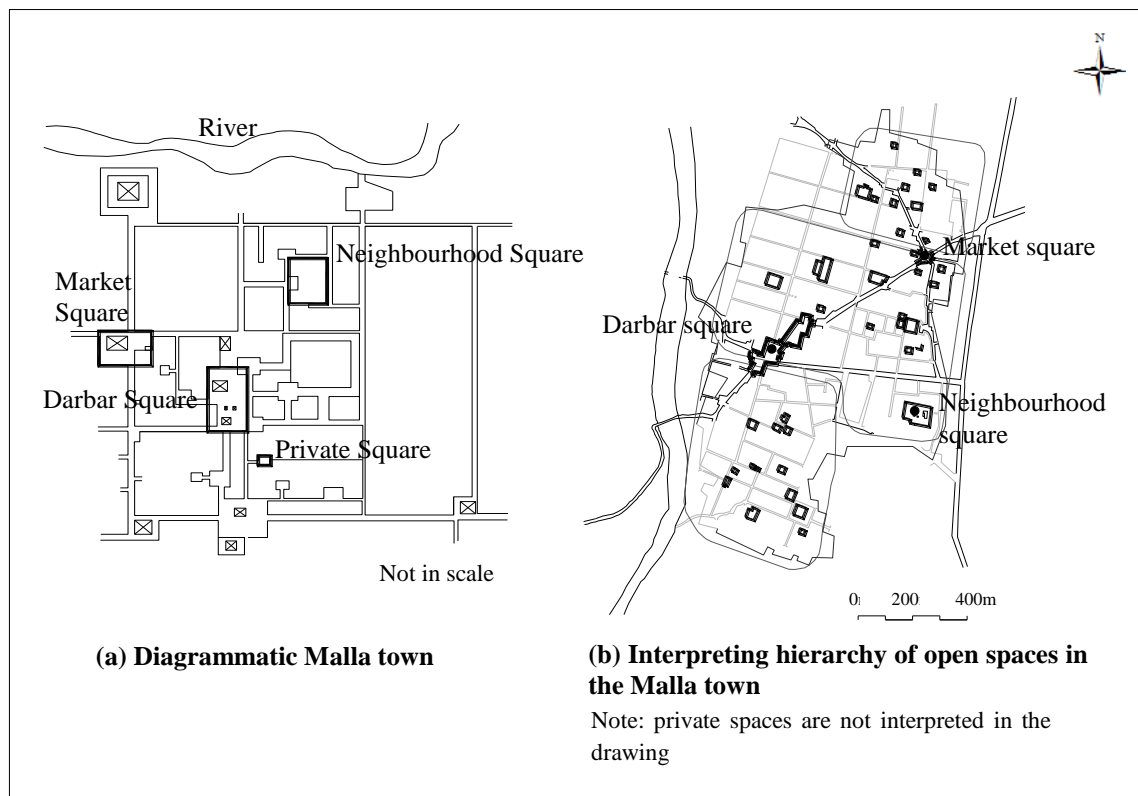


**Figure 5.14: Open space of the Lichhavi town**

Source: Drawing after Tiwari (1996)

### 5.4.2 Open spaces of the Malla period

It is only during the Malla period that the public spaces were categorized in a hierarchical order, which still exists today. The hierarchy of these spaces did not depend on size and shape, but rather was determined by social cultural activities, where diverse degrees of publicness were achieved. That is why according to Tiwari (2012), the squares of the valley's past are remarkable examples of socio-cultural civility - a novel mix of graded publicness. By 'past' here he means the Malla period specifically, which had established a set of squares: private residential square, neighbourhood square, market square, and Darbar square. The degree of publicness differs accordingly with each of these squares. The private square involved only the family, so there was no publicness. The neighbourhood square involved family and clans (homogenous groups), the market square involved neighbourhood groups (4-8 neighbourhoods) and the Darbar square involved larger heterogeneous groups (24 neighbourhoods).



**Figure 5.15: Hierarchies of squares in the Malla town**

Source: (a) Drawing after Tiwari (1989), (b) Drawing after Gutschow (1982)

The hierarchy of the squares, according to Tiwari (1989), is classified in various orders: first order (private square), second order (neighbourhood square), third order (market square) and apex (Darbar square). If the diagrammatic Malla town is analysed, these orders of squares follow a system of linkage with each other (Figure 5.15). The Darbar square, market square and the residential neighbourhood square are dependent on the

street whereas the private square is independent of the street. The social importance of squares increases as they progress closer to the centre. There are three hierarchies of streets. The main street are where all the major social and religious functions take place and links the Darbar square to various market squares forming a chain of temples along the way, the secondary street links the market square with neighbourhood squares, and lesser street extend from the residential areas and form a network of service behind the festive streets of the town (Tiwari, 1989).

***Open space hierarchy: socio-cultural and spatial order of squares of the Malla town***

The Malla towns are considered as one of the most extraordinary models in the Nepalese history. Society, social interactions and social vitality had high priority in their concept for town planning. A gradient of publicness in open spaces, which is dependent on the use by diverse cultural groups, is always maintained in the towns of this period. Two distinct types of open spaces – mono-cultural and multi-cultural spaces existed in this period. These types were further categorized in several hierarchical orders – first, second, and third. The following section is based on Tiwari (1989) and the lecture series of Tiwari (2012) delivered in the programme of Interactive Mapping and Archive Project (IMAP) organized by Social Science Baha. Tiwari has classified open spaces on the basis of graded publicness, identity, ownership, and patronage.

**i. Mono-cultural space**

The mono-cultural space generally belongs to a particular family or clan group. These spaces have their own identity and a sense of territoriality, where the group engagement is limited to their family or clans. These mono-cultural spaces can further be classified into the following:

***First order:*** The private courtyard is a good example of this order. The private courtyards are a simple rectangle or a square with a building envelope of similar characteristics and shared by the extended families. The courtyard is linked to the street through a passage on the ground floor of the building. The geometric division of all the elevations results in a heavy ground floor and light second floor. Some of these squares may also have a miniature temple or a well, but no grass areas or trees. These private courtyards are used for domestic activities, as playgrounds for the children, and sitting area.



**Second order:** Neighbourhood squares, well, and rest house (Pati) come under this category. The neighbourhood square houses a large number of extended families, often belonging to the same clan group, Buddhist monasteries ('Baha' and 'Bahi'<sup>63</sup>) or same occupation groups. These squares are enclosed spaces with some public religious structures such as a temple or a large waterspout (Figure 5.16). However, the temple volumes do not dominate these squares since these are basically residential squares. These squares differ from the private courtyards in the sense that two or more streets come to meet this space. All functions in the square are at neighbourhood level.



**Figure 5.16: A residential neighbourhood square - second order of mono-cultural space**

Wells are also considered as a public space of this order. Wells are generally located in neighbourhood squares and only for those who are residing in the neighbourhood. People residing in a particular neighbourhood belonged to the same or a similar caste group. The use of wells in these neighbourhoods was not given access to lower untouchable caste groups. These groups were not allowed to fetch water or even touch a well. People believe that water will get impure if the lower caste groups touch the wells and since the water in the wells is stagnant, the impurity remains in the well forever. For these lower caste groups, water taps (hiti) were provided outside the neighbourhood; since these taps have flowing water, impurities also go with flowing water. The 'Patis' were also restricted for untouchable groups. Wells were considered as the female socializing spaces whereas patis were considered as the male socializing spaces. Wells were used by females for domestic uses such as fetching water, washing clothes, and utensils. Patis were used by males for social interactions.

<sup>63</sup>Baha and Bahi both are the Buddhist monasteries. Bahil is built on a raised platform above street level, and is a two storeyed structure surrounding a sunken square courtyard. Bahal is a two storeyed court style building (Korn, 1976).



(a) Well in neighbourhood square  
Source: Hosken (1974)



(b) Pati - A Public rest place  
Source: Collections of Old Nepal - Photos and Images

**Figure 5.17: Second orders of mono-cultural spaces**

## ii. Multi-cultural space

Multi-cultural space generally means the space where people from diverse cultures socialize and hence the gradient of publicness also increases in these spaces. The multi-cultural spaces are also categorized as following:

**First order:** Temples, Dabalis (a raised platform for cultural activities) at the crossings of at least four neighbourhoods are the examples of this type of space. The temples, dedicated to different gods and goddesses, provide a realm where people come and meet with others in addition to the religious activities. Similarly, the Dabalis are the platform for bringing people together during cultural events and social and political gatherings.



**Figure 5.18: A Dabali - first order of multi-cultural space**

Picture courtesy: Pradip Ratna Tuladhar

**Second order:** Market Squares are the second order of multi-cultural spaces. The square is remarkable for its heightened urban space and possesses many elements of urban interest. This square plays a great role in the socio-cultural aspects of the town. It is the centre for social, commercial and religious activities, dominated by commercial use. The archetypal



**Figure 5.19: Market square - second order of multi-cultural space**

Source: Hosken (1974)

characteristics of the square are that these are located at street intersections and combine the commercial residential buildings. These squares, when no marketing or cultural activities take place, give the sense of enclosure of the residential buildings. The market square in the past came to life with cultural activities rather than with commercial activities. These spaces during the Malla period were generally located in the city core and city level religious festivals were celebrated. Hence, these squares can be considered as city core spaces.

**Third order:** Darbar square (palace square) is of this order. The palace is the dominant form of this space. By royal decree all major festivities which are performed in different cycles of festivals either commence, pass through or conclude in this square. This square, during the Malla periods, was also used for the socio-political gatherings. Other distinctive features of the palace square are that the squares incorporate a number of temples and reflect splendid traditional architectures. All main streets of the Malla towns lead to the square. The squares had well designated vertical movements; the plinths of temples and platforms are raised, which not only act as a demarcation between street level and temples but also as an arena for commemorating festivals. All civic functions occurred in these squares during the Malla period. The square today no longer used as palace but as museum. The square still today maintains national importance and is the centre of power and culture (Sandy, 1979).



(a) Kathmandu Darbar square, 1870  
Source: Bourne and Shephard in  
[www.ne-np.facebook.com/VintageNepal](http://www.ne-np.facebook.com/VintageNepal)



(b) Civic Ceremony in Darbar square  
Source: Proksch (1995)

**Figure 5.20: A Darbar square - third order of multi-cultural space**

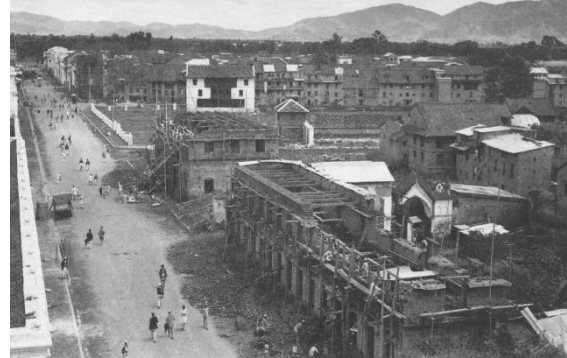
### 5.4.3 Open spaces of the Rana period

The Rana rulers, with an influence from European architecture and planning, had mainly focused in adding new typologies of streets and landscapes. They emphasized more on private gardens in their grandeur palaces than the socializing spaces. The

devastating earthquake of 1934 A.D. had given them opportunities to show their power and monumental expressions in the city landscapes. Few examples of these include New road and Bhugol park. After Rana period, there were not any additions of open spaces in the city core landscape. The city went through only beautification, redevelopment or regeneration of the existing open spaces.



(a) Bhugol park, 1941



(b) Construction of New road, 1936

### Figure 5.21: Open space of the Rana period

Source: Proksch (1995)

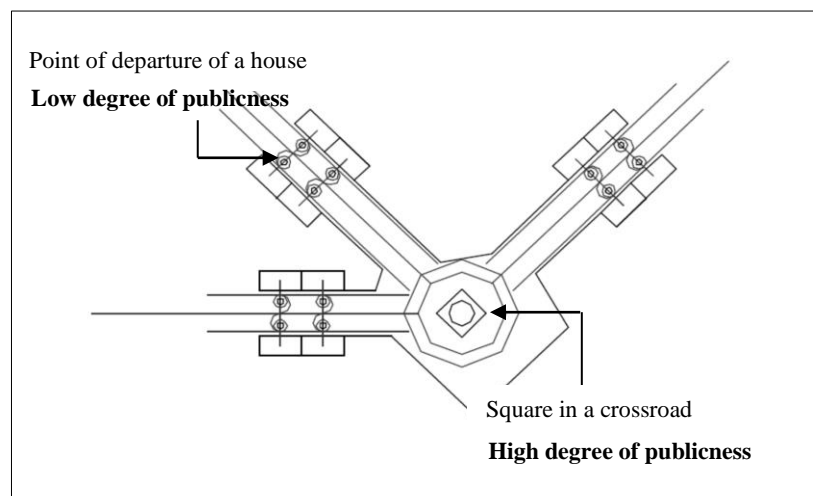
## 5.5 Significances of open spaces

The open spaces in the Malla period functioned as the space for socializing than just as a physical space. The neighbourhoods of the Malla town were linked to same family profession; this shows that their planning considered homogeneity to increase the interaction of a community. According to Tiwari (nd), each of these neighbourhoods had religious mix within itself. No Toles used monuments belonging to either religion, thus it seems to exhibit the religious harmony. Similar aspect was also seen in the use of wells within the Tole and stone water conduits between Toles. According to Tiwari, ‘such patterns in historical towns of Kathmandu suggest that through creation of mosaic scenario, it may be possible to sustain a multi-cultural or heterogeneous urban society provided that interactions are sought and provisions for it provided, socially as well as spatially, within as well as between groups through designated spatial elements along networks, crossings and other boundary conditions of the mosaic tiles’ (p.8).

Newar urbanism had greatly flourished during the Malla period. The society had predominantly Newar ethnic groups. Social interactions, integration, communal life, which were commonly noticeable in each pockets of the neighbourhoods had become the main aspects of the Newar communities. The identities of these communities were embraced by their daily activities and the periodic rituals.

### 5.5.1 Social expression

Social expressions in the traditional societies had followed a system regulated by daily performances and rituals. Social vitality was established everywhere in streets, squares, wells, playing field and even in the agricultural lands, which were left for cultivation. From the earlier discussions, it shows that the open spaces of the Malla period had provided places for socialization more than any other periods. The level of interactions was also high at that time. However, the level of publicness differs with the hierarchy of open spaces of this period. The neighbourhood square involved family and clans (homogenous groups), the market square involved 4-8 neighbourhoods, and the Darbar square involved 24 neighbourhoods (larger heterogeneous groups). Even from the point of departure of a house (private space) to the square (public space) in the cross roads, where people from several neighbourhoods meet, the degree of publicness increases and social activities also increases accordingly. The point of departure of a house has low degree of publicness whereas the square in the crossroads have high degree of publicness (Figure 5.22).



**Figure 5.22: Degree of publicness**

Source: Tiwari (nd)

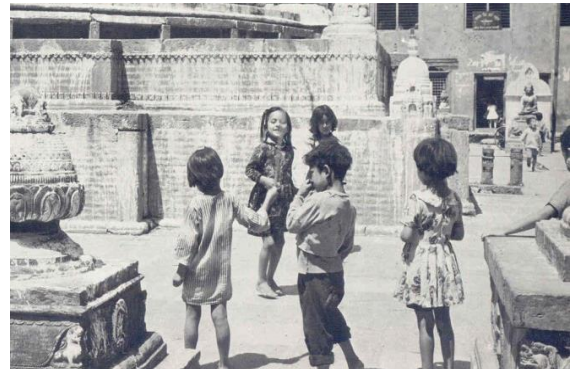
### *Squares as social realm*

Sharing of ideas and emotions, discussing problems and solutions of everyday life had become a daily phenomenon in the squares. The private and public squares in the traditional period had provided a social realm but in different levels. Since, the private squares comprised of small/extended family, these were shared at small scale. On the other hand, the neighbourhood squares consists of a large number of extended families, hence these were shared at neighbourhood scale. Moreover, the neighbourhood squares also have socio-religious significances; the temples in it were used as a worshipping

place in the morning, the open courtyard used for drying grains (Figure 5.23 a), washing and drying clothes, and bathing in the afternoon, play area for children (Figure 5.23 b), and walking and chatting place for the adults in the evening.



(a) Drying grains in square



(b) Children playing in square

**Figure 5.23: Squares as social realm**

Source: Hosken (1974)

The public squares and courtyards were often used for display of images of gods (Figure 5.24) and goddesses during particular festivals. The religious and cultural performances in ‘Dabalis’ during different festivals were common in the past. Likewise, the everyday selling and purchasing of vegetables encouraged social life in the market square.



(a) Idols of gods

Source: Own collection



(b) Photographs of gods

Source: Johan Reinhard

[www.picasaweb.google.com/johan.reinhard/](http://www.picasaweb.google.com/johan.reinhard/)

**Figure 5.24: Display of Gods in the squares**

The streets, perceived as the path-defining element and radiating from the squares played an important part in social life. The dialogue between people living inside of the building and outside in the street in the traditional societies, had become an important part of the everyday life in the traditional period. It helped in bringing liveliness in the society. Also the presence of social urban elements like the Pati (rest house), Dharas (the water spout) at every short distance added to the essence in the urban fabric. The

Pati served as a place for gathering as well as resting for the travelers. The Dharas serve the community with water as well as providing an outdoor room for gathering, chatting and sharing of feelings.



(a) Pati used as the social gathering place  
Source: www.members.virtualltourist.com/



(b) Dharas as a public space  
Source: Hosken (1974)

### Figure 5.25: Urban elements bringing liveliness

The mixed land use of commercial and residences had also helped to generate liveliness in the towns (Figure 5.26). The ground floors of the buildings were used as the commercial shops and the upper floors as the residences. Not only were the open spaces inside of a town but also the open spaces in the hinterland (Khyo) were also used for social interactions.



Figure 5.26: Commercial activities bringing liveliness

Source: Hosken (1974)

These Khyos were mainly used during festivals when members from the entire family came together and worshiped their lineage god (Kuldevata).

### 5.5.2 Cultural expression

The social structure of the town was influenced by religious and the cultural practices. They had contributed to form a socio-cultural and religious mosaic. The urban space had proven as a joyous space in the societies. Cultural assimilation was widely established in the traditional towns. This is clearly seen during the festivals, religious processions or any cultural performances (Figure 5.27). The festivals and religious processions had to follow the ritual guidelines and thus were systematic. For example the chariot procession during several festivals had to follow a fixed route including from where to begin, where to stop, and where to end. These festivals had become a medium for people to interact with each other and had established a social bond.



**(a) Chariot procession during festival**  
Source: Collections of Old Nepal - Photos and Images



**(b) Public observing festival, 1956**  
Source: Bettmann in Collections of Old Nepal - Photos and Images

**Figure 5.27: Cultural assimilation**

## 5.6 Conclusion

The diffused settlements of Lichhavi period changed into compact and walled settlements during the Malla period. The planning of Lichhavi towns was mainly determined by the position of palaces and temples. The Malla town on the other hand had palace (Darbar square) as its nucleus, the town divisions were based on caste principles. The higher caste groups such as families involved in the profession of worship and rituals, administration and politics were located around the palace. The other professions were located in separate neighbourhoods around the core. The Malla towns had incorporated the Mandala pattern with temples in and around the town. In the Rana period, the palaces emerged outside of the core and the Malla town started to diffuse slowly. The open spaces were also developed accordingly with the growth. The hierarchy of the open spaces were defined in the Malla period only. Two distinct types of spaces – mono-cultural and multi-cultural spaces existed in this period. Each of these spaces was further categorized into several orders – first, second, and third. The first order of mono-cultural spaces includes private square and second order includes neighbourhood square, well, and the rest house. The first order of multi-cultural spaces includes temples, raised platform (Dabali); second order includes market square; and third order includes Darbar square. The neighbourhood squares, market squares, and Darbar squares also consists elements of interest (e.g. temples, Dabali, well, pati etc.). In addition, each of these squares has social and cultural significances. On the other hand, the Rana rulers were focused on power. Only monumental spaces, private gardens, and few parks were introduced in this period rather than the places of socializations.



## **Chapter 6 : Socio-cultural and spatial meaning of public open spaces in the traditional urban centre and sprawled area**

### **6.1 Introduction**

This chapter focuses first on the transect walk method conducted to identify the open spaces from TUC to SA in Kathmandu Valley and on providing a general background of TUC and SA. It then focuses on the physical, social, and cultural meanings of selected six public open spaces (three from each TUC and SA) that are identified by the Transect-walk method. Three different hierarchies of open spaces are selected – market squares, neighbourhood squares, and community squares from TUC as well as from SA. The analysis of these open spaces are conducted based on the method developed by the researcher (refer to Chapter 3) and the available documents. The meanings of place in each case study open spaces are identified with reference to physical settings and activities with their sensory perceptions, and patterns of activities. The access including pedestrian, vehicle movements, and their relationships with the physical settings and activities are also discussed. The urban scale analyses for each case are done further. The results of analyses are interpreted in descriptions as well as in maps, supported by visual images where necessary. This chapter then focuses on the transformations taking place in these open spaces. It must be noted here that for market squares, detailed as well as comparative studies are presented in this chapter. For neighborhood and community squares, only comparative studies are discussed in this chapter. The detailed studies include physical settings and activities, whereas the comparative studies include physical settings and activities with their sensory perceptions, reoccurrence of activities between 2012/2013, patterns of activities, access, and urban scale analysis. Detail studies of the neighbourhood and community squares are presented in Appendices 6.2 and 6.3 respectively.

### **6.2 Transect Walk**

The transect walk was conducted from the diagonal trade route in the TUC and completed in Bungmati as shown in Figure 6.1. The main aim of this method is to identify open spaces from traditional urban centre to sprawled area. The concept of Duany on transect walk has been adapted for the Valley. Coding was assigned to each of the zones in the Valley. T6 was assigned to TUC, T5 for the urban centre zone, T4 for general urban zone, T3 for sprawled area, T2 for outer traditional settlements, and

T1 for the natural zone. However, the natural zone is not discussed in this research, since it consists of only forest areas and the main purpose of this transect method is to identify urban open spaces. Transect T6 is situated in the Kathmandu Metropolitan City, T5 is in Kathmandu Metropolitan City and Lalitpur Sub-metropolitan City, T4 is in Lalitpur Sub-metropolitan City, T3 is in Sainbu VDC, and T2 is in Kokhana and Bungmati VDCs. Different hierarchies of open spaces are found in each transect. These

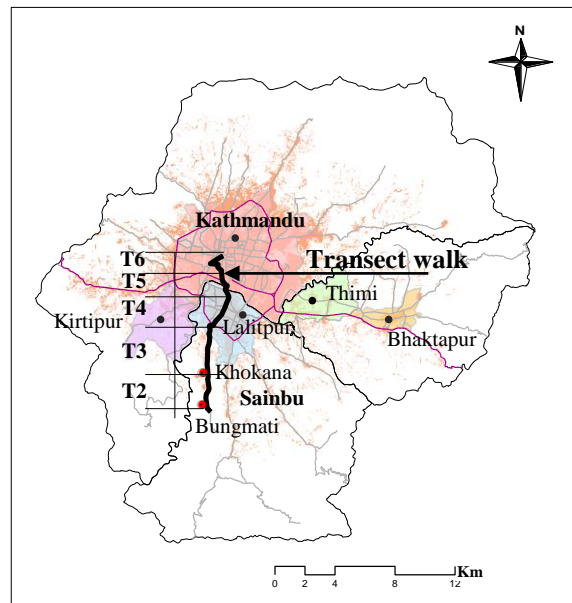
are discussed in further sections. The research, though aimed to study the public open spaces in TUC (T6) and SA (T3), other transects were also explored to identify the nature of open spaces in each transect and to have a brief idea about their similarities and discrepancies with those in TUC and SA.

### **Transect T6 - Traditional urban centre**

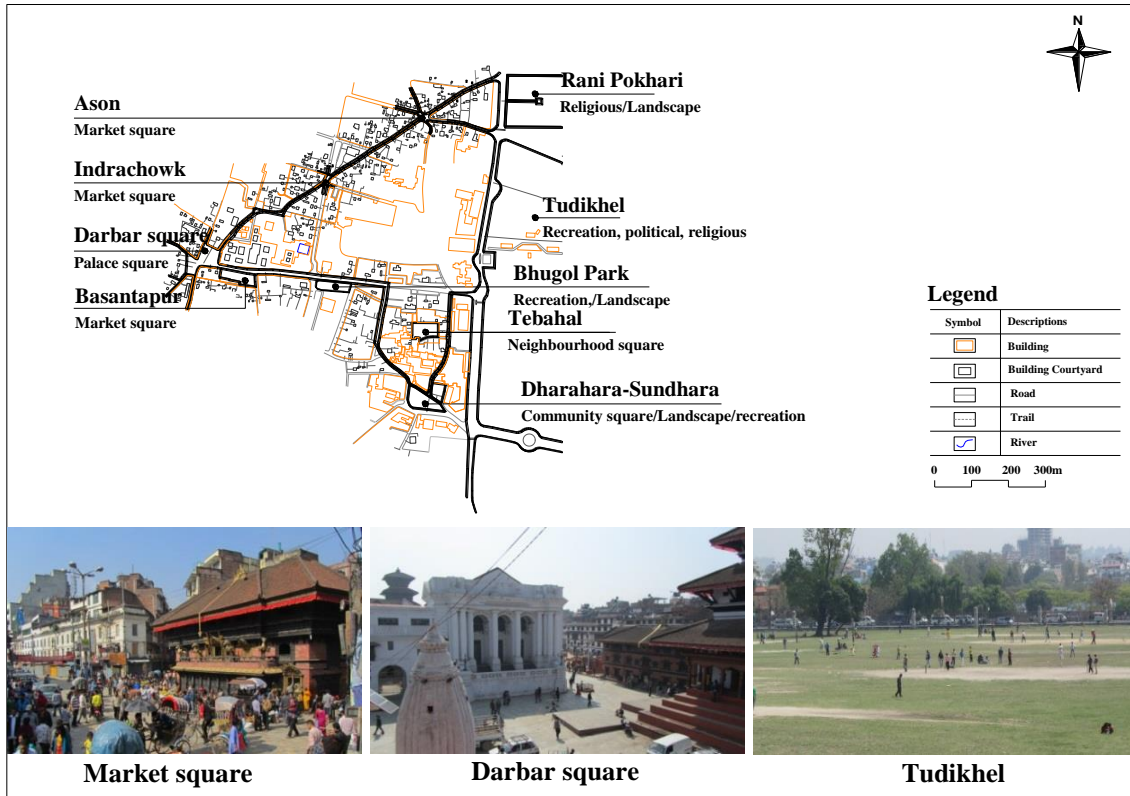
The TUC consists of different hierarchies of open spaces – private squares, neighbourhood squares, market squares, and Darbar square (Figure 6.2). The market squares include Ason, Indrachowk, and Basantapur. The neighbourhood square includes Tebahal. The community squares include Dharahara-Sundhara (DS) and Bhugol park. All these open spaces are within the administrative unit of Kathmandu city core. There is also another open space, known as Tudikhel, located at the edge of the core. In terms of size of these open spaces in TUC, Tudikhel is the biggest open space followed by the Darbar square, neighbourhood squares, market squares, and private squares respectively. In terms of use of the squares by cultural groups, all open spaces except private squares are the multicultural spaces.

### **Transect T5- Urban center zone**

Transect T5 does not comprise many open spaces as in TUC (Figure 6.3). The open spaces include those in government office buildings (such as KMC office and Nepal Rastriya Bank), the community space (Kalmochan ghat), the sports stadium (Dasrath stadium), and the southern side of Tudikhel. The government offices found along this

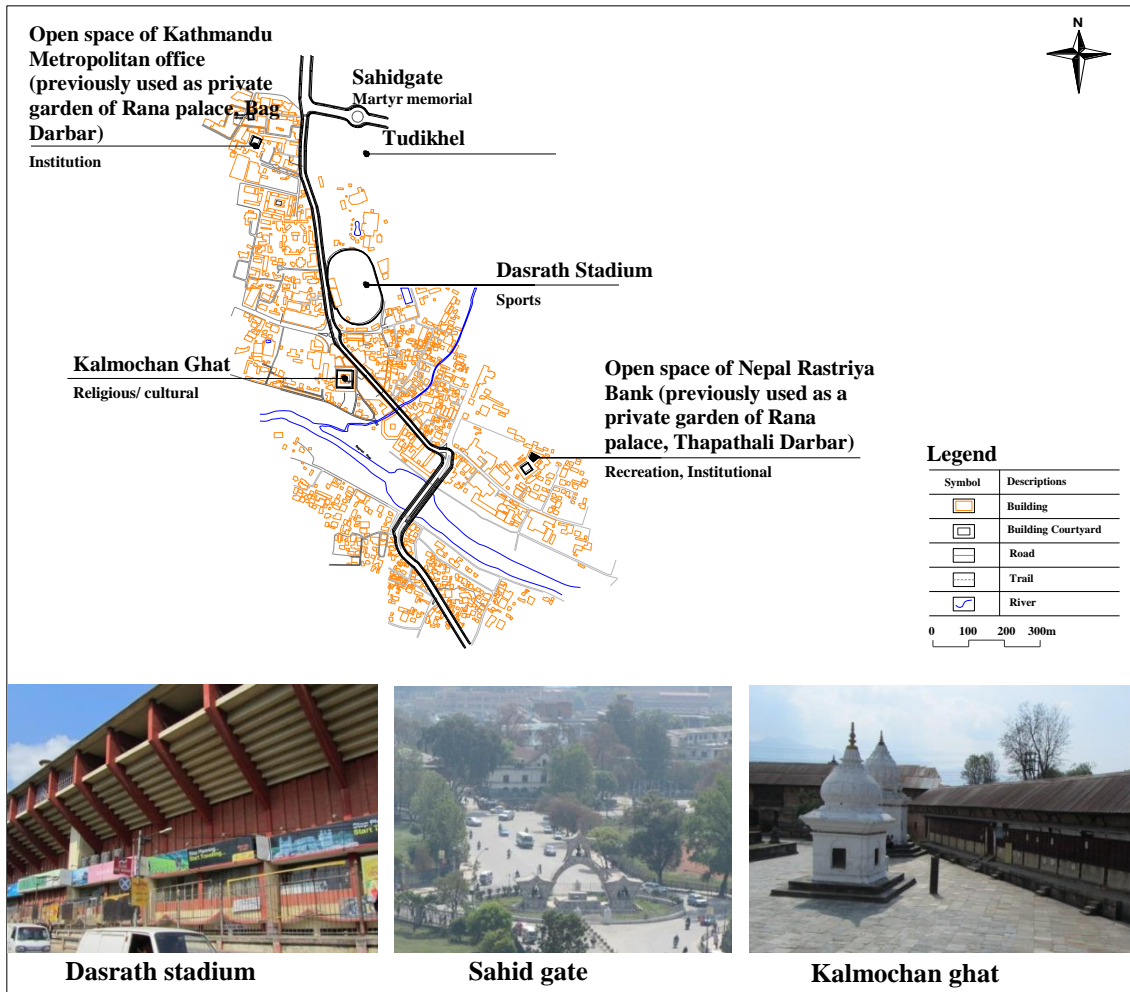


**Figure 6.1: Transect-walk in Kathmandu Valley**



**Figure 6.2: Transect T6 -TUC**

Source: Drawing based on AutoCAD data of KVTDC (2007)



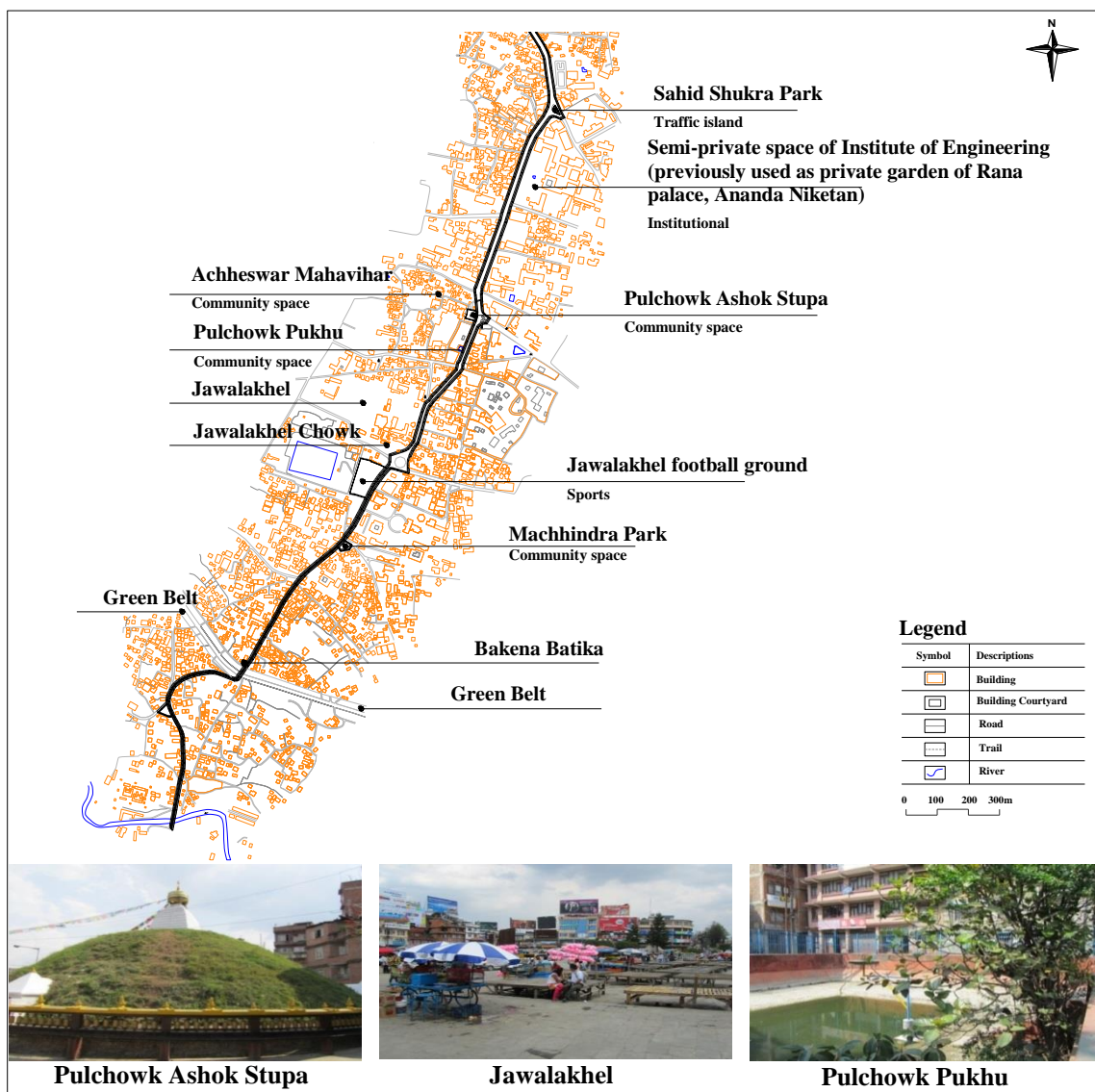
**Figure 6.3: Transect T5 - Urban centre zone**

Source: Drawing based on AutoCAD data of KVTDC (2007)

stretch were the palaces of the Ranas during their regime, which today are used by the government. The open spaces found in these buildings were previously used as private gardens by the Ranas. The Kalmochan ghat is the cremation site near Bagmati River.

### Transect T4- General urban zone

Transect T4 is comprised of public and semi-private open spaces (Figure 6.4). The stretch also has a monastery called Achheswar Mahabihar that serve the community, Pulchowk pukhu (pond) and Ashok stupa. The semi-private open spaces include the gardens in the Institute of Engineering; this building was also previously one of the Rana palaces and the open spaces were used as the private gardens. Other open spaces along this stretch include small parks, Jawalakhel Chowk and sports ground. Today, Jawalakhel Chowk is used for open-air markets.

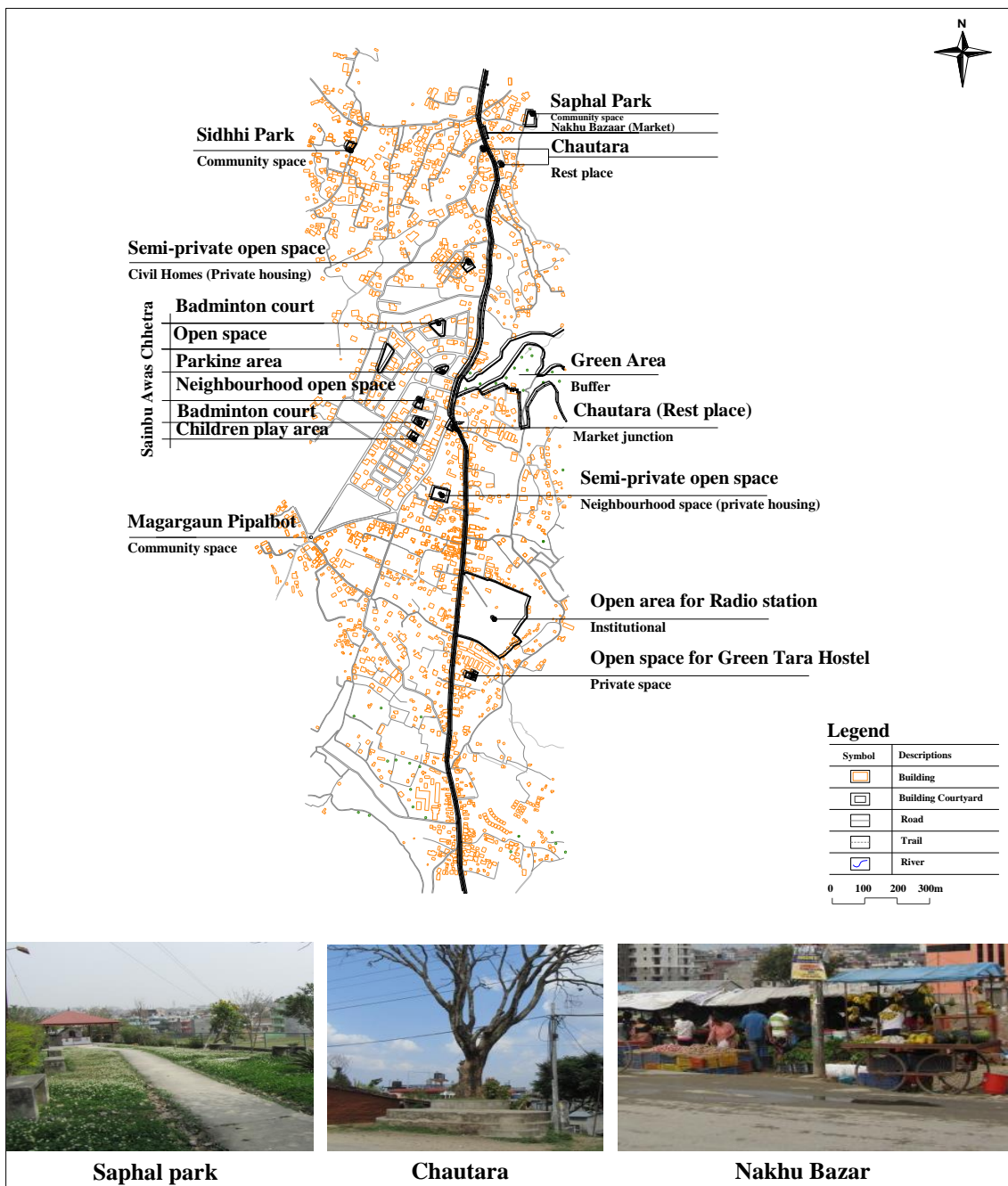


**Figure 6.4: Transect T4 - General urban zone**

Source: Drawing based on AutoCAD data of KVTDC (2007)

### Transect T3- Sprawled area

Transect T3 has mostly new developments and most of the open spaces in this stretch are newly established in the recent period (Figure 6.5). These include small parks (Siddhi park and Saphal park) that serve as community spaces, semi-private spaces in the government and private housing, and private spaces. There also exist old open spaces, some of which are included in the newly developed residential area and its periphery, for example, the open spaces in Sainbu Awas Chhetra, Bhaisepati chowk, and Magargaun Pipalbot community space.

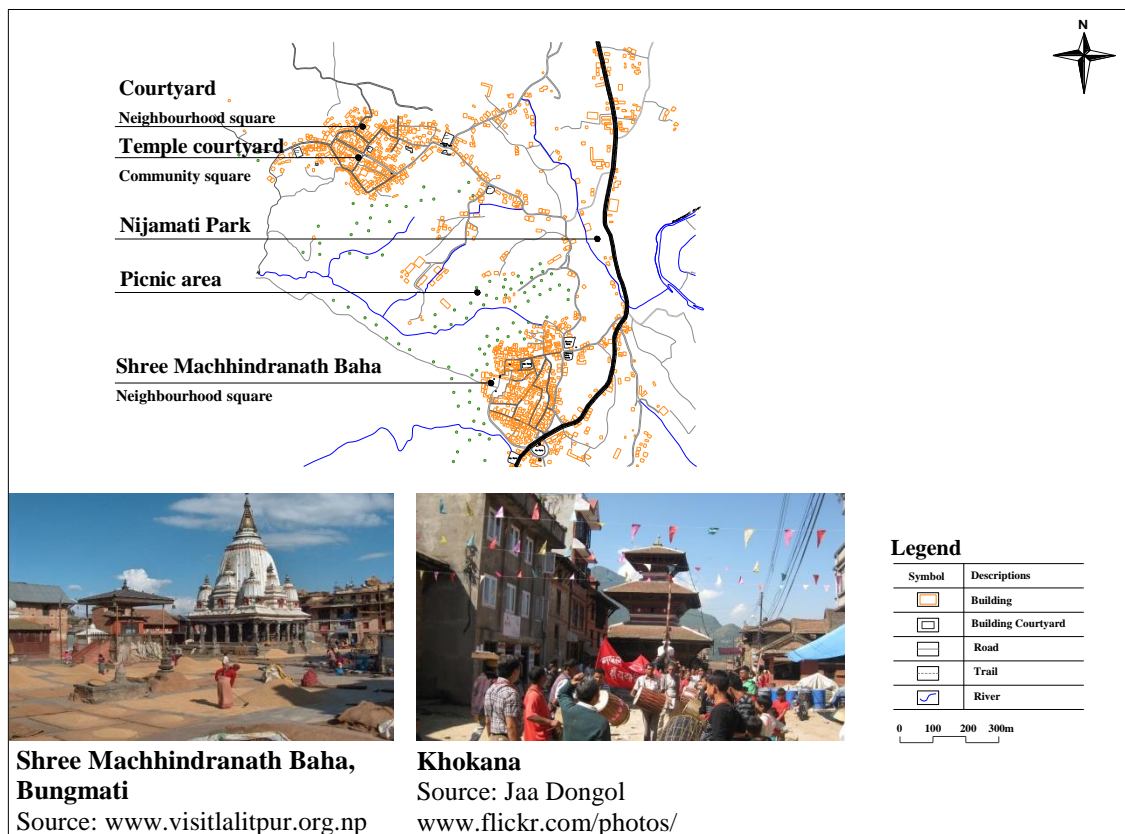


**Figure 6.5: Transect T3 - Sprawled area**

Source: Drawing based on AutoCAD data of KVTDC (2011)

## Transect T2- Other traditional settlements zone

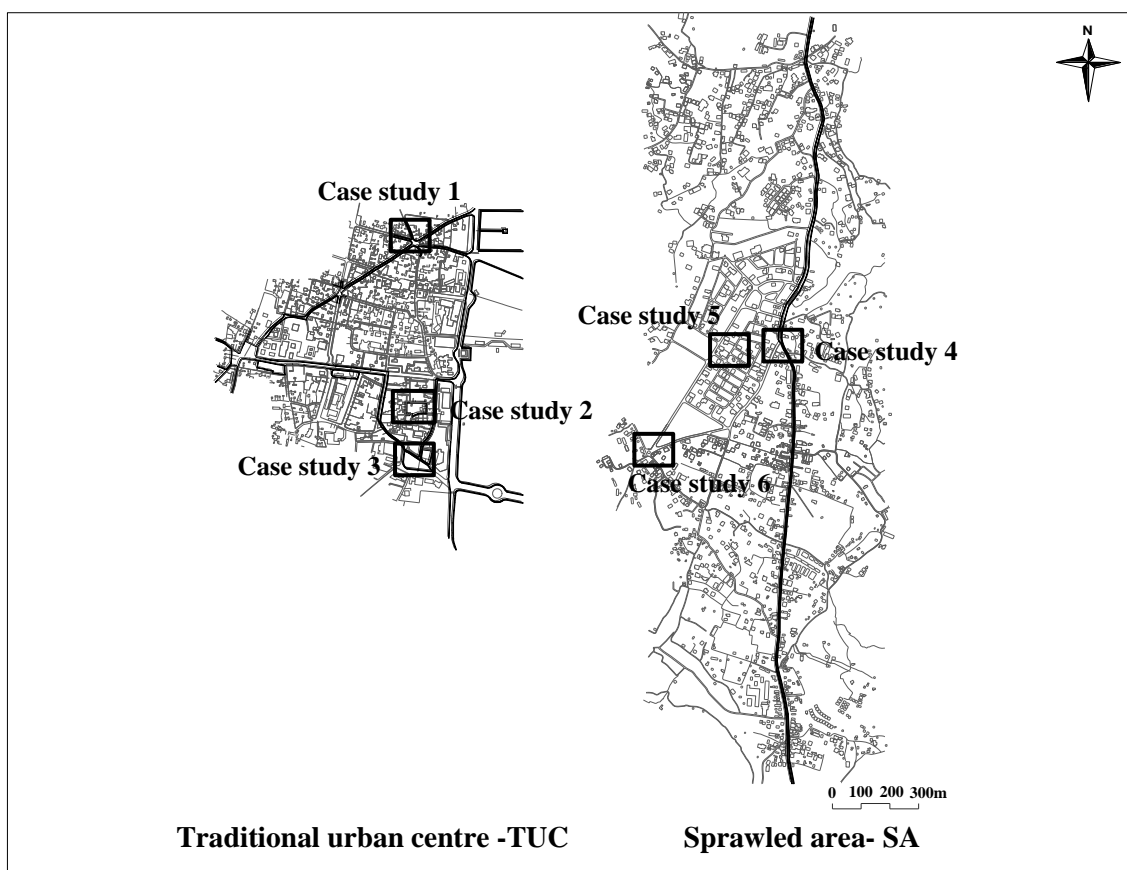
Transect T2 includes two traditional settlements – Khokana and Bungmati (Figure 6.6). Each of these traditional settlements has courtyards that serve as the neighbourhood spaces. Furthermore, this stretch also contains a park and a picnic area.



**Figure 6.6: Transect T2 - Other traditional settlements zone**

Source: Drawing based on AutoCAD data of KVTDC (2011)

From the transect walk, it is found that the hierarchy of open spaces differs as they stretch out from the core to the sprawled area. The hierarchy of open spaces outside the core area is similar if they are closer to the core and different as they go far from the core. It was also confirmed that the open spaces of the traditional periods still exist in TUC. Based on their hierarchy a market square (Ason), neighbourhood square (Tebahal), and community square (Dharahara-Sundhara) were selected for the study. In the SA, not only new spaces but also a few open spaces of the past were found. The exact dates of the origin of the open spaces of SA are not known and no literature exists about these spaces. However, based on the functions of open spaces, a market square (Bhaisepati chowk), neighbourhood square (Sainbu Awas Chhetra), and community square (Magargaun Pipalbot) were selected for the comparative study (refer Figure 6.7 and Table 6.1).



**Figure 6.7: Location of case studies in TUC and SA**

**Table 6.1: Hierarchies of public open spaces selected for case study**

Hierarchy	TUC	SA
Market square	Case study 1 - Ason	Case study 4 - Bhaisepati Chowk
Neighbourhood square	Case study 2 - Tebahal	Case study 5 - Sainbu Awas Chhetra
Community square	Case study 3- Dharahara -Sundhara	Case study 6 - Magargaun Pipalbot

### 6.3 Background study on TUC and SA

The following section presents some background information about Kathmandu city core located in KMC and Sainbu, the urbanizing VDC located in the fringe of LSMC (Figure 6.8), where the case studies for this research are located.

#### 6.3.1 Kathmandu city core

##### *Population concentration*

The KMC, which is located in Kathmandu district, is divided into five sectors – the central sector, the east sector, the north sector, the city core, and the west sector (Figure 6.9 a). These sectors include 35 administrative wards in total. The core area is

considered as ‘a classic example of Newari urban and architectural form, of universal interest as a living museum’ (KVUDPP in DHUD and ADB, 1991, p.11). The central core has the highest densities, ranging from 106,700 person per square kilometre in ward 27 to 41,900 person per square kilometre in

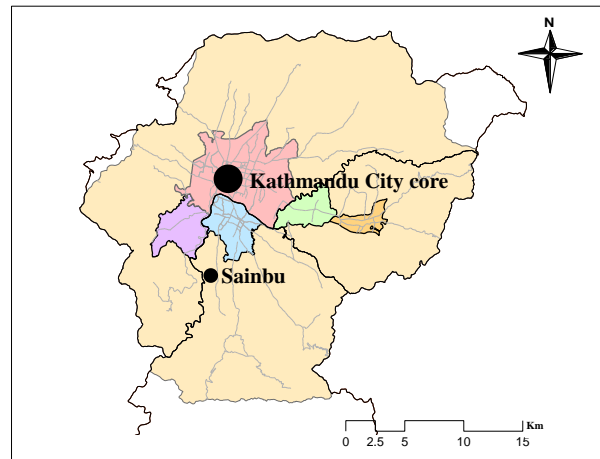
ward 22 in 1991 (KMC and WB, 2001). Comparing the population between 2001 and 2011, there are changes (Table 6.2), the population in most of wards having increased in the latter year (also refer Figure 6.9 b).

**Table 6.2: Population of Kathmandu city core area, 2001 and 2011**

Ward no.	Population (2001)	Population (2011)
12	10313	13262
17	19876	25926
18	8065	10746
19	7400	10711
20	8240	10968
21	12369	13727
22	5840	5699
23	8289	8357
24	5272	3488
25	4310	3486
26	3764	4133
27	7789	7592
28	5462	5611
30	9896	8563

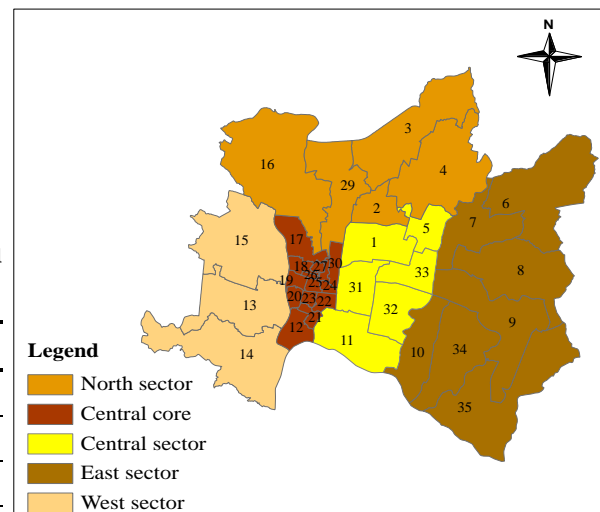
Source: CBS (2001 and 2012)

Regarding the selected case study open spaces, market square is located at the edges of wards 27 and 30 and neighbourhood square and the community square in ward 22.



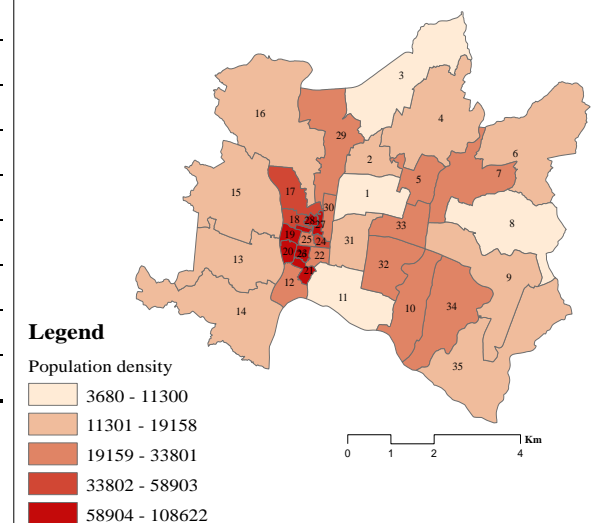
**Figure 6.8: Location of Kathmandu city core and Sainbu VDC**

Source: Map based on GIS data of KVTDC (2002)



**(a) Administrative Sectors**

Source: Map based on GIS data of KVTDC (2002)



**(b) Population density (per square kilometer)**

Source: Map based on CBS (2012) and GIS data of KVTDC (2002)

**Figure 6.9: Kathmandu Metropolitan City**



*Ethnic/caste diversity*

Nepal is rich in ethnicity. Bhattachan and Pyakurel (1996, p.17) have defined ethnicity 'as a varying degree of reciprocal, common identification (or peoplehood) marked by (a) symbols of shared heritage, including language, religion, and customs, (b) an awareness of similar historical experience, and (c) a sense of in-group loyalty or we feeling associated with a shared social position, similar values and interests and often, but not inevitably, identification with specific national origin'. Ethnic diversity in Nepal is complex as there are multiple and overlapping categories of identity and ethnic labels have shifted over time (Hagen, 2007)<sup>64</sup>. According to Dahal (2003), there are more than 100 ethnic/caste groups with distinct language and culture and these groups are classified into five broad overlapping cultural groups<sup>65</sup>: i) the caste origin Hindu groups; ii) the Newar; iii) the Janajati or nationalities; iv) Muslim; and v) Other. Pradhan and Shrestha (2005) on the other hand, clustered the diverse groups found in Nepal into three major overlapping divisions: i) the hierarchical caste structured groups (jats) and ethnic groups (Janajatis); ii) the high caste or the ritually 'pure' castes and the low, ritually 'impure' untouchable (Dalits) castes; and iii) Pahadis and Madhesi<sup>66</sup>. They also had differentiated caste and ethnic groups. According to them, caste groups are Caucasoid Hindus speaking various Indo-European languages and the ethnic groups comprises mainly of Mongoloid stock, speak various Tibeto-Burman languages, and

<sup>64</sup>The social hierarchy of people, according to Nepal's first legal code (the Muluki Ain of 1854) has five categories on the basis of purity. The high-caste Hindus, referred to as wearers of the sacred thread (Tagadhari) were at the top. Next were the alcohol drinkers (Matwali), divided according to groups of unenslavable and enslavable people. At the bottom were the impure but touchable castes, followed by untouchable caste groups, with whom other groups could not share water (pani na chalne). The Matwali category united diverse groups of people and today these people call themselves indigenous nationalities (adibasi janajati)' (Hagen, 2007, p. 11). 'At the start of 1960s, the state abolished legally sanctioned hierarchy based on caste, ethnic, and religion. The new Civil Code of 1963 was no longer caste but citizen, and as citizens all Nepalese, irrespective of their social identity. However, caste and ethnicity remained socially valid categories and were the basis of everyday interaction. In 1990, the country was declared as a multi ethnic and multilingual Hindu constitutional monarchical kingdom and prohibited any form of discrimination based on religion, race, caste or ethnicity' (Pradhan and Shrestha, 2005, p.6-7). It is also after 1990s that various ethnic and caste groups were rediscovering and asserting their ethnic and caste diversity. The Hill Brahmins, Chhetris, and Thakuris even have prepared themselves transforming Hindu caste to ethnic groups (Bhattachan and Pyakurel, 1996).

<sup>65</sup>According to Dahal (2003), the caste-origin Hindu groups have distinct cultural features – hierarchical structure, hereditary basis of the membership, endogamy, purity and pollution. The Newars have complicated social structure among all groups in Nepal; this group is based on the model of four Hindu Varna categories and is clearly divided into two distinct religious groups: the Hindu and the Buddhist. Newars are divided internally into more than 40 distinct cultural groups with different occupational categories, though they share a common language. The Janjati group has its own mother tongue and traditional culture, have their distinct collective identity, religion, own traditional egalitarian social structure, geographical area, we feeling etc. Regarding the Muslim and other categories, two and four cultural groups were respectively found.

<sup>66</sup>Pahadis and Madhesi are regional identities; the hill areas are occupied by the Pahadis and the plain are populated by Madhesi.

profess religions such as Buddhism, Animism besides Hinduism. Furthermore, the castes are hierarchically structures in terms of ritual purity, whereas ethnic groups are more egalitarian in their social structures, except Newars, who are structured by their own internal caste system.

Pradhan and Shrestha (2005) further asserted that among the caste-structured groups, there is a fundamental division between the ritually pure castes (such as Brahmin, Chhetri, Kayastha), and the untouchable castes (such as Kami, Sarki, Chyame etc). The Pahadis comprise diverse groups such as the Nepali-speaking Parbatiya castes (such as Brahmin, Chhetri) as well as ethnic groups (such as Tamang, Magar, and Rai), each with its own language, culture, and religion. The Madhesis are composed of various castes (such as Brahmin and Dalit), linguistic groups (such as the Maithalis and Bhojpuris), ethnic groups (such as Tharu and Danuwar) and religious groups (such as Hindus and Muslims). The Pahadis consider themselves culturally distinct from the Madhesis even though there are many similarities among the caste groups who are Hindus and speak Indo-European languages. From these discussions, it is quite clear that ethnic/caste system in Nepal is complex. The distinction between them is also ambiguous as there are overlapping characteristics between these.

Despite the traditional hierarchies of castes having lost their importance after the implementation of the 1964 new legal code in Nepal, people are still maintaining them (Shrestha, 2007). This also shows that social status of people is still maintained by caste in the contemporary society. People can be identified by which caste they belong to if their surname is known. That is why Rosser (1966) cited in Shrestha (2007) stated that,

‘From every Newar’s personal name, it is possible to identify his caste at once. Once his name is known he is no longer anonymous, simply a Newar: he becomes immediately identified as a member of a particular caste to whom one behaves with a certain deference and respect or alternatively with authority and superiority.’

There are also cases of social mobility among different ethnic/caste groups. Rosser (1966) in Shrestha (2007), with reference to Newar groups, stated that individual social mobility among Newars was common. The social mobility according to Rosser can occur in different steps: i) a public claim to equality with person of higher status; ii)

modification or adjustment of behaviour to conform with that current among the higher status group aspired to; iii) rejection of former peers of lower status and severance or minimization of interaction with them; and iv) acceptance by the higher status group demonstrated and confirmed by social interaction with them on terms of equality.

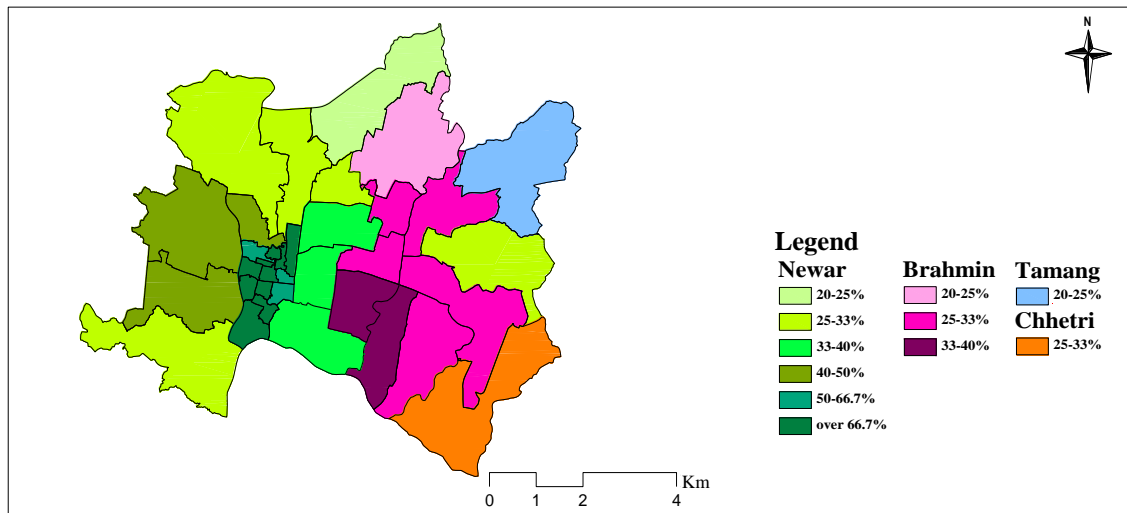
Another influencing factor for social mobility is marriage (in same caste group or inter-caste group). According to the view of Raju KC, a sociologist, published in the Kathmandupost by Sedhai (2011), inter-caste marriages are rising due to increasing social mobility. However, Quigley (1986) argued social mobility takes place between sub-castes rather than between different caste groups. In context of Nepalese society that includes several ethnic/caste groups; social mobility seemed to be complex phenomenon. Moreover, this research that aimed to study the social and cultural transformations of public spaces did not study the effect of social mobility in the use of public spaces as the concept itself is very complex and needs in-depth study which is not in the scope of this research.

### ***Concentration of ethnic/caste groups in the settlement***

Regarding the city design of Kathmandu Valley, it was based on hierarchy of caste groups (higher to lower caste groups) and positioning of gods (refer Chapter 5). Toffin (1996) also found in his study that the layout of the locality mirrors the hierarchy of caste and offers an ideal representation of ordered human society. Kathmandu Valley is historically known as Newar settlement. Majority of the Newars lived in the towns of Kathmandu, Lalitpur, and Bhaktapur. The large Newar settlements lie on or near the main trade routes, and in administrative centres, where the Newar merchants cater for the needs of government officials (Furer-Haimendorf, 1956). Furer-Haimendorf also stated that the Newar towns infiltrated from such provincial town into the surrounding countryside, where they stand side by side with Brahmin, Chhetris, Tamangs, and where Newar acquired land and were engaged in cultivation. This shows that the intermixing of different caste group started to occur as early as 1950s. In the modern Nepal, the coexistence of Newar with non-Newar makes the pluralism and cultural complexity of Kathmandu (Hrdaya, 2010, p.344). Hrdaya (2010) also added that urban Kathmandu has evolved to mirror the great sociocultural pluralism of the nation through increasing migration into the old town and its expanding suburbs. The ethnicity and caste of Newars remain significant social markers of their identity, especially as expressed in the

rich and varied cultural traditions that continue to be deeply felt sources of pride. According to Levi (1905, p.248) cited in Quigley (1995, p. 301), ‘the dominant feature of the Newar character is the taste for society. The Newar never stays alone; he likes to live ..... in houses which are several storey high and bursting with inhabitants’. The Newar society also has religious significance since the past. The Newar festival could be created on the basis of the extent of movement through the city (also refer Figure 6.14), the number of castes involved organizationally, temporal duration etc. with the most significant reaching the royal palace (Darbar square) (Lewis, 1995). These festivals are continued still today.

Regarding the ethnic/caste composition at present context, many groups exist in the Valley. In the context of KMC, though many ethnic/caste groups exist, the four groups – Newar, Brahmin, Chhetri, and Tamang – make up either the majority or single largest group status in one or more wards. Newar is the predominant group in the core area. Almost all wards in the core area have more than 66.7% of Newar groups in 2001 (Figure 6.10) (Subedi, 2010).



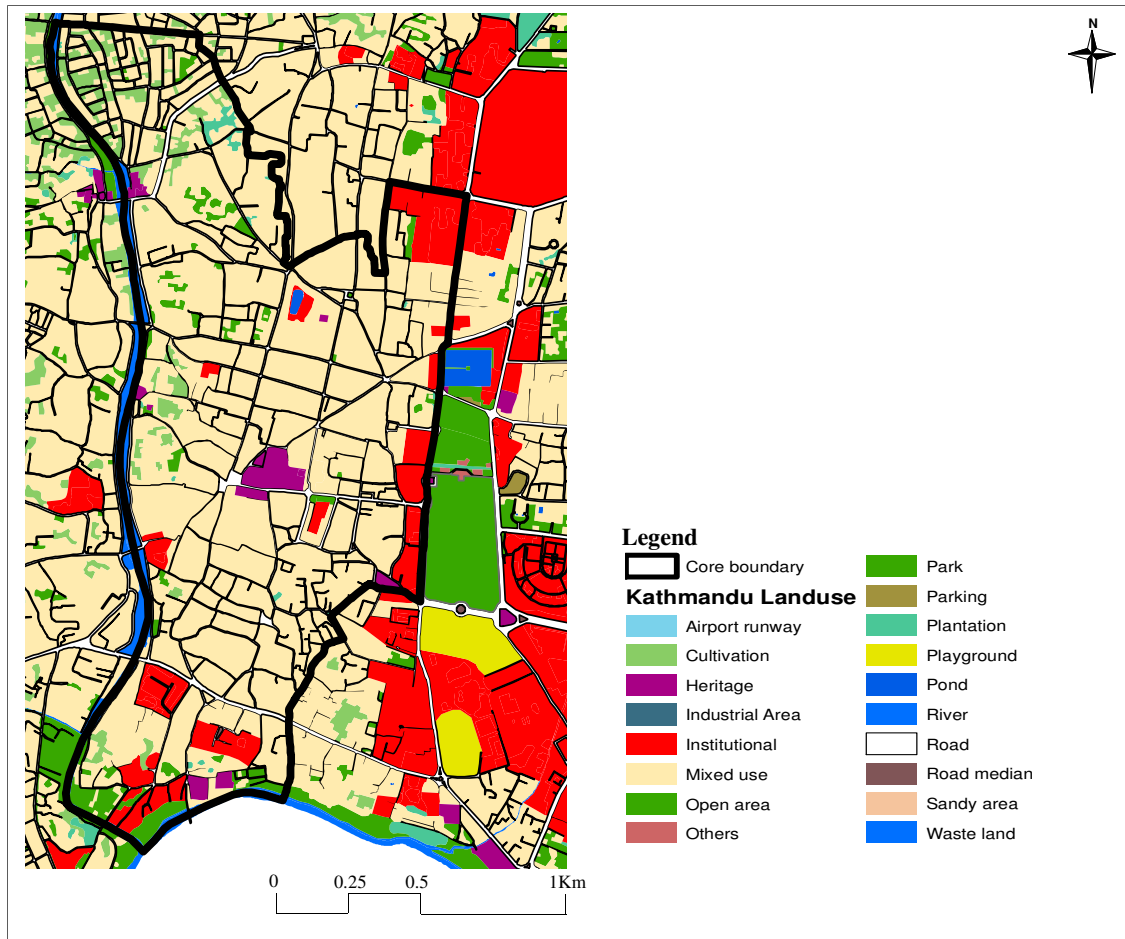
**Figure 6.10: Ethnic concentration in KMC- largest group, 2001**

Source: Map based on Subedi (2010)

### *Land use of Kathmandu city core*

Kathmandu core area has mixed land uses. This section enumerates some of the distinct features of land use of the core area defined in KVUDPP, 1991 and that are still in existence. The ground floor of most buildings facing the main street is utilized for commercial activity, mainly small retailing outlets. Almost all of the buildings use mixed space – publicly used commercial shops in the ground and the private residential

space in the upper floors. The commercial activity predominates over any other uses on the New road and its periphery. Small hotels, guesthouses, institutions are concentrated in specific places (Figure 6.11). The institutional uses within the core are relatively few; most of these uses are located on the periphery of the core area. All public open space within the core area comprises hard surfaced courtyards and squares, with a few exceptions of parks. The core is full of religious and cultural land uses.

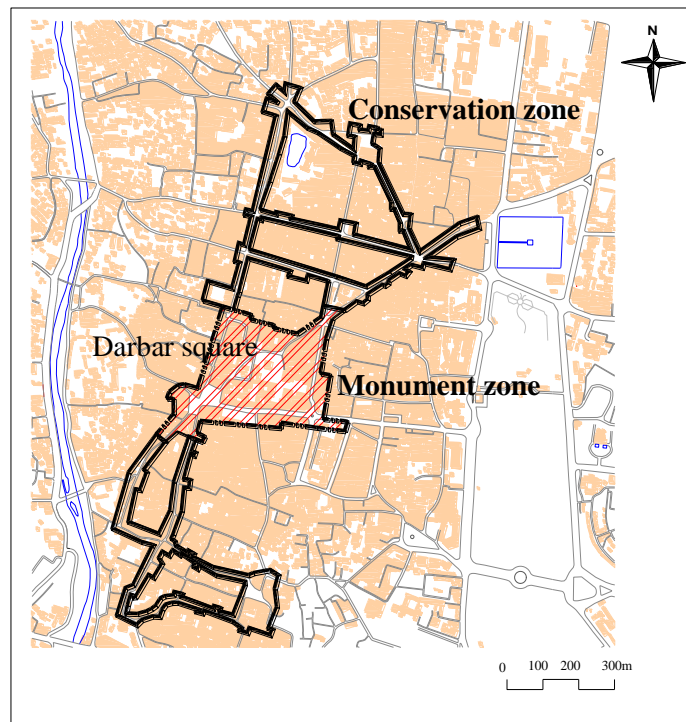


**Figure 6.11: Land use of Kathmandu core area**

Source: KVUDPP, 1991 and GIS data of KVTDC (2007)

### *Monument and conservation zones*

The Ancient Monument Preservation Act of 1957 introduced the necessary legislation and regulations to control and guide the development within the designated zone, referred to as Monument Zones (MZ). These regulations are to be used for the construction of houses/buildings to avoid abuse of the historical and archaeological environment of the declared Monumental areas (KVUDPP in DHUD and ADB, 1991). The monument zone of Kathmandu includes Darbar square and its immediate environment only. The conservation zone is also demarcated as shown in Figure 6.12 that includes those structures that have archaeological, historical, and cultural interest.



**Figure 6.12: Monument zones in TUC**

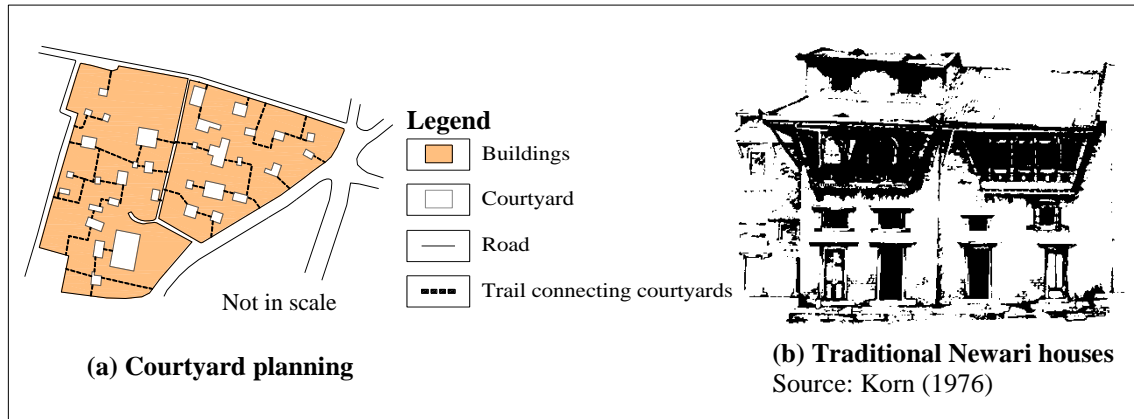
Source: Drawing based on KVUDPP, 1991

### *Residential form of the TUC*

The most unique and distinct features of the core is the traditional courtyard planning of the Malla period. The concept was to make the settlement compact and preservation of the adjacent fertile land for agriculture in that period. The open courtyards were provided in such a way that every house receive natural light and ventilation. In addition, the buildings were designed in such a manner that it receives enough light and at the same time enable social interactions. The heights of the surrounding buildings were kept low. The position of different functional rooms, openings such as windows and doors and their sizes were done with consideration to the natural light and social interactions. These have become the typical characteristics of the traditional Newari house<sup>67</sup> of that period (Figure 6.13 b). The courtyards were interconnected by series of

<sup>67</sup>According to Korn (1976), the Newari house generally is three-storeyed (two storeyed for poorer inhabitants who dwell in the town's fringes) and has a vertical room arrangement that is not dependent on the size of the house. The ground floor is used as shops or for the storage. The first floor used for the bedrooms, the second floor used for the family or living room, and the top floor for the kitchen and eating room. The window opening in the bedroom is of smaller size whereas the size of window in the family room is bigger. The common communication to the street/courtyard other than the door is through the window (San Jhya) in the family room. The family members spend most of their times in the family room, hence the larger windows provide them with enough day light. Another distinct feature of the Newari house is the symmetric façade. 'It is attained on a central axis of a main window or door by pairing windows around the central axis on each succeeding floor with the central windows of each floor emphasized by its size and detailed carving' (Korn, 1976, p.20). Furthermore, the building materials have also played a great role in attaining the aesthetic of the buildings. The walls of the façade are built in bricks, windows and door are made in timber, and the sloping roof of the buildings is built in the tiles known as Djhingati.

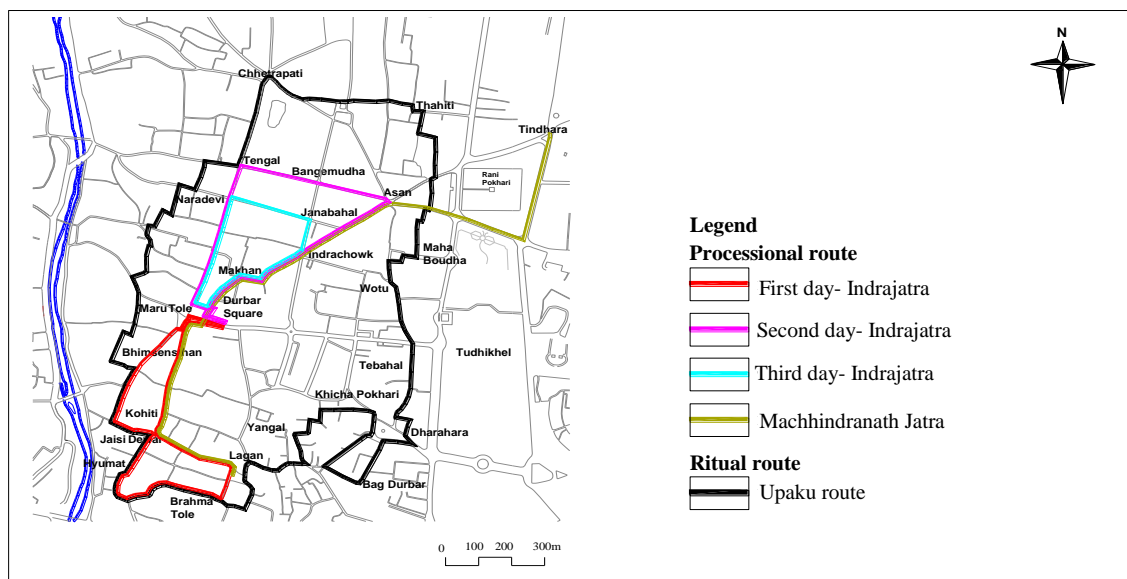
passages and alleys and sometimes beneath the buildings enabling pedestrian movement throughout the entire city (Figure 6.13 a). Most of the courtyards still exist today, however, the skyline of the buildings has gone high and the designs of the buildings have changed due to availability of the high technology and building materials (KVUDPP in DHUD and ADB, 1991).



**Figure 6.13: Characteristics of Newar town**

***Traditional routes in TUC***

The core has three traditional routes – procession, ritual, and funeral. The ritual routes follow along the periphery of the city core, where the Malla city wall existed. It is used once a year on the last week of September by relatives of those deceased who died during the last year. There are two processional routes used in different festivals, one for Machhindra festival (in mid-April) and the other for Indraajatra (in August). During Indraajatra, the procession is followed from three different places on three consecutive days respectively (Figure 6.14). The ritual and procession routes always move in clockwise direction, whereas the funeral route always goes perpendicular to the processional route and generally follows the shortest way to the cremation ground.



**Figure 6.14: Processional and ritual routes in TUC**

Source: Drawing based on KVUDPP, 1991

During the funeral route, care will be taken to avoid temples on the way. These routes are part of life for the Newar community (KVUDPP in DHUD and ADB, 1991, p.85).

### 6.3.2 Sainbu area

Sainbu<sup>68</sup> is located on the southern side of the Valley, at the edge of two rivers Bagmati and Nakhu. It is connected by the arterial Ekantakuna-Tika Bhairab road to the ring road of the Valley. It is an urbanizing VDC, where the in-migration is happening at a rapid pace. Though it does not have an ancient background, Sainbu has played a great role in economic, social, and cultural enrichment of the surrounding traditional settlements. Many new housing developments, under private or public initiated programme, have developed in this area. Sainbu is composed of nine wards.

#### *Population and ethnic/caste concentration*

Like in the core area, the population in almost all of the wards has increased from 2001 to 2011 in Sainbu VDC (Table 6.3). Among all the wards, ward number 4 has the highest population density and ward number 9 has the lowest population density (Figure 6.15). Regarding the ethnic/caste concentrations in Sainbu area, no data on ward level is found. The available data is at VDC level. In Sainbu VDC, the predominant group is Chhetri (38%) followed by Newar (16 %), Brahmin (9%), Magar (8%), Tamang (8%) and the rest are other groups (CBS, 2001). Regarding the

**Table 6.3: Population of Sainbu VDC, 2001 and 2011**

Ward no.	Population (2001)	Population (2011)
1	1068	2408
2	670	1558
3	862	2464
4	1781	5145
5	1481	2526
6	728	2076
7	425	522
8	1024	2455
9	298	567
Total	8337	19721

Source: CBS (2001 and 2012)

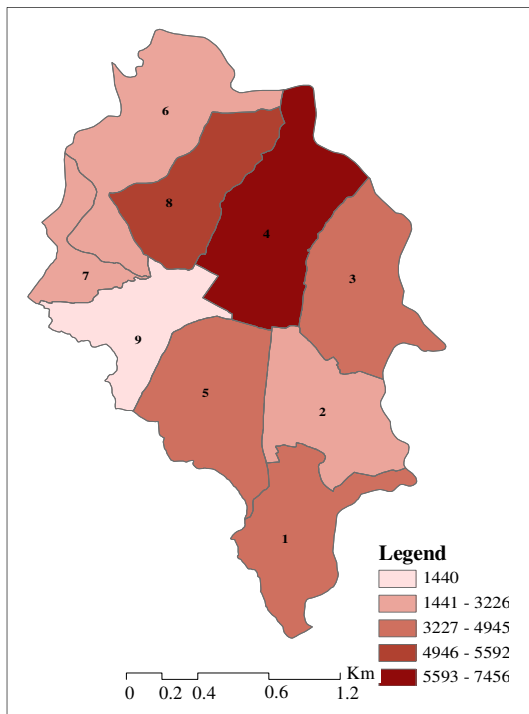
selected case study open spaces, Market and neighbourhood squares are located in ward 4 and the community square is located at the edge of wards 5 and 9.

<sup>68</sup>According to the locals, Sainbu literally received its name from newari language, 'sain' meaning people of Tibetan culture and 'bu' meaning agricultural land. Hence, the area was an agricultural land owned by the Tibetan cultural group in the past.



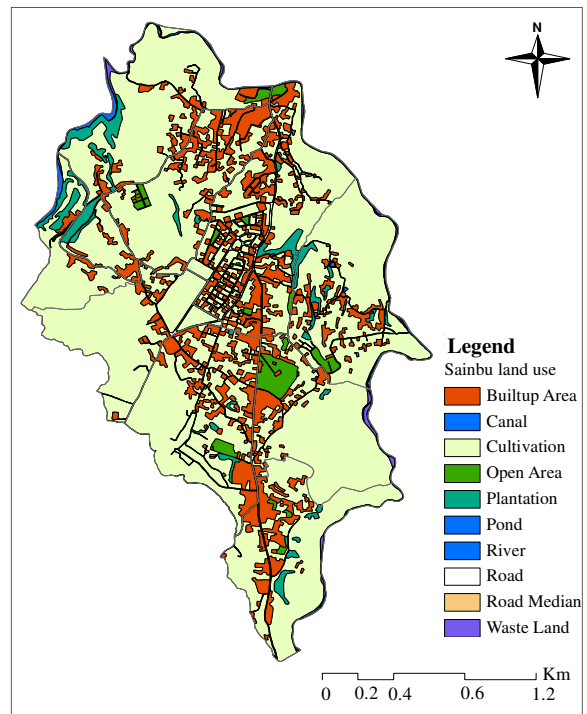
### *Land use of Sainbu area*

The area of Sainbu VDC is 4.78 sq.km. approximately with 0.12% mixed commercial and residential area, 5.88% Sainbu Awasi chhetra (a government initiated site and services project), 13.63% new residential area, 6.06% rural area, 64.64% agricultural area, 3.39% road areas, 4.03% public land and 2.25% institutional area (KVUDC, 2003). Unlike the core, most of the areas are purely residential buildings. Commercialization has just started in this area. The land use of Sainbu VDC is shown in Figure 6.16.



**Figure 6.15: Population density (per square kilometre) of Sainbu VDC, 2011**

Source: Map based on CBS (2012) and GIS data of KVTDC (2011)



**Figure 6.16: Land use of Sainbu VDC, 2011**

Source: Map based on GIS data of KVTDC (2011)

## **6.4 Interpreting sense of place and the transformations of public open spaces in TUC and SA**

This section discusses the physical, social, and cultural meanings associated with the selected case study open spaces and their transformations with regard to their physical settings and use values. Three different types of open spaces are selected – market squares, neighbourhood squares, and community squares – from TUC and SA.

### 6.4.1 Market squares

#### i. Ason, market square in TUC

Ason<sup>69</sup> square, which has become the heart of the city and is located at the north east of the city core of Kathmandu consists of six outspread roads connecting different market squares (also see Figure 6.55). The square is situated in the walled town of the Malla period and bridges in two different wards, being on the western and eastern edges of wards 27 and 30 respectively. Ason, being a ceremonial and commercial hub, brings people from all over the Valley. It is today one of the oldest and most vibrant open spaces and comes under the definition of market square. Because of its alignment in an ancient trade route, it has been esteemed as the trade and commercial centre of Kathmandu. The goods ranging from local products such as rice grains, spices, oils, copper, and brass metals to imported products such as clothes, shoes, electronic goods; the temples; and the platforms for cultural events, all have enhanced the commercial, religious as well as cultural essence of the square.

#### a. Physical settings

Ason is an example of amalgamation of commerce and religious shrines (refer to Figure 6.17 and Figure 6.42). This ambiance together with the built environs has given the locals a sense of inhabiting a place with divinity. Furthermore, the characteristics of its individual spaces have made the square most idiosyncratic among any other public spaces stretched across the valley. That is why Lewis (1995) has stated that Ason is an important centre in Kathmandu's cultural geography due to its notable religious shrines.

#### Places of religious meanings

The religious meanings in the square are depicted by several temples as well as the socio-cultural structures; these are discussed further in the following section.

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<sup>69</sup>There are many legends associated with naming the square as 'Ason'. However, no historical evidences exist to prove its origin. It is the place, where one of the arrows of Manjushri was struck while making Kathmandu habitable and generated a loud sound, known as 'Asani Bajrapat'. 'Asani' was then used as excerpted word to mark the place, which later again changed in to 'Ason' (Shrestha, 2002b). Another legend according to locals is related with a farmer who placed his bag of grains in this place, failed to lift it after, and left the place with fear. Upon questioning about the incident, he could only express three nepali letters; 'Aa', 'Na', and 'Sa'. When the bag was examined, the grains already transformed into a 'Kalash', a vessel, with Goddess, 'Asan bhulu Ajima' inside. Since then the area was called 'Anasa', meaning 'just over there' in Newari language and the word changed into 'Ason' over time.

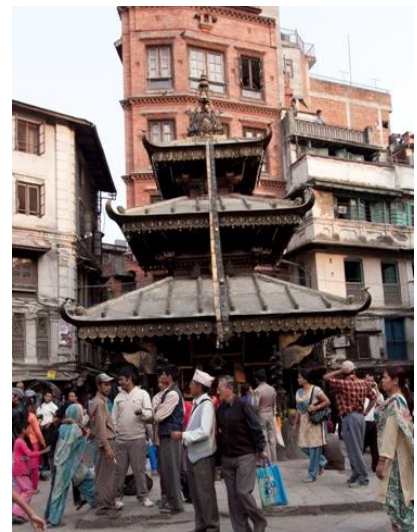


**Figure 6.17: View of Ason looking west**

Picture Courtesy: Pradip Ratna Tuladhar

### *The temple settings*

The three-storey temple of Annapurna, located at the southeast corner of the square, which is dedicated to wealth and prosperity, is quite popular among the devotees of the Valley. The inscription found in the temple premises dating back to 1682 A.D and the highly flourishing trade relation of that time between Nepal and Tibet provide strong evidence for the existence of this temple during the Malla period (Amatya, 2011). The temple dedicated to goddess Annapurna ('Anna' meaning grains/food and 'Purna' meaning complete in Nepali language) is also popularly known as 'Asan bhulu Ajima' among the locals. The temple shrine consists of a full vessel 'Purna Kalash', which is considered as



**Figure 6.18: Annapurna Temple, 'Goddess of Food'**

one of the eight auspicious signs, ‘Astamangal’<sup>70</sup>, in both Hinduism and Buddhism. This temple is still considered by the business communities of Kathmandu Valley as their patron goddess (Amatya, *ibid*). Though Sundays are dedicated to worshipping the god, the temple is always crowded with devotees every day. Not only merchants but also ordinary people have strong belief and respect towards the goddess<sup>71</sup>.

The artistic features and the proportion of the three-tiered pagoda styled Annapurna temple have strengthened its supreme position in the square. The decorated gilt tiered copper roofs, the wooden carved struts, the cornice, the golden entrance ‘Torana’, a gilt metal banner descending from the roof, and the golden pinnacle all have enhanced the visual impressions of the temple. On the other hand, though the yellow metal



**Figure 6.19: Fish idol – Nya Lhon**

bars used for the protection against theft of the ornamented entrance, and cornices, could potentially have lowered the visual quality, the wide projected roof has lessened this visual disturbance. In addition, the temple is best known for its remarkable festival that occurs once in every 12 years. On this day the whole temple is decorated with puffed rice grains known as ‘Taya Ma’ that add visual interest in the temple during the festival. Other temples such as the Higadyo, Uma Maheswor, Laxmi Narayan and Ganesh temples<sup>72</sup> are found in the square. Another religious idol, Nya Lhon<sup>73</sup>, a stone

<sup>70</sup>Astamangal, a composite word of ‘Asta’ meaning eight and ‘Mangal’ meaning auspicious sign, includes eight sacred symbols; White parasol, Fish, Sankha, Dhvaja, Srivatsa, Kalasha, Padma, and Chamaru. The White parasol protects one from evil desires. Fish, an incarnation of Lord Vishnu, represents good fortune. Sankha or conch symbolizes goodness. The Dhvaja depicts the victory of Buddha over ignorance, disharmony and all the negativity surrounding this world. Srivatsa or endless knot signifies infinity representing the wisdom of Buddha and the union of knowledge and compassion. Kalasha is the treasure of all spiritual wealth long life, prosperity and goodness in the world. Lotus signifies a sign of purity and Chamaru, a yak tail usually used during ritual recitation symbolizes tantric expressions (Sherchan, 2010).

<sup>71</sup>According to locals, if anyone worships goddess Annapurna before selling their goods, their business will profit.

<sup>72</sup>Laxmi Narayan temple, guarded with two stone lions on either side of the entrance and located at the center of the square, is regarded as the temple of the Hindu god Narayan, although it is a Buddhist temple. A two storey temple of god Ganesh at north east corner that was constructed in 1927 A.D. is revered by the local inhabitants as the symbol of prosperity. The Uma Maheswor temple that is located behind the Laxmi Narayan temple and dates back to the early Malla period is dedicated to the Hindu god Shiva, and Higadyo, which lies in a sunken area, is believed to be the shrine of Hindu god (Amatya, 2011).

<sup>73</sup>Nya Lhon is worshipped by both Hindus and Buddhists. The fish idol does not appear in any historical document. According to the mythology, the location of this idol is the spot where one of the arrows of Manjushree had struck.

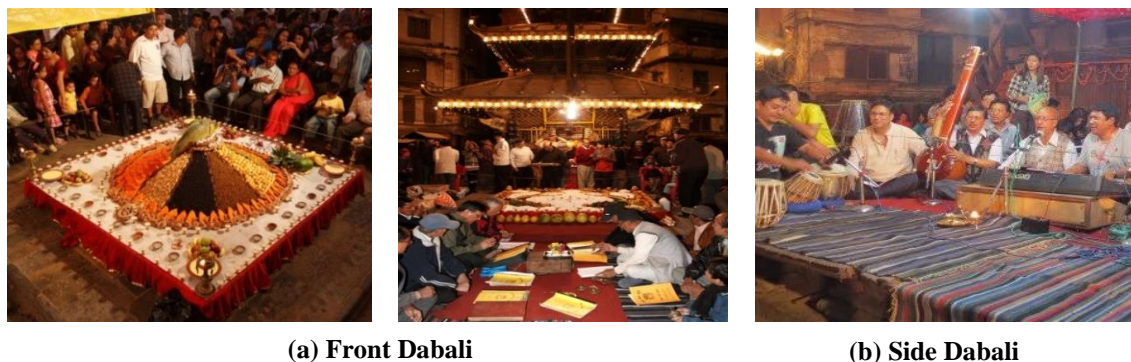
fish and popularly known as ‘Ason ko macha’ meaning Ason’s fish is also seen in the square. People believe that it was established to demarcate a boundary of the upper town of the Kathmandu city (also refer to Figure 5.7 in Chapter 5). The newly renovated temple Higa dyo in traditional style architecture and the remarkable old temples - Laxmi Narayan and Uma Maheswor seem to be moderately integrated with the architectural style of the square. The Ganesh temple also has remarkable architectural features with intricate detailing in the roof, door, and cornices; however, the addition of vertical metal bars for protection against theft of Ganesh idol has dominated the entire temple. The Nya Lhon on other hand, situated on the raised stone platform seems, to be particularly belonging to the square because of it being made of the same material (stone) as the square.



**Figure 6.20: Places of religious meanings - Ason**

### *Socio-cultural structures*

The socio-cultural perspective of Nepalese society is very much manifested through religion. In the square, there exist two Dabalīs: one low height in front of the Annapurna temple; and the other elevated southwest of Annapurna temple<sup>74</sup>. These Dabalīs have religious and cultural significances and are used for cultural performances in different occasions and festivals.



**Figure 6.21: Socio-cultural and religious performances on the Dabalīs - Ason**

<sup>74</sup>The southwest Dabali, which originally was called Ashok Mandap, today is known as Ason Mandap.

According to the locals, these are also the place where various gods and goddess from different parts of the Valley take rest during their travel in a chariot. These Dabalīs in the past were used by the money exchangers known as ‘Asan Sarafis’ for money transactions when no religious activities were taking place.

The front Dabali is also used during a traditional ceremony known as Halimali Bwayegu<sup>75</sup> on the full moon day, usually in November. The ceremony is celebrated with a devotional song (Bhajan) at night. This low height stone paved Dabali in front of the Annapurna temple is splendidly integrated with the entire square complex and its proper maintenance has further reinforced its visual impressions. Another structure, the Yita Chapaa, a long Sattal at the south of the square was constructed in 1622 A.D in the Malla period as a rest house<sup>76</sup>. The building today accommodates a prayer room on the ground floor, where the devotees perform ‘Bhajans’ every evening.



**Figure 6.22: Yita Chapaa**

### Places of commercial meanings

Despite their original functions, the Dabalīs and the ground floor of the Yita Chapaa are used for commercial purposes. The upper floor of the Yita Chapaa also accommodates a small office and a store owned by Ason service committee<sup>77</sup>. The Yita Chapaa accommodates a mix of selling varieties of shops from soaps to spices on its ground

<sup>75</sup>According to the locals, during this festival 3 metres long and 1.8 metres wide painting of a sacred jar made of puffed rice, black soybeans and wheat are displayed.

<sup>76</sup>Ason was believed to be a jungle in the ancient period and was used as a hunting place by the rulers of that period. One of the then kings, who lost his way while hunting, was later found resting in a place. Upon finding him, this place was marked as a lodge constructed to accommodate the travellers (Tuladhar, 2010).

<sup>77</sup>Ason neighbourhood is looked after by different clubs, namely Balkumari Khel Mandal, Leo Club of Kantipur, Hapaa Guthi, Ason Service Committee, and Bhintuna Guthi. Balkumari Khel Mandal looks into sports development, Leo Club of Kantipur looks into social development, Happa Guthi and Bhintuna Guthi looks into cultural development, and Ason Service Committee looks into community improvement. Guthi is a public corporation responsible for maintenance and renovation of ancient monuments and religious sites as well as for continuing traditional and cultural practices (DoA, 2011).

floor. This traditional style building with sixteen numbers of inclined opening seems to be well integrated in the built environment, however the deteriorated conditions of the building need immediate action. On the other hand, the encroachment of the side Dabali by a cluster of small shops, partitioned by timber boards, has overshadowed its visual quality. This Dabali is mostly occupied by incense shops, with a few shops for shoes and spices. All these small shops, which hardly accommodate one person, are not visually integrated with each other. The square also has various architectural styles in its buildings: old traditional, neo-classical, and new/contemporary buildings. The traditional buildings, generally four storey high with attic at the top, are constructed with traditional materials such as mud and brick for wall façade, timber for windows and doors, and tiles for the pitched roof. The neo classical buildings are five storey high with plaster façade, timber windows with glass panels and flat corrugated sheets on the roof. The new buildings are five to seven storey high with brick or plastered façade and glass windows. The ground floors of all the buildings are used for commercial functions and the upper floors for residential purposes. Various ranges of markets such as rice grains, spices, oils, candles, copper and brass metals, clothes, shoes, electronic goods, etc. stretch along the four sides of the squares.



(a) Western side



(b) Eastern side



(c) Northern side

**Figure 6.23: Commercial uses on edges of the open space - Ason**

The dwellings facing east are still standing in their traditional architecture style. These low height buildings even today comply with the traditional concept that the building height should be lower than the temples to respect the gods and goddesses. The numbers of spice shops on the ground floor with the consistent floor height throughout the entire stretch resemble a ‘horizontal band’ and that seems as a frame for spices (Figure 6.24). Unfortunately, the building is in a dilapidated state that needs immediate action. The stretches of shops at the north side are in a mix of buildings, both new



**Figure 6.24: Frames of spices**

and old. No harmony is maintained by the entire building envelope with respect to the skyline, building style and the use of construction materials. This is also true for the stretch at the eastern side and in addition to this, the dwellings have also gone vertical. Among these places of commercial structures, only a few such as the western commercial stretch, Yita Chapaa, and the side Dabali include plinths that can be used for seating purposes and as social space. However, the hard surfaces of these structures do not provide comfort and are not inviting.

### **Places of structures with other functions**

The other structures that exist in the square are the police booth and the letterbox. No religious or commercial significances are associated with these structures. These were added later due to the needs of society. The police booth was provided for safeguarding the square and the letterbox as a means of communication. These temporary structures have been in existence for less than 10 years. These structures seem to be like imported extraneous constituents because of their design and materials used.

#### **b. Activities**

Ason, being one of the most bustling places in Kathmandu always has diverse activities (also see Figure 6.46) – worshipping, buying, selling, and passers-by – from dawn until dusk. The square becomes quiet only during the middle of the night.

#### ***Interpreting morning activities***

One of the prominent activities that the square experiences in the morning is worshipping of gods and goddesses<sup>78</sup>. Visiting temples is part of everyday life of Nepalese people. People were seen performing morning rituals at most of the temples during the fieldwork observations. The assembly of devotees in front of these shrines with colourful offerings such as red powder, flowers, garlands and incenses with pleasing fragrances, added an aura in the square. Furthermore, the circumambulation of devotees around Annapurna temple following a pattern, the bell chimes (Figure 6.25), and prayers during rituals in the temple all complemented the appealing visual and sound perceptions in the square. The devotees were obstructed by beggars for money or any kind of offerings. The open flower and fruit vendors were using the spaces for

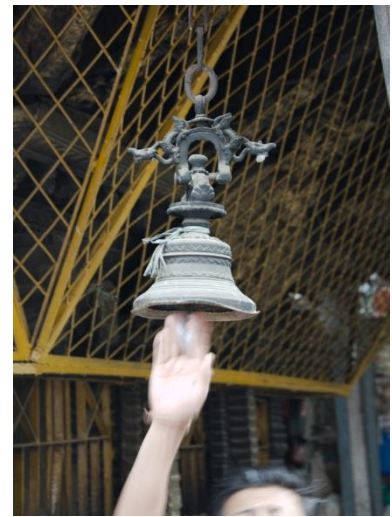
<sup>78</sup>In the Nepalese culture people offer ‘Abir’, a red powder; ‘Akshata’, dried rice grains; colourful flowers/garlands; fruits; sweets; ‘Dewa’, a butter lamp; and ‘Agarbatti’, an incense, to the gods.



commercial purposes near Annapurna and Ganesh temples. The mix of different coloured flowers/garlands and the fruits kept in a flat bamboo woven tray or basket and the space organization by these vendors were visually appealing.

Only a few shops (mainly the sweets shop) were open. A milk seller was seen selling milk<sup>79</sup> in open crates, which were scattered in front of Ganesh temple. Two open teashops were seen at different locations, one with no seats at the eastern corner of the square and the other in Yita Chapaa that used the plinth as a seat

with the traditional straw weaved mat laid over it. According to the shop owners, they were doing their business for more than 10 years. The dispersed kitchen appliances and washing utensils in the square by these tea shops created unpleasant visual perceptions and the noise produced from the gas-cooking stove generated unpleasant sound. Most people go to these shops regularly before or after their daily activities like worshipping or a morning walk to have tea. These teashops are permitted in the square only until 9:00 am every day.



**Figure 6.25: Bell emanating sound**

Source: Irishmick, www.flickr.com



**Figure 6.26: Morning vending - Ason**

The open vegetable markets were mostly concentrated at the western corner of the square and were quite organized. The interesting feature of these open markets is that each individual space belongs to a separate owner. These owners should not use space other than their own. Each space is inherited from the ancestors and is considered as their own space. The cluster of open market includes varieties of vegetables such as garlic, potato, mushroom, onion, tomato, spinach etc., and curds. Typically, the vegetables were kept in a traditional woven basket. Furthermore, passers-by were seen

<sup>79</sup> It is very common practice to sell and buy milk in an open space in Nepalese society.

and a few bikes were parked despite no parking is allowed in the morning. The parking created obstructions for the devotees as well as the open vegetable vendors. A few people were seen sitting on the plinths of shops along western side and side Dabali, and a few were standing and chatting.



**Figure 6.27: Open vegetable vending concentrated along the western side of the square - Ason**

### *Interpreting afternoon activities*

Comparing with the morning activities of the square, the afternoon seemed to be less busy. Only a few customers were seen at the shops. The open markets are not permitted in the afternoon. However, vending related to religious offerings was allowed, but these should create no obstructions in the square.



**Figure 6.28: Commercial activities in the afternoon - Ason**

The flower sellers near the Annapurna temple and the fruit sellers near Ganesh temple were seen continuing their business from the morning. The religious activities were also less at this time. The square was predominantly used for parking near the police booth.



**Figure 6.29: Devotees and public in the afternoon - Ason**

The religious as well as many commercial activities maintained smell in the square. The varieties of spices, the incenses (Figure 6.30), and the candles all emanated a good smell. The bad smell emitted by the motor bikes in the parking area near police booth on the other hand made breathing difficult. They also had created disturbing sound.



(a) Open incense shop



(b) Open spice shop

**Figure 6.30: Vending activities that emanate smell - Ason**

### *Interpreting evening activities*

The evening in the square is the busiest time of the day. All parking spaces of the afternoon near the police booth were replaced by the open markets. The clusters of open vegetable vendors and fruit vendors were concentrated at different locations of the square with nice smell.



**Figure 6.31: Evening activities - Ason**

Not only the open markets, but also the shops seemed to be busy with the customers and at times bargaining loudly. The predominant activity at this time was the open vegetable markets. There was an increase in numbers of devotees around the Annapurna temple in relation to the afternoon. There were many passers-by and the entire square was overcrowded. In addition to these everyday activities, many other activities also take place in different events, feasts and festivals. During the time of the festival (Tihar), the entire square is crowded with fruit and flower vendors and people (Figure 6.32 a). Sometimes, this square is also used for the political gatherings (Figure 6.32 b).



(a) Square during Tihar festival  
Source: Tuladhar (2011)



(b) Square during political gathering  
Source: ASAN Bulls (2010)

**Figure 6.32: Activities in different occasions - Ason**

## ii. Bhaisepati Chowk, market square in SA

Bhaisepati Chowk, a market junction sited in ward number 4 of Sainbu VDC, connects Lalitpur Sub Metropolitan Ring road in the north, and traditional settlements Bungmati and Khokana at south and southwest respectively via the Ekantakuna - Tika Bhairab arterial road. It is a market hub connecting a newly developed area and the traditional centres.

### a. Physical settings

The Chowk, functioning as a node, is an example of fusion of various amenities such as commercial, social, and recreational. It is enriched with both formal and informal markets, seating spaces and the games spaces. Although the Chowk is situated in a newly urbanized area, it also embraces historical significances. The existence of the Chautara has acknowledged the Chowk as a social space.



**Figure 6.33: View of Chowk looking southwest**

### Places of socio-cultural meanings

The raised rectangular stone seating area of ‘Chautara’<sup>80</sup> is used for social gatherings. Chautara, which generally means a seating at a foot of tree and is located on trails or crossroads of the villages or towns, is a landmark that serve multi functions: religious, social, cultural, relaxation, and political. It provides comfort for use as a meeting place, a shelter for travellers, and a platform for performing various events such as political gatherings, health awareness programmes etc. Because of its good maintenance and juxtaposition with the Chowk, the Chautara appeared is visually alluring. Furthermore, the paving of the Chowk in different materials than the road surface not only demarcates the boundary between these two but also establishes the visual quality.



(a) Chautara used as space for resting and reading Newspaper



(b) Chautara used for Health programs

**Figure 6.34: Chautara as socio-cultural space**

### Places of commercial functions

The Chowk provides all the basic requirements that the locals need for living such as vegetables, fruits, rice etc. These shops are accommodated in the ground floors of the buildings at the southern side of the Chowk. There are not many sheltered shops in the Chowk. The only two commercial buildings of the Chowk do not integrate with each other; no harmony is maintained in these buildings. Open temporary commercial structures are also seen in the Chowk; these include a mobile wooden cart and an unstable wooden bench. The mobile cart is used for selling vegetables whereas the bench is used for selling grilled corn. These structures are kept in the Chowk in an unhygienic condition. Another commercial structure in the Chowk is the low height

<sup>80</sup>Generally, Chautaras are constructed with special types of trees, either Peepal or Bar, with the majority being Peepal. The latter is a sacred tree, which is regarded as the representation of Lord Bishnu and other Hindu gods. Culturally, it is associated with the everyday life of people. It provides shades for the farmers while carrying out fieldwork. Furthermore, people believe that if a Chautara is constructed, it will bring good fortune in the next birth. The trees in Chautara may possess religious and cultural significances. However, as an exception, the Chautara used in this space does not possess any religious significance.

restaurant building, which does not seem to be integrated with other structures. The writings on the wall also have lessened its visual quality.



(a) Sheltered shops at southern side of Chowk (b) Restaurant at south-east of Chowk

**Figure 6.35: Places of commercial functions - Bhaisepati Chowk**

### Places of structures with other functions

The structures of other functions in this Chowk include a bus shelter and a concrete table tennis board. These structures were added to meet social needs. The lack of harmony of these structures with the Chowk as well as their improper location has not only resulted in an unpleasant visual quality but also has disrupted the pedestrian movement (refer to Figure 6.57). Metal rods are used as a seat in the bus shelter<sup>81</sup>, but are not comfortable to sit. The table tennis board has provided the young people with a sport facility; however, it does not seem to be in a correct position as it is obstructing the pedestrian movement.



**Figure 6.36: A bus shelter and table tennis space in the Chowk**

### Places of natural elements

A hard landscaping concept has been applied in the Chowk; the entire Chowk is paved. There is plantation at both edges of the Chowk. This is provided not only for visual interest, but also for ecological reasons (to help purify the air).



**Figure 6.37: Trees at the edge of Chowk**

<sup>81</sup>The bus shelter has connected the locals to different stretches of the Valley.

## b. Activities

The Chowk experiences diverse activities from morning to evening. These are discussed as below (also refer Figure 6.46).

### *Interpreting morning activities*

The activity that was very noticeable in the morning is people waiting for bus. This includes school kids waiting for their school buses, office workers heading to work, and travellers making their journeys to their destinations. The Chautara was occupied by people; some people were chatting, some resting, and some reading the newspaper. Another prominent activity of the morning was vending. The shops had scattered crates and heaps of vegetables in plastic bags outside. There was also a mobile vendor selling vegetables. Although, these activities created a market environment and enticed people due to availability of the mix of fruits and vegetables, they were not visually attractive. Besides, the cobbler was seen busy repairing the shoes at the western edge of the Chowk; the use of leather and glues created an unpleasant smell in that space.



**Figure 6.38: Morning activities - Bhaisepati Chowk**

### *Interpreting afternoon activities*

The Chowk in the afternoon was less active than in the morning with fewer vending activities and less people. However, some activities such as informal fruit vendor in a mobile cart in front of Chautara, an open vendor selling grilled corn producing fumes (Figure 6.39) and strewing corn litter next to the bus shelter, and a few youngsters playing table tennis making immoderate sounds were noticed. The restaurant was open and had few customers.



**Figure 6.39: Women grilling corn - Bhaisepati Chowk**



**Figure 6.40: Afternoon activities - Bhaisepati Chowk**

***Interpreting evening activities***

The evening was the busiest time in the Chowk. The entire Chowk was full of diverse activities. Some activities such as open grilled corn vending, table tennis playing, people resting in Chautara, and shopping in sheltered shops were seen as in the afternoon, but with increased users. Some new activities were also emerged, most of which were the informal vendors. The bus shelter was occupied by the informal fast food stall, other spaces in the Chowk were encroached by other informal vendors selling varieties of snacks, fruits, and ice creams. These activities though they brought vitality in the Chowk due to involvement and conversation of people and created a mix odours of foods, they also had created litters in the Chowk. A motorcycle was parked near the Chautara.



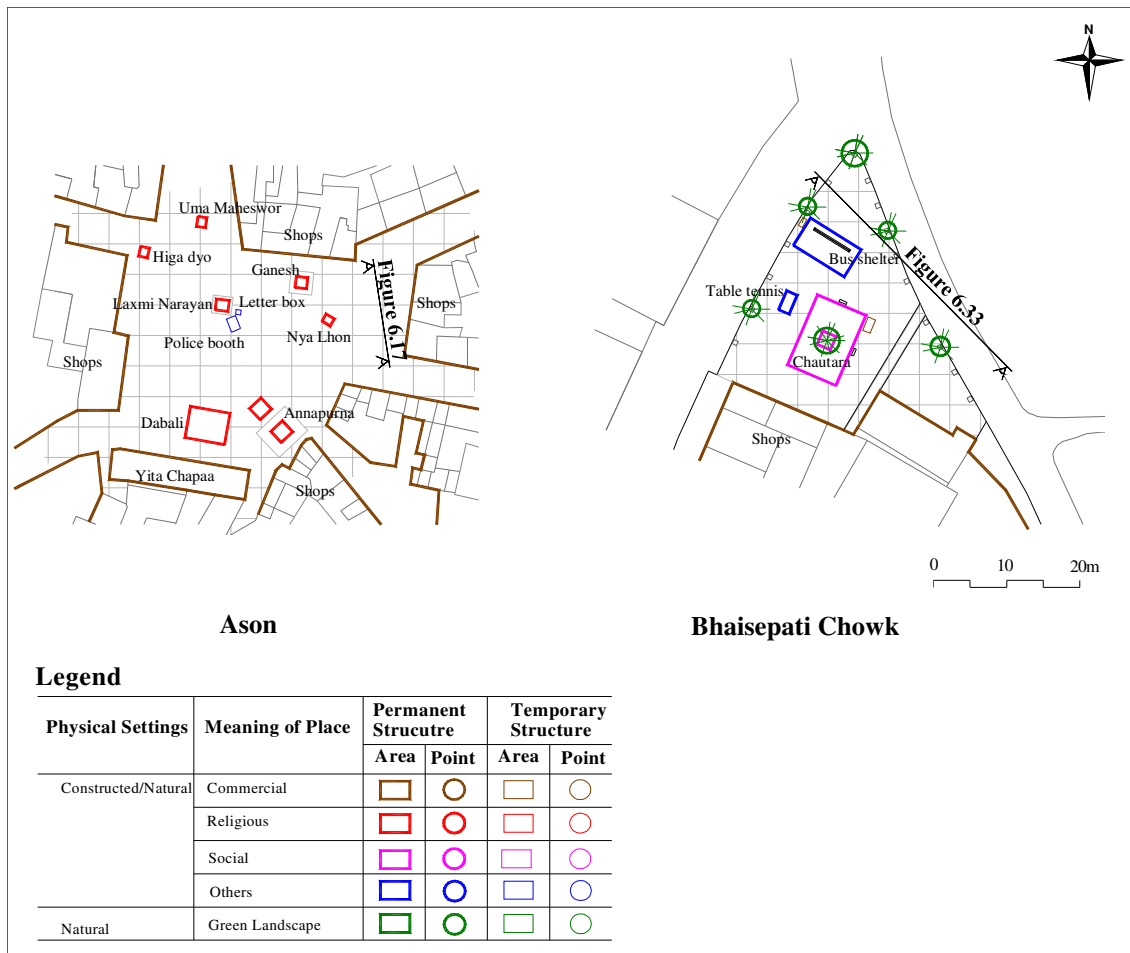
**Figure 6.41: Evening activities - Bhaisepati Chowk**

**iii. Comparison of market squares**

**a. Physical settings**

Ason is predominantly depicted by places of religious and commercial meanings whereas Bhaisepati Chowk is depicted by places of social meaning (Figure 6.42). In both cases, these places are permanent. The places with other functions in Ason are temporary, whereas in Bhaisepati Chowk, these are permanent. Beside these, Bhaisepati Chowk has places of natural elements, which in case of Ason is missing.





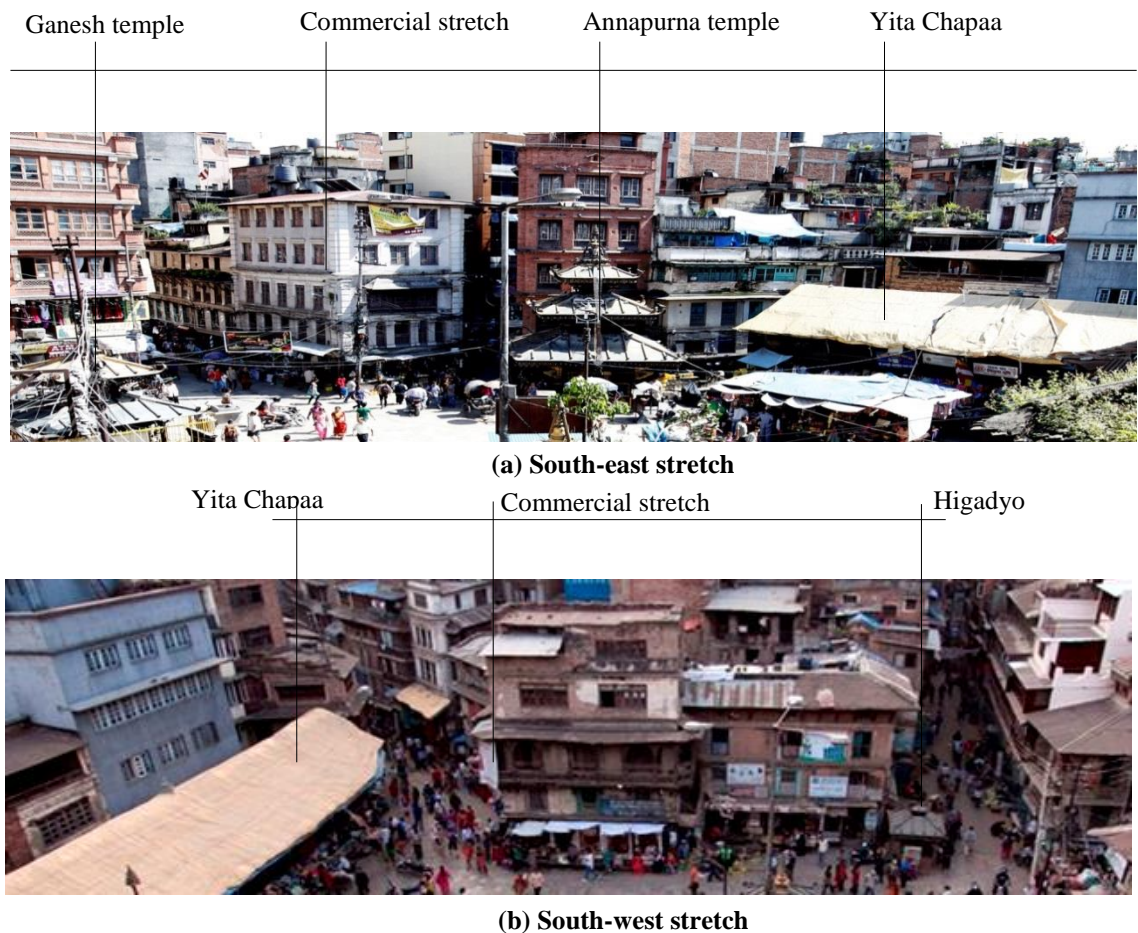
**Figure 6.42: Comparison of physical settings between market squares**

**b. Sensory perceptions of physical settings**

The mappings of sensory perceptions are based on the observations of professionals including the researcher. Ason consists of mainly constructed structures. All the physical structures (commercial, religious, and others) that exist in the square have visual and a few of these have touch perceptions. In this square, not any particular smells or sounds emanated from the physical structures due to weather conditions. Hence, only visual and touch perceptions of the structures are mapped. In case of Bhaisepati Chowk, the presence of constructed and natural structures clearly illustrates that they exhibit visual and touch perceptions. Although, the Chowk has numbers of trees, these have no fragrances and hence do not have any smell perception. Again, in Bhaisepati Chowk, no particular smells or sounds emanated from the physical structures due to weather conditions. The results of the sensory perceptions are illustrated in Figure 6.44 and Figure 6.45.

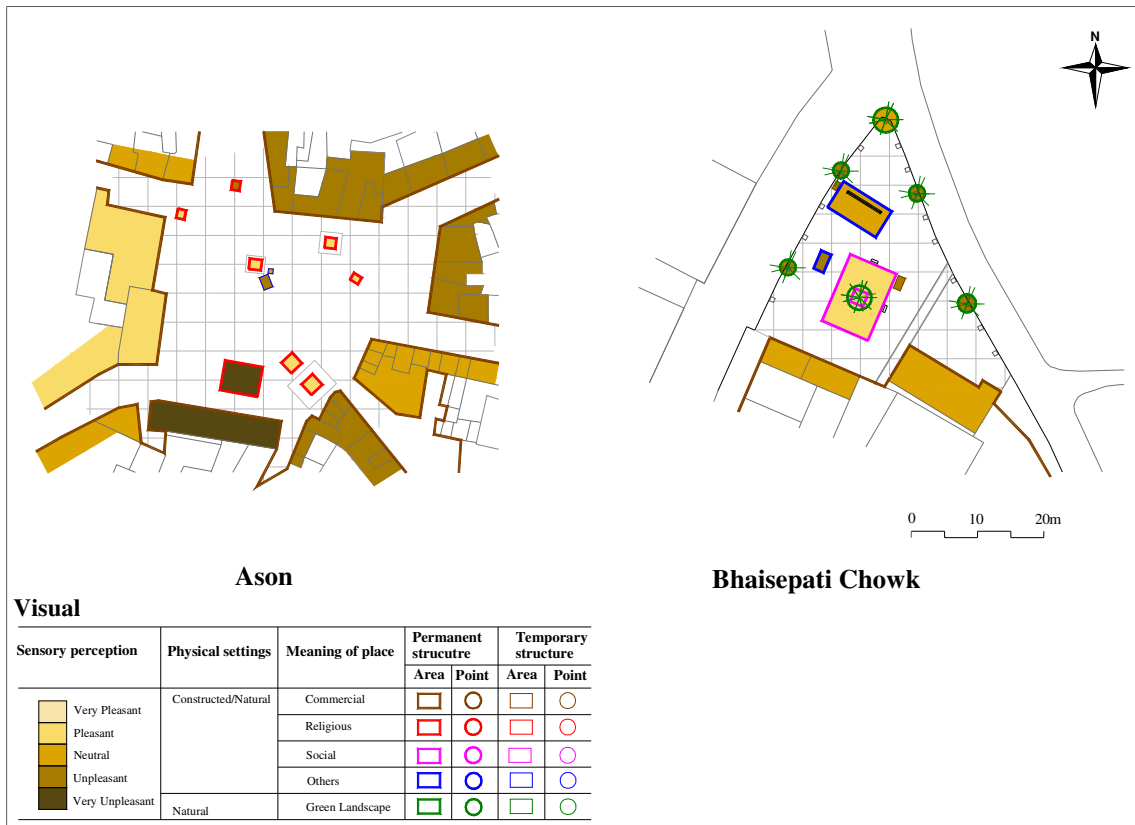
### Visual perceptions

The results for visual perceptions of the professionals for Ason show that almost all religious structures are visually alluring. Regarding the commercial structures, the western stretch is visually pleasant; visual perceptions of the eastern and northern stretches are a mixture of neutral and unpleasant; and the southern stretch is perceived as mix of visually unpleasant, very unpleasant, and neutral. The structures with other functions such as a letterbox and police booth have neutral and unpleasant visual perception respectively.



**Figure 6.43: Visual interpretation - Ason**

The results for visual perceptions of the professionals for Bhaisepati Chowk show that the social structures such as Chautara is visually pleasant; almost all of the commercial structures are considered visually neutral except the temporary wooden bench, which has an unpleasant perception. The structures with other functions such as table tennis board and the bus shelter are perceived as unpleasant and neutral respectively. The natural elements were also reported as a mix of neutral and unpleasant visual perceptions.

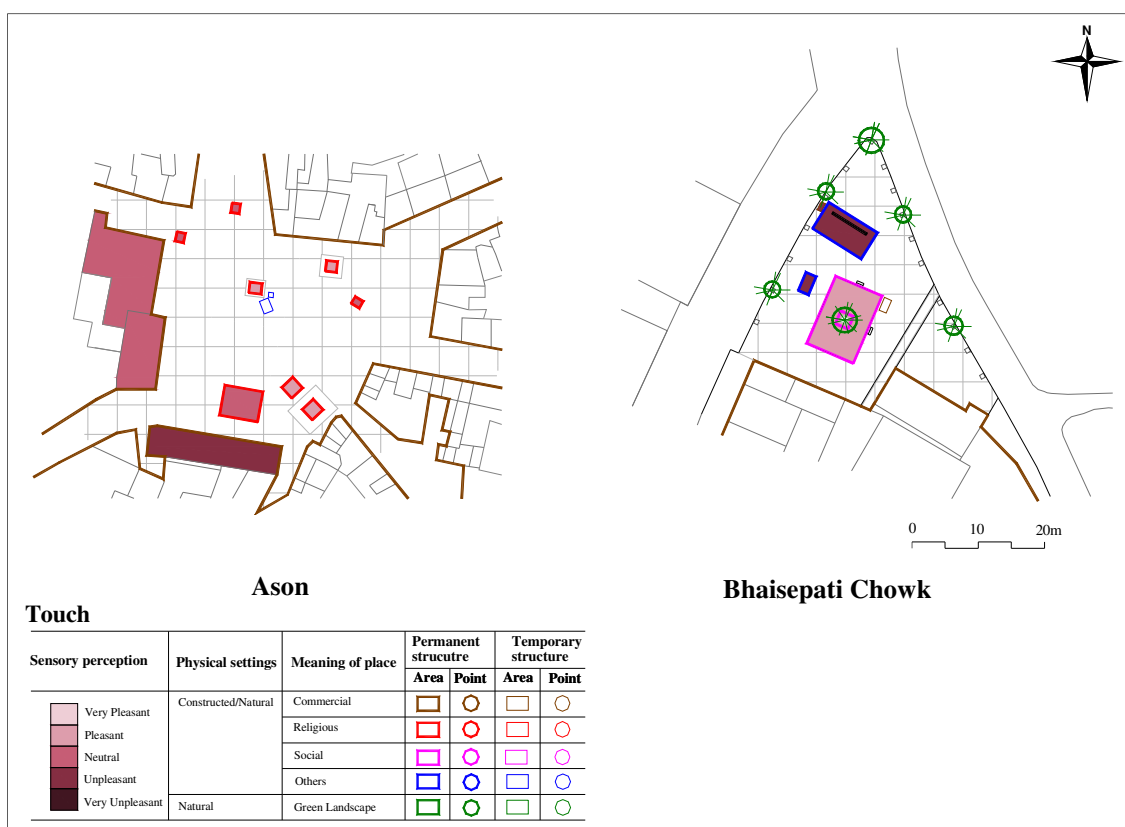


**Figure 6.44: Comparison of visual perception of physical settings between market squares**

### Touch perceptions

In Ason, the results of touch perceptions show that the religious structures that have pleasing touch include the Annapurna temple, front Dabali, Ganesh and Laxmi Narayan temples, and the rest of religious structures have neutral touch. Regarding the commercial structures, the Yita Chapaa is perceived as being unpleasant to touch because its plinth that is used as a seat seems to be not comfortable to sit on. Likewise, the plinths of the commercial structures at west are seen as neutral to touch. The rest of the structures do not possess any touch perception.

In Bhaisepati Chowk, the well-maintained floor of the Chowk had attracted many activities - social gatherings, vending, and sports. Among the structures that have touch perception, the results show that social structure, Chautara is pleasant to touch; the structure with other functions such as the table tennis board, bus shelter, and the commercial wooden bench has unpleasant touch perceptions.



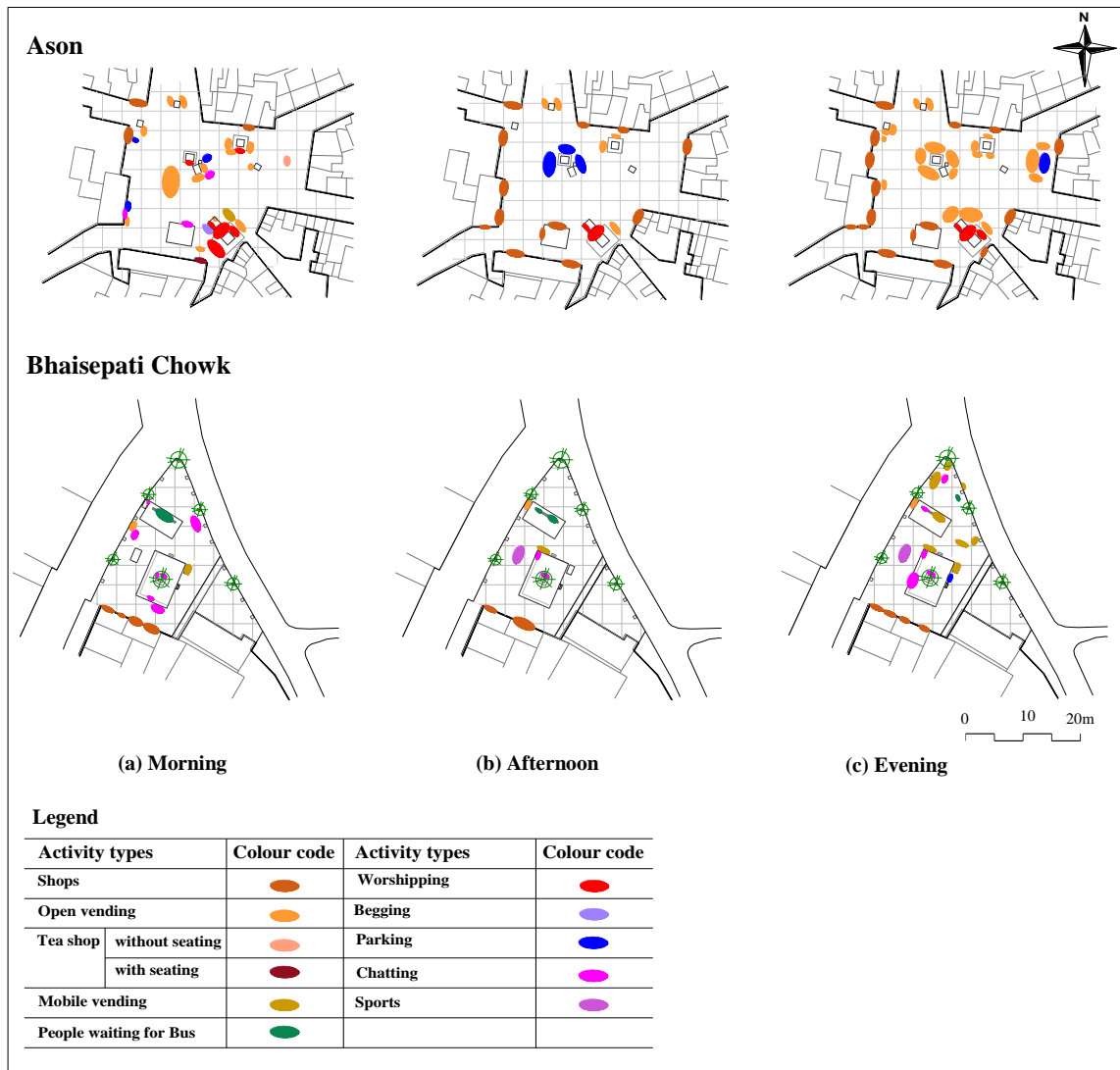
**Figure 6.45: Comparison of touch perception of physical settings between market squares**

### c. Activities

Ason seems to be more vibrant than Bhaisepati Chowk throughout a day (Figure 6.46). In both cases, evening has many activities than other times of the day. The activities in Ason are predominantly religious and commercial, whereas they are social and commercial in Bhaisepati Chowk. Ason is mostly used by religious and open vending in the morning, shops and parking in the afternoon, and shops and open vending in the evening. On the other hand, Bhaisepati Chowk is mostly used by shops and social activities in the morning and afternoon, and mobile vending in the evening. In terms of types of commercial activities, Ason has many open vending while Bhaisepati Chowk has many mobile vending. The other activities such as parking seem to be less in Bhaisepati Chowk than in Ason. Furthermore, Ason has clustered activities, concentrating at different locations, but in Bhaisepati Chowk, the activities were spread in the Chowk.

### d. (Re)occurrence of activities - 2012/13

It is clear from the previous discussion that Ason is full of diverse activities; however, some activities are restricted on the time allocated. The open vegetable markets are only



**Figure 6.46: Comparison of activities (2012) between market squares**

allowed before 9:00am and after 4:00pm. Likewise, the parking of motorbikes is allowed between 10:00am and 3:45pm. The purpose of restricting these activities is to reduce the congestion in the square throughout the day. These have become a sort of cyclic activities. Comparing the activities observed in year 2012 and 2013 (Figure 6.47), almost all of the commercial and religious activities occurred in both years and exactly in the same location. Only the social activities and parking occurred at different places. There were also a few additions or disappearances of activities in the latter year. The observations of activities by the professionals including the researcher were done on different days. In order to identify the reoccurring activities, the activities were counted. The higher counts signify that the activities are most reoccurring (refer to examples in Appendix 6.1).

In Ason, most of the commercial and religious activities have the highest count than rest of the activities in the morning and evening rather than in the afternoon. In contrast, the

parking in morning and evening has the least count than in the afternoon. The social activities have the least count at all times. This shows that the commercial and religious activities are recurring most in the square on a daily basis.

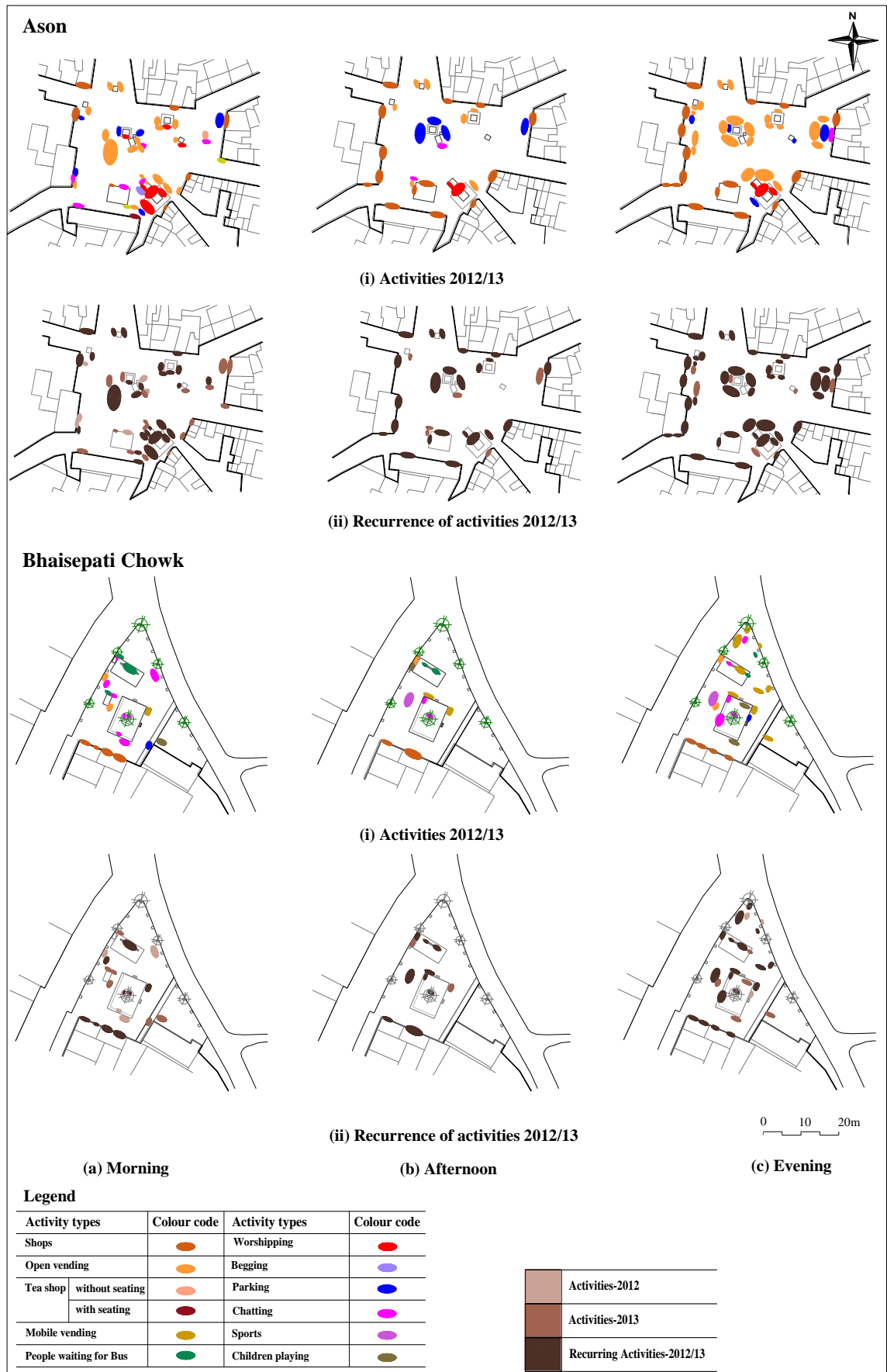


Figure 6.47: Comparison of occurrences of activities between market squares

Like in Ason, most of the activities in Bhaisepati Chowk that were found in 2012 also existed in 2013, with a few activities added in the latter year. The types of activities that were added in 2013 observation are mostly social and commercial. The activities were added mainly in the morning and evening. Analysing the counts of activities throughout the day, the commercial and social activities have the high counts than other activities throughout the day.

#### **e. Sensory perceptions of activities**

The sensory perceptions of activities were conducted for visual, smell, and sound perceptions. The comparative study on each of these perceptions for market squares are discussed as below.

#### **Visual perceptions**

In Ason, the visual perceptions of the professionals on activities (Figure 6.48) show that the religious activities near Annapurna temple that remain unchanged throughout the day provide pleasing visual perceptions. The neutral visual perception generated by commercial activities and unpleasant visual perception by parking around Laxmi Narayan temple in the morning change into unpleasant by parking in the afternoon and pleasant by the commercial activities in the evening. The western commercial side, throughout the day has unchanged, new as well as disappearing activities. The mix of neutral, unpleasant and very unpleasant visual perceptions along this stretch in the morning changes into a mix of pleasant and neutral visual perception in the afternoon and then to a mix of neutral, unpleasant and very unpleasant visual perception in the evening. Similarly, the northern commercial side that includes a few commercial activities and has neutral visual perception in the morning changes into a mix of pleasant and neutral visual perception in the afternoon when the other additional commercial activities are added, and remains with the neutral visual perception in the evening when the activities remain unchanged. In the southern commercial side, the unpleasant visual perception established by commercial activities changes into neutral visual perception in the afternoon and evening with further additions of commercial activities. The parking near Annapurna that appeared in the morning and evening have very unpleasant visual perception. The commercial activities concentrated near Annapurna temple and at eastern corner that appear only in the evening have unpleasant

and neutral visual perceptions respectively. The parking at the eastern stretch is neutral in the morning and unpleasant in the afternoon and evening.



**Figure 6.48: Visual perception of activities in market squares**

In Bhaisepti Chowk, the results of the professionals' perceptions of activities show that commercial activities in the shops that remain throughout the day were visually neutral. Almost all of the open and mobile vending at different locations were visually unpleasant in the afternoon and evening, and neutral in the morning except the cobbler, which was perceived as unpleasant visual perception.

### Smell perceptions

For the smell perceptions in Ason (Figure 6.49), the result does not show any significant differences throughout a day, though the activities remain the same, changed or (dis/re)appear (except in the space around Laxmi Narayan temple). The space around Laxmi Narayan temple that is used for commercial activities and a few parking and which has a mixture of neutral and unpleasant smell in the morning and neutral in evening is occupied by parking in the afternoon and has unpleasant smell. Almost all



commercial activities have neutral smell and religious activities have pleasant smell throughout a day.



**Figure 6.49: Smell perception of activities in market squares**

In Bhaisepati Chowk, the activities that have smell perception in the Chowk include the commercial activities such as vegetables/fruits vending, fast food stall, and women selling grilled corn. According to the result obtained from the professionals, almost all of the commercial activities have neutral smell throughout a day except the women grilling corn in the afternoon and evening, which has unpleasant smell. The fruit-vending stall near the Chautara in the afternoon has pleasant smell.

### Sound perceptions

For sound perceptions in Ason (Figure 6.50), the commercial activities of the morning around the Laxmi Narayan temple when replaced by the parking in the afternoon, the sound perceptions change from neutral to unpleasant, and when again replaced by commercial activities in the evening, they changes into pleasant. Most of the sound perceptions of religious activities and other commercial activities remain the same throughout the day. The religious activities have pleasant and other commercial activities have mostly neutral sound perceptions.

Regarding the sound influences in the Bhaisepati Chowk, almost all activities throughout the day have neutral sound except the activities in the evening such as youngster playing table tennis and women grilling corn, which have unpleasant sound. In addition, since the Chowk is located near the road, the sound of traffic also has added noise pollution.



**Figure 6.50: Sound perception of activities in market squares**

Comparing all of the sensory perceptions of activities in Ason, religious activities of the market square in TUC are perceived as pleasant to all senses throughout a day. This also shows that religious activities have become the essence of the square linked to sensory perceptions. In Bhaisepati Chowk, there were not activities that are perceived as pleasant to all senses throughout a day. A few commercial (mainly open mobile vending) in Bhaisepati Chowk were perceived as having unpleasant visual, smell, and sound perceptions. Parking in market square of TUC is perceived as unpleasant to all senses.

#### **f. Characterizing the pattern of activities of market squares**

This section characterizes the activities patterns in the case study by identifying how the same space has been used by the activities in morning, afternoon, and evening. This is

done by classifying the number of occurrences of activities throughout a day: 1 instance; 2 instances; and 3 instances. A comparison of these patterns is made focusing respectively on the four different categorizations of activity: commercial; religious; social; and others. This section is solely based on the study conducted by the researcher in 2012 and does not include the studies of the professionals conducted in 2013. This is because there are no discrepancies between the studies carried out by the researcher and the professionals, except for a few minor additional activities in the latter year. In addition, the observations for individual case studies carried by the researcher for the morning, afternoon, and evening were made on the same day, thus capturing an actual pattern on a given day.

### Commercial activities

As discussed in the previous sections, Ason square and Bhaisepati Chowk both experience diverse activities from the morning until evening. Ason square is predominantly used for religious and commercial purposes in the morning, parking in the afternoon, and commercial purposes in the evening.



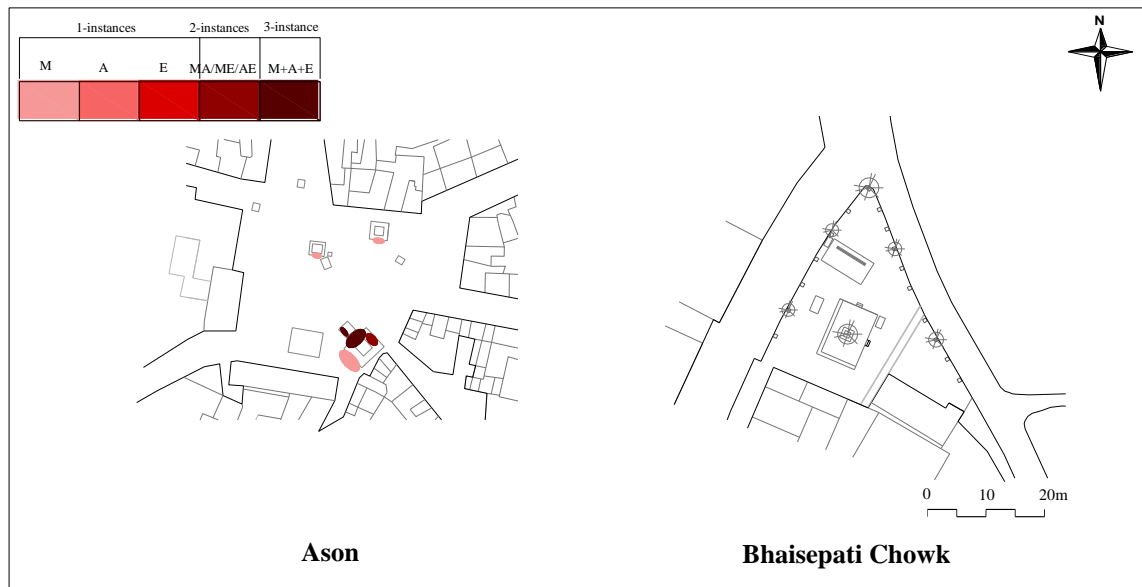
**Figure 6.51: Pattern of commercial activities (2012) in market squares**

Bhaisepati Chowk on the other hand is predominantly used for social purposes in the morning and afternoon and social and commercial purposes, especially informal markets, in the evening. In both cases, most of the open vending occurred in 1 instances and the activities in the shops in 2 or 3 instances. The same location in both squares was used by different activities at different times of a day. The commercial activities in

Ason had followed a kind of pattern<sup>82</sup>, which in Bhaisepati Chowk is missing (Figure 6.51).

### Religious activities

Regarding the religious activities (Figure 6.52), the activities concentrated around the Annapurna temple in Ason has a mix of 1, 2, and 3 instances. Bhaisepati Chowk on the other hand does not have any religious activities.



**Figure 6.52: Pattern of religious activities (2012) in market squares**

### Social activities

No specific pattern was followed by social activities in both cases (Figure 6.53). Ason lacks social activities whereas Bhaisepati Chowk is predominantly used as a social space. The prime difference between these cases irrespective of the specific functions is that Ason has 1- instance activities and Bhaisepati Chowk has 1 and 2 instances activities.

### Activities with other functions

The activities with other functions in Ason occurred only in 1-instance whereas in Bhaisepati Chowk these occurred in 1 and 2 instances. The activities in Ason followed a pattern, which is missing in Bhaisepati Chowk (Figure 6.54).

<sup>82</sup>For example space near Laxmi Narayan temple were used for vegetable vending in the morning, parking in the afternoon, and again vegetable vending in the evening. Each of these activities had occupied the space differently. The use of the space by these activities when analyzed together, resemble a pattern (in this case a kind of circular).



**Figure 6.53: Pattern of social activities (2012) in market squares**



**Figure 6.54: Pattern of activities with other functions (2012) in market squares**

**g. Access**

*Physical access*

Ason square, located at the crossroads of six different streets is easily accessible from all corners of Kathmandu (Figure 6.55). The entire square has no level difference, except the temple of Higadyo, which is in a sunken floor. All the structures are given access to the public (Figure 6.56). However, a metal bars have been provided at the temple of Annapurna beyond which the worshippers are not allowed, as a precaution taken to avoid damage to the idol of the god. All the temples are accessible except from

9:00pm until 4:00am to protect against theft of the idols. Besides, other private courtyards are also accessible from the square through the alleys.

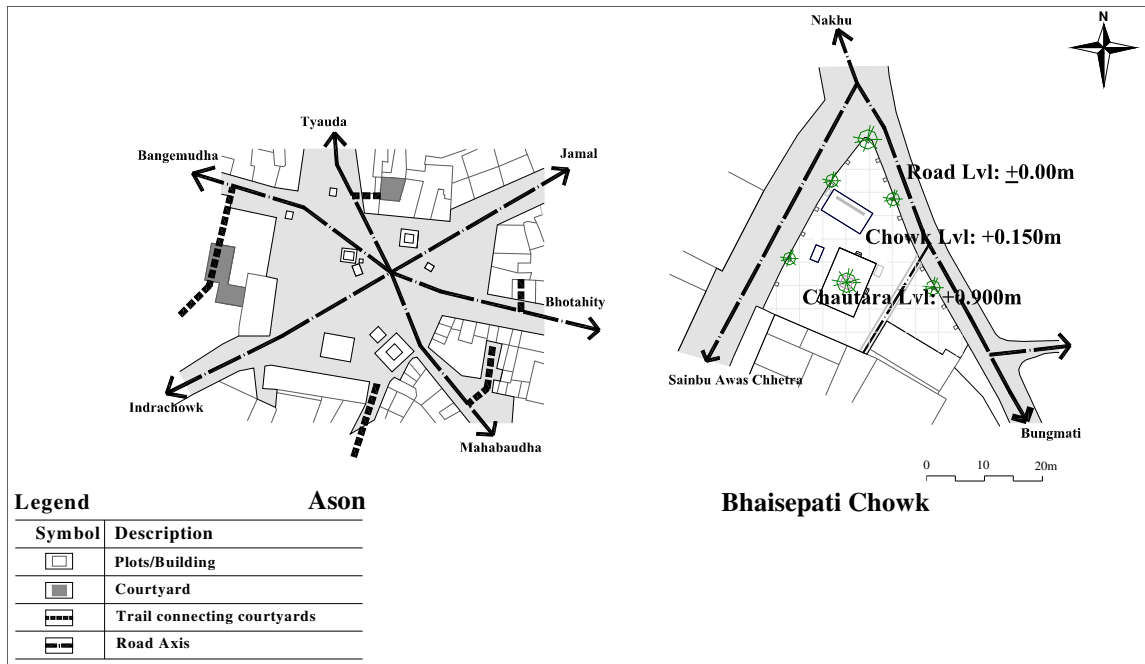


Figure 6.55: Linkages in market squares

Bhaisepati Chowk is also located at the prime junction and is easily accessible by the public. The existence of bus shelter in the Chowk has helped in bringing people from different parts of the Valley. The Chowk is raised from the road level. It is further divided into two different levels. The seating area of the Chautara is at the top level giving priority to social activities. The raised Chowk has precluded itself from being used as a parking space.

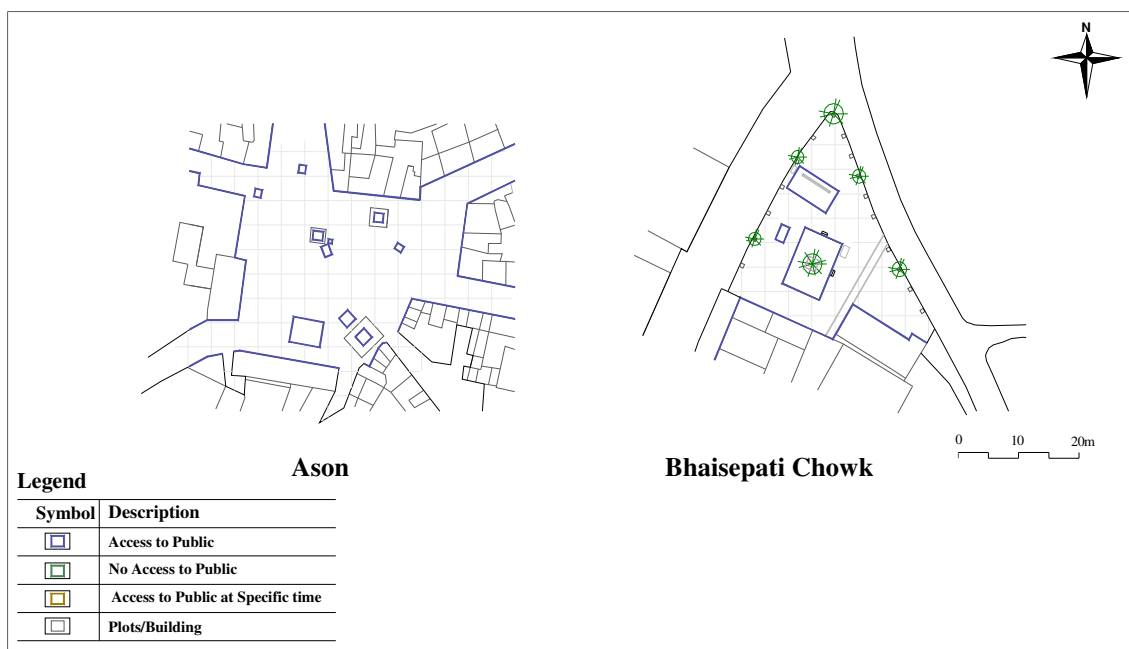


Figure 6.56: Physical access in market squares

Regarding vehicular movement in Ason, some traffic rules are enforced by the government to use the streets as one way or two-way directions. According to the rules, two-wheelers such as motorbikes are allowed at all times in the square whereas no four wheelers such as cars, vans, and trucks are allowed between 9:00am and 8:00pm. The markets, the worshippers, and the customers together with the motorbikes caused congestion in the square in the morning. The square being a transit space, people were also seen passing through the square to reach their destinations (also refer to Chapter 7 for the detailed study about users involved in activity and passers-by). People were heading to offices, to open their shops nearby, homes after finishing their daily rituals, and children going to school.

The two-wheelers were seen in all directions, but high traffic was observed along the Indrachowk-Jamal diagonal route (Figure 6.57). A few four-wheelers were seen along this route, but only in one direction. Comparing to the morning, the afternoon traffic is relatively low and moving in all directions. The reduced number of activities and the low traffic created less congestion in the square at this time. In the evening, there was a dramatic change in the activities as well as the traffic. The increased open markets together with heavy traffic, especially motorbikes, caused congestion in the square and difficulty for pedestrians to walk. Like the vehicular traffic, heavier pedestrian flow was found along the diagonal route in the evening than at any other time of the day. Although Bhaisepati Chowk acts as a node between two vehicular roads, the activities carried out in it are not affected by any vehicular movements throughout the day. The parking of taxis at the western end has no influence in the Chowk. Instead, the structures and activities in the Chowk have influenced the movement of the pedestrians. The location of structures such as the bus shelter, table tennis, the Chautara together with the activities have established a small variation in the pattern of the pedestrian movement over the day as shown in Figure 6.57. The pedestrian movements of morning and afternoon were less compared to the evening.

### *Symbolic access*

Tracing the symbolic access of the Ason square, it is greatly dependent on both square and the surrounding environment. The arrays of varieties of shops and the numerous temples of the square have complemented its symbolic representations. In addition, the six different streets that lead to the square, possessing their own identity (which will be

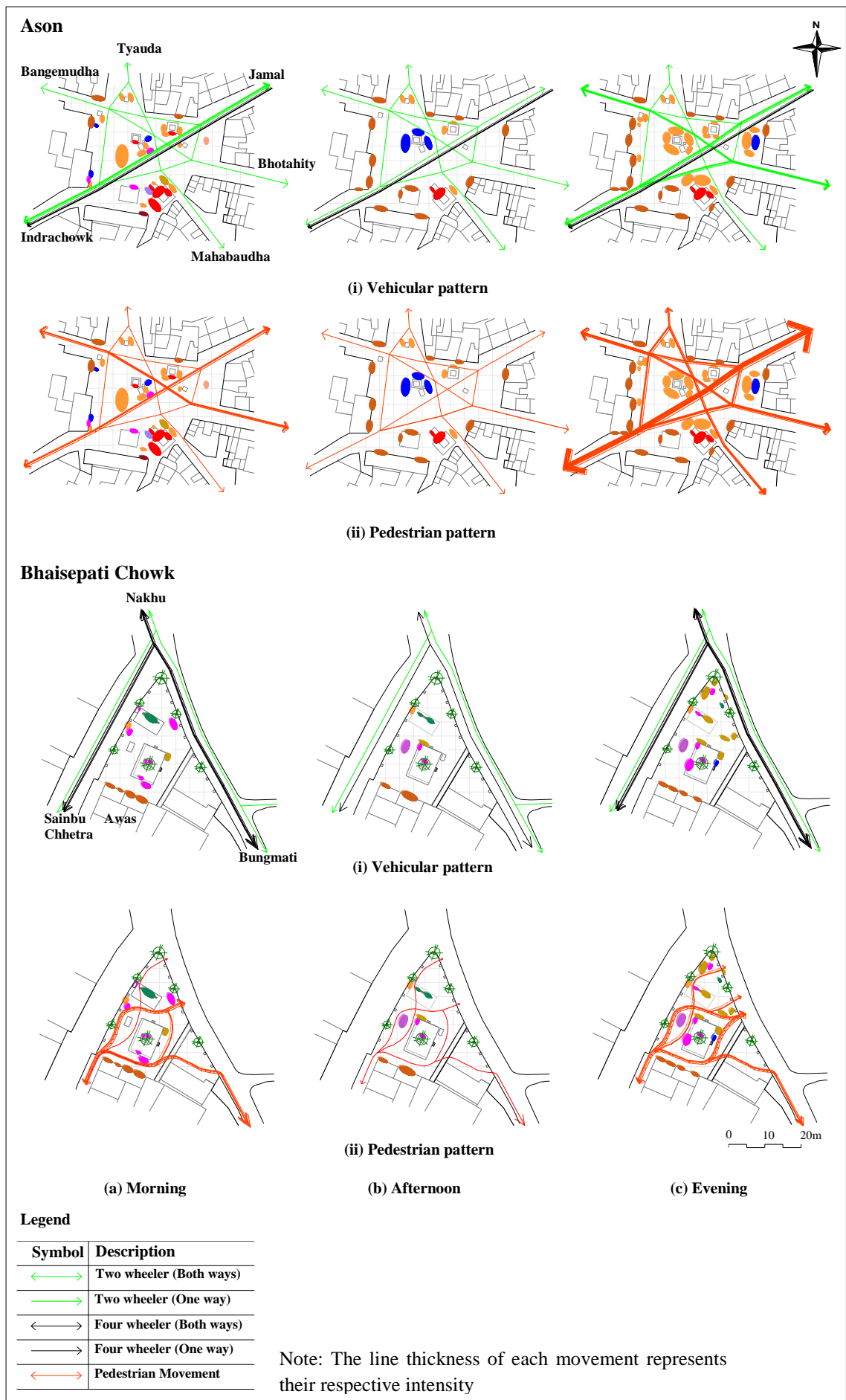


Figure 6.57: Traffic movement (2012) in market squares



discussed in the later section) and its vibrant nature throughout a day have acknowledged this square as a convivial place.

The symbolic access in the Bhaisepati Chowk is determined by a Chautara. The Chautara, as a 'symbolic portrayal,' has not only attracted the locals but also the passers-by. Because of its multi functions such as gathering of people, resting, chatting and bringing diverse vendors to carry out different activities, it has become a genial place.

### ***Visual access***

The visual safety in the square is defined by the building enclosures and the active use of the square throughout the day. Both of these give the users a feeling of comfort to use the space. The building enclosure provides the feeling of a habitable space, whereas the activities give the feeling of liveliness in the square. The questionnaire conducted on users also shows that most of the users feel safe in the square due to existence of the residential dwellings in the square (also refer Chapter 7).

Likewise, the prime location and visibility of Bhaisepati Chowk from all sides have given a feeling of visual safety to the public. That is why most of the people who participated in the questionnaire responded that they feel safe in the Chowk (also refer Chapter 7).

### **h. Urban Scale Analysis - Ason**

The square is located in one of the densest areas (1000 person per hectare) of the city core. The mixed land use (ground floors for commercial use and upper floors for residential use) has enhanced the vitality in the square. Not only locals, but also the people from neighbouring cities are attracted to this square. This has been possible due to available bus parks that are in walking distance from the square. In addition, the proximity between the square and the adjacent linear belt of institutional buildings (see also Figure 6.11 for land use) has made it easier for people to come to the square to shop after their office hours.

### *Market corridors*

It is evident from the earlier discussions that Ason square serves as an archetypal market square of the Malla period. It is the oldest market place of the capital. Six different streets, each with its own commercial identity, merge into the square, which has a completely different commercial image revealing a degree of surprise. All six streets include stores of all sizes, ranging from small (doorway wide) to big and selling all kinds of goods - dried fish, canned food, jeweller, clothes, shoes etc. Indrachwok street is famous for its metal crafts and caps, Tyado for dried fish, Bangemudha for electrical repairing and works, Kamalachi for garments, Bhotahity for the educational books, and Mahaboudha for cooking oil and candles. Among these six routes, the diagonal route, Indrachowk-Ason-Jamal, is the busiest (see Figure 6.60 b) route. This diagonal route further joins the busiest street of the capital, i.e New Road, where many shopping plazas and cafes are situated.



**Figure 6.58: Indrachowk street- A busy diagonal route**

### *Cultural corridors*

The urban praxis of Kathmandu is rooted with in cultural practices and traditions. It was already described in Chapter 5 how cultural assimilations in urban spaces are facilitated by the ritual guidelines in the traditional towns. The trade route from Darbar Square to Ason Square serves as a cultural route during the festivals of Indrajatra, and Machhindranath Jatra (Figure 6.59 a). Other festivals that use this square include ‘Ason Paya’<sup>83</sup>, a sword procession, and ‘Pahan Charhe’<sup>84</sup>, when the images of mother goddesses from different places are brought; this ceremony is known as ‘Ason Dya Lwakigu’ (Figure 6.59 b) meaning meeting of gods in Ason.

<sup>83</sup>It is the only festival where the youngest one leads the procession, which in other cases would be the elders. This festival is particularly for the people of Ason, and it is celebrated in October. This festival is also known as ‘Ason Chalan’, meaning the systems of Ason inhabitants.

<sup>84</sup>Pahan Charhe, the festival that is celebrated especially in Kathmandu in April.



(a) Machhindranath Jatra



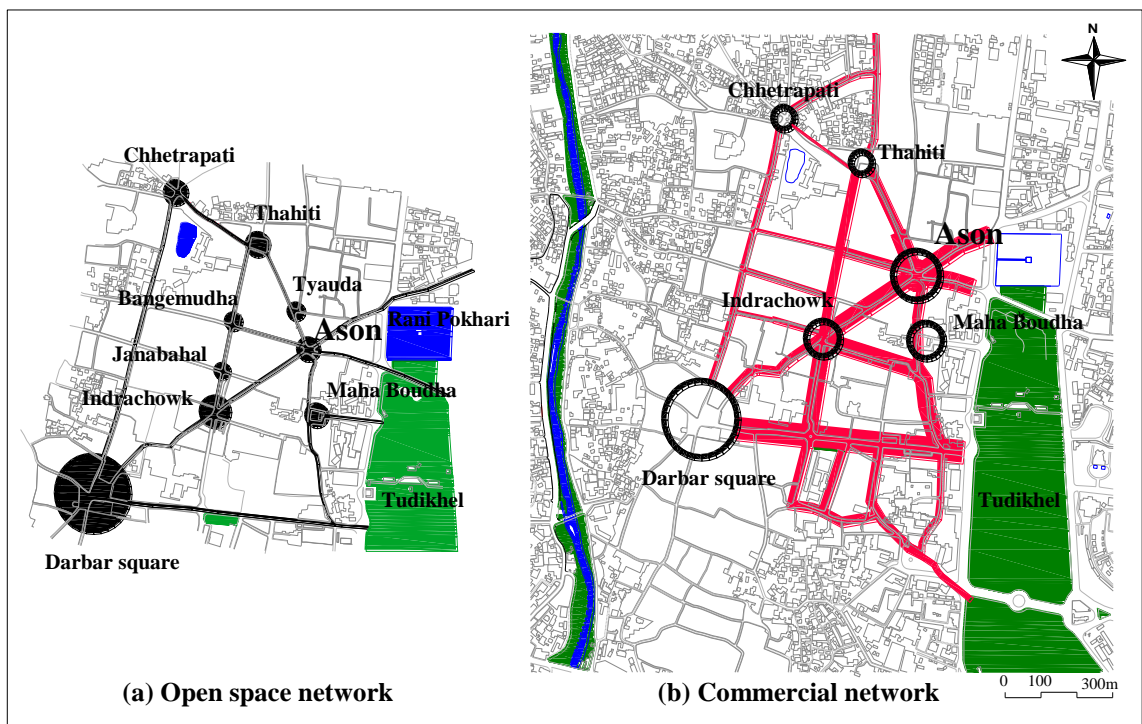
(b) Ason Dyo Lwakigu

**Figure 6.59: Festivals celebrated in Ason**

Picture courtesy: Pradip Ratna Tuladhar

*Networks of Ason with other open spaces*

The open spaces of old Kathmandu are always interlinked in one way or the other. They always have a network regardless of their hierarchy. Ason has either commercial or cultural (or both) networks linking to other open spaces of the urban centre.



**Figure 6.60: Network of open spaces - Ason**

It has both commercial and cultural networks linking it to the Darbar square (the third order multicultural open space) and Indrachowk (a transitional square between the Darbar square and Ason), and commercial links to Mahaboudha. The vending of varieties of rice grains, which was very popular in Ason in the past, has today shifted to Mahaboudha. Mahaboudha is used for wholesale trading and the purchasers even include the retailers from Ason in addition to those from other parts of the city.

### **i. Urban Scale Analysis – Bhaisepati Chowk**

The Bhaisepati Chowk on the other hand is located in the newly and rapidly developed area of Sainbu VDC (also refer Figure 6.16). The development of the area, not more than 15 years ago, comprises predominantly purely residential areas. However, mixed land use (residential and commercial or official buildings) has also stretched along arterial and secondary roads. Because of the lack of socializing space in the area, this Chowk has been widely used by the locals and the people residing in the adjacent areas. The commercial uses in the ground floor of the buildings consisting of clothing, decorative elements, and café have enticed people to use the Chowk. In addition, the agricultural lands and the public woodland nearby have given a feeling of closeness to nature.

#### ***Market corridor***

The commercial centres that have developed progressively in the area mostly stretch along the roads. High concentrations of commercial activities are observed in the areas near the ring road and the Chowk, and very low concentrations in the areas where residential development have just started. The Ekantakuna-Tikabhairab arterial road incorporates hardware shops, an open vegetable market, and cold stores whereas the secondary roads comprise of small local stores that contain all basic necessities.

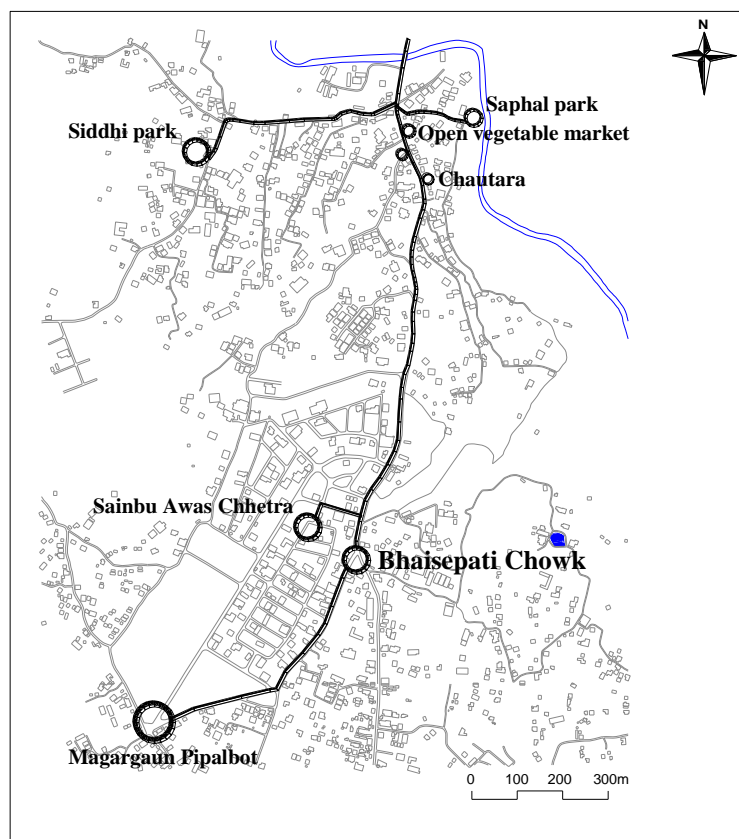
#### ***Cultural route***

Like the Seto (white) Machhindranath festival of Kathmandu, the festival of Rato (red) Machhindranath, the god of rain, is celebrated in Lalitpur. The shrines of Rato Machhindranath are situated one in Bungmati and other in Lalitpur. The chariot procession is performed annually in Lalitpur. However, once in every twelve year, the chariot is assembled in Bungmati and the procession proceeds to Lalitpur via Bhaisepati and Nakhu River. In this event, people gather in the Chowk to observe and enjoy the festival.

#### ***Networks of open spaces***

Although the area has different hierarchies of open spaces, from public market spaces, neighbourhood spaces to private spaces, it lacks networking of open spaces as in the traditional centre. No relationships have been established between the available open

spaces either commercially or culturally. All open spaces feature independently. For example, the open spaces that are recently developed (Saphal Park and Siddhi Park) serve as a neighbourhood park, the open space provided for the vegetable market functions as an informal market, and the Chautaras at different locations provide social space for the public. The other open spaces near the Chowk are the neighbourhood and community open spaces in the Sainbu Awas Chhetra and the Magargaun, respectively.



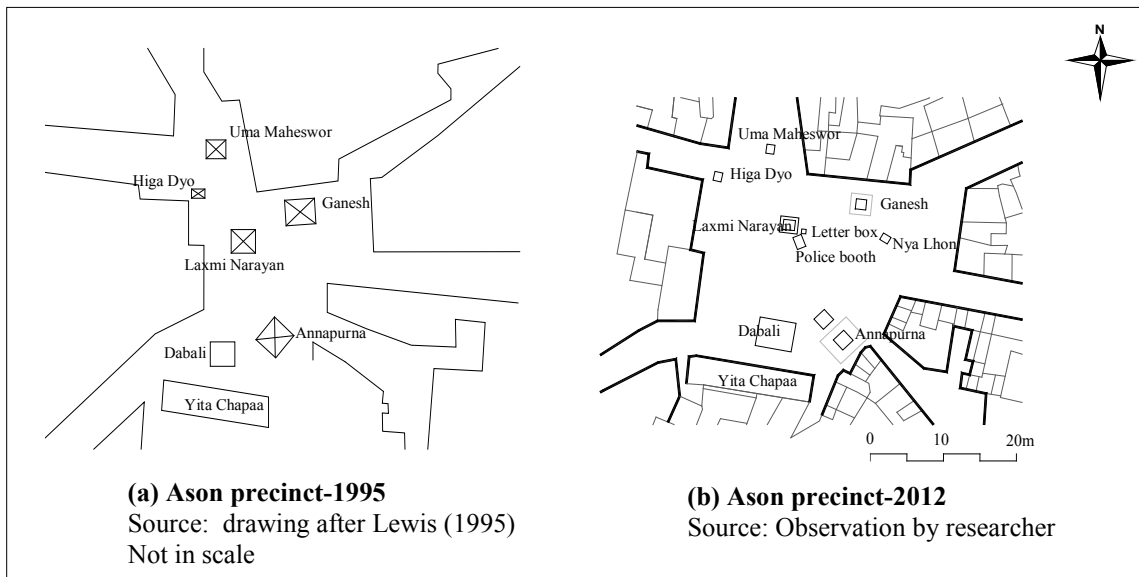
**Figure 6.61: Open space network in Sainbu**

#### iv. Urban transformations in Ason

The socio-cultural setting of Ason square is greatly represented by the places of commercial, religious meanings as well as the entire neighbourhood. The following section analyses the changes that have taken place in this square over time.

##### *Socio-cultural settings*

For analysing any additions to or alterations of the structures within the square, no cartographic references of the past exist. However, from the map which Todd Lewis used for illustrating the Ason neighbourhood and landmarks (Figure 6.62 a) shows that there were no police booth and letterbox. These structures, according to the locals, were added only after 2005. The rest of the structures remain as they were in the past.

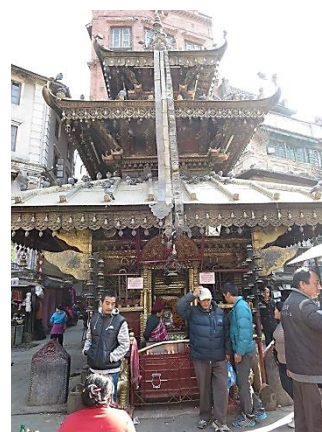


**Figure 6.62: Identifying physical changes - Ason**

The only changes in the physical structures are their visual appearances. The square, which was gravelled in the past, is today stone paved. It has solved the problems of the vendors during rainy seasons. The Annapurna temple, Ganesha temple, and Laxmi Narayan temple have experienced some physical changes with time. The arch doorway of Annapurna temple of 1912 was removed, the traditional tiled roof of the Ganesha temple of 1920 was replaced by the metal roofs, and the domed roof of Laxmi Narayan temple was altered by a pagoda styled roof after 1920. Another structure Nya Lhon has also been repeatedly changed; the stone idol located in the ground was encased by the metal bars, but today it is raised on a stone platform.



**(a) ca.1912**  
Source: Madanpuraskar Pustakalaya

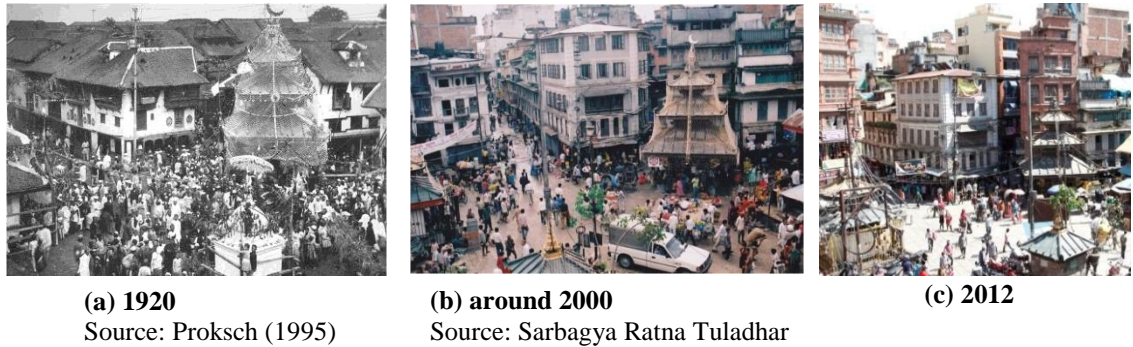


**(b) 2012**

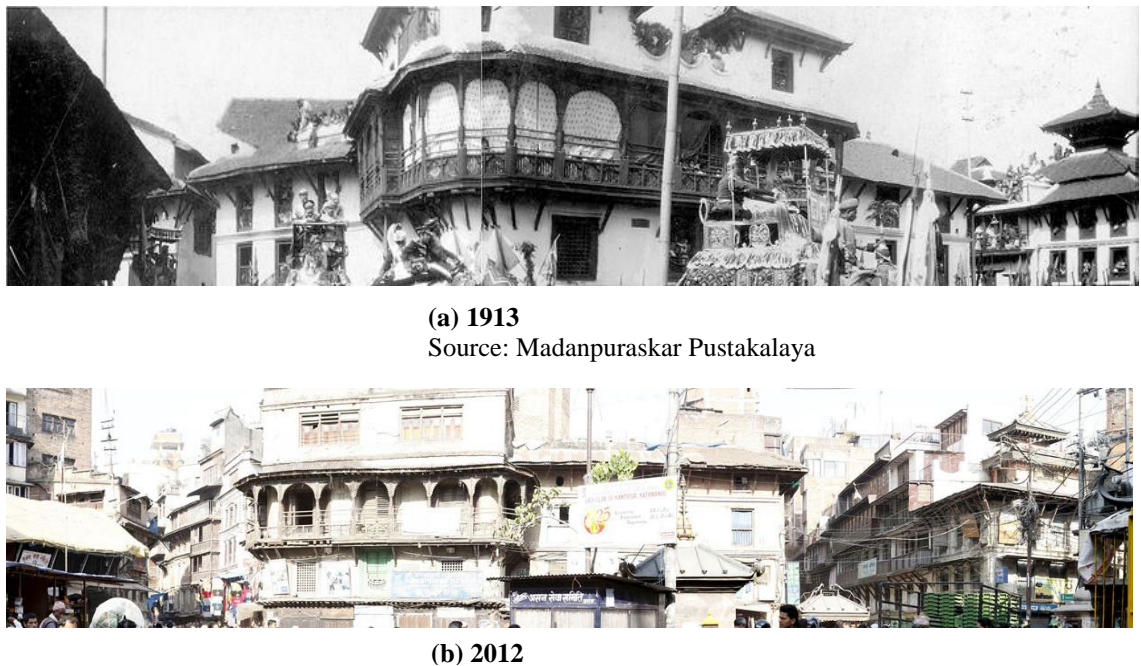
**Figure 6.63: Changing faces of Annapurna temple**

There is also a dramatic change in architectural style in the square. The harmony between the physical structures of the square in terms of height, scale, proportion, and the use of materials on the past, is today greatly ignored. The heights of buildings lower

than temples and the scale and proportion of buildings compare to the temples shows that the temples had superior positions in the past, but today the buildings are taller than the temples, thus dominating the temple structures (Figure 6.64). In addition, the traditional styled buildings that seem to be integrating with the temple architecture in the past is missing in the present context. Few traditional buildings aged more than 100 years still exist (Figure 6.65) but these are dilapidating and need immediate action for their preservation.



**Figure 6.64: Changing faces of Ason**



**Figure 6.65: Exemplary Building that is still in existence - Ason**

### *Use Values*

Ason was not as dynamic in the past as it is today. According to the locals, life used to come to a halt after 5:00pm. Even in the afternoon, the square used to remain empty without any activities taking place. In order to bring liveliness, people used to perform different activities. One of the interviewee, who is in 70s recalled,

‘people used to organize bull fighting to overcome their boredom. I had watched it several times. When the performance was about to happen, I used to get informed by my uncle, who had shop in the square’.



**Figure 6.66: Bull fight to bring liveliness**

Source: Painting from Artist Hari Prasad Sharma

Regarding the places of commercialization in the square, there were very few and particularly concentrated in front of

Annapurna temple. The common business during the 1970s in the square was rice selling and this included both open vending and shops. Most of these vending were replaced by new businesses after the 80s because of no rules for the markets. Again, in the early 21<sup>st</sup> century, informal markets for items such as bags, shoes, clothes etc. had occupied the square; however, these markets were removed by government action. Today, the square is full of diverse trades. Only a few shops are continuing their same trades since the past and these includes mainly rice and spice shops. For the open vending, these at present context are allowed in only permissible times.



**(a) Open rice grain market, 1973**

Source: Tod Ragsdale  
www.flickr.com/photos/



**(b) Informal market, 2005**

Source: Rehvonwald  
www.flickr.com/photos/rehvonwald/



**(c) Open vegetable/flower market, 2012**

**Figure 6.67: Various commercial activities in different years - Ason**

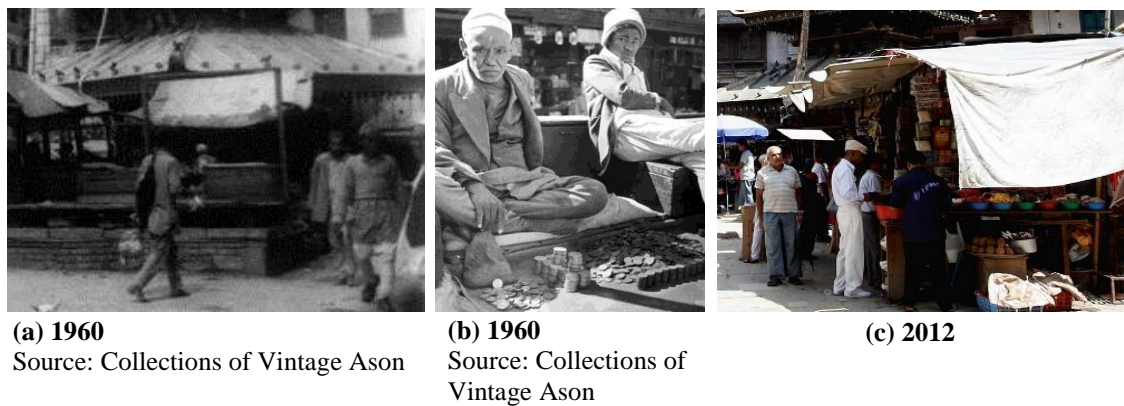
Most of the places for religious meanings have remained the same as in the past. However, there are also a few structures that have experienced prominent changes in their usage. For example, the Dabali<sup>85</sup>, which used to be a platform for cultural events

<sup>85</sup>The Dabali must be emptied on the day of the festival known as Machhindranath jatra every year. It is the only once in a year that the Dabali is emptied.



and money exchange area (when no religious activities taking place) of ‘Ason Sarafis<sup>86</sup>’ in the past, is today encroached by the numbers of shops. For the emergence of the shops, one of the interviewee stated that,

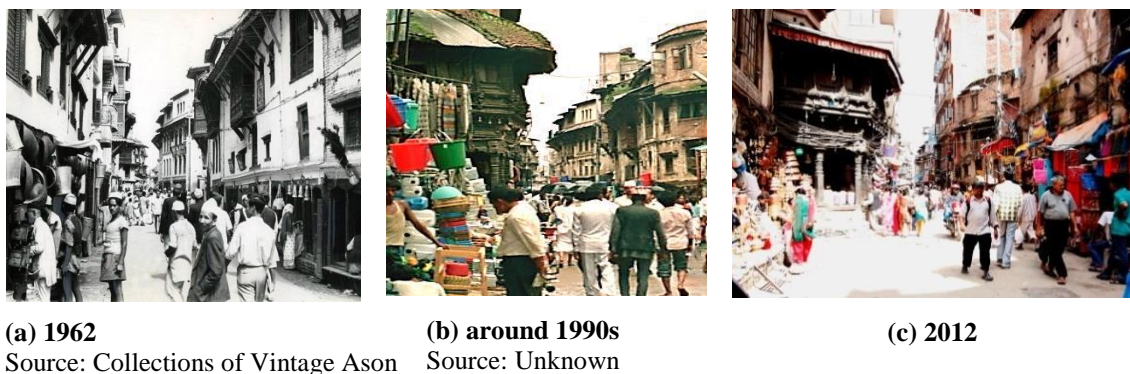
‘the Sarafi business used to be recognized by government in the past, but today the government do not provide a license to this business. There are many exchange offices emerging these days, which are recognized by the government. In addition, the new generations do not want to continue their ancestor business as a Sarafi. That is the reason why the Sarafi businesses are deemed today. When there is an empty space, it is obvious that vending will take place in that space’.



**Figure 6.68: Transformations of functions in Dabali - Ason**

(a) Dabali for cultural events, (b) Money Exchange in Dabali, (c) Encroachment by Shops

Similarly, the Sattal has also undergone several changes regarding its uses. Originally, it was the rest house, which was changed to a police station in the 1990s, but today it is used as a store owned by Ason Service Committee. Since it is in a dilapidated condition, most of spaces on the first floors are not used.



**Figure 6.69: Changing faces of streets - Ason**

<sup>86</sup>Sarafi is a nepali word for money exchangers. Ason Sarafis are the money exchangers, who dwell in Ason.

Ason, in the early 21<sup>st</sup> century was very congested because of its use by the nonstop shoppers, wandering of animals, vegetable vendors, vehicles as well as the pedestrians. Today, the congestion is relatively low than it used to be in those days due to the rules for vehicular access and the time slot for the open markets. Not only the square, but also the connecting streets have been experiencing the transformations. The changing faces of the streets due to rapid commercialisations have driven commercial function into the square (Figure 6.69).



(a) 1957

Source: Collections of Old Nepal - Photos & Images



(b) 2011

Picture courtesy: Pradip Ratna Tuladhar

**Figure 6.70: Continuation of cultures, Ason Dya Lwakegu**



(a) 1915

Source: Proksch (1995)



(b) 1972

Source: Collections of Old Nepal - Photos & Images



(c) 2011

Picture courtesy: Pradip Ratna Tuladhar

**Figure 6.71: Continuation of cultures, Machhindranath Jatra**

Despite the changes in physical structures and uses, there also exist some cultures, which have remained the same since past (Figure 6.70 and Figure 6.71). The new generations are still today following the same traditions and cultural activities, to name

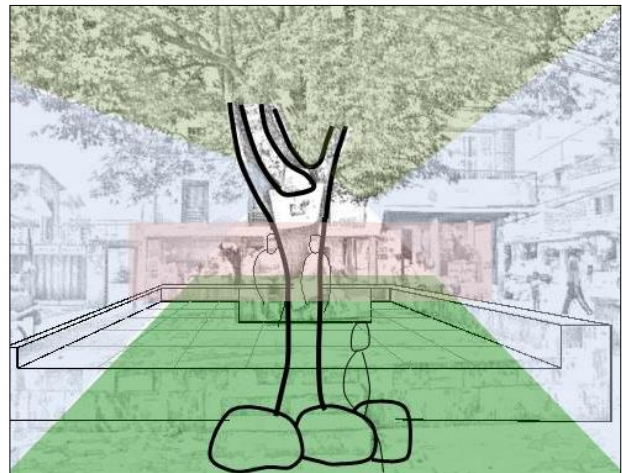
a few, Ason Dyo Lwakegu, Machhindranath Jatra, and Indrajatra. According to the local users, these festivals are held at national level, so no changes are possible. In addition, the local users are also trying to preserve the culture and traditions of the past.

#### v. **Urban transformations in Bhaisepati Chowk**

No evidences such as cartography, photographs or any literatures on transformations of this space have been found. Hence, this section draws purely on interviews conducted with the users, especially the local residents.

##### *Socio-cultural settings*

According to the locals, the area developed steadily after the construction of the ring road in 1975. The development of this Chowk has taken its current shape after the success of the government-led housing programme known as Sainbu Awas Chhetra. The area in the past consisted of only a few small houses. Most of the land was agricultural. Only trails existed and there were not any modes of transportations. People used to travel by foot.



**Figure 6.72: Transformation from open ground to the raised platform**

Interpretation based on interviews with the locals

The Chowk was an open grass ground with no differences in level (Figure 6.72). The ground only had the tree with a few stones surrounding it that were used as seats. The arterial road was developed after urbanization that connects people from rural to the urban areas to meet the needs of the locals. The bus shelter was established in the Chowk only about 15 years ago. In order to minimize the accidents, the level of the Chowk was raised. The stone seats were replaced by the raised stone platform. Trees were also planted as landscaping elements at the edges of the Chowk. The table tennis board was introduced about 10 years back to satisfy the needs of the youngsters. All of these developments in the Chowk were sponsored by the Sainbu Awas Chhetra project.

### *Use Values*

The Chautara today has the same meaning as it used to have in the past. In the past, it was mainly used by the travellers and the porters of the villages for resting purposes. Also, the children used the open ground as a play field. Most of the elderly people still today recall how they used to play marbles and enjoy their childhood in the Chowk. One of the interviewees expressed,

‘I am in my 50s now and I still remember my childhood playing and enjoying in the Chautara. Those were the days. I used to play marbles, and hide and seek there. When I was in my teenage, I used to meet my friends. I still meet my friends here’. Another interviewee said that, ‘there are not many children seen playing in the Chowk. Unlike the past, mostly the teenagers are seen playing, especially the table tennis’.

Some even had recalled how people used to stay overnight in the Chowk, feast with snacks, sweets, liquors and enjoy singing and dancing. Today the uses of Chowk have changed. In addition to the use as playing and meeting point, it has also become a locale for shopping and informal markets. The commercial activities that are found in the Chowk at present did not exist in the past; these developed simultaneously with the urbanization taking place in the area not more than 10 years ago.

Some structures accommodated in the Chowk have undergone some transformations in terms of uses. The present restaurant, which was a library at one time converted in to a school. Because the building is very small, it could not accommodate the student and was shifted to the nearby area. Since then the building has been used as a restaurant.

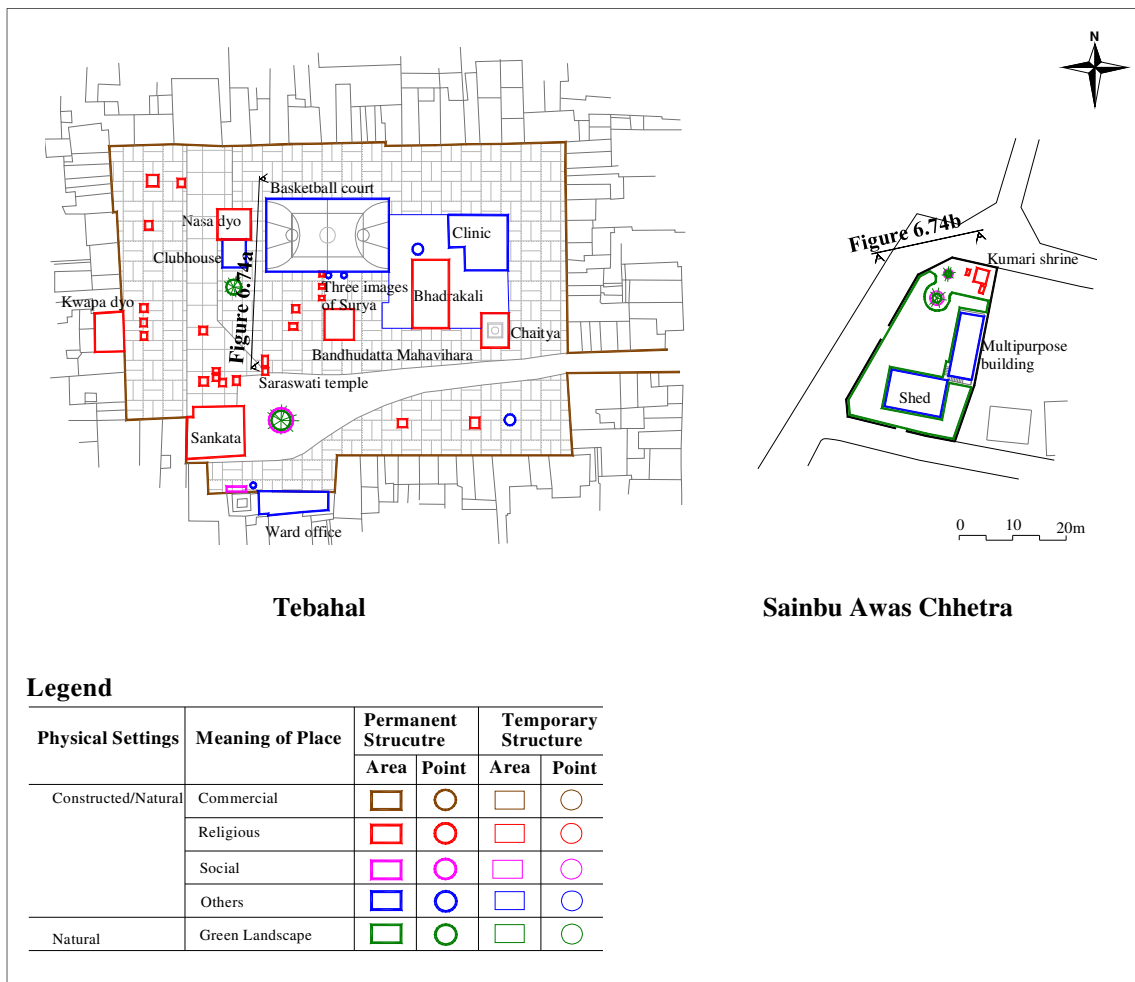
#### **6.4.2 Neighbourhood squares**

Only a comparative study of the neighbourhood squares – Tebahal from TUC and Sainbu Awas Chhetra from SA – are discussed in this section. The detailed study is discussed in Appendix 6.2. Tebahal, the oldest Bahal, located between the busy old and new commercial centres, comes under the definition of neighbourhood square. It is located in ward number 22 of KMC. The open space in Sainbu Awas Chhetra is situated in a planned residential neighbourhood in ward number 4 and is hidden from the main road.

**i. Comparison of neighbourhood squares**

**a. Physical settings**

Comparing the neighbourhood squares between TUC and SA (Figure 6.73), both cases have places of religious, social, and other meanings. However, the ratio of these places differs between these case study open spaces. Tebahal has many religious places than SAC. The religious structures in both cases are permanent. Regarding the places of social meanings, both cases have only a few social structures. The common feature found in both cases is the seating provided around trees for social purposes. In Tebahal the seating is permanent whereas it is temporary in SAC. For the places of other meanings, Tebahal has many of the structures belonging to this category than SAC and these structures are permanent in both cases. The main difference between Tebahal and SAC is that Tebahal has places of commercial meaning and SAC has green spaces; these are permanent in both cases.



**Figure 6.73: Comparison of physical settings between neighbourhood squares**



(a) Tebahal



(b) Sainbu Awas Chhetra

**Figure 6.74: Physical settings of neighbourhood squares**

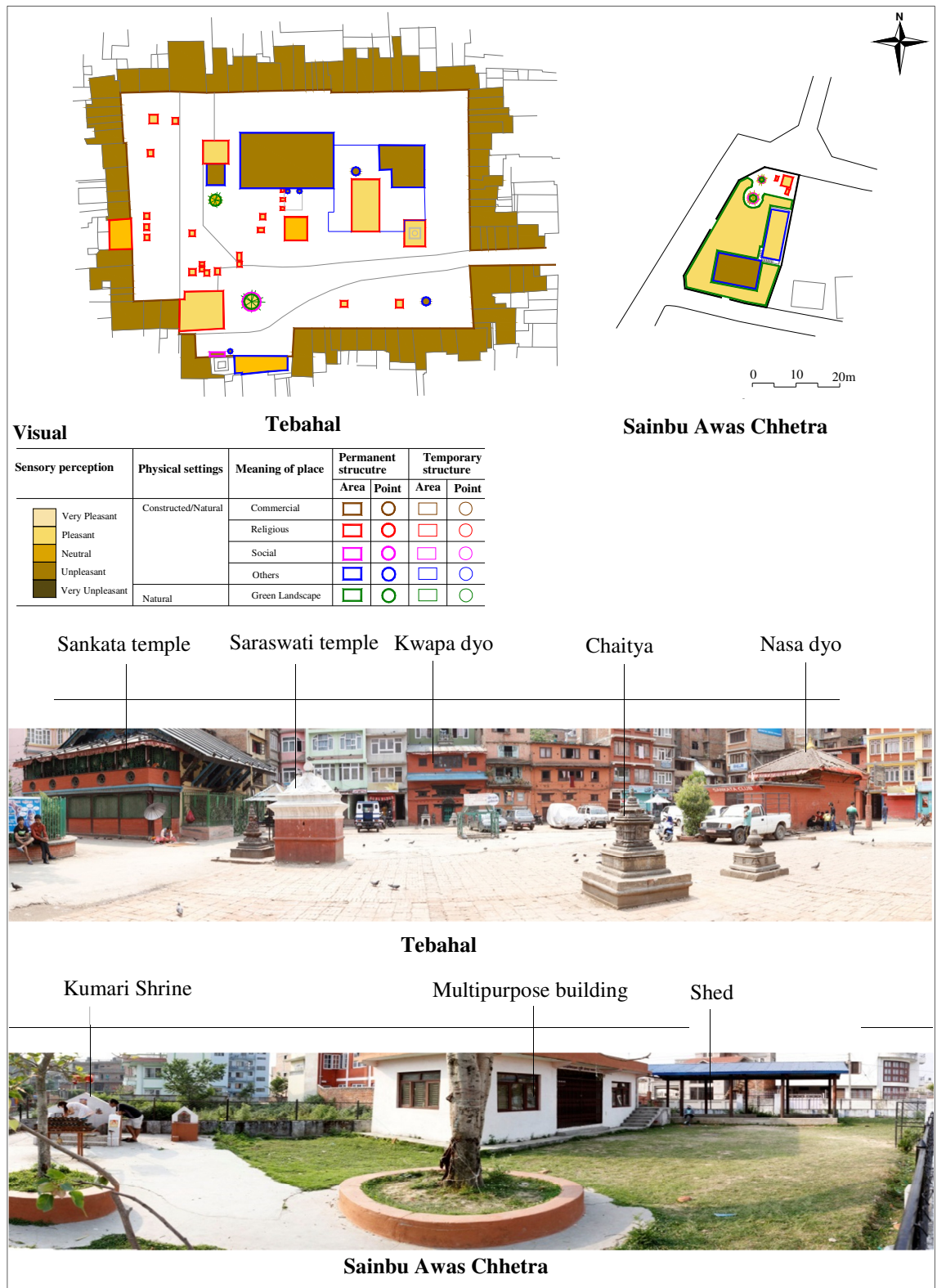
**b. Sensory perceptions of physical settings**

The structures existed in both cases clearly exhibited visual and touch perceptions. Not any particular sounds were emanated regardless of the weather conditions in both cases. Though both cases have numbers of trees, they have no fragrances. On the other hand, the green grass in SAC has smell perception. The results on perceptions of professionals regarding these sensory perceptions are summarized as below (also refer Figures 6.75, 6.76, and 6.77).

**Visual perceptions**

For Tebahal, the results of professionals show that all religious structures except Kwapa dyo shrine and Bandhudatta Mahavihara (these structures have neutral visual perception) have pleasant visual perception. The commercial structures and the structures with other functions (such as clubhouse, basketball court, clinic, and wells) have unpleasant and ward office has neutral visual perception. Regarding the social structures, the seating around tree has neutral visual perception whereas the seating

provided at the south of Sankata temple has unpleasant visual perception. A tree near clubhouse has neutral and a tree near Sankata temple has pleasant visual perception.



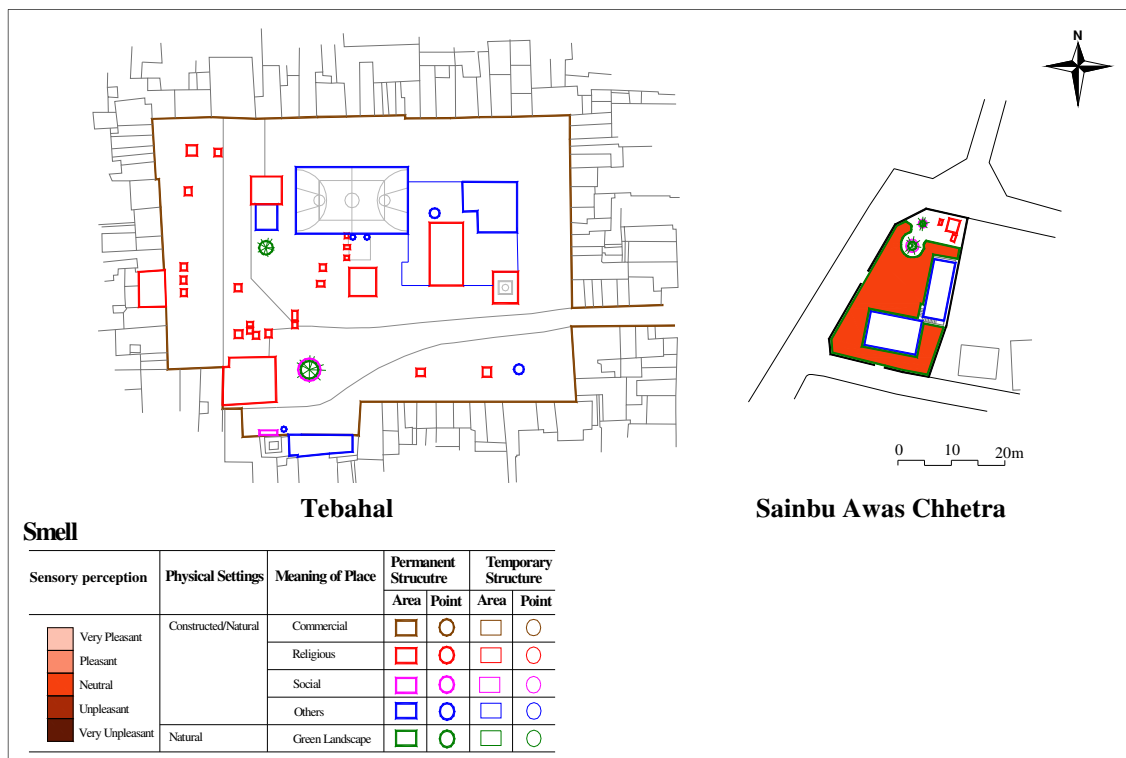
**Figure 6.75: Comparison of visual perception of physical settings between neighbourhood squares**

For SAC, the results of professionals show that the religious structures have pleasant visual perception. For structure with other functions, multipurpose building and covered

shed have pleasant and unpleasant visual perceptions respectively. The social structures in this case have neutral visual perception. For natural elements, the green grass and a tree near multipurpose building have pleasant, and a tree near shrine has unpleasant visual perception.

### Smell perceptions

Tebahal does not have any structures that have smell perception, whereas SAC has green grass that emanates smell. The results of professionals' perception show that smell emanating from green grass in SAC is neutral.



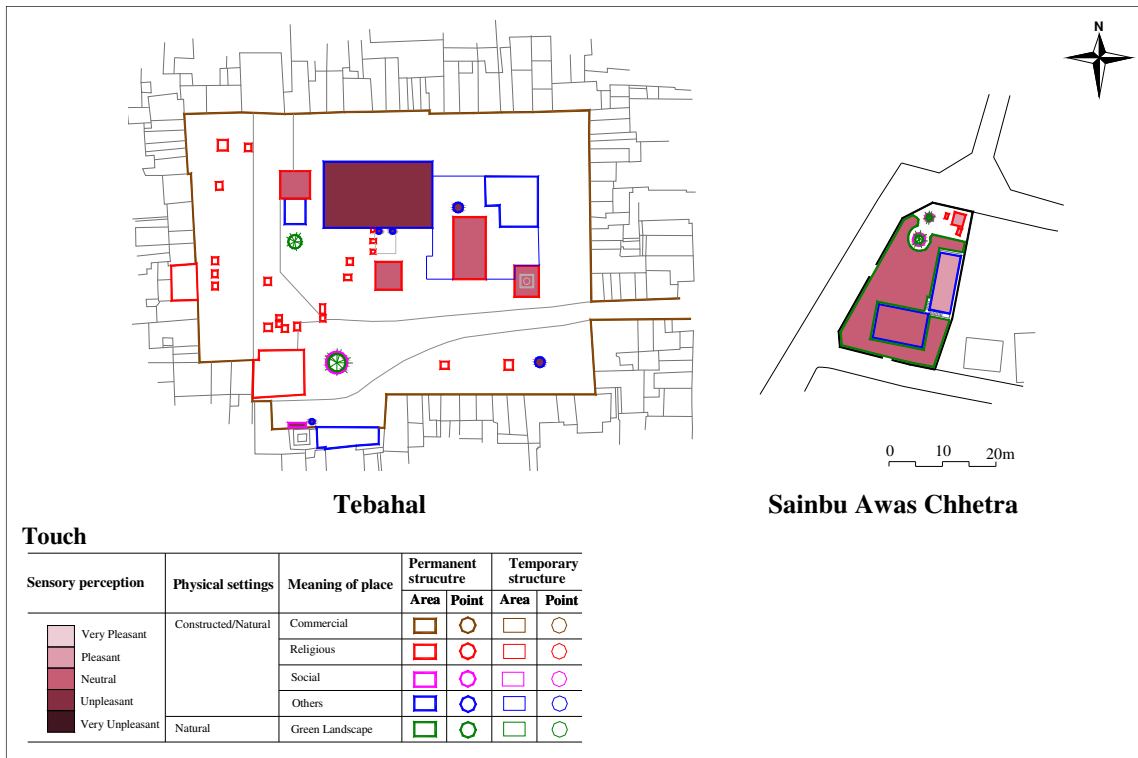
**Figure 6.76: Comparison of smell perception of physical settings between neighbourhood squares**

### Touch perceptions

In Tebahal, the plinth of a few religious structures is used as the seat. These structures together with other religious structures where one has to take off shoes for worshipping purposes are considered for the analysis of touch perception. These structures include Bandhudatta Vihar, Bhadrakali temple, Nasa dyo, and a Chaitya at east. The Sankata temple and Kwapa dyo are exceptions. In Sankata temple, the devotees must take off shoes in the upper floor only. In Kwapa dyo, only the priest assigned particularly for the shrine is allowed to enter. Hence, these structures are not mapped for touch perception. The results of professionals' perceptions show that the religious structures are perceived



as neutral to touch. The social structures (seating at two locations) and structures with other functions (such as basketball court and wells) are perceived as unpleasant to touch.

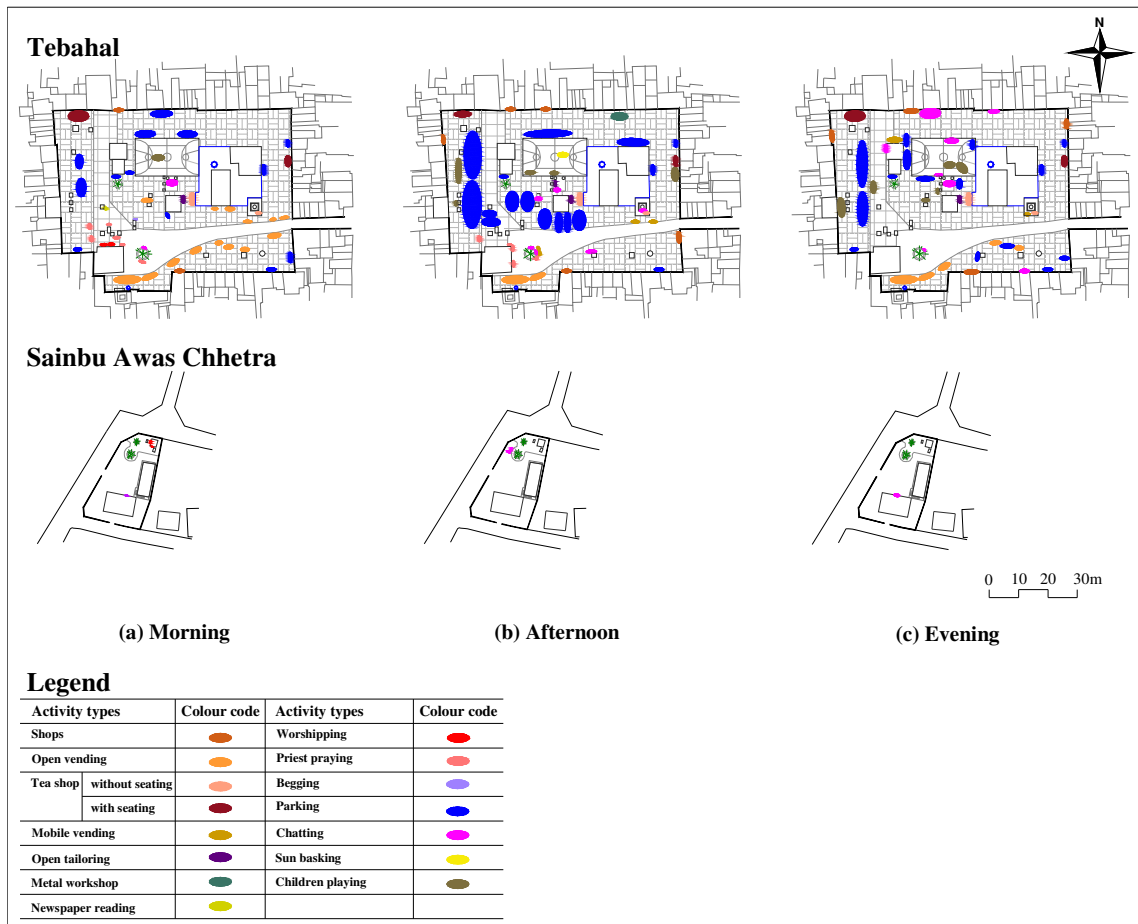


**Figure 6.77: Comparison of touch perception of physical settings between neighbourhood squares**

In SAC, the results of professionals' perceptions show that the religious structures are perceived as pleasant to touch. The social structures are perceived as neutral to touch. The structures with other functions – multipurpose building and covered shed – are perceived respectively as pleasant and neutral to touch. The green grass ground is also perceived as neutral to touch.

### c. Activities

Tebahal has diverse activities throughout a day than SAC (Figure 6.78). Though the Bahal has diverse activities such as religious, commercial, social, and others, it was used mostly by open vending in the morning, parking in the afternoon, and social activities in the evening. On the other hand, SAC has very less activities throughout a day. A few religious activities were seen in the morning and social activities in the afternoon and evening. Comparing the activities between these two case study open spaces, the common activities found in these spaces are religious activities in the morning and social activities in the afternoon and evening.

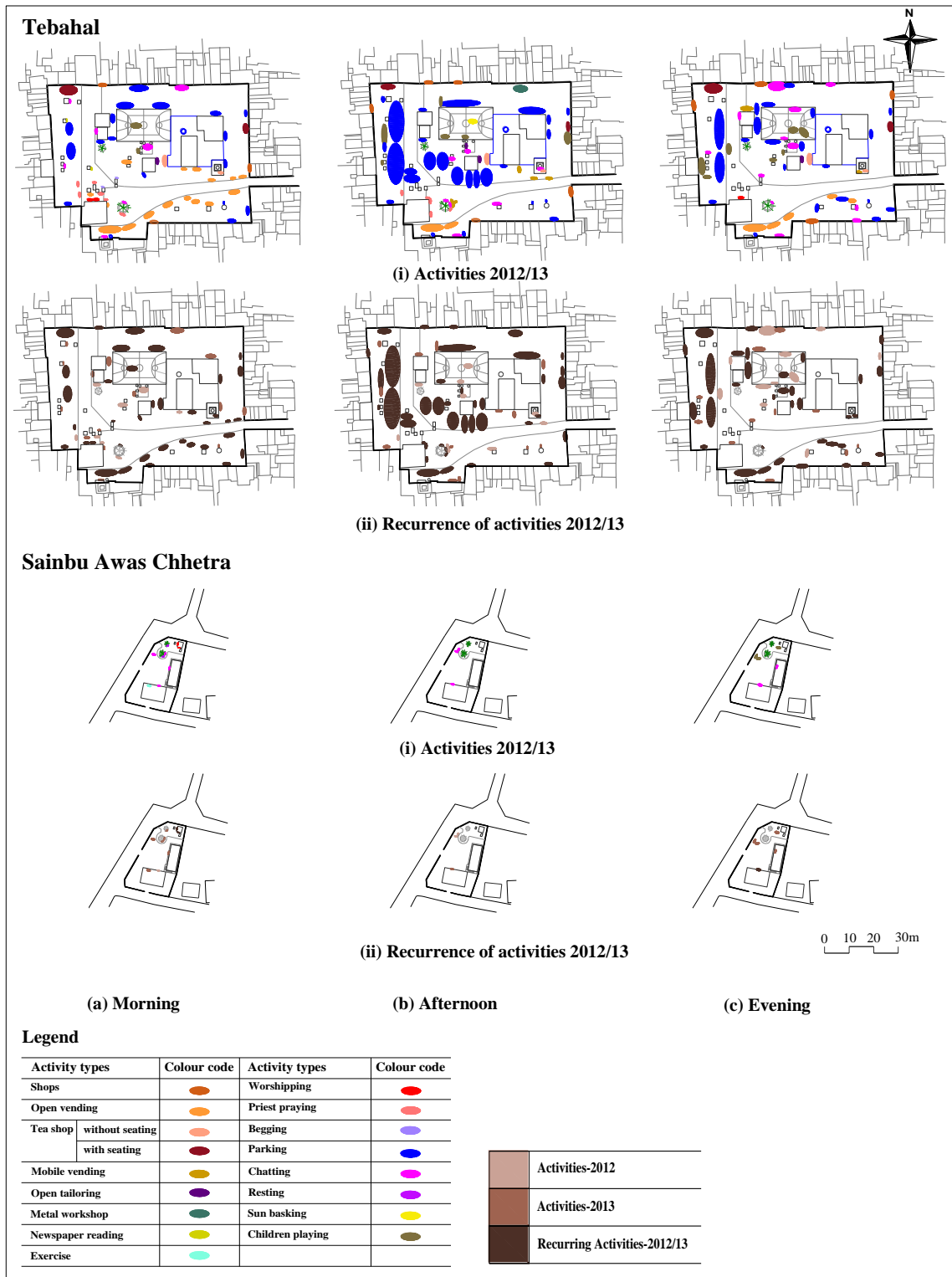


**Figure 6.78: Comparison of activities (2012) between neighbourhood squares**

**d. (Re)occurrence of activities - 2012/13**

Comparing the activities observed in 2012 and 2013 in Tebahal and SAC, most of the activities were found in both years and almost in the same location with a few activities added in the latter year (Figure 6.79).

The types of activities that were added in 2013 observations in Tebahal include mostly social and parking. Analysing the activities of years, the religious, commercial, and parking have the highest counts. The worshipping activities in the Sankata temple, open vegetable, and flower vending have the highest count in the morning, parking have the highest count in the afternoon and evening, and mobile open vending have the highest count in the evening. The social activities have the least count among other activities at all times. The open space in SAC was vacant in most of the times in the field observation done in 2012 as well as in 2013. When the occurrences of these activities are analysed, almost all activities are also seen less occurring. The highest count is found for the social activities followed by the religious activities, and all other activities have the least count.



**Figure 6.79: Comparison of occurrences of activities between neighbourhood squares**

**e. Sensory perceptions of activities**

The sensory perceptions of activities were conducted for visual, smell, and sound perceptions. The comparative study on each of these perceptions for neighbourhood squares are discussed as below (Figures 6.81, 6.83, and 6.84).

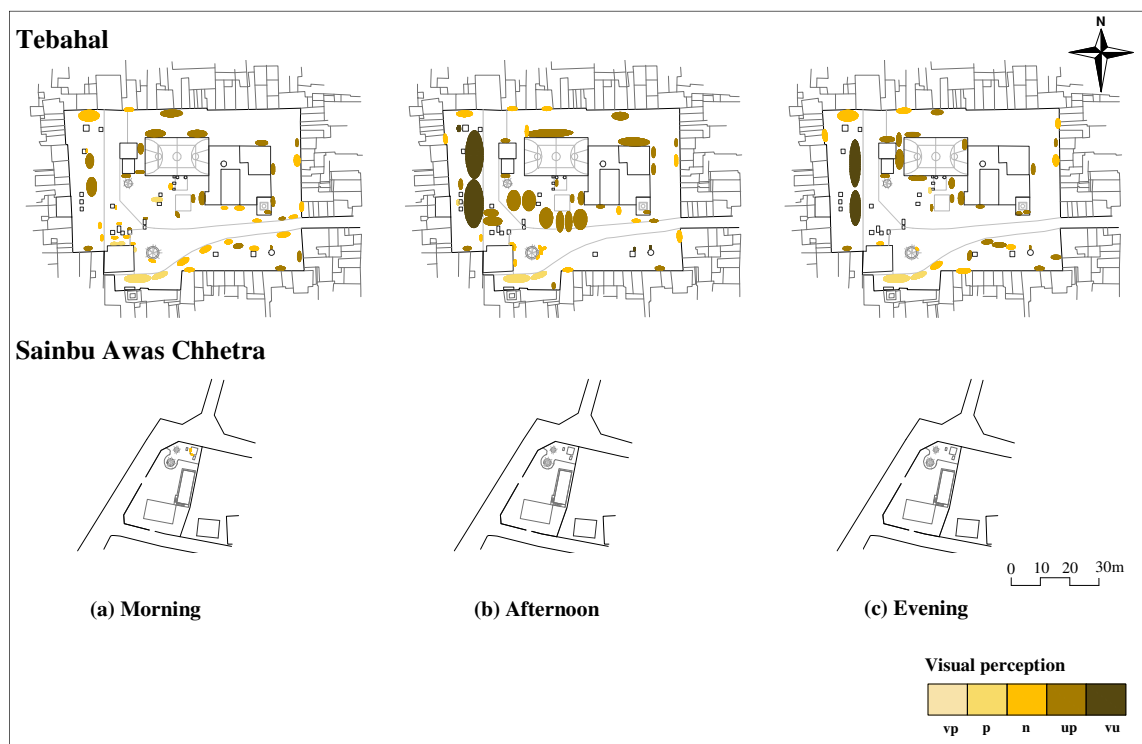
### Visual perceptions

The visual perceptions of professionals for Tebahal show that all religious activities throughout a day have pleasant perceptions except the activities involved with the priest (that appeared only in the morning and afternoon) have neutral perceptions.



**Figure 6.80: Open flower vending**

Regarding the commercial activities, the open flowers vending (Figure 6.80) near Sankata temple that remained throughout a day have pleasant visual perceptions. The open vegetables vending that appears only in the morning and evening have unpleasant visual perceptions at both times, the mobile open fast food stall that appear only in the evening has unpleasant visual perceptions. The teashops in Stupa and near Bhadrakali have unpleasant perceptions, whereas those at northwest and northeast have neutral perceptions throughout a day. All parking in the morning has unpleasant visual perception and in the afternoon and evening, most of these have very unpleasant visual perception. The tailoring at Bandhudatta Mahavihara that also remained in the same place throughout a day has unpleasant visual perception. On the other hand, the results of the professionals' perceptions for SAC show that the activities that have visual perceptions existed only in the morning; these are only religious activities and are neutral.



**Figure 6.81: Visual perception of activities in neighbourhood squares**

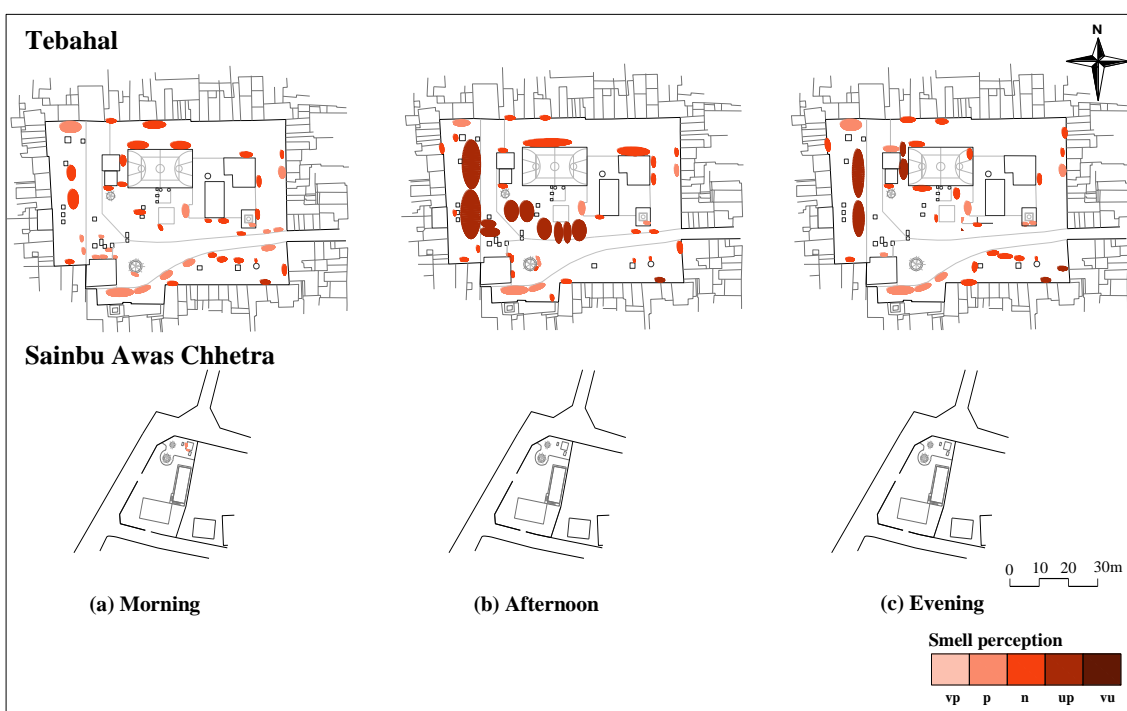
## Smell perceptions

For smell perceptions, the results for Tebahal show that almost all of the religious activities throughout a day have pleasant smell perception. Regarding the commercial activities, the open flowers vending near Sankata temple, all mobile fast food vending (Figure 6.82), and all teashops throughout a day have pleasant smell perception. The open



**Figure 6.82: Fast food vending**

vegetables vending (that emerged in the morning and evening) on the other hand has neutral smell perception. All parking in the morning has neutral smell, whereas in the afternoon and evening, most of these have unpleasant smell perception. On the other hand, the religious activities in SAC have pleasant smell perception.



**Figure 6.83: Smell perception of activities in neighbourhood squares**

## Sound perceptions

For sound perceptions, the results for Tebahal show that all religious activities throughout a day have pleasing sound perception. The open flowers vending near Sankata temple in the morning and evening have pleasant sound perception whereas these have neutral sound perception in the afternoon. The open vegetables vending on the other hand have neutral sound perception. Almost all social interactions in the Bahal

including those in the teashops, tailoring, and children playing have pleasant sound perception, whereas the mobile fast food vending near the basketball court has unpleasant sound perception. All parking in the morning has neutral sound, whereas in the afternoon and evening, most of these have unpleasant sound perception.



**Figure 6.84: Sound perception of activities in neighbourhood squares**

In SAC, the sound emanated by all activities in the morning are neutral, except people chatting in covered shed has pleasant sound perception. Likewise the activities of afternoon are also neutral to sound. All activities in the evening have pleasant sound perceptions except people chatting in the covered shed, which has neutral sound perception.

Comparing all of the sensory perceptions of activities in Tebahal, there were not any activities that were perceived as pleasant to all senses throughout a day. The activities that were perceived as unpleasant to all senses in this case is parking. Similarly in SAC, there were not any activities that are perceived as pleasant or unpleasant to all senses throughout a day.

#### **f. Characterizing the pattern of activities of neighbourhood squares**

The patterns of commercial, religious, social, and other activities of Tebahal and Sainbu Awas Chhetra are discussed in the following sections.

### Commercial activities

Tebahal had many commercial activities throughout a day. The commercial activities include shops, open vending, and mobile vending. The activities in shops occurred in either 1 or 2 instances. The open vending that were concentrated at the southern side of the Bahal occurred in 1, 2, or 3 instances (Figure 6.85). The SAC on the other hand had no commercial activities.

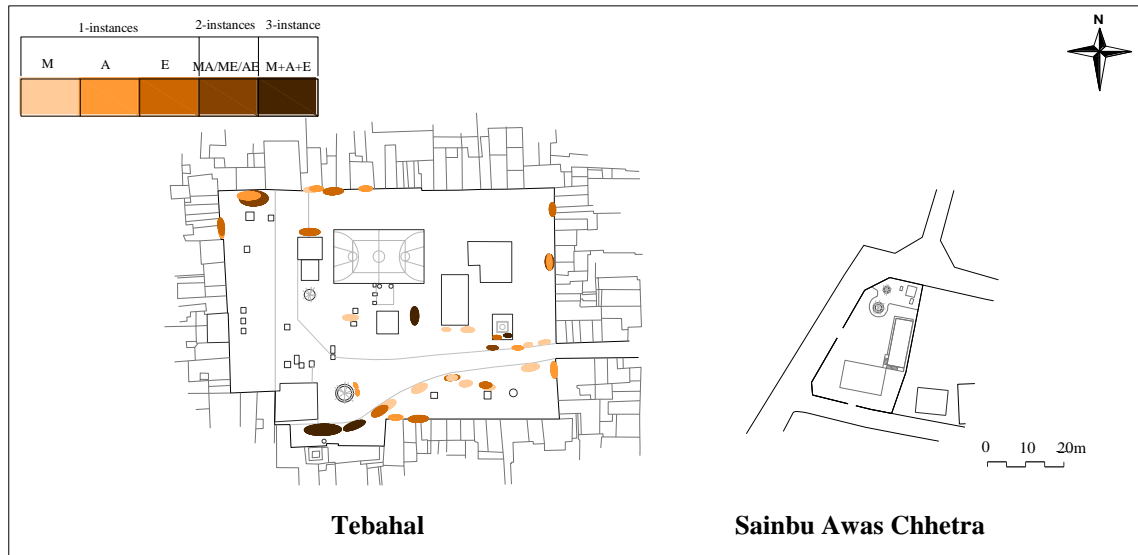


Figure 6.85: Pattern of commercial activities (2012) in neighbourhood squares

### Religious activities

Regarding the religious activities, Tebahal had the activities concentrated at south-western corner and occurred in 1 or 2 instances. SAC had only 1-instance religious activities (Figure 6.86).

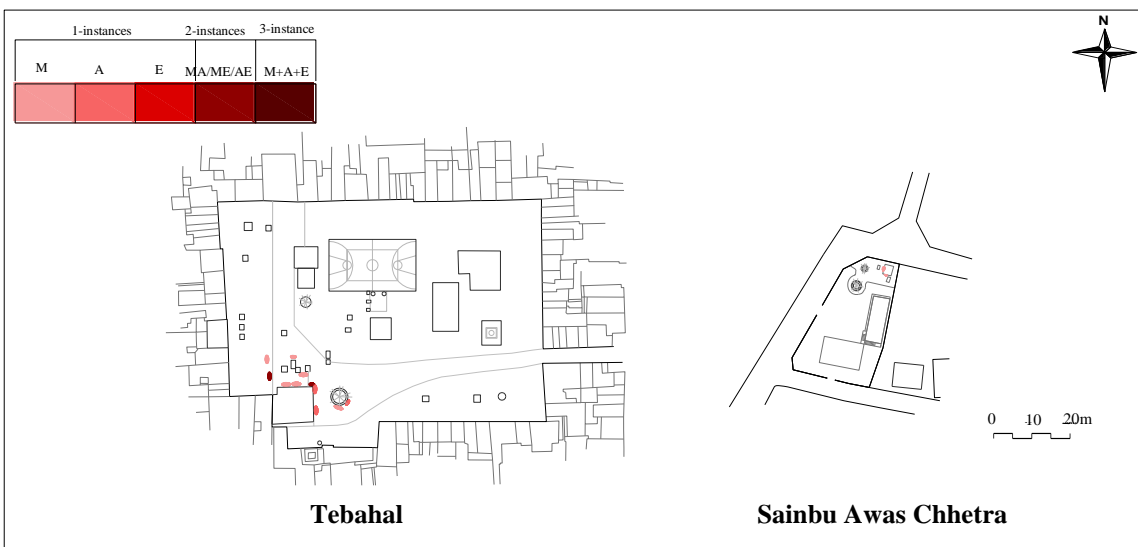
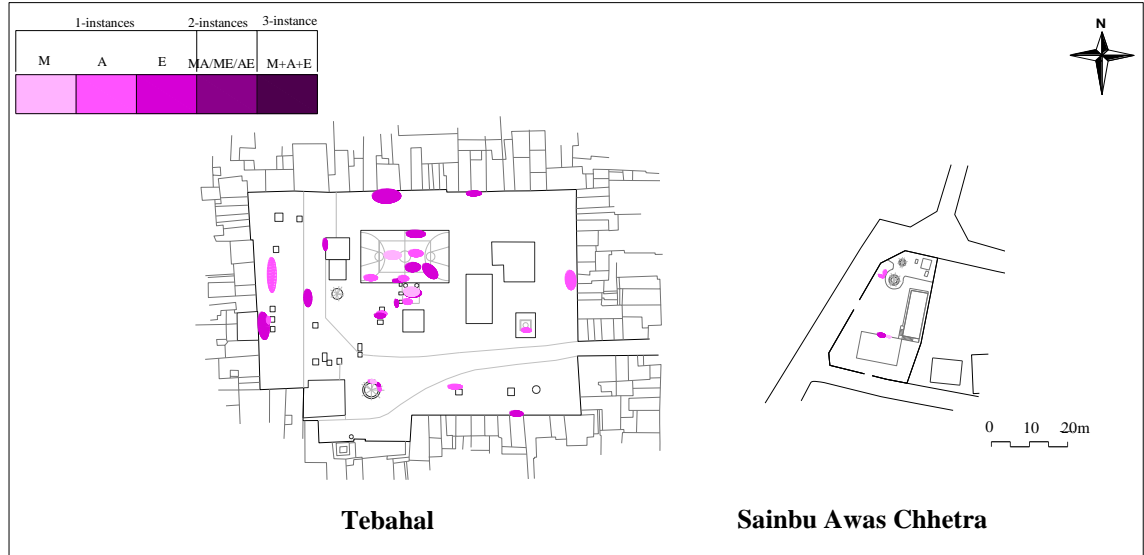


Figure 6.86: Pattern of religious activities (2012) in neighbourhood squares

### Social activities

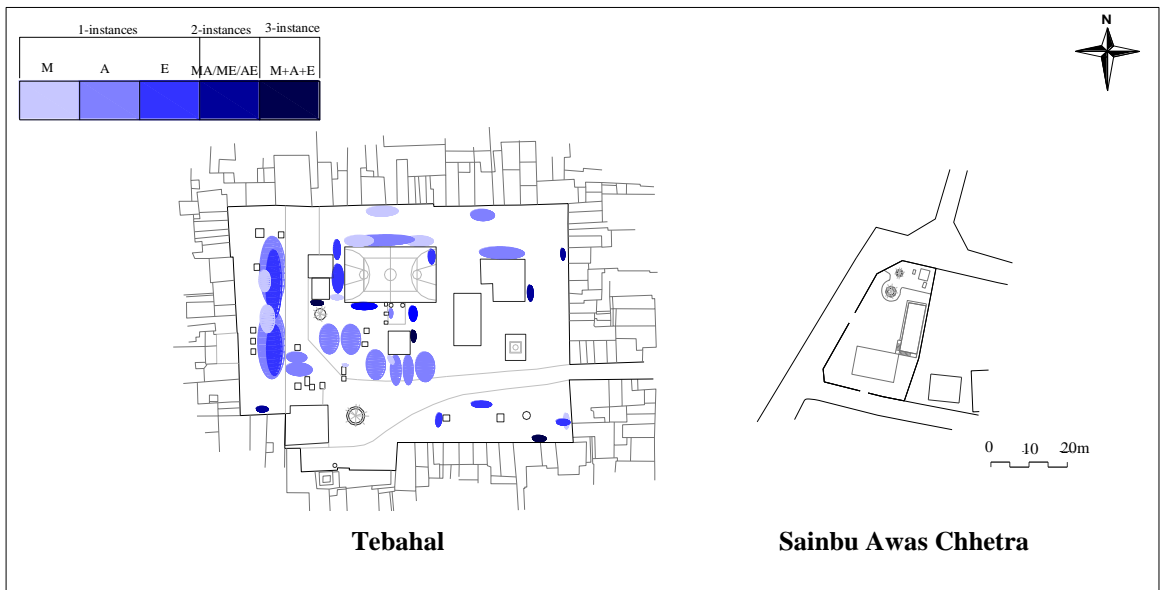
Regarding the social activities, these were concentrated mainly at the centre in Tebahal and occurred in only 1 instances. Most of these activities occurred in the evening. SAC had only few social activities and occurred in 1 instances (Figure 6.87).



**Figure 6.87: Pattern of social activities (2012) in neighbourhood squares**

### Activities with other functions

The activities considered as ‘others’ in Tebahal were concentrated at the western and centre of the Bahal and occurred in 1, 2 or 3 instances. Many of these occurred in the afternoon. SAC had no activities that belong to ‘others’ (Figure 6.88).

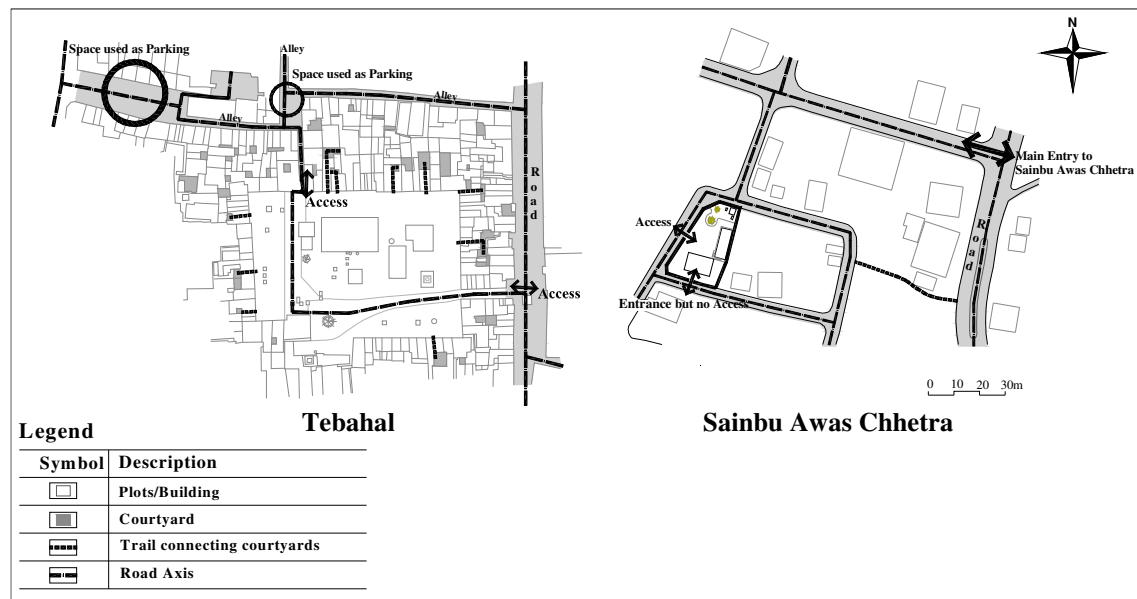


**Figure 6.88: Pattern of activities with other functions (2012) in neighbourhood squares**



### g. Access in neighbourhood squares

Tebahal consists of two primary accesses, one at its eastern side and another at the northwest side (Figure 6.89). This shows that this Bahal is still following the characteristics of neighbourhood square (refer Chapter 5). The access at east joins the street that leads to the busiest commercial road. The access at northwest joins the alleys that connect to other neighbourhood. The open space in SAC is hiding from the main road. The fenced space has two accesses, one at western and other at southern sides. However, only one access at the western side is open and the other closed at all times.

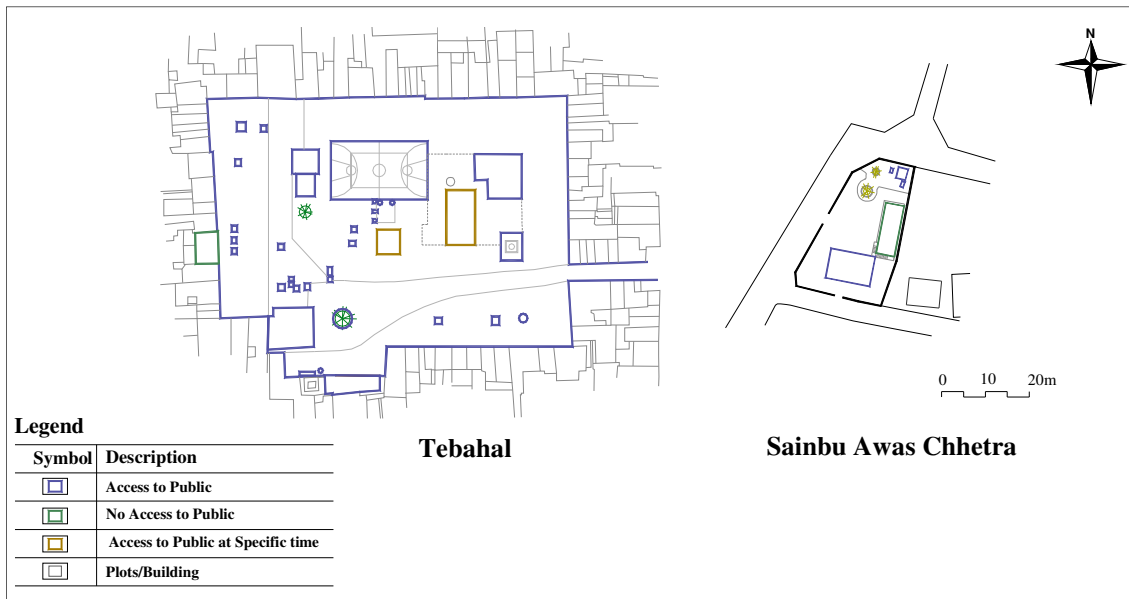


**Figure 6.89: Linkages in neighbourhood squares**

#### *Physical access*

Most of the structures in Tebahal are given access to the public (Figure 6.90). Only a few religious structures are prohibited to the public because of their religious beliefs. For example, the ground floor of Kwapadyo is not given access to the public, only priests belonging to this shrine are allowed to go inside and perform daily rituals; the devotees have to worship from outside. The ground floor of the Sankata temple is open only in the morning and the upper floor is open throughout a day. The Bandhudatta Mahavihara is also open in morning only and the metal bar fencing is mostly locked at other times. The Bhadrakali temple, which today is under construction, is also given access to the public only in the morning. Regarding the level difference, though the pavement in the south is raised, it is convenient to access the activities taking place in this pavement. In SAC, all structures are in same level, making easier to carry out

activities. All structures are open to the public, except the multipurpose building, which remains closed at all times unless anyone need for any specific reason.



**Figure 6.90: Physical access in neighbourhood squares**

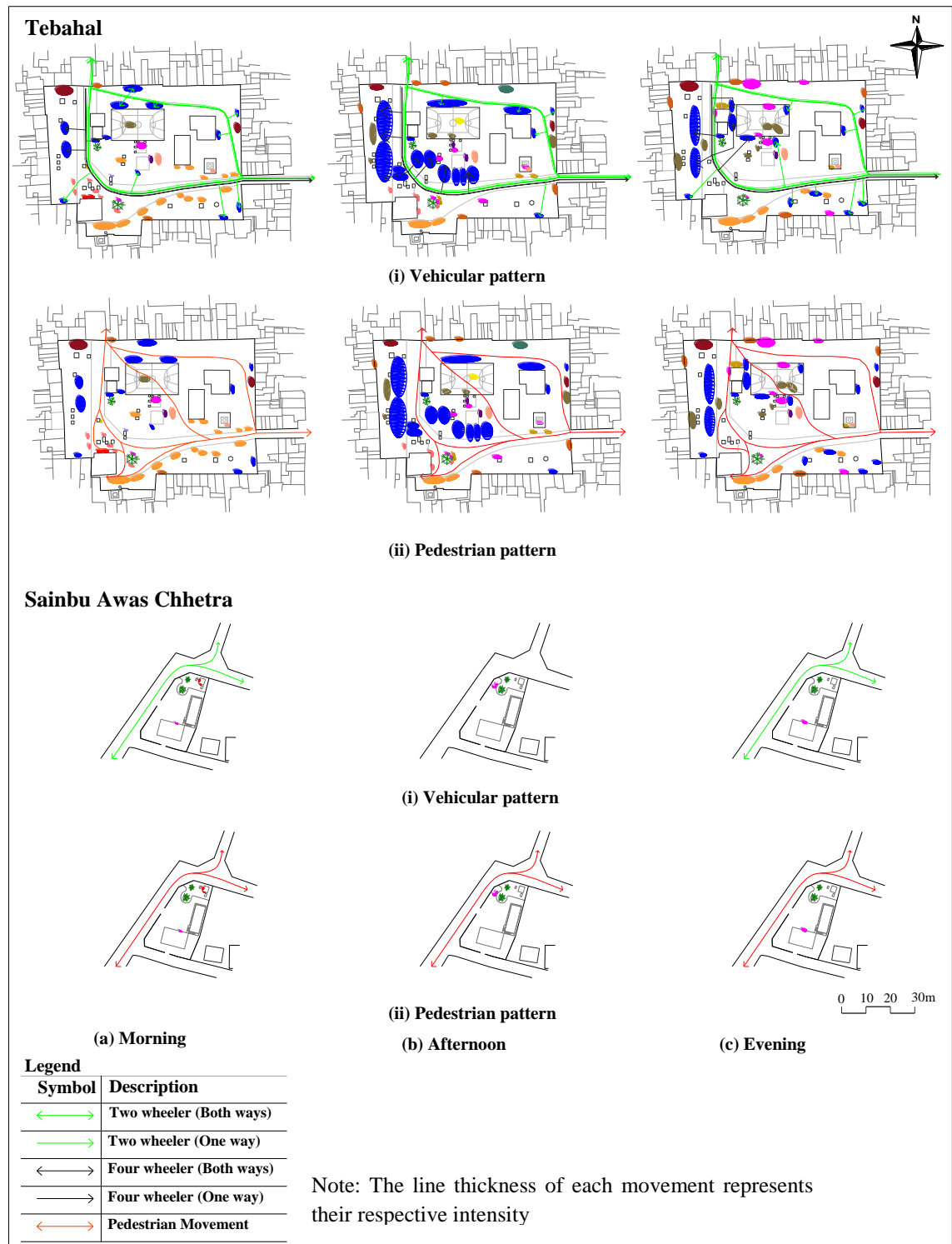
The Bahal, though has a clear and well-defined pathways, pedestrians were seen using the basketball court as a short route (Figure 6.91). The parking at western side had mostly affected the pedestrian. The pedestrian movement had same intensity throughout the day. Both four and two wheelers are allowed in the square. However, the access for four wheelers is only possible through eastern entry whereas the two wheelers can enter from both primary accesses. The Bahal is mainly used by the local residents as a parking in the morning and evening whereas in the afternoon it is used for pay parking. No vehicles are allowed to access if the bahal is full of vehicle parking and also on Saturdays, when the entire Bahal is occupied by the devotees. The parking is regulated by a person appointed by the club. Since this open space in SAC is located in the residential neighbourhood, no heavy traffic was found; only few motorbikes were seen in the morning and evening. The afternoon was very quiet. In addition, only few pedestrian were seen throughout a day.

### ***Symbolic access***

The symbolic access in Tebahal is greatly determined by religious structures; these are also the elements of surprise, which are only experienced after entering into the Bahal. No symbolic access is seen in SAC. The neighbourhood, though has an open symbolic gate at its entrance, it does not indicate the existence of public open space inside it.

**Visual access**

The visual access in Tebahal has been maintained by the neighbourhood itself. The big open space is enclosed by the residences and visible from all sides, thus giving a sense of visual safety. SAC has metal fencing. The design of the fences has considered the visual safety, providing a clear visibility of what is happening at inside and outside of the space. This has helped people to feel it as a safe place.



**Figure 6.91: Traffic movement (2012) in neighbourhood squares**

### h. Urban Scale Analysis - Tebahal

Tebahal, which is entrenched from the adjacent bustling commercial roads, are accessible via different alleys. It is located in the mixed land use; the ground floors of the residences are used for commercial purposes, mainly small retail outlets, and the upper floors are used as residential spaces.

#### *Market corridor*

The markets nearby have great influence on Tebahal. The northern commercial street (1) is popular for jewellery shops, the eastern street (2) is known for pharmaceuticals and sewing machines, the western street (3) is known for the garments (Figure 6.92). According to the local residents, the recent development of jewellery shops in the commercial road has caused other shops to



**Figure 6.92: Market corridor in Tebahal**

move to other locations and most of the computer retailers to this Bahal. The growing needs of computer technology and the prime location have made the Bahal most preferable site by the retailers. Furthermore, Tebahal is widely used as a parking area by the customers of the adjacent commercial markets for loading and unloading of goods from the vehicles.



**(a) Commercial street - 2**

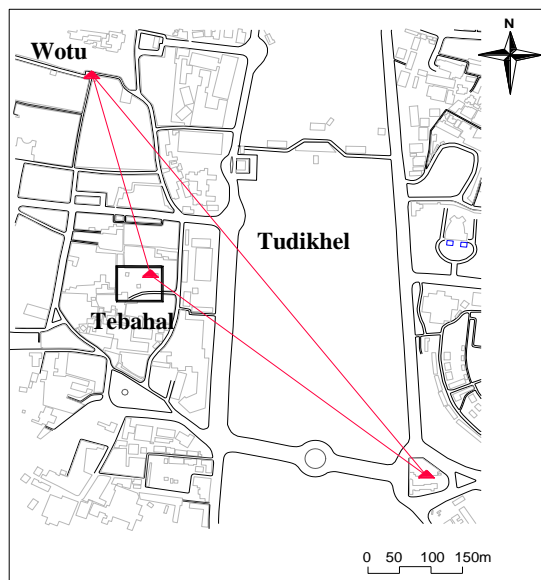


**(b) Commercial street - 3**

**Figure 6.93: Commercial streets**

### *Socio-cultural and religious relationships*

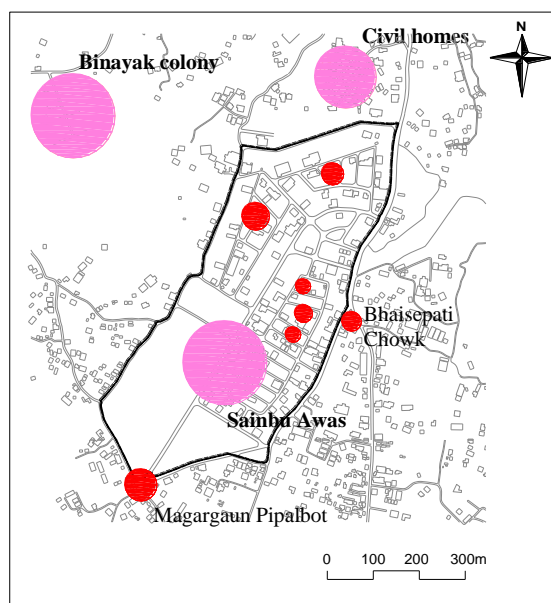
Different religious deities of this Bahal have religious relationships with other deities in different parts of the Valley. According to the local residents, the deity of Sankata makes a pair with another religious deity at Tudikhel and their annual festival is celebrated on the same day. Likewise, the Bhadrakali temple of this Bahal, the temple at the southeast end of Tudikhel and temple at Wotu are dedicated to the same deity (Figure 6.94). During the festival of Pahan Charhe, the mother goddess from Tebahal meets other mother goddesses in Ason square (also see Dya Lwakegu in Figure 6.70). This has been still followed by new generation. Like in Ason, the sword procession<sup>87</sup> is also taken out from Tebahal. Furthermore, during a festival dedicated to god Sankata that occurs once in every 12 years, the sacred vessel is brought from another place (Sanepa) of the Valley and is worshipped. This tradition is still followed by the priest of the Sankata temple.



**Figure 6.94: Religious relationship of temple in Tebahal with other temples**

#### **i. Urban Scale Analysis - Sainbu Awas Chhetra**

Sainbu Awas Chhetra is purely residential area. The neighborhood has encouraged the development of the Sainbu VDC. Many other housing colonies also started to develop in different areas (Figure 6.95). According to the locals, the land value has increased so immensely that only affluent people can afford it. Regarding the networking of open spaces, no linkages



**Figure 6.95: Housing developments - Sainbu**

<sup>87</sup>The difference between the sword procession in Ason and Tebahal is that in Ason, the younger member lead the procession whereas in Tebahal the elders lead the procession.

are seen at present despite of existence of other open spaces in the same area. Different typologies of open spaces found here are based on their functions and public access. These include – private, the gardens in individual residences public; semi-private, the basketball court, tennis court, and children play area; and public, the one on which the researcher had carried out the study.

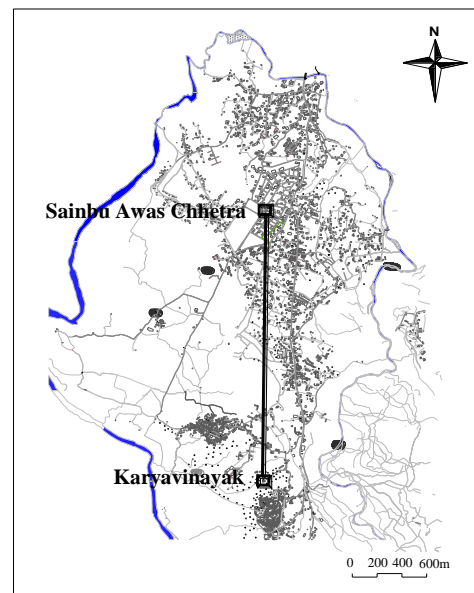


**Figure 6.96: Children play area in Sainbu Awas Chhetra**

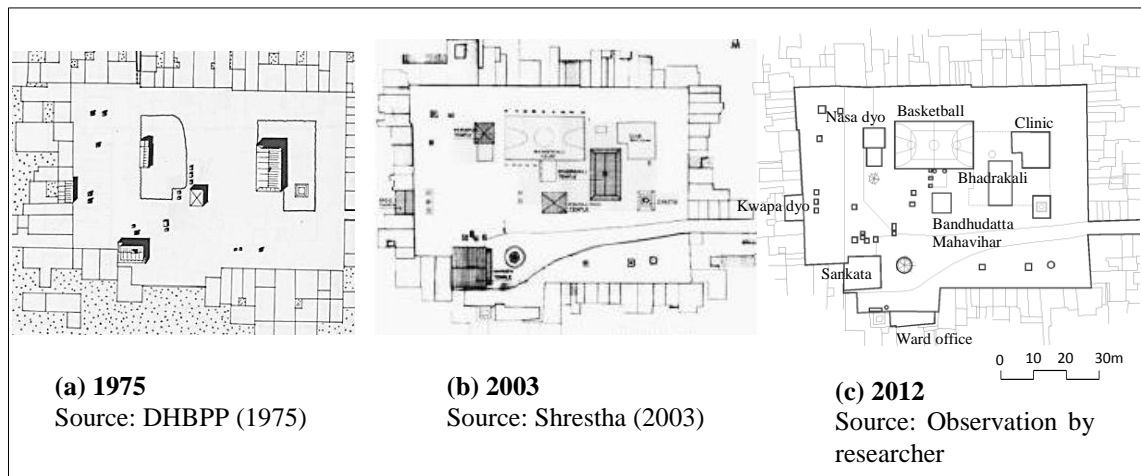
According to the local users, there is a religious relationship between the goddess of this space and another temple in Karyavinayak (Figure 6.97). The rituals have to be performed every year by the ethnic group, who considered the goddess of the space as their lineage deity, in the temple of Karyavinayak.

## ii. Urban transformations in Tebahal

Tebahal has experienced a number of physical changes and uses over time. The available cartographies show that the basketball court, clubhouse, and the clinic are the later additions (Figure 6.98). The cartography dated to 2003 shows that there was also a table tennis board near the clinic. According to the local residents, all these structures were added after 2000 A.D. Bajracharya (1996) mentioned that there was also a rest house, where a current ward office is located and many idols at the south of Sankata temple; these are missing in the present context. There were seven wells in the entire complex, but at present, only a few of these are found. It is believed by the local resident that these might have come under the concrete buildings.



**Figure 6.97: Religious relationship**



**Figure 6.98: Identifying physical changes - Tebahal**

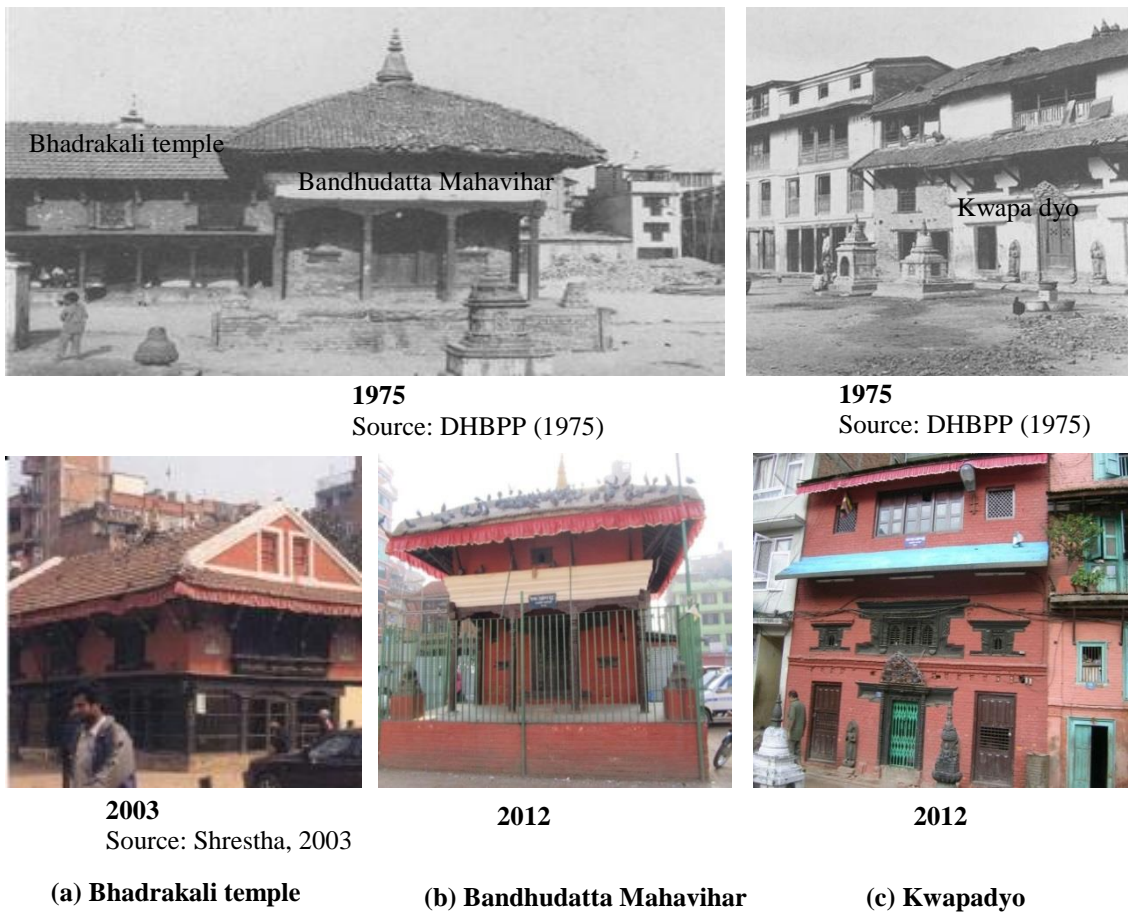
### *Socio-cultural structures*

The Bandhudatta Vihar, according to Bajracharya (1996) was established around 2200 years ago. Locke (1986, p. 304), in his work mentioned about this Vihara that

‘.... all that is left now is a squat one-storied building of brick with a tile roof. The building is just big enough to serve as a one-roomed shrine. The level of the ground level and in front of the plain solid door of the shrine is a veranda. There is no torana and no decoration of any kind on the building’.

If the physical characteristics of Bahal is referred, it must consist of a quadrangle wings built around the central sunken courtyard, the surrounding building generally have to be two storey high, must have a clearly defined entrance area, and Torana above entrance door (Korn, 1976). This indicates that this Vihar has undergone a physical change. In addition, this Vihar today has metal bars all around the temple.

The picture dated 1975 A.D also shows the white washed and plastered building that houses the main deity (Kwapadyo), has today brick finish and the traditional doors and windows are replaced by the modern ones. The tile roof which popularly known as Djhingati roof is also replaced by the corrugated roof. Sankata temple, the existence of which is not known, was renovated in 1985. Its corrugated iron roof was replaced by metal sheet roof. The Bhadrakali temple has also undergone several changes. The open colonnaded plinth seen in 1975 was closed by metal bars in 2003 (Figure 6.99). At present, it is still closed but the metal bars are being replaced by the wooden latticed panels.

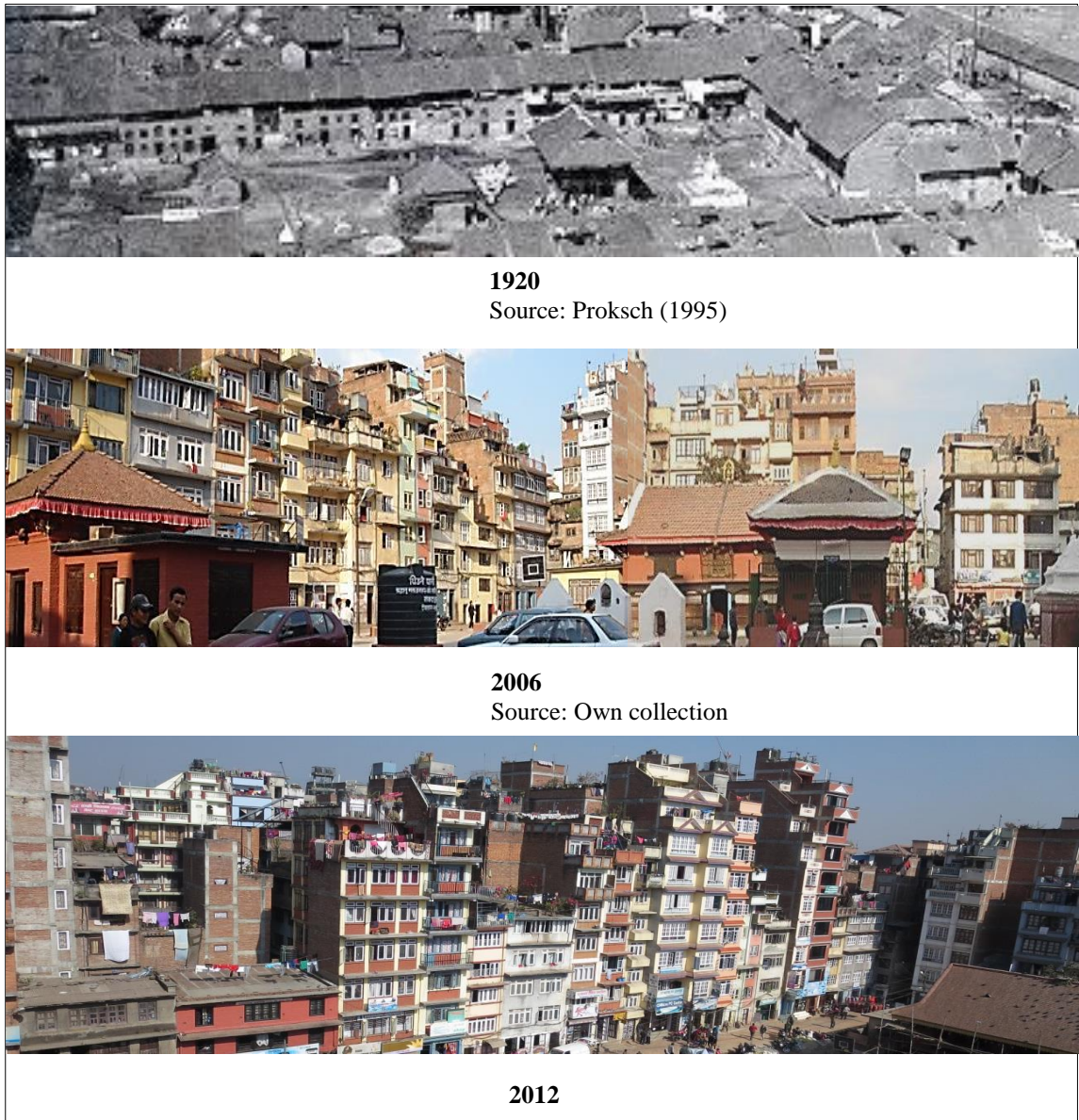


**Figure 6.99: Changes in religious structures - Tebahal**

*Changing skyline of the neighbourhood*

The environment of living together with the divinity is missing at present context. The concept of low building height than the shrines is not followed by the current residents. Hence, almost all buildings have gone tall except few old houses. There used to be harmony of the buildings in terms of skyline, use of building material, and the architectural style, thus giving sense of architectural integrity. The residences in the past were mostly of traditional style (Figure 6.100). But today, most of the traditional buildings are replaced by new buildings with no consideration of maintaining harmony in the neighbourhood. Like in Ason market square, the tall buildings have dominated the religious shrines of the bahal. In addition, the low height buildings of the past had created a sense of openness, but today this has been reduced by tall buildings.

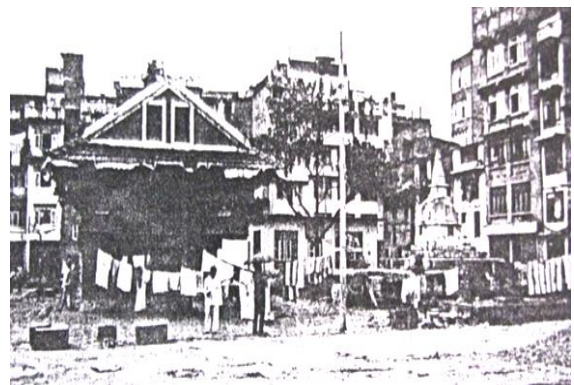




**Figure 6.100: Changing skyline - Tebahal**

*Use values*

From the available evidences, the Bahal was used more as a social space in the past. Social interactions, washing and drying clothes (Figure 6.101), sun basking, and drying grains were the prominent activities in the courtyard in the past. According to the locals, it was not popular for the religious activities as it is today. It was mainly popular as the Buddhist site due to existence of two Bahals, but later (medieval period) due to



**Figure 6.101: Drying clothes in Tebahal**  
Source: DHUD (1995)

influence of Hindus, it has become popular sites for both Hindus and Buddhist. Over the past few years, the devotees have increased in the Bahal.



**Figure 6.102: Same types of activities in same location – Tebahal**

Source: Own collection

The courtyard, which used to be the children’s play area, gathering space of the elders, is today used as the pay parking space. As a result, children were seen playing in the pathways or wherever space is available (Figure 6.103), and the adults were seen socializing in the Chaityas. Quoting one of the users, who is the resident of the bahal,



**Figure 6.103: Children playing in Tebahal**

‘There are not any spaces in the bahal where the elderly people can socialize, where they can sit, and where they can bask in the sun during winter. There used to be a few gathering spaces like the ground floor of Bhadrakali temple, Bandhudatta Mahavihara in the past. And of course, the bahal was all open and one could easily find spaces anywhere to socialize. But, today, the Bhadrakali temple is under construction and Vihara is fenced by metal bars.

Regarding the commercial activities, the flower and vegetable vending, teashops, and tailors all were taking place in almost in the same location (Figure 6.102) since more

than 10 years ago. On the other hand, the uses of the residential buildings are changing. The ground floors of residences are opened up for commercial activities, which was uncommon in the past. Quoting one of the users,

‘It was purely residential neighbourhood in the past. As the commercialization has taken a rapid pace in the areas like Newroad, Dharahara, and Khichapokhari, Tebahal started to develop into a mix of commercial and residential neighbourhood. In the recent years, this commercialization has become intense in this bahal and the owners of the residences have started converting the ground floors of their buildings into shops, cafes or any other commercial purposes from which they can generate income’.

Some residences are even converted into guesthouses and restaurants. The other change found in the use of the building is a clinic. This building was a clubhouse in 2006 and today shifted to the building near Nasa dyo.

### **iii. Urban transformations in Sainbu Awas Chhetra**

No historical cartographic references are found to study transformations of Sainu Awas Chhetra. Hence, this section is purely based on the available literature and the interviews conducted with the users of open space.

#### ***Urban settings***

The government in 1974, initially proposed to construct the prison in the area where the residential neighbourhood is at present, but due to several reasons, this project shifted to another location. In 1988, the government decided to develop a residential neighbourhood with an aim to regulate the rapid urbanization of the Valley. However, this project was only initiated in 1991 after resolving the issues between the government body and the landowners of this area. According to the interviewees, the agreements were made between the government and the local residents. These include the provision of areas for the residences of political diplomats and the lineage deity of the particular ethnic group (Achhami) in the neighbourhood. For the lineage deity, an agreement was made between the government and the people from that ethnic group to provide the deity in an open space of the neighbourhood.

There are not any written evidences how the open space was in the past. However, according to the local users, the area was entirely an open ground with a stone god idol. Before the residential planning, only a small area was demarcated as the territory of the deity. After the planning, a small shrine was made where the deity is kept and the open space was provided with fencing. The multipurpose building and the covered shed were added later, these according to the local users were provided not more than five years ago. Today, this open space not only has respected the religion and culture of the particular ethnic group but also has met the needs of the users.

### *Use values*

The open ground in the past was used particularly by one ethnic group for worshipping purposes, but at present, everyone comes to this space for worshipping. Regarding the uses in this space, the same culture and tradition are being followed since past. The festival celebrated by that particular group is still followed every year. All the elderly members of this ethnic/caste group have to perform rituals in the shrine. A feast also takes place on this particular day. After the success of the project, this area has developed and became a safer place than before. Quoting one of the users,

‘I am a cow herder; I come here for grazing cattle almost every day since my teenage. Before the town-planning project, this place was very quiet and unsafe and I have to go home during daylight. Today, I feel safe’.

The area after development came into a lime light of the film industry. The open space was used for filming movies, but today due to security reasons, it has been restricted. The filming organizers had to pay certain amount to the responsible authority that is looking after this space. The earnings were then used for the annual festival or any maintenance of this space, but as the filming is not allowed, the source of income has been cut off. Today, the funds are raised within the ethnic groups for safeguarding and maintenance of the space.

### **6.4.3 Community squares**

A comparative study of community squares – Dharahara-Sundhara from TUC and Magargaun Pipalbot from SA are discussed in this section. A detailed study is discussed

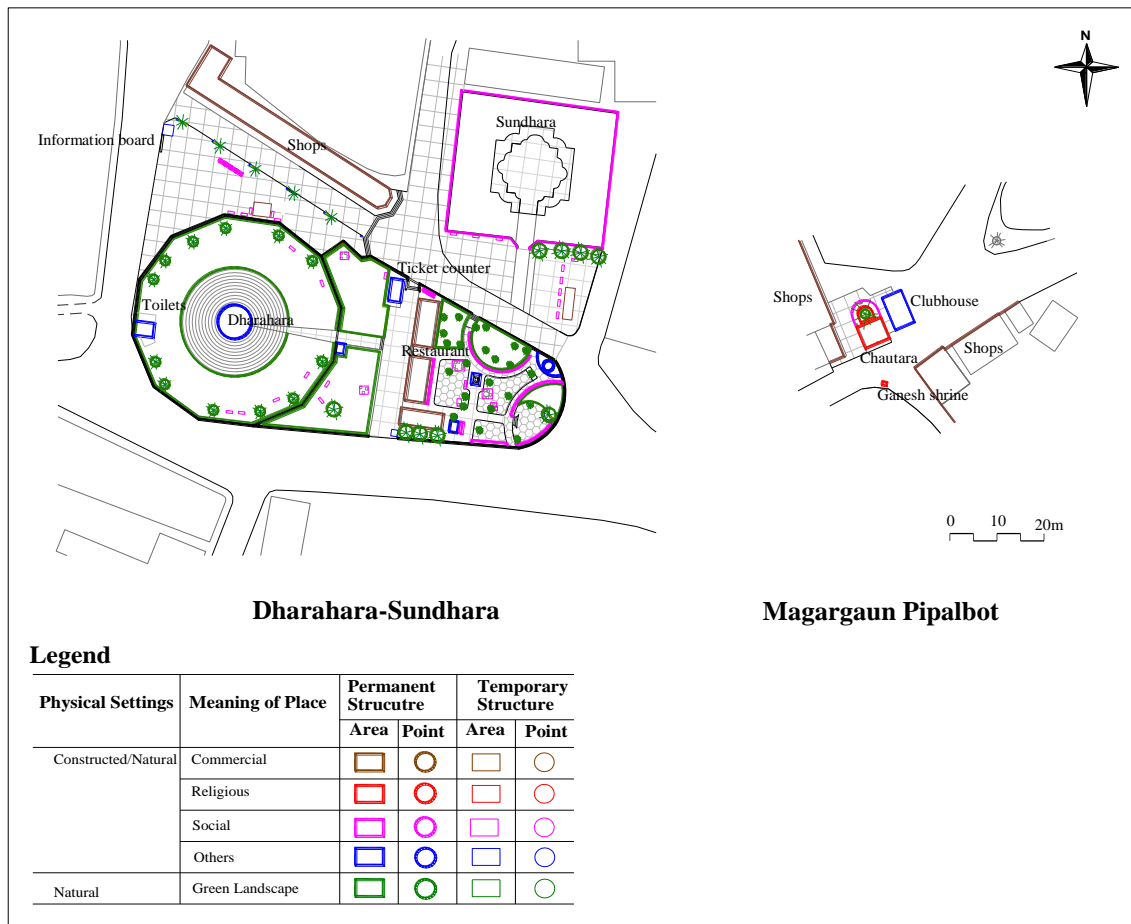
in Appendix 6.3. Dharahara-Sundhara precinct situated in ward number 22 is easily approachable from different transportation nodes (bus stop, Tempo, and micro van stand at east), busiest commercial areas (at north), and other residential neighbourhoods. The Magargaun-Pipalbot on the other hand bridges in two different wards of Sainbu VDC, being on the eastern and western edges of wards 5 and 9 respectively. It is located in the crossroad and is easily approachable from the adjoining areas. The five different roads converge into an open area with Chautara. The Chowk joins different communities such as Kunwargaun at north and Magargaun at the south. The names of these communities follow the caste/ethnic groups of the Nepal (this will be discussed later). The existence of bus stop in the nearby area has helped this space to become popular among the local people.

#### **i. Comparison of community squares**

The ‘Dharahara-Sundhara (DS)’ precinct, the heritage and cultural site, was developed as a public plaza under the first Public Private Partnership (PPP) programme of Nepal between Kathmandu Metropolitan City (KMC) and a private company (SideWalker Traders Pvt. Ltd.). The company is given the ownership of this public property for 20 years by KMC in 2004 and is authorized to plan, manage and develop the site following the guidelines of KMC and the Department of Archaeology (DoA). The area today is the most widely used urban space for meetings, shopping, and gatherings. It comprises of two historic structures Dharahara, (also known as Bhimsen Stambha) and Sundhara (the public stone waterspout). These symbolic structures at present have become a source of income generation. The Magargaun Pipalbot (MP) Chowk is commonly popular for recreational and commercial purposes. The Chowk at the junction of roads and with a big tree is considered as a landmark of the area.

#### **a. Physical settings**

Comparing the community squares between TUC and SA (Figure 6.104), DS has places of commercial and social meanings, places with other functions, and natural elements, whereas, MP has places of religious meaning in addition to places of commercial and social meanings, structures with other functions, and natural element. Almost all structures in DS (except few structures) and in MP are permanent. The DS is greatly represented by the symbolic structures Dharahara and Sundhara and MP by the Chautara. The details of these structures are discussed in Appendix 6.3.



**Figure 6.104: Comparison of physical settings between community squares**



**Figure 6.105: A view of Dharahara-Sundhara from south**  
Picture courtesy: Pradip Ratna Tuladhar



**Figure 6.106: A view of Magargaun Pipalbot from north**

#### **b. Sensory perceptions of physical settings**

The structures in both cases have visual, smell, and touch perceptions. Not any particular sounds were emanated regardless of the weather conditions in both cases (also refer Figures 107, 108, and 109).

#### **Visual perceptions**

For DS, the results obtained from the perceptions of the professionals show that the two monuments Dharahara and Sundhara have very pleasant visual perception. The commercial structures have the ranges of pleasant to unpleasant perceptions. The shops are perceived as pleasant, the restaurant and commercial stalls as neutral, and the kitchen of the restaurant and cold drinks stall as unpleasant to visual perception. Almost all social structures are visually pleasant except the seating near to the main entrance of the park that has neutral visual perception. Most of the structures with other functions are visually unpleasant except the sculpture of the queen and the information board that have neutral and stone sculpture that has pleasant visual perceptions. The greenery areas at the western side have neutral visual perception and the eastern have unpleasant perception. All trees in this precinct have pleasant visual perception.

In MP, the results show that the stretch of shops at west is visually pleasant whereas the southeast stretch has neutral visual perception. The social and religious structure, Chautara and the religious structure, Ganesh shrine have pleasant visual perception. The structure with other functions, a clubhouse has unpleasant visual perception. The tree in a Chautara has pleasant visual perception.

#### **Smell perceptions**

In DS, only the greenery areas have smell perceptions. The results show that all of the greenery areas provided in this space have neutral smell perception. In MP, the tree also has a neutral smell.

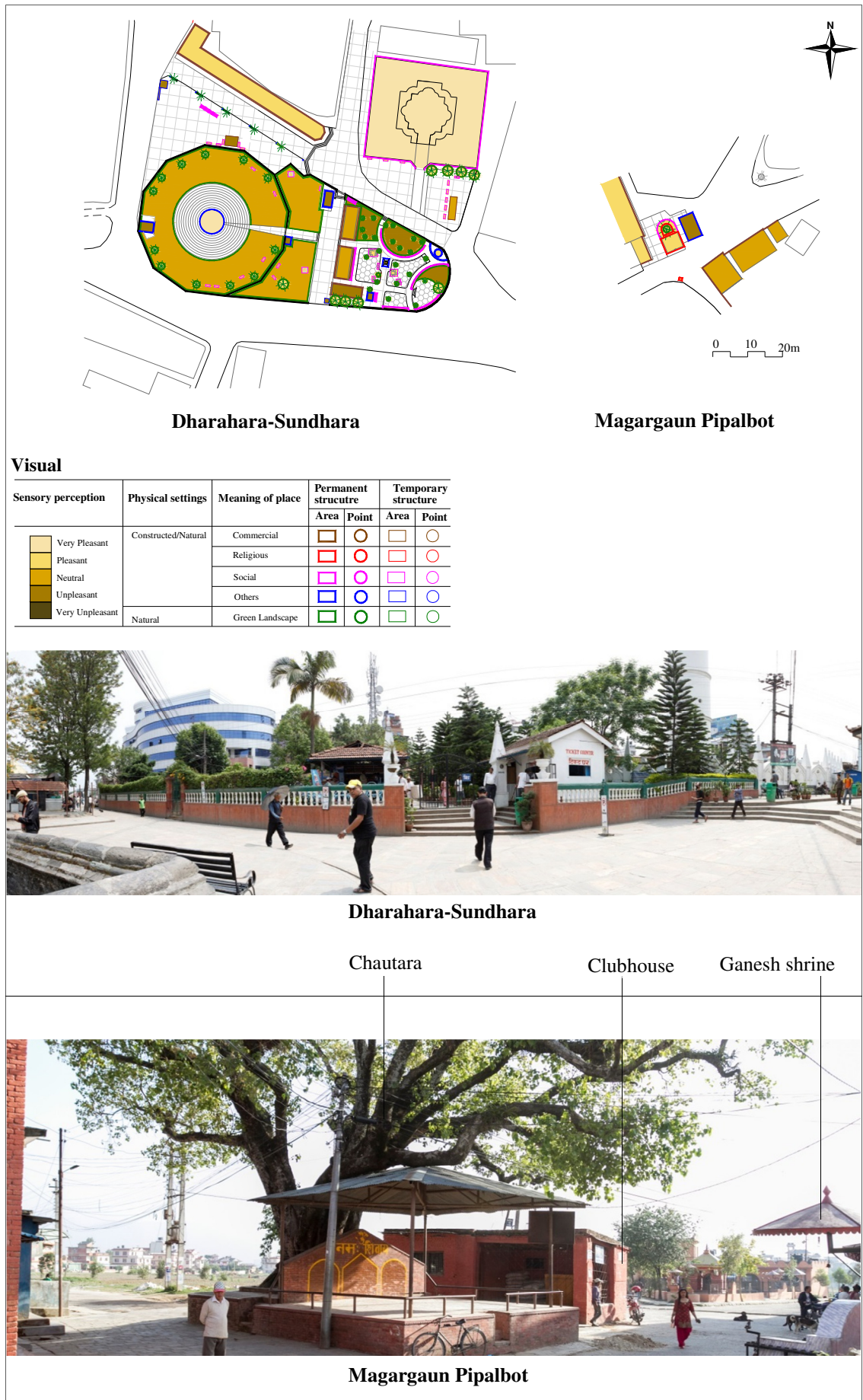
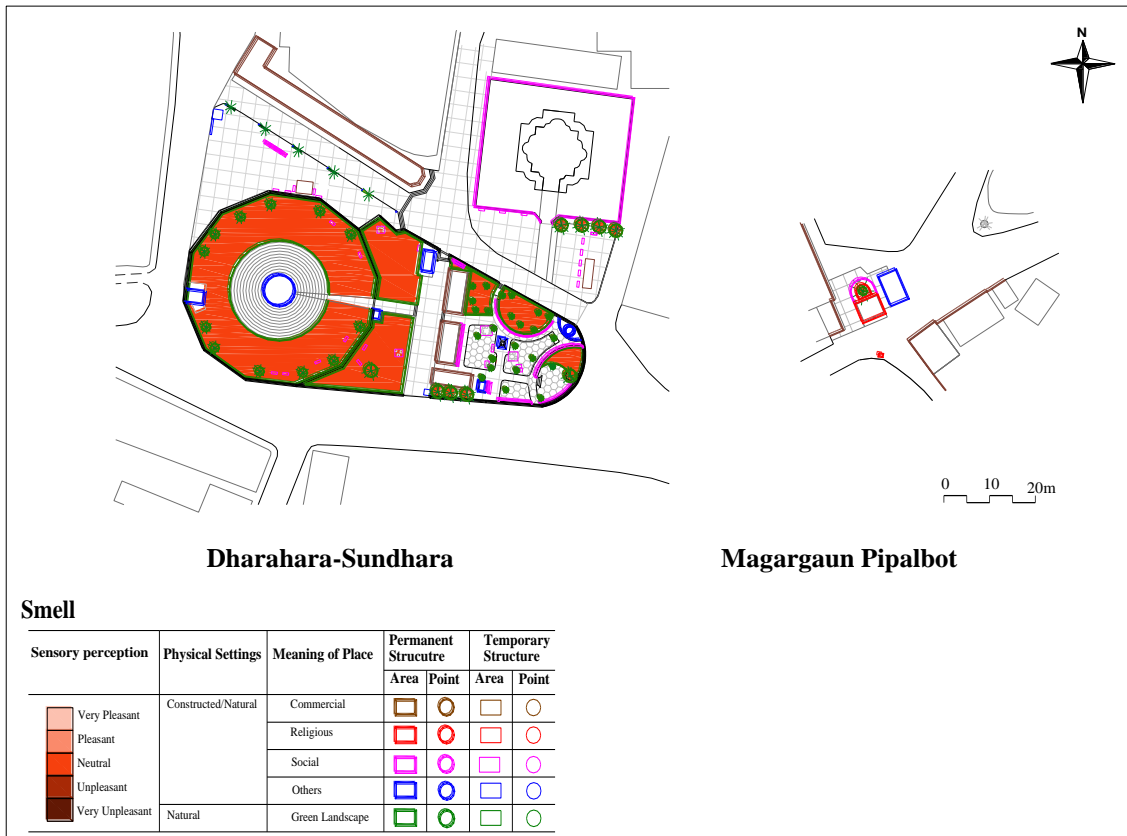
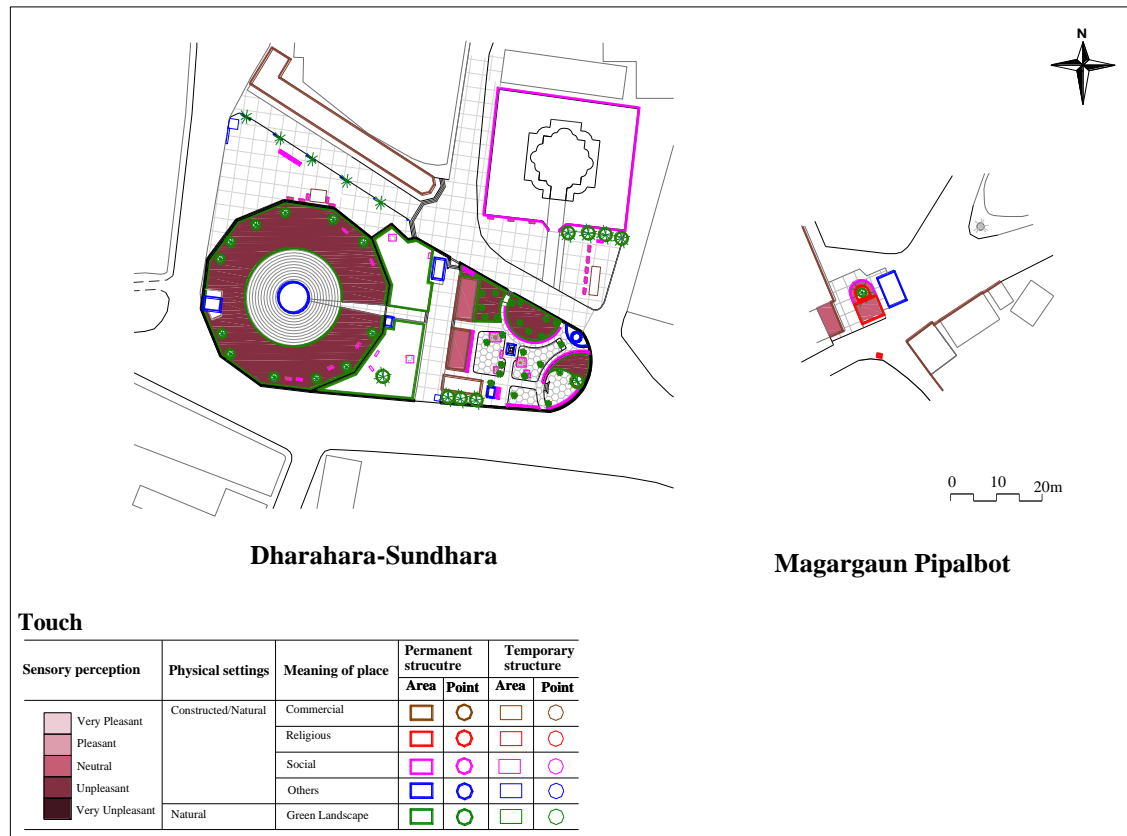


Figure 6.107: Comparison of visual perception of physical settings between community squares





**Figure 6.108: Comparison of smell perception of physical settings between community squares**



**Figure 6.109: Comparison of touch perception of physical settings between community squares**

### Touch perceptions

In DS, a few structures such as Sundhara and a few greenery areas that possess touch perceptions are not given access to the public; hence, no interpretations have been made for these structures. The results show that all social structures and the restaurant are neutral to touch, except the seating in front of the shops that are perceived as pleasant to touch. All the greenery areas (excluding the one, which were not given access) have unpleasant touch. Regarding the touch perception in MP, the plinth of building at west stretch, Chautara and a Ganesh shrine are neutral to touch.

### c. Activities

DS has diverse activities throughout a day than MP (Figure 6.110). Regarding the activities throughout a day, DS had many social activities in the morning; parking in the afternoon; and social, commercial, as well as other activities in the evening. On the other hand, the activities were less in MP throughout a day. Most of the activities in the morning in MP were commercial whereas they were social in the afternoon and evening.

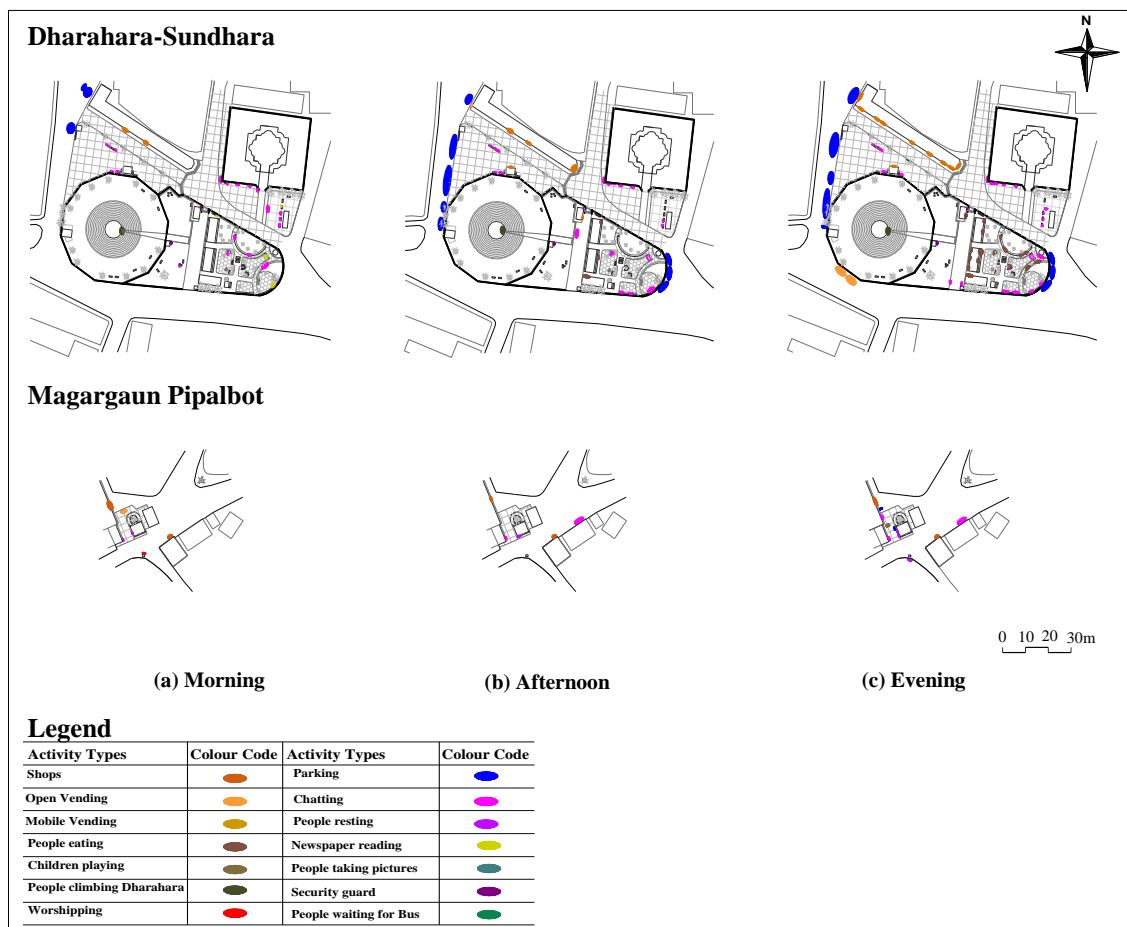


Figure 6.110: Comparison of activities (2012) between community squares

Comparing the activities between these two case study open spaces, the common types of activities found in these spaces are social activities in the afternoon and evening. The prime differences in activities between these open spaces are religious activities that are found only in MP in the morning and intense parking activities that are found only in DS at all times of a day.

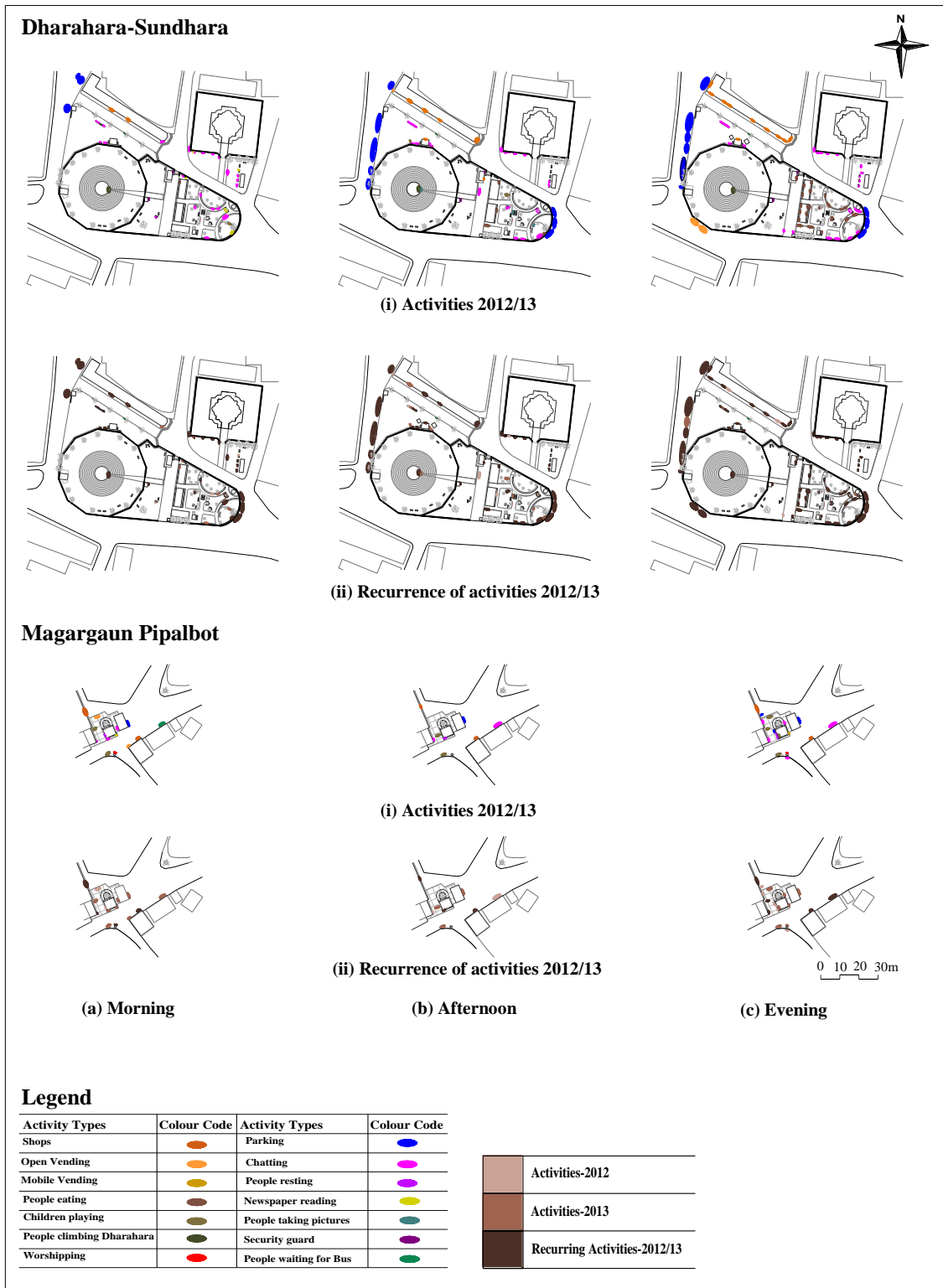


Figure 6.111: Comparison of occurrences of activities between community squares

#### d. (Re)occurrence of activities-2012/13

Comparing the activities observed in the two consecutive years 2012 and 2013 in both case study open spaces, almost all activities that existed in the year 2012 were also found in the year 2013, except those related to social activities such as people relaxing, reading newspaper and chatting, and few open vending (Figure 6.111). Regarding the occurrence of activities, in DS both commercial and social activities have the highest count in the morning. For social activities, the activities in the space near Sundhara have more counts than those in the green park area. In the afternoon, all commercial, social as well as parking activities have the highest count. In the evening, social activities have the highest count than commercial activities and parking.

In MP, many new activities were seen in the morning and evening in 2013. The commercial activities have the highest count in the afternoon and evening than in the morning. Among these commercial activities, vending activities in shop occurred more than open vending. The Chautaras are mainly for the social purposes, but in this case, social activities have low counts.

#### e. Sensory perceptions of activities

The sensory perceptions of activities were conducted for visual, smell, and sound. The comparative study on each of these perceptions for community squares are discussed as below (refer Figures 6.113, 6.115, and 6.116).

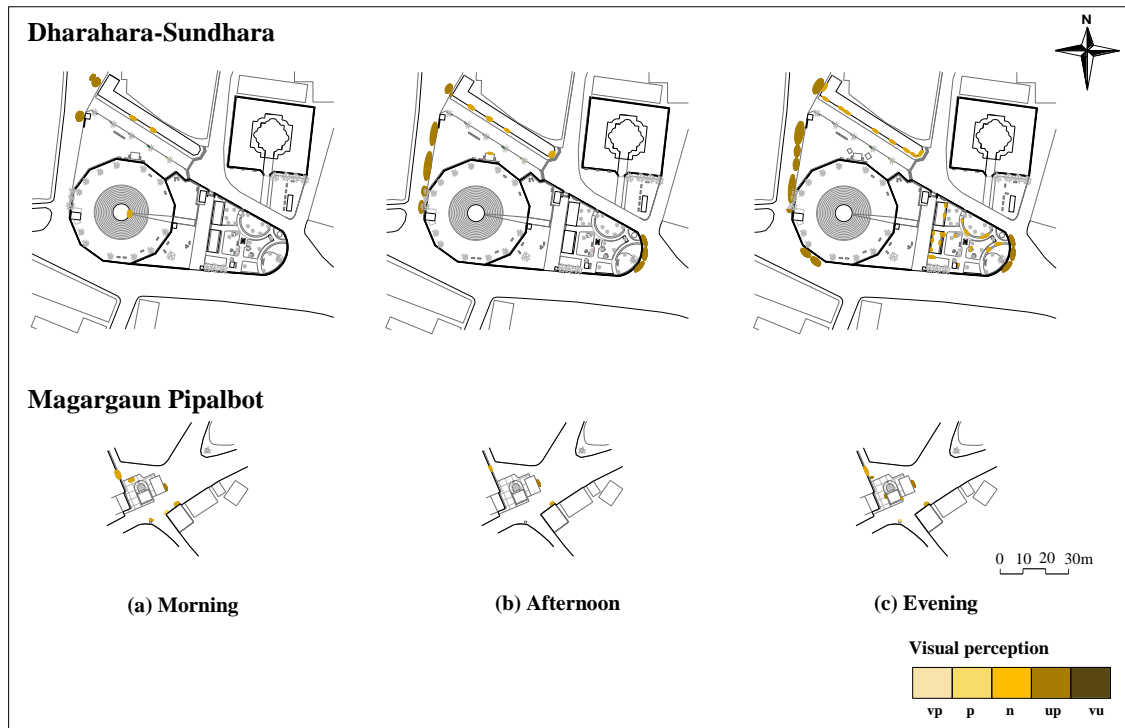
##### Visual perceptions

According to the professionals' perceptions in DS, almost all of the commercial activities and parking in the morning, afternoon as well as evening have neutral and unpleasant visual perceptions respectively. The open vending that appeared in afternoon and evening have unpleasant visual perceptions.



**Figure 6.112: Visual perception of parking in Dharahara-Sundhara**

In MP, the religious activity in the shrine in morning has neutral and in evening has pleasant perceptions. Most of the commercial activities have neutral visual perception throughout a day. The open vending that appeared only in the morning has neutral visual perception. The parking near clubhouse throughout a day is visually unpleasant.



**Figure 6.113: Visual perception of activities in community squares**

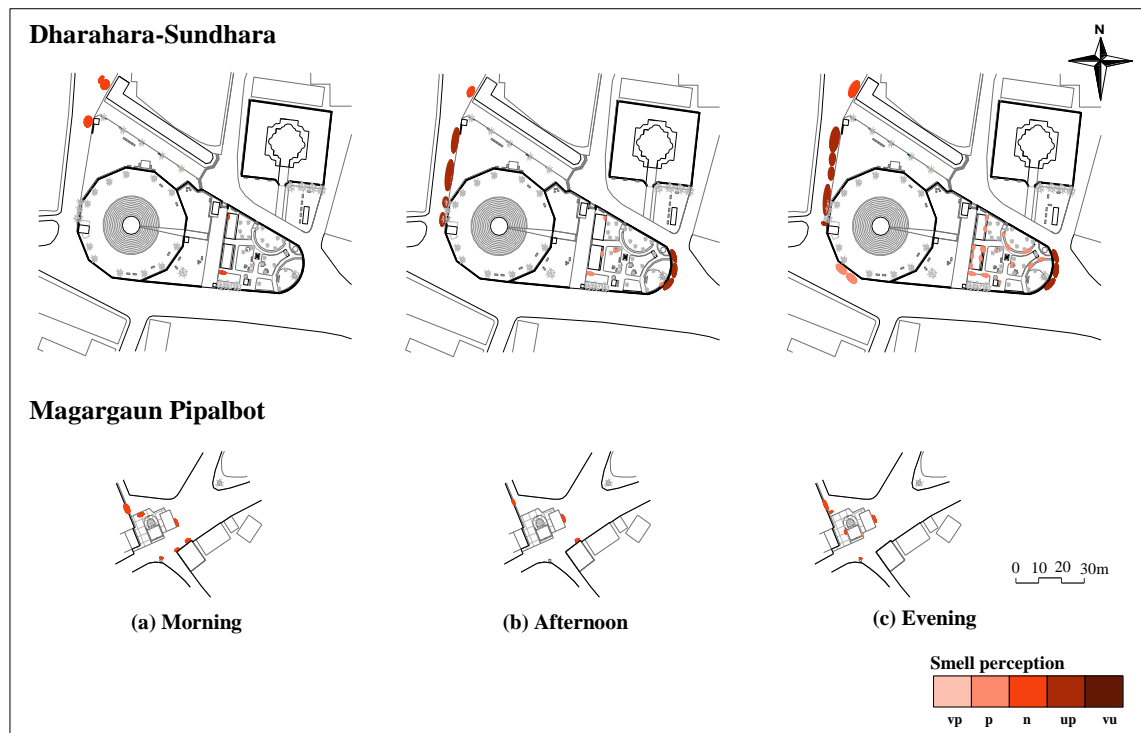
### Smell perceptions

In DS, the commercial activities in the restaurant (people having coffee, cooking, eating) throughout a day and open vending (roasting meat) (Figure 6.114) that appeared in the evening have pleasant smell perception. Most of the parking throughout a day has unpleasant smell perception.

In MP, not many activities have smell perceptions. The religious activities in the morning and evening have neutral smell perceptions. All commercial activities are neutral throughout a day except the snack vendor of the evening that has pleasant smell. The parking in this case has neutral smell perception.



**Figure 6.114: Open vending emanating smell**



**Figure 6.115: Smell perception of activities in community squares**

### Sound perceptions

In DS, almost all commercial activities have neutral sound perception. A few social activities such as chatting near shops and at western space of Sundhara and children playing have pleasant sound perception. The parking at western and eastern boundary has unpleasant sound perception.

In MP, almost all of the commercial activities have neutral sound except the open vegetable vending of morning that has pleasant sound perception. The social activities in the Chautara and parking have neutral sound perception whereas children playing and the religious activities have pleasant sound perceptions.

Comparing all of the sensory perceptions of activities in Dharahara-Sundhara, there were not any activities that were perceived as pleasant to all senses throughout a day. The activities in this case that were perceived as unpleasant to all senses are parking. Similarly in Magargaun Pipalbot, there were not any activities that are perceived as pleasant or unpleasant to all senses throughout a day.

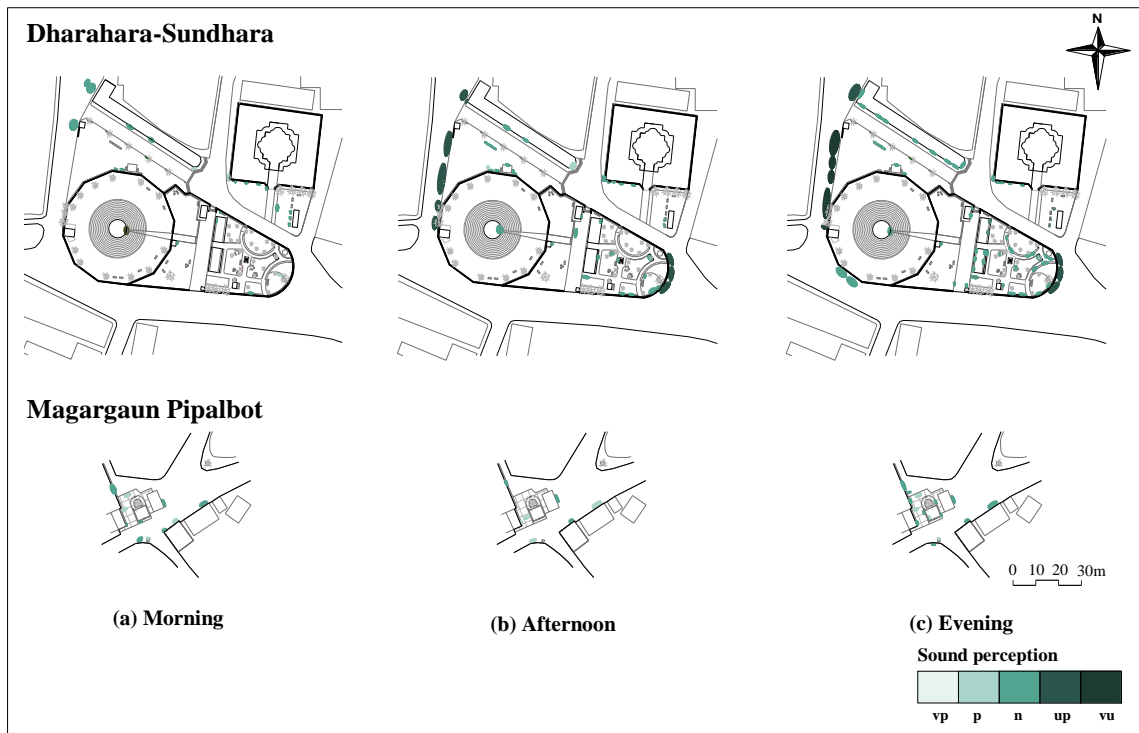


Figure 6.116: Sound perception of activities in community squares

f. Characterizing the pattern of activities

**Commercial activities**

The DS complex had shops, cafes, and open vending as the commercial activities. The activities in shops occurred in 1-instances and 3 instances, most of which were occurred in the evening. The open vending and the activities in café also occurred in 1-instances and most of them occurred seen in the evening. The commercial activities in MP include shops and open vending. The activities in shops occurred in 1, or 2 instances and the open vending occurred in only 1-instance (Figure 6.117).

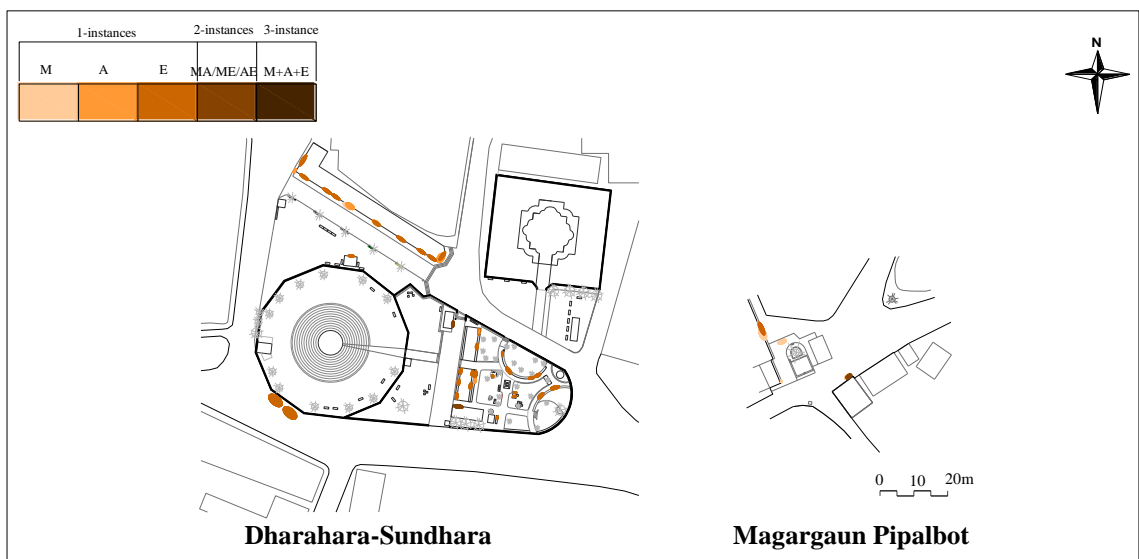
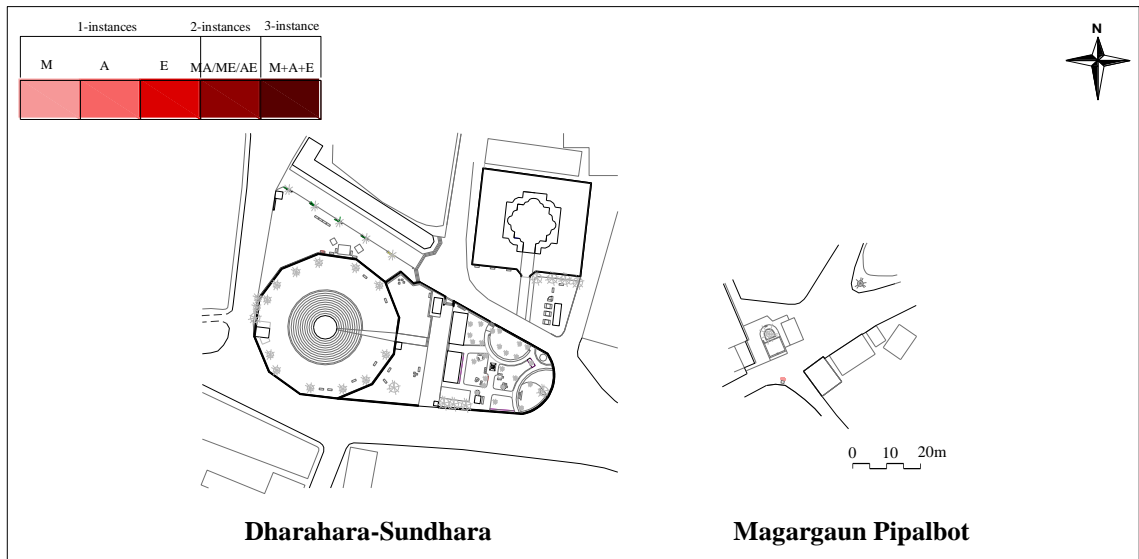


Figure 6.117: Pattern of commercial activities (2012) in community squares

### Religious activities

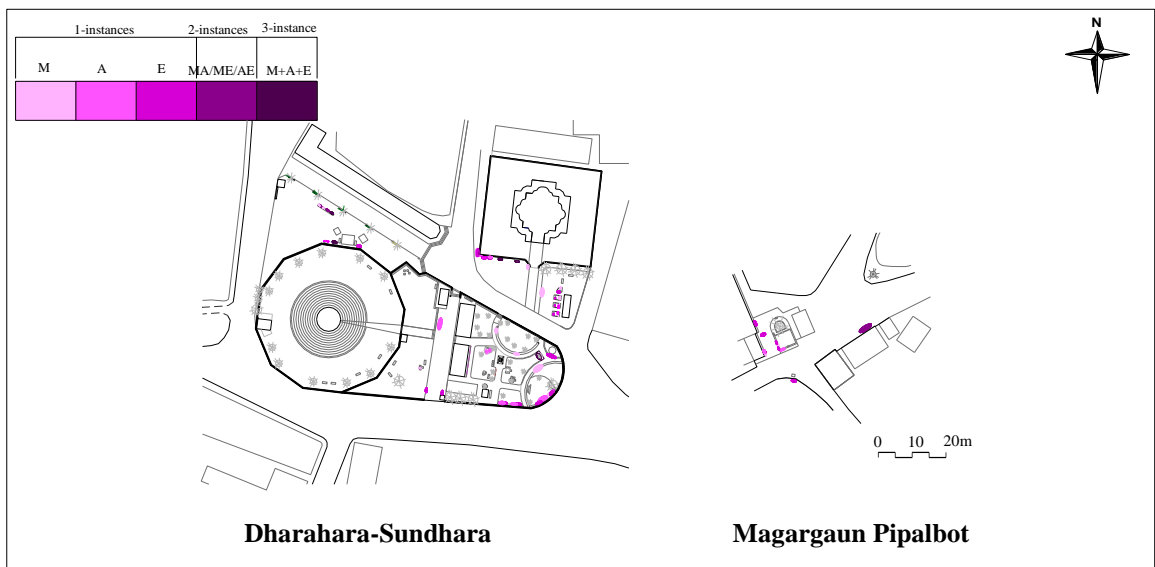
Regarding the religious activities, DS had no religious activities, whereas in MP a few religious activities occurred in 1-instance only (Figure 6.118).



**Figure 6.118: Pattern of religious activities (2012) in community squares**

### Social activities

Regarding the social activities, most of these were concentrated inside where the green spaces and seats are provided and at the edge of the Sundhara monument. These social activities occurred in 1, 2, or 3 instances. In case of MP, most of social activities concentrated in the Chautara. The social activities in this case occurred in 1 and 2 instances (Figure 6.119).

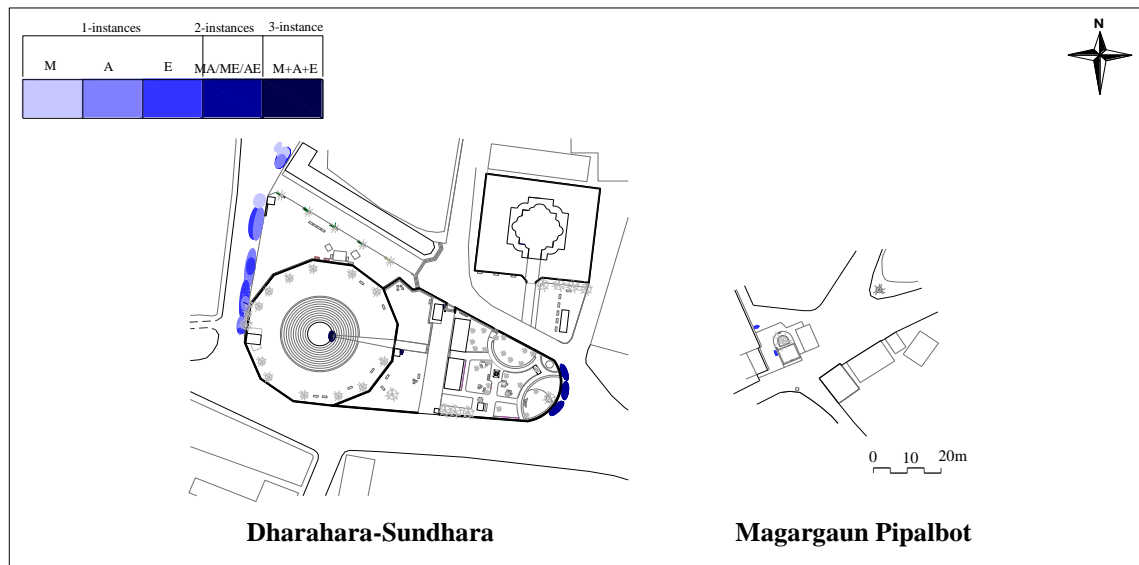


**Figure 6.119: Pattern of social activities (2012) in community squares**



### Activities with other functions

Regarding the activities considered as ‘Others’, most of these occurred at the boundary of the Dharahara. These activities occurred in 1, 2, or 3 instances. In case of MP, these activities occurred in 1-instance only (Figure 6.120).



**Figure 6.120: Pattern of activities with other functions (2012) in community squares**

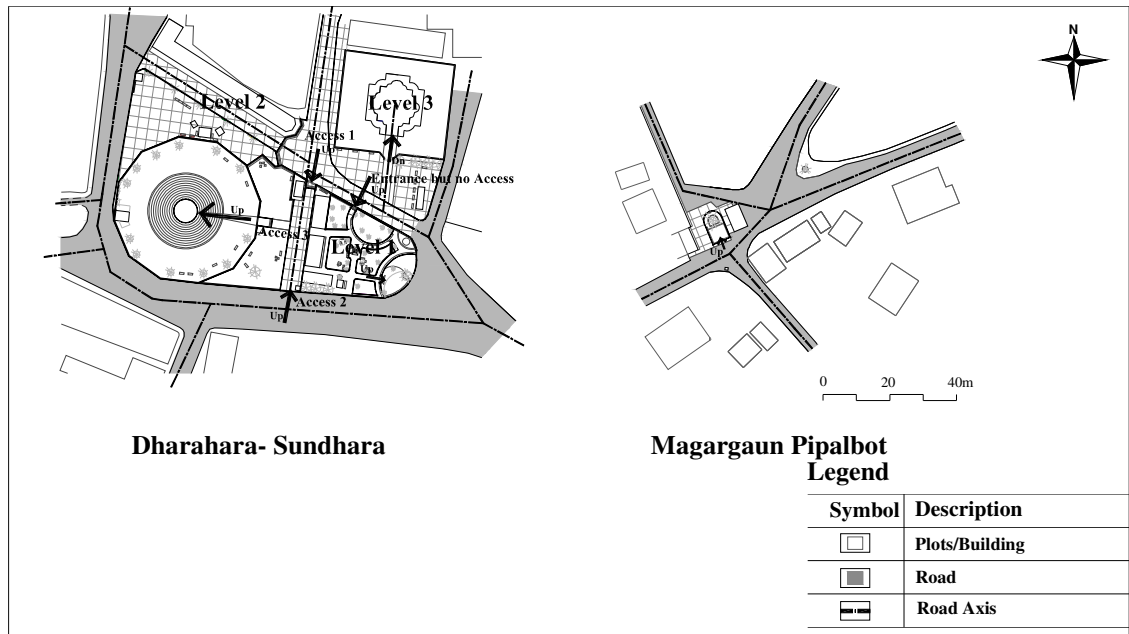
#### g. Access

DS, located at the junction of roads is easily accessible from different parts of the core. MP, also located at the junction of roads is easily accessible from different neighbourhoods of the Sainbu VDC. A comparison is made between these case study open spaces.

#### *Physical access*

The entire DS plaza is divided into different levels. The greenery park is in the highest level (Level 1), the commercial outlets in the intermediate level (Level 2), and the Sundhara at the lowest level (Level 3) (Figure 6.121). No design considerations have been incorporated for the disabled people. The park has two primary entries, where the security checks are done. There is also one secondary access, which is always closed.

In MP, all structures are in same level except the Chautara that is raised from the ground. A few narrow steps are provided that are inconvenient to use.

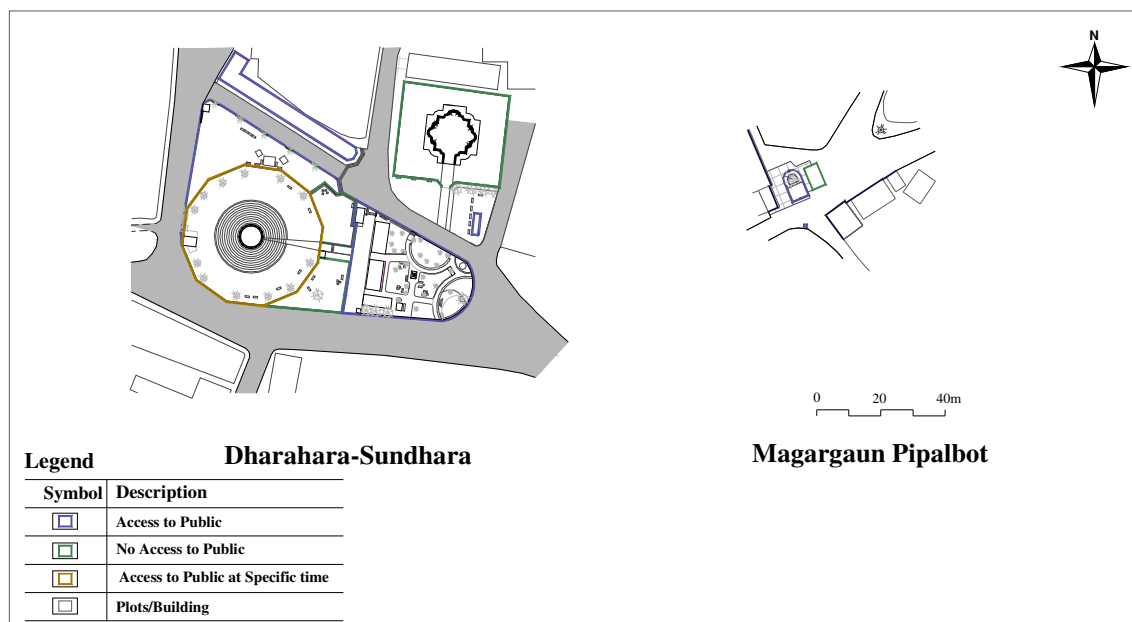


**Figure 6.121: Linkages in community squares**

Not all of the spaces in the plaza are given access to public (Figure 6.123). The Dharahara monument that is fenced by a boundary wall is open to public with an entry fee only. Few greenery areas are not made accessible to public. A prohibited sign were placed to indicate that public are not allowed to those areas (Figure 6.122). Sundhara is also not given access to public. In case of MP, there are no restrictions for its use. However, the clubhouse that is responsible for the development of the locality always remains closed unless needed.



**Figure 6.122: Signpost stating prohibited access**



**Figure 6.123: Physical access in community squares**

The DS area, being at the prime junction of the commercial and institutional hubs, had high flow of the pedestrians in the evening than in the morning and afternoon. The diagonal road dividing the commercial shops and the monument area is used by the pedestrians most at all three times. The vehicular movement is also high in the evening than other times of a day. The two as well as four wheelers are allowed only in the specified routes (Figure 6.124).

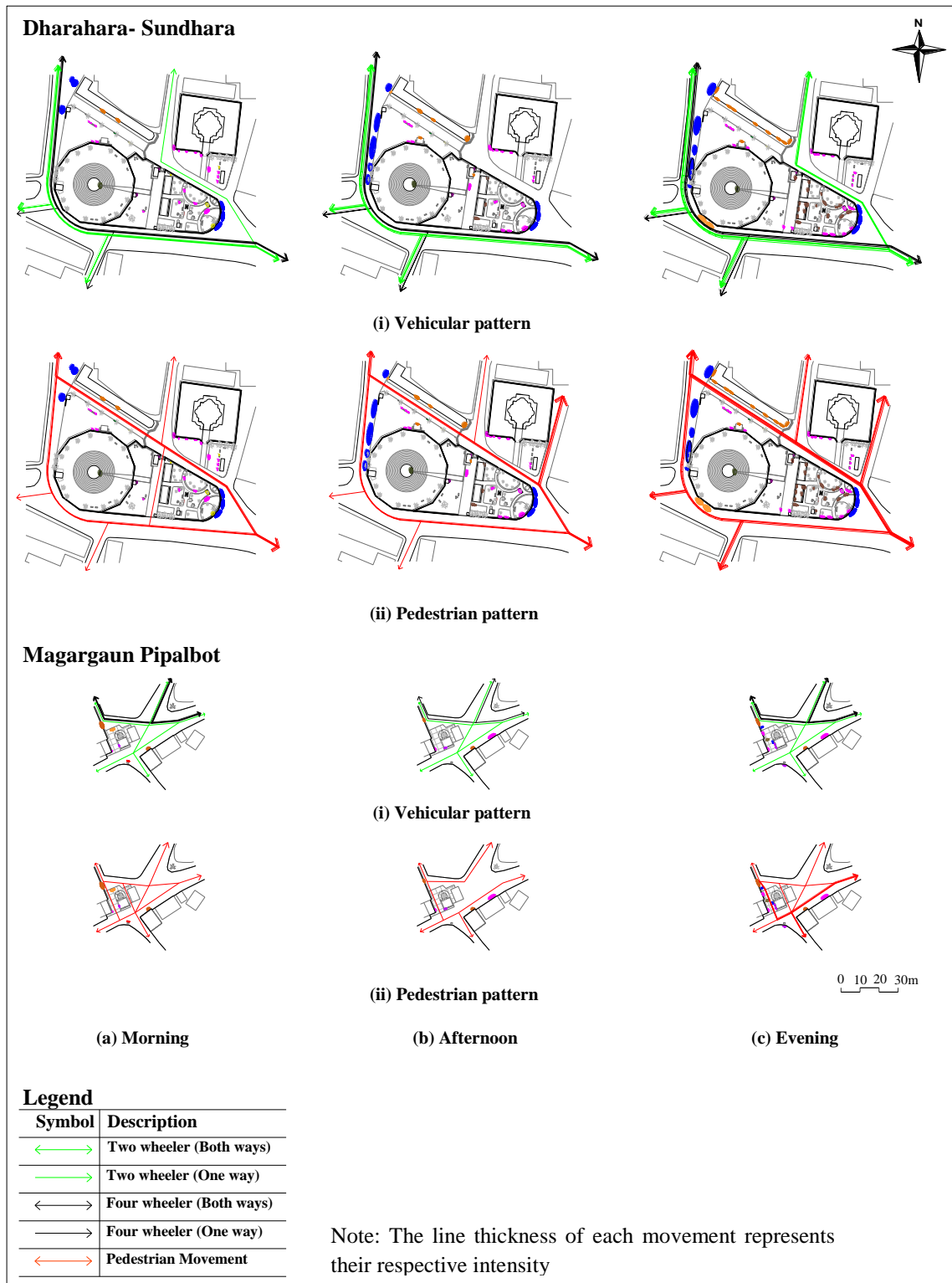


Figure 6.124: Traffic movement (2012) in community squares

Since the MP Chowk is located at the intersection of five different roads, it has served as a speed control for the vehicles. The bus stops for the public transportation and the school in the Chowk had reasonably increased traffic movement in the morning and evening than in the afternoon. The four wheelers were seen more than the two wheelers. Regarding the pedestrian movement, it is more in the evening than in the morning and afternoon.

### *Symbolic access*

The symbolic access in DS is maintained by the landmark Dharahara as well as the water spout Sundhara. The tall minaret is visible from all most all corners of the core area. Likewise, the symbolic access in MP is maintained by the big tree visible from most of the neighbourhoods.

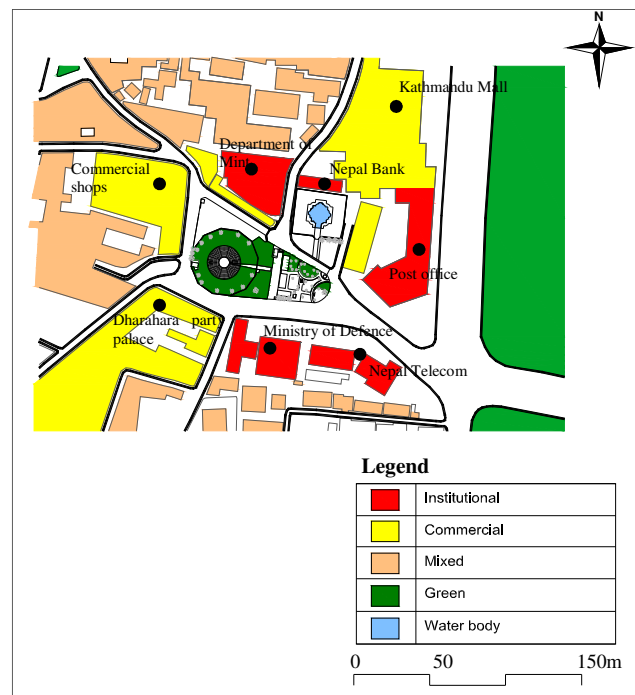
### *Visual access*

The recent redevelopment in DS has enhanced visual safety in the plaza. The entire plaza is developed than it was before. The openness of the plaza that is visible from all sides has maintained its visual safety. Similarly, the MP Chowk, which has no visual barrier, a greater visual safety is maintained. Moreover, the mixed residential neighbourhood also helped in providing a feeling of safety in this place.

## **h. Urban Scale Analysis – Dharahra-Sundhara**

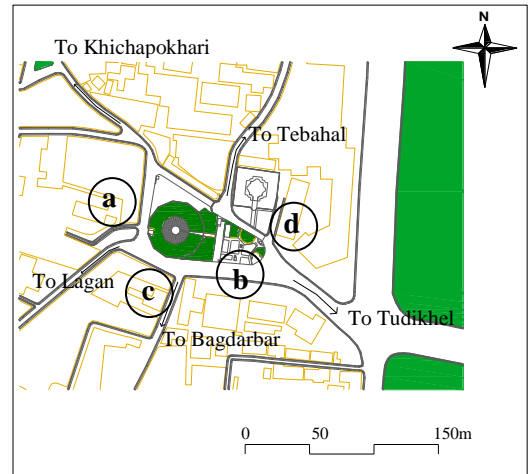
### *Urban settings*

The plaza consists of mix of institutional, residential, and commercial buildings at its periphery (Figure 6.125), Nepal Bank Limited, Department of Mint, and retail outlets at north; General Post office building, and Kathmandu Mall in the east; Nepal Telecommunication Corporation, Controller Office of Ministry of Defence, and Dharahara Party



**Figure 6.125: Urban settings - Dharahara-Sundhara**

complex in the south; and commercial and residential buildings at the west. One of the residential buildings in the west also accommodates the mosque; the road next to this building is used by people for praying during their main festival. These buildings including the plaza are situated outside of the Malla town (also refer to Chapter 5).



**Figure 6.126: Uses in Dharahara-Sundhara**

Moreover, the footpath outside the Telecommunication Corporation is always occupied by the shoe repairers throughout a day (refer Figure 6.126 and Figure 6.127b) and the sidewalk in front of the Dharahara party palace is occupied by the row of informal teashops and parked vehicles. The roads that join plaza have different commercial identities; the road leading to Tebahal has a mix of open tailors, butcher shops, and sewing machine shops, the road leading to Khicha Pokhari is used by a clothing and shoes shop, the road to Lagan has a mix of medicine and lightings shops and the road to Bagdarbar is occupied by the local travel agents, legal advising agents, and small local hotels.



**(a) Clothes shops at Southwest Street**



**(b) Shoe repairers in sidewalk of Telecom**



**(c) Local travel agents towards Bagdarbar**

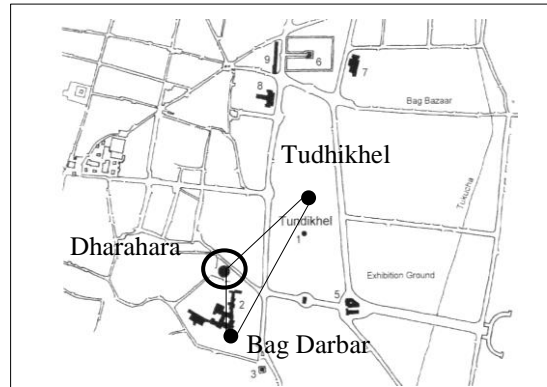


**(d) Street Tailors towards Tebahal**

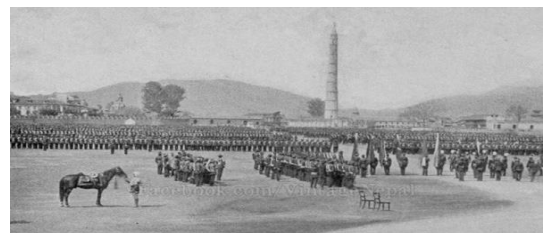
**Figure 6.127: Peripheral activities – Dharahara-Sundhara**

**Symbolic relationship**

The Dharahara has the strong relationship with the Tudikhel, a parade ground for the army and Bag Darbar, the residence of the then prime minister Bhimsen Thapa (Figure 6.128). The bugles used to blow from the balcony of the watchtower Dharahara at the time of emergencies or any events as a call to the soldiers, who lived in the barracks nearby and assemble immediately in the parade ground Tudikhel. It is also believed that there was replication of Dharahara in the Bag Darbar area, but no remains existed to support this.



Source: Based on Proksch (1995)

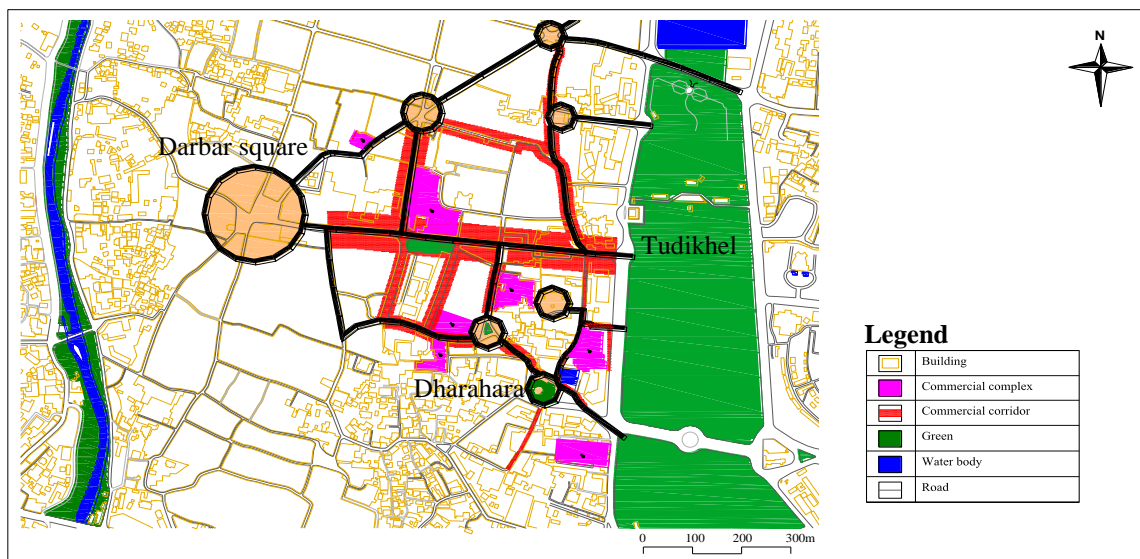


**Figure 6.128: Symbolic relationship in Dharahara-Sundhara**

Source: Collections of Vintage Nepal  
[www.ne-np.facebook.com/VintageNepal](http://www.ne-np.facebook.com/VintageNepal)

**Commercial network**

The easy access and prime location has made many commercial complexes and institutions to emerge in the periphery of the plaza (Figure 6.129). The area has become more intensified after its redevelopment. This space has a great commercial networking with its adjacent areas creating a network of commercial complexes in the core (also see Figure 6.60).



**Figure 6.129: Commercial complexes development near Dharahara-Sundhara**

### *Cultural route*

The Dharahara, though has no significant religious aspects, the diagonal road is used as a cultural route during one of the festival known as ‘Pahan Charhe’ celebrated in April (Figure 6.130). On this day, a procession takes place with a palanquin of god.



**Figure 6.130: Cultural route in Dharahara-Sundhara**

Similarly, the southern route is used as ritual route during the festivals ‘Upaku wanegu’

meaning walking in the boundaries (refer Figure 6.14) of the old Malla town.

#### **i. Urban Scale Analysis – Magargaun Pipalbot**

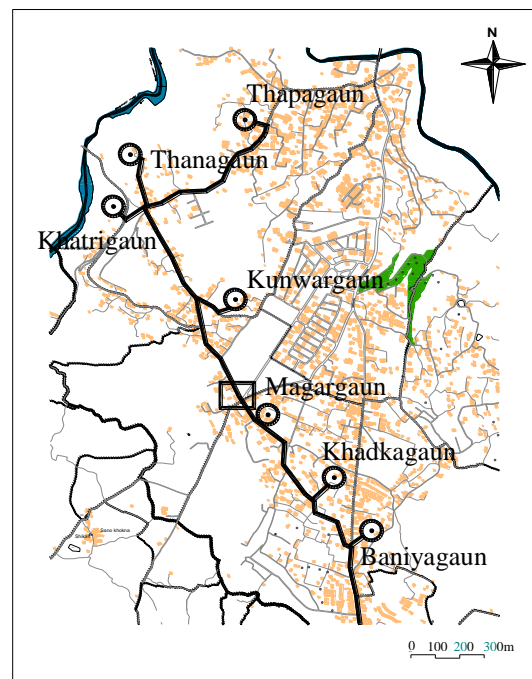
The open space does not have any networking with the other open spaces; however, people who visit the temple in another VDC known as Khokana have to go through this open space. The Chautara is used by the visitors as well as people going to collect grass in the agricultural field in nearby areas.

### *Transportation nodes*

The bus stop near the Chautara has connected local people to other cities mostly for the work and education. The public transport links another bus stop that is located in the Chautara of Bhaishapati Chowk. It seems that the public open spaces are also used as a public transport node in this area.

### *Networking of villages ‘Gauns’*

The Sainbu VDC includes many small villages known as ‘gaun’ in Nepalese language. The gaun is used as the suffix to a caste or ethnic group. For example, a combination of Magar and gaun forms Magargaun, meaning villages of Magars (an ethnic group). There are several villages (eg.



**Figure 6.131: Villages network**

Source: Drawing based on AutoCAD data of KVTDC (2011)

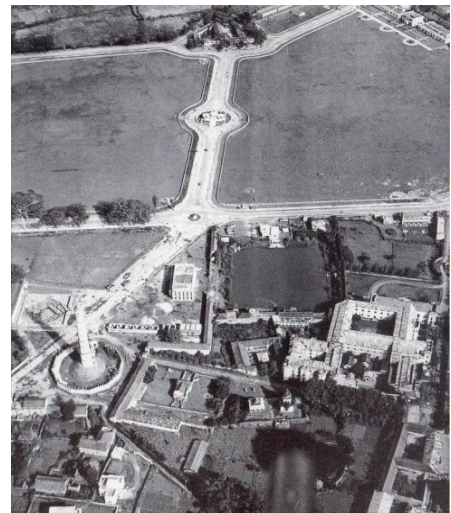
Thapagaun, Thanagaun, Khatrigaun, Kunwargaun, Magargaun, Khadkagaun, Baniyagaun etc.) named after several ethnic groups (Figure 6.131). Due to its central location, the MP Chowk is used by diverse caste/ethnic groups from these villages.

## ii. Urban transformations in Dharahara-Sundhara

The public private partnership project has caused a great change in the precinct. The public realm, land use, the physical configurations of the plaza and its use all have changed over different phases. The project aimed to complete in three different phases: phase 1 includes the renovation and maintenance of the tower and boundary, park development, paving of access ways, infrastructure development, security, and insurance provisions; phase 2 includes demolition of incompatible structures, construction of reversible tourist rest place, realigning and paving of the existing public access way; and phase 3 includes renovation of Sundhara and peripheral development. The project has not yet been completed due to on-going conflicts between the private company and the local residents (this will be discussed in detail in Chapter 7). Only a few works of phases 1 and 2 are completed. Among the completed works, a few works changed into completely different use than it was proposed. For example, the proposal of construction of reversible tourist rest place was replaced by commercial outlets. The phase 3 of the project has not yet started. In order to trace the transformations of plaza, no traditional cartographic references are found. Hence, the analysis is based on the available documents, photographs, drawings, and interviews.

### *Urban settings*

The area, which was located outside of the Malla settlement, had high development potential in the past as it had high capacity to attract new settlement. The photograph (Figure 6.132) reflects that the precinct in the past was an open ground. The major earthquake of 1934 in Nepal caused a massive damage in the Valley. Dharahara was one of the damaged structures with only few remains. It was then rebuilt with an addition of balcony. The city expansion after the earthquake changed the shape of this area. The streets and building



**Figure 6.132: Dharahara-Sundhara precinct in ca.1960s**

Source: Collections of Old Nepal - Photos & Images



started to emerge. The open ground that used to be single entity was fragmented. The monuments Dharahara and Sundhara, the equestrian statue of the Rana king at the intersection, the Martyrs' Memorial Gate, the temple, and the then palace (which today accommodates several ministries) were all aligned in the axis showing the strong planning principles of the Rana period. This planning concept still exists today, except the equestrian is shifted in the Tudikhel to make easy for the traffic movement. The advertisements given in the national daily newspaper 'The Gorkhapatra' dated to 23<sup>rd</sup> December 1959 and the newsletter 'Nepal Bhasa Patrika' dated to 2<sup>nd</sup> December 1959 indicate that there was an intercity bus park in this area. Because of the bus park, many travel agents for inter-city links, lodges, and hotels developed in this area and its surroundings (Figure 6.133). According to the local residents, the bus park was then shifted to the eastern side of Tudikhel as a part of city beautification campaign in 1986, but the lodges and hotels remained in the same location. Today, many new buildings mainly institutional and commercial started to emerge in the periphery (Figure 6.134). The road expansion in the present context has even made Dharahara as an island.



**Figure 6.133: A Dharahara-Sundhara precinct, 1971**

Source: Collections of Vintage Nepal~Rare Old Pictures, Videos and Arts of Nepal's Photos  
[www.ne-np.facebook.com/VintageNepal](http://www.ne-np.facebook.com/VintageNepal)



**Figure 6.134: A Dharahara-Sundhara precinct, 2013**

Source: Gautam Verma  
[www.panoramio.com/](http://www.panoramio.com/)

**Boundary of space**

Today, the commercialization is increasing in the periphery of DS precinct. Situated in a highly commercial influenced area, many commercial spaces started to emerge in the plaza. Regarding the change in boundary of the Dharahara, it has undergone into several transformations over time (Figure



**Figure 6.135: Neglected Dharahara, 2003**

Picture courtesy: SideWalkers Pvt. Ltd.

6.136). The changes were made in the public access. The area, which was once a single public entity, was segregated into public and private realms. In 2003, Dharahara area was not given access to public though it was a public property, whereas Sundhara was given access to public. The Dharahara area was also greatly neglected by the government (Figure 6.135), due to which it became a leftover space. The social security also became a prime concern as the crimes (theft, burglar) rates were increased.



**Figure 6.136: Changing boundaries in Dharahara-Sundhara - 2003-2012**

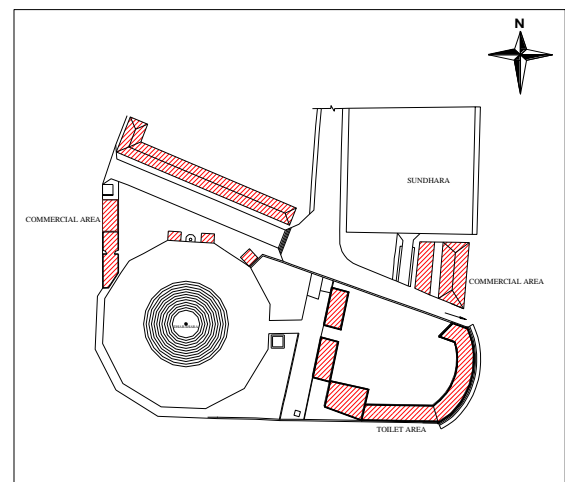
Source: Maps based on AutoCAD data of DHUD (1999), KVTDC (2007), and available photographs

After the PPP project in 2004, the redevelopment of the entire area succeeded to make it a safe place by bringing different functional spaces such as commercial and the greenery park. The access to the monument and greenery park was made public, but with an entry fee. In 2012, the access to park was made free to public, but the access to watchtower still needed an entry fee. There are also frequent revisions in the master plan (Figure 6.137). Recently, the commercial spaces seem to be emphasized more than green spaces.



**Figure 6.137: Changing green area - Dharahara-Sundhara**

Further proposal, which is in the process of approval from KMC and DoA, also includes addition of commercial structures, souvenir shops, and the public toilets (Figure 6.138). If the plan is implemented, there will be again reduction in green space. These experiments regarding the addition, replacement, or removal of the structures seem to be on-going process since the project had been launched.



**Figure 6.138: Proposal - emphasis on commercialization**

Source: Sidewalkers Pvt. Ltd.

### *Use values*

The open ground in the past was used for gathering, resting, and grazing cattle. According to the local users, it was also used for drying grains and children play area. The Sundhara was used for fetching water, bathing and washing clothes; these functions steadily reduced with time and today it is closed for the public. Quoting one of the users,

‘I live nearby. I had spent most of my childhood playing in open ground of Dharahara. Even today, I have collective memories about what I used to do together with my friends in the area. We used to play with rubber wheels, go to Sundhara for bathing. There used to be constant natural flow of clean water from Sundhara, but today the water has dried up. You can see commercial activities everywhere’.



(a) Cattle grazing in Dharahara  
Source: Dwarika Das Shrestha in Collections of Old Nepal - Photos & Images



(b) Drying grains in Sundhara  
Source: Remibridot  
[www.flickr.com/photos/](http://www.flickr.com/photos/)

**Figure 6.139: Changing use of Dharahara and Sundhara**

Another user, who was interviewed, mentioned that she used to go to Sundhara for drying grains.

‘During the drying season, I used to go to dry grains on the plinths of Sundhara. I have to keep the grains for several days until these dried up completely. Sometimes, I also asked my son to go and check if everything is fine’.

The peripheral areas used to be occupied entirely by informal vending in most of the times creating congestion in the area (Figure 6.140). In addition, the space near Dharahara and in front of post office, and the Telecom office used to encroach by the shoes repairers.



**Figure 6.140: Informal open vending near post office, 2006**  
Source: Own collection

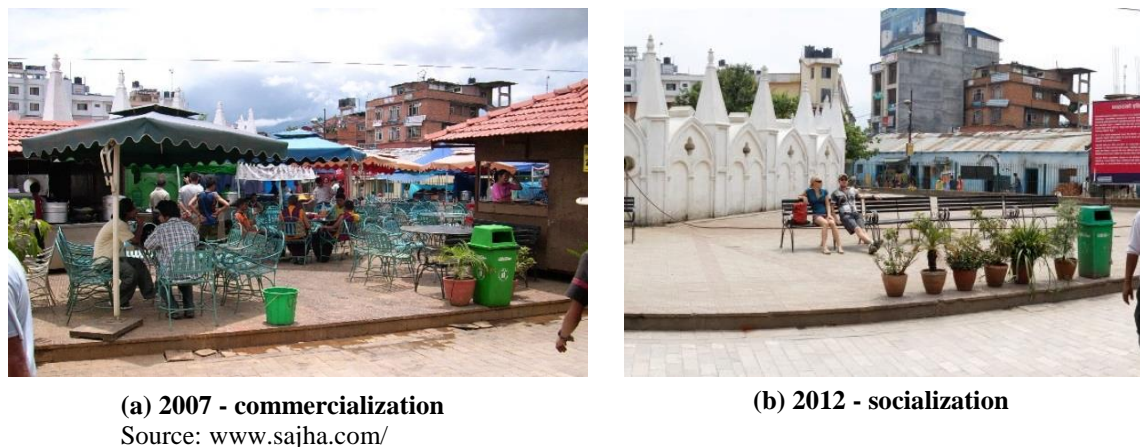
After the PPP project, the shoes repairers in front Telecom office stayed in the same

location and those near Dharahara and in front of post office moved to the footpath in front of Telecom office. The space near Dharahara was then replaced by parking (Figure 6.141).



**Figure 6.141: Changing use in Dharahara**

Again, after the implementation of the PPP project, the changes in the master plan have caused changes in activities too. The open space at southeast of the monument, which today is used by people mainly for meeting friends, resting, watching other activities, was used as the open café in 2007. The green space, which was used especially for the recreational purposes, is today used for social and commercial purposes. At present, there is also an increase in pay parking due to intensifications of commercial activities and the institutional services in the area.



**Figure 6.142: Changing use in southeast of Dharahara**

### iii. Urban transformations in Magargaun Pipalbot

Like other case studies in the sprawled area of Sainbu VDC, this case also lacks of any historical evidences about how the space used to be in the past. Hence, this section will be based on the questionnaires and interviews conducted on the local users.

### *Urban settings*

The development of this area has taken at a very steady pace. No physical infrastructures existed in the past; there were no roads, water supply, and electricity. Only a few buildings were clustered together. With time, especially after the development of Sainbu Awas Chhetra, the area changed its shape, settlement, physical infrastructures, and markets started to develop. According to the local people, the Chautara that existed since Rana period and which was neglected for a long time, had gone under transformations. Before the transformations, the Chautara included only a tree in an open ground with few stones that were used as the seats. The ground used to be muddy, but today it is stone paved. The raised platform was constructed around the religious tree. The clubhouse and a small shrine were added. All these additions and alterations according to them had taken place not more than five years ago.

### *Use values*

According to the elderly people of this area, the Chautara used to be a rest place as well as a parking area of the Rana kings on their way to visit other places. Because of the topography and poor road conditions, the kings used to park their vehicles in the Chautara and then travel to their destinations by horse. Hence, the Chautara used to be a transit point during that time. It used to be a playfield<sup>88</sup> for the children, a meeting point for the adults, and a resting place for the travellers as well as the porters.



**Figure 6.143: Traditional swing**

Source: Jessicaemperkins

[www.flickr.com/](http://www.flickr.com/)

After the raised platform was constructed, the Chautara that also has religious significances became more popular for gathering and religious activities than before. It has become a place for performing rituals such as singing hymns (especially during the holy months, ‘Chaturmas’, which is celebrated in July to October). The tradition of erecting traditional swing (Figure 6.143) during the main festivals (Dashain), is still in practice since past. The only change in terms of use in this space is the commercial attractions due to development of markets; however, it must be worth noting here that this is taking a slow pace. Furthermore, the government

<sup>88</sup>Different games such as hide and seek, football, marbles were the common games played in those days.

have proposed to locate the bus park connecting Kathmandu to the south of Nepal in nearby area as a part of Fast Track road plan. If the proposal is approved, the Chauatara in future could take different shape than it is at present.

#### **6.4.4 Summary of findings of open spaces in TUC and SA**

A summary on comparative study of open spaces in TUC and SA are discussed as below (refer to Tables 6.4, 6.5, and 6.6).

##### **i. Market squares**

The market square in TUC is predominantly depicted by places of religious and commercial meanings whereas in SA it is depicted by places of social meaning. Regarding the sensory perceptions of the structures, almost all religious structures in the square of TUC have pleasant visual and touch perceptions and commercial structures have a mixed (pleasant, neutral, unpleasant, and very unpleasant) visual and mixed (neutral and unpleasant) touch perceptions. In SA, the social structure has pleasant visual and touch perceptions. The commercial structures in SA possess mixed (neutral and unpleasant) visual perception. The structures with other functions in TUC have only visual perception and have mixed (neutral and unpleasant), whereas structures with other functions in SA have mixed (neutral and unpleasant) visual and unpleasant touch perceptions. The places of natural elements in SA have mixed (neutral and unpleasant) visual perceptions.

The activities in the market square of TUC are predominantly religious and commercial, whereas they are social and commercial in SA. The evening in both cases, have many activities than any other times of a day. Comparing the activities that were observed between the years 2012 and 2013, in both cases most of the activities found in 2012 were also found in 2013 with few exceptions. The types of activities that were added in the latter year in market square of TUC were social activities and parking, whereas they were social and commercial activities in market square of SA. However, the religious and commercial activities occurred most in TUC and social and commercial activities occurred most in SA. Based on the sensory perceptions of activities, religious activities of the market square in TUC are perceived as pleasant to all senses throughout a day, hence it can be concluded the sensory perceptions of these activities have helped these to become the essence of the square. In SA, no activities are found that are perceived as

pleasant to all senses throughout a day. Parking in market square of TUC is perceived as unpleasant to all senses, which shows that these have become undesirable activities in both squares. All structures in both cases have access to the public. The market square in TUC seemed to be used more by the pedestrian and vehicles than in SA. Market square in TUC is located in a dense mixed residential zone and is interconnected with other open spaces both commercially and culturally, whereas market square in SA is sited in a newly developed mixed land use area and has no networking with other open spaces culturally or commercially. Regarding the changes, both market squares had undergone changes in terms of its structures as well as in their uses. Market square in TUC, which in the past used to be lifeless, has today become the most bustling place in the city. The market square of SA in the past was an open grass, but today it has been developed into a commercial centre. The changes in both squares seemed to be taking place due to needs of society.

## **ii. Neighbourhood squares**

The neighbourhood squares in TUC as well as SA are depicted by places of religious meaning. The places of religious meaning in TUC give the feeling of living together with gods, which in case of SA is missing. Green space that is seen in SA is missing in TUC. The commercial structures and natural elements in TUC have respectively unpleasant and pleasant and neutral visual perceptions. In both cases, the religious structures have mostly pleasant visual perception. The structures with other functions in TUC have mixed (neutral and unpleasant) and in SA have mixed (pleasant and unpleasant) visual perception. The social structures in TUC have mixed (neutral and unpleasant) and in SA have neutral visual perceptions. The natural elements in SA have mixed (pleasant and unpleasant) visual perception and neutral smell perception. Regarding the touch perceptions in TUC, only a few religious structures have neutral and a few social and structures with other functions have unpleasant perceptions. In SA, the religious structures have pleasant, social structures have neutral and structures with other functions have mixed (pleasant and neutral), and natural elements have neutral touch perception.

In TUC, the religious and social activities were seen mostly in the morning and evening and the parking was seen mostly in the afternoon. Not many activities were seen in SA throughout a day; only a few social and religious activities were noticed. Unlike TUC, no commercial activities were found in SA; this could be easily justified by their



location - TUC being situated in mixed residential zone and SA situated in pure residential zone. Comparing the activities observed between the years 2012 and 2013, in both cases the similar types of activities found were religious and social activities. A few activities in both cases were added in the latter year, these were mainly social activities and parking in TUC and social activities in SA. However, the most occurred activities in TUC were parking, religious, and commercial activities, whereas they were social activities in SA. Based on the sensory perceptions of activities, the neighbourhood squares of TUC as well as SA have no activities that are perceived as pleasant to all senses throughout a day. The parking in TUC are perceived as unpleasant to all senses, meaning it is also perceived as undesirable activities. Regarding the access to the public, almost all structures are given access to the public in both cases with few exceptions. The pedestrian and vehicular pattern seemed to be similar throughout a day in both cases, except in SA case, no vehicles were seen in the afternoon. The neighbourhood square in TUC is located in a mixed residential zone and is interconnected with other open spaces both commercially and culturally. Unlike TUC, the neighbourhood square in SA is located in a new and pure residential area and has no networking with other nearby open spaces culturally and commercially. However, it has religious networking with the one that is situated at distance. Regarding the changes, both neighbourhood squares had undergone changes in terms of its structures as well as in their uses. The neighbourhood square in TUC has transformed from a religious and social space to a commercial space. The neighbourhood square in SA in the past was open grassland, but today is developed into a fenced public open space. The changes in both squares are due to needs of society.

### **iii. Community squares**

The community square in TUC is predominantly depicted by symbolic monuments than other structures, whereas it is by a landmark in SA. Both cases have places of commercial, social, and structures with other functions, but in different scale. The monument, most of social structures, and a few commercial structures in TUC have pleasant visual perception. Most of the structures with other functions have unpleasant visual perceptions. In SA, the religious and social structures have pleasant visual, commercial structures have mixed (neutral and pleasant), and structures with others functions have unpleasant visual perceptions. The religious, social and commercial structures in SA case have neutral touch perception. The natural elements in both cases also have neutral smell perception. The evening in TUC case was mostly occupied by

social and commercial activities than any other times of a day. Parking were mostly used in the afternoon and evening. Like TUC, in SA, the evening is occupied by social and commercial activities than any other times of a day. Like in other cases of TUC and SA, many activities that existed in 2012 also emerged in 2013, except social activities, throughout a day. However, the social and commercial activities occurred most in TUC, whereas in SA, the commercial activities occurred most. Based on the sensory perceptions of activities, the community squares of TUC as well as SA have no activities that are perceived as pleasant to all senses throughout a day. The parking in TUC are perceived as unpleasant to all senses, meaning it is perceived as undesirable activities. SA has no activities that are perceived as unpleasant to all of the sensory perceptions throughout a day. Regarding the access to public, many structures in both cases are given access to public. In both cases, the pedestrian movement in the evening was more than any other times of a day. The vehicle movement in the TUC is more in the evening, whereas it is in the morning and evening in SA. The TUC is situated in the mix of institutional, residential, and commercial areas and has commercial network with other commercial places and cultural network with other open spaces. The SA is situated in residential and commercial areas and has no networking with other open spaces culturally and commercially, it rather has a transport network. Regarding the changes, both community squares had undergone changes in terms of its structures as well as in their uses. After PPP project, the community plaza in TUC has intensified commercial spaces. The community square in SA today is also attracting commercial uses.

**Table 6.4: Summary of findings on physical structures of public open spaces**

Hierarchy of open spaces	Case study open spaces		Places of religious meaning	Places of commercial meaning	Places of social meaning	Places of other meaning	Places of natural elements
	Perceptions						
Market squares	Ason (TUC)		✓	✓	-	✓ (f)	-
	Structure types		permanent	permanent	-	temporary	-
	Perceptions	Visual	Mostly pleasant	mixed	-	mixed	-
		Touch	Mostly pleasant	mixed	-	-	-
		Smell	-	-	-	-	-
	Bhaisepati Chowk (SA)		-	✓ (f)	✓	✓ (f)	✓
	Structure types		-	mixed	permanent	permanent	permanent
	Perceptions	Visual	-	mixed	pleasant	mixed	mixed
		Touch	-	unpleasant	pleasant	unpleasant	-
		Smell	-	-	-	-	-
Neighbourhood squares	Tebahal (TUC)		✓	✓(f)	✓(f)	✓(f)	✓
	Structure types		permanent	permanent	permanent	permanent	permanent
	Perceptions	Visual	Mostly pleasant	unpleasant	mixed	Mostly unpleasant	mixed
		Touch	neutral	-	unpleasant	unpleasant	-
Smell		-	-	-	-	-	

(f) indicates functions rather than meanings of a place.

Table 6.4 contd.

Hierarchy of open spaces	Case study open spaces		Places of religious meaning	Places of commercial meaning	Places of social meaning	Places of other meaning	Places of natural elements
	Perceptions						
	<b>Sainbu Awas Chhetra (SA)</b>		✓	-	✓(f)	✓(f)	✓
	<b>Structure types</b>		permanent	-	temporary	permanent	permanent
	Perceptions	Visual	pleasant	-	neutral	mixed	mixed
		Touch	pleasant	-	neutral	mixed	neutral
Smell		-	-	-	-	neutral	
<b>Community squares</b>	<b>Dharahara-Sundhara (TUC)</b>		-	✓(f)	✓(f)	✓	✓
	<b>Structure types</b>		-	mixed	mixed	mixed	permanent
	Perceptions	Visual	-	mixed	mixed	mixed	mixed
		Touch	-	neutral	mixed	-	unpleasant
		Smell	-	-	-	-	neutral
	<b>Magargaun Pipalbot (SA)</b>		✓	✓(f)	✓	✓(f)	✓
	<b>Structure types</b>		permanent	permanent	permanent	permanent	permanent
Perceptions	Visual	pleasant	mixed	pleasant	unpleasant	pleasant	
	Touch	neutral	neutral	neutral	-	-	
	Smell	-	-	-	-	neutral	

Table 6.5: Summary of findings on use of public open spaces

Hierarchy of open spaces	Case study open spaces	Activities	Perceptions	Most Recurring activities
<b>Market squares</b>	<b>Ason (TUC)</b>	Commercial, Religious, Social, Others	- Religious activities are pleasant to all senses throughout a day - Parking are perceived as unpleasant to all senses	Commercial Religious
	<b>Bhaisepati Chowk (SA)</b>	Commercial, Social, Others	- No activities are found that are pleasant to all senses throughout a day - A few commercial activities are unpleasant to all senses	Commercial Social
<b>Neighbourhood squares</b>	<b>Tebahal (TUC)</b>	Commercial, Religious, Social, Others	- No activities are found that are pleasant to all senses throughout a day - Parking are unpleasant to all senses	Commercial Religious Parking
	<b>Sainbu Awas Chhetra (SA)</b>	Religious, Social	- No activities are found that are pleasant/unpleasant to all senses throughout a day	Social
<b>Community squares</b>	<b>Dharahara-Sundhara (TUC)</b>	Commercial, Social, Others	- No activities are found that are pleasant to all senses throughout a day - Parking are unpleasant to all senses	Commercial Social
	<b>Magargaun Pipalbot (SA)</b>	Commercial, Religious, Social, Others	- No activities are found that are pleasant to all senses throughout a day - No activities are found that are unpleasant to all senses throughout a day	Commercial

**Table 6.6: Summary of findings on transformation of public open spaces**

Hierarchy of open spaces	Case study open spaces	Transformation		Other Remarks
		Structures	Uses	
Market squares	Ason (TUC)	<b>Commercial:</b> - traditional styled buildings changed into modern <b>Religious:</b> - changes in physical appearance <b>Others:</b> - added in recent years	<b>Commercial:</b> - change in types <b>Religious:</b> - some spaces used for commercial uses	<b>Urban setting:</b> - no architectural integrity  <b>Use:</b> - preservation of culture
	Bhaisepati Chowk (SA)	<b>Commercial:</b> - added in recent years <b>Social:</b> - change in physical appearance <b>Others:</b> - mostly added in recent years	<b>Social:</b> - social spaces changed into a mix of commercial and social uses. <b>Others:</b> - few structures changed into different purposes	<b>Urban setting:</b> - no architectural integrity  <b>Use:</b> - commercialization
Neighbourhood squares	Tebahal (TUC)	<b>Commercial:</b> - developed in recent years - traditional styled buildings changed into modern <b>Religious:</b> - change in physical appearances - disappearance of social spaces in religious structures <b>Others:</b> - added in recent years	<b>Commercial:</b> - purely residential neighbourhood changed into commercial use <b>Religious:</b> - some religious spaces used for commercial uses <b>Social:</b> - the entire courtyard used as social space changed into parking space	<b>Urban setting:</b> - no architectural integrity  <b>Use:</b> - commercialization in the residential neighbourhood - preservation of culture
	Sainbu Awas Chhetra (SA)	<b>Religious:</b> - change in physical appearances <b>Others:</b> - added in recent years	<b>Religious:</b> - remains same since past <b>Others:</b> - change in purposes with time	<b>Urban setting:</b> - development of entire space  <b>Use:</b> - preservation of cultural uses
Community squares	Dharahara-Sundhara (TUC)	<b>Commercial:</b> - added in recent years <b>Social:</b> - mostly added in recent years <b>Others:</b> - mostly added in recent years	<b>Commercial:</b> - changes in uses at the peripheral areas of the open space <b>Social:</b> - social uses in open space of the past have been disappeared. - few spaces changed into parking spaces	<b>Urban setting:</b> - redevelopment of area after PPP project has caused - change in boundary of space - change in green areas
	Magargaun Pipalbot (SA)	<b>Commercial:</b> - added in recent years <b>Religious:</b> - change in physical appearances <b>Social:</b> - change in physical appearances <b>Others:</b> - mostly added in recent years	<b>Commercial:</b> - emergence of commercial uses <b>Religious:</b> - remains same since past	<b>Urban setting:</b> - entire space developed  <b>Use:</b> - preservation of cultural uses

## 6.5 Conclusion

All open spaces in TUC and SA are associated with different meanings. Majority of open spaces in TUC as well as SA have religious connection regardless of their hierarchies (such as market and neighbourhood squares of TUC and neighbourhood and community squares of SA). The meanings of each open space are depicted by their structures and activities. Most of the religious and social structures in open spaces of TUC and SA have contributed meaning in the spaces whereas the commercial (except in

market squares) and structures with other function have become function rather than meaning of the space. The structures that contributed meaning are the elements of urban interest that existed since several historical periods such as the Lichhavi, Malla, and Rana periods. Most of these elements of urban interest contribute pleasant sensory perceptions in TUC and SA. Regarding the activities, the occurrence of the same types of activities in the same location, following the same spatial pattern in two years (2012/13) suggests that they have become a part of the identity of all spaces in TUC. The open spaces of SA also have same types of activities over two years with many new activities in the year 2013, but no explicit spatial patterns have been followed by the activities. With few exceptions, only a few activities have become a part of the identity of the SA spaces. Based on the sensory perceptions of activities throughout a day, almost all open spaces of both TUC and SA have no activities which remain at same place and also are pleasant to all of the senses (visual, smell, as well as sound) throughout a day, except market square of TUC. The parking in most of the open spaces of TUC and SA are perceived as unpleasant to all senses.

Almost all structures in open spaces of TUC and SA are given access to public. The symbolic and visual accesses are maintained in almost all open spaces. The open spaces in TUC have become more congested with activities and traffic including pedestrian and vehicular movements. The open spaces in TUC have commercial or cultural or both networking with other open spaces in the core which in SA is missing. Regarding the changes, all open spaces in TUC and SA had undergone transformations in terms of physical structures and uses. Despite open spaces in TUC and SA have different functions and activities; they have similar kinds of transformation trends. The commercial structures and structures with other functions in almost all open spaces were added in the recent years and the religious structures were changed only in their physical appearances. In both TUC and SA, the structures that have contributed meaning in the space have only changed in their physical appearances. Regarding the uses, commercialization has taken place in almost all open spaces in TUC and SA. In most of the cases, commercialization has replaced other uses that were accustomed in the past. However, the cultures associated with the open spaces are also preserved in most of the cases.

## **Chapter 7 : Exploring the users' dimensions: A comparative analysis between the public open spaces in TUC and SA**

### **7.1 Introduction**

From the previous chapter, it is clear that the public open spaces in both TUC and SA have transformed over time and differ from each other in terms of physical aspects and uses. The next step is to investigate the impressions of spaces the users of these areas have and how the users are affected by the transformations. For this, comparative analyses between the public open spaces of TUC and SA are presented. The analyses are conducted in three dimensions – characterizations of users, impressions of spaces, and impacts on users due to transformations of open spaces. For the characterization of users, the users in each case study are identified based on their area of residence, involvement in the activities, age group, gender, and ethnic/caste group. The area of residence here means the user's current place of residence (e.g. TUC, periphery or others) (see questionnaire in Appendix 7.1). The involvement in activity determines if the users are using the space for any kind of activities or only as a passer-by. For the purpose of visits, four different categories are classified as commercial, social, religious, and others. The 'commercial' purposes include informal markets, shops and pay parking; the 'social' include cultural ceremonies/festivals, picnic, sun bathing, playing, drying grains, and meeting friends; 'religious' include worshipping and ceremonies; and 'others' include any other purposes than those mentioned earlier. All the participants were also asked about the purposes for which they usually visit (other than the day when the questionnaires were conducted). For the users' impression of spaces, the overall satisfaction level, perceptions about the physical structures and activities, and safety level are analysed. All the analyses are based on the questionnaire conducted on the users. The impact on users due to transformations is based on the interviews (refer Appendix 7.2) conducted among a selection of those who participated in the questionnaire. The interviewees were selected based on their area of residence – a) born as well as currently residing in the neighbourhood, b) moved from the neighbourhood and residing in the periphery or others, and c) moved from other areas and currently residing in the neighbourhood or periphery, – and the purpose of visits (see Appendices 7.3, 7.4, and 7.5 for each case study).

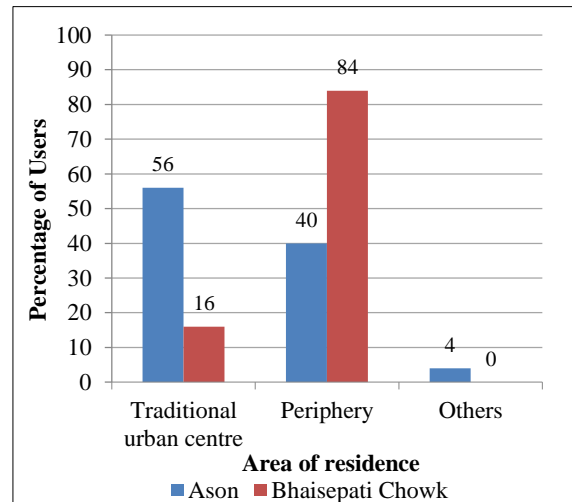
## 7.2 Characterization of users in the public open spaces in TUC and SA

In market squares, Ason and Bhaisepati Chowk, the questionnaire was conducted on 25 numbers of users. In neighbourhood square, Tebahal, it was conducted on 28 users, whereas in Sainbu Awas chhetra, due to presence of less numbers of users, only 16 numbers were involved in the questionnaire. In community square, Dharahara-Sundhara, it was conducted on 25 users, whereas it was 20 users in case of Magargarun Pipalbot. The users in all cases were selected randomly; hence, the analysis in these case studies establishes the general findings only.

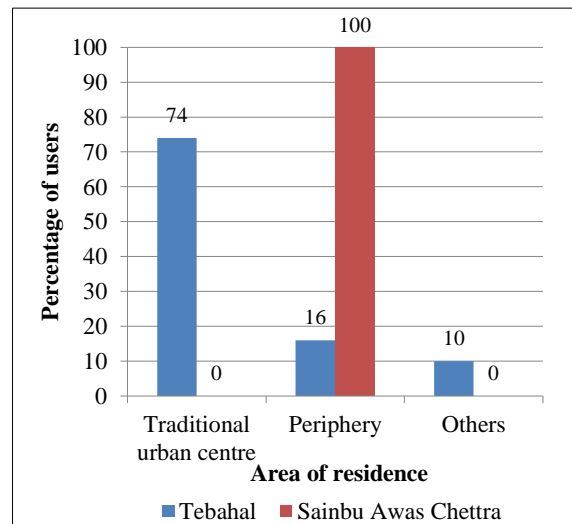
### 7.2.1 Users' Category

#### *By area of residence*

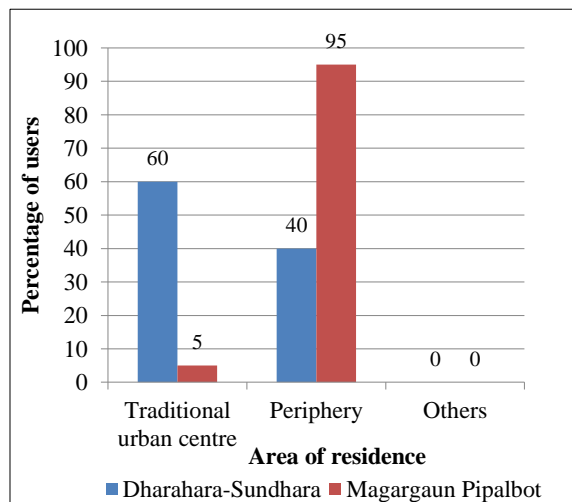
Regarding the market squares, Ason, the busiest open space in the city centre (refer chapter 6), is used predominantly by users from TUC. The analysis (Figure 7.1) shows that out of the total users, 56% users were from TUC, 40% from the periphery, and 4% from other areas. Bhaisepati Chowk, also the busy place in Sainbu area, has 84% of users from the periphery and 16% from TUC. Regarding the neighbourhood squares, in Tebahal, out of the total users, 74% were from TUC, 16% from the periphery, and 10% from other areas (Figure 7.2). Out of the users from TUC (74%), 56% were



**Figure 7.1: Users in market squares by area of residence**



**Figure 7.2: Users in neighbourhood squares by area of residence**



**Figure 7.3: Users in community squares by area of residence**

Source: Questionnaire conducted on users

from the neighbourhood itself. The Sainbu Awas Chhetra on the other hand has all users from the periphery. Regarding the community squares, in Dharahara-Sundhara, out of total users, 60% of the users were from TUC and 40% from the periphery (Figure 7.3). In Magargaun Pipalbot, 5% of users were from TUC and 95% from the periphery. Despite public open spaces of TUC situated in the city core, the share of open space by the users from TUC and periphery seems to be different in different spaces. There is a low difference between the users from TUC and periphery in Ason and Dharahara-Sundhara, whereas a big difference is seen in Tebahal. In case of SA, the users were predominantly from the periphery in all spaces.

### *Discussion*

Ason is one of the densest areas in the city core (also see Figure 6.9 b in Chapter 6) and is situated in a prime location, stretching across two wards (ward numbers 27 and 30) with populations of 7592 and 8563 (2011 census) respectively (see Table 6.2). This suggests that there is likely to be a much higher proportion of TUC users, but the result shows that there was only a low proportion between TUC and periphery users. Hence, population size in this case does not appear to be the prime factor in the share of open space by users. The religious and commercial significances and good transportation nodes in its proximity may be key factors for attracting people from all over the Valley. Tebahal and Dharahara-Sundhara, though both are located in the same ward 22 with population of 5699, the proportion of users are different (Figure 7.2 and Figure 7.3). This shows that population size in these cases also does not appear to be a key factor in the share of spaces. The residential neighbourhood of Tebahal together with social and religious significances and provision of parking space in the square may be the reasons behind the highest number of users being from the TUC, whereas the existence of commercial and institutional opportunities (refer Chapter 6) and the easy accessibility in Dharahara-Sundhara could be the key reasons for attracting people from different parts of the Valley.

For public open spaces in SA, Bhaisepati Chowk and Sainbu Awas Chhetra are located in ward 4 that has population of 5145 (see Table 6.3) and Magargaun in wards 5 and 9 that has population of 2526 and 567 respectively. Sainbu VDC has just started to develop and commercialization has taken place at a steady pace. The Bhaisepati Chowk and Magargaun have limited opportunities and could establish their identity only in



their contiguous areas. That is why most of the users in these spaces were seen from the periphery. In case of Sainbu Awas Chhetra, though it is situated in the pure residential area, only 14% of the users were from the neighbourhood and the rest (86%) from nearby areas. The newly developed residential area and the private gardens in residences may have caused less use of the space by the users from the neighbourhood.

### ***By users' involvement in activity***

With Ason, the square being located at the junction of six different routes, it is used either for a specific activity or as a transit space by pedestrians. Table 7.1 clearly illustrates that in Ason, 56% of users were involved in the activities and 44% were passers-by. Out of the total (56%) users involved in the activities, 40% were from TUC, 12% from periphery, and 4% from other areas. The 44% of passers-by include 28% from the periphery and 16% from TUC. It seems that although Ason attracts more people from elsewhere, throughout the city, it is mostly local residents who use the square as an activity destination. The commercial and religious milieu of Ason and easy accessibility could justify why the majority of users from TUC were actively involved. On the other hand, the majority of users from the periphery were passers-by rather than being involved in activities. This could be due to employment opportunities in the core: people from periphery come to the centre and with Ason being located at the centre, one must pass through the square to reach their destinations. In the Bhaisepati Chowk, 72% were involved in the activities and 28% were the passers-by. All of 16% of users from TUC were passers-by; of the total (84%) of users from the periphery, 72% and 12% were involved in activities and passers-by respectively. The majority of people from the periphery were involved in activities, which could be because of the social and commercial opportunities in the Chowk. Situated in an outlying area and with availability of all services to meet basic needs in the centre, the Chowk has not become a focus of activity for the people from TUC, who only experience the space as passers-by.

In Tebahal, 76% users were involved in the activities and 24% were passers-by. Out of the users involved in the activities, 54% were from TUC, 16% from the periphery and the rest (6%) from other areas. The 24% of passers-by include 20% from TUC, and the rest (4%) from other areas. Higher proportions of users from TUC were involved in the activities compared to those from the periphery and other areas (Table 7.2). Being the

residential neighbourhood, religious square and availability of parking space, the users have visited the square for several purposes such as social gathering, worshipping, open vending, and parking vehicles (also refer Chapter 6). In Sainbu Awas Chettra, the higher proportions i.e 64% of users were passers-by and 36% were involved in the activities. The small shrine and the multipurpose building may have attracted users to visit this space. However, the inadequate opportunities in the space may have caused fewer users to be involved in the activities.

**Table 7.1: Types of users in market squares by involvement in activity**

Area of residence	Ason			Bhaisepati Chowk		
	Activity-involved users	Passers-by	Total	Activity-involved users	Passers-by	Total
Traditional Urban centre	40	16	56	0	16	16
Periphery	12	28	40	72	12	84
Others	4	0	4	0	0	0
<b>Total</b>	56	44	<b>100</b>	72	28	<b>100</b>

**Table 7.2: Types of users in neighbourhood squares by involvement in activity**

Area of residence	Tebahal			Sainbu Awas Chhetra		
	Activity-involved users	Passers-by	Total	Activity-involved users	Passers-by	Total
Traditional Urban centre	54	20	74	0	0	0
Periphery	16	0	16	36	64	100
Others	6	4	10	0	0	0
<b>Total</b>	76	24	<b>100</b>	36	64	<b>100</b>

**Table 7.3: Types of users in community squares by involvement in activity**

Area of residence	Dharahara-Sundhara			Magargaun Pipalbot		
	Activity-involved users	Passers-by	Total	Activity-involved users	Passers-by	Total
Traditional Urban centre	36	24	60	0	5	5
Periphery	16	24	40	75	20	95
Others	0	0	0	0	0	0
<b>Total</b>	52	48	<b>100</b>	75	25	<b>100</b>

Source: Questionnaire conducted on users

In Dharahara-Sundhara, out of the total users, 52% were involved in activities and 48% were passers-by. The 52% of users who were involved in activities include 36% from TUC and 16% from the periphery, whereas 48% of users who were passers-by include

24% users from TUC and 24% users from the periphery (Table 7.3). Dharahara-Sundhara is located in the transit junction; many users from the core as well as from the periphery pass through this area to reach their destination. The existence of commercial, social opportunities in the open space as well as institutional opportunities nearby have caused people engaged in this open space. In Magargaun Pipalbot, 75% of users were involved in activities and 25% were passers-by. All of the users from TUC (5%) were passers-by and out of the total (95%) users from the periphery, 75% were involved in activities and 20% were passers-by. The commercial and social opportunities and absence of other public spaces in the locality have caused many users involved in these activities.

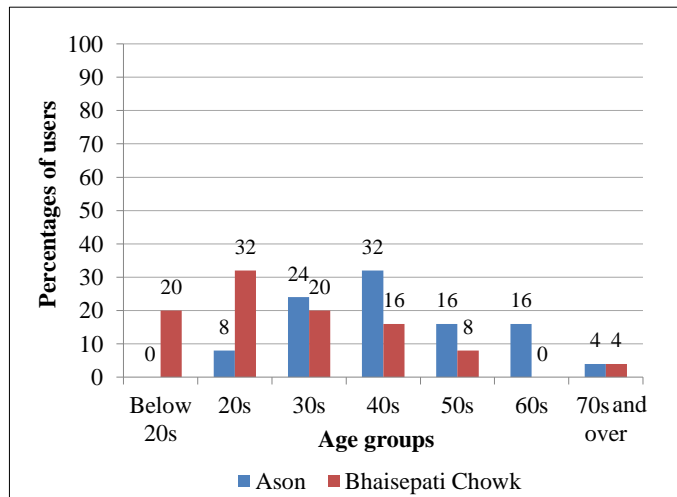
Referring to Tables 7.1, 7.2, and 7.3, many users were involved in activities than passers-by in all squares of TUC. In SA, many users were involved in activities than passers-by in market and community squares, whereas in case of neighbourhood square, it is just the opposite.

### ***By age group***

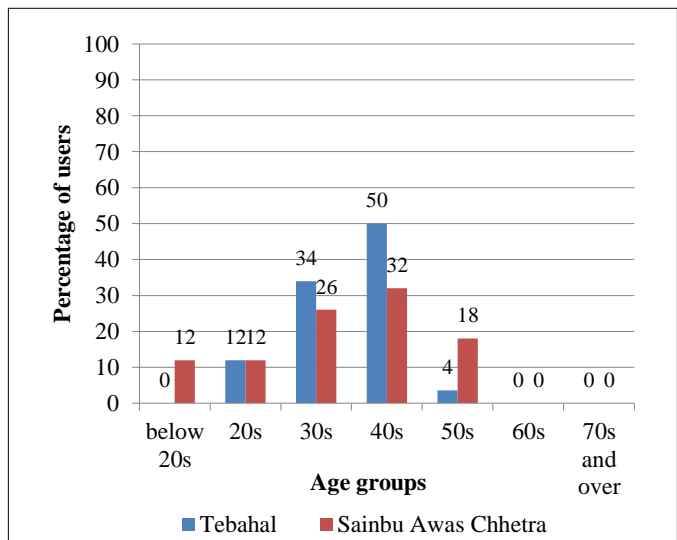
In Ason, out of the total users who participated in the questionnaire, 32% users are in their 40s followed by 24% in their 30s, 16% each in their 50s and 60s, 8% in their 20s, and 4% in their 70s and over (Figure 7.4). Comparing the age groups of users with respect to the area of residence and involvement in the activities (also refer to Appendix 7.3 i and ii), most of the users in their 40s were from TUC and many of them were involved in the activities. The majority of users in their 30s were also from TUC, but there is equal proportion of users involved in the activities and passers-by. Likewise, the users in their 20s, 50s, and 60s have similar proportions of users from TUC and periphery and the proportion of users in these age categories involved in activities and passers-by are equal. The users in their 70s and over were all from the periphery and were passers-by only. In Bhaisepati Chowk, 32% of users are in their 20s followed by 20% each in below 20s and 30s, 16% in their 40s, 8% in their 50s and 4% in their 70s and over. All of those in below 20s, 20s, 50s, 70s and over, and a few in their 40s were from the periphery and involved in the activities. The users from TUC are in their 30s and 40s and were passers-by only.

In Tebahal, out of the total users who participated in the questionnaire, 50% are in their 40s followed by 34% in their 30s, 12% in their 20s, and 4% in their 50s (Figure 7.5). Comparing the age groups of users with respect to the area of residence and involvement in the activities (see Appendix 7.4 i and ii), most of the users in their 30s and 40s were from TUC and many of them were involved in the activities. The users in their 20s have similar proportions of the users from TUC, periphery and other areas and all of these users were involved in activities. The users in their 50s were all from TUC and were passers-by only. In Sainbu Awas Chhetra, out of the total users, 32% are in their 40s followed by 26% in their 30s, 18% in their 50s, and 12% each in their 20s and below 20s. All age groups were from the periphery. Many users in their 20s, 30s, 40s, and 50s were involved in the activities, whereas those in their below 20s were passers-by only.

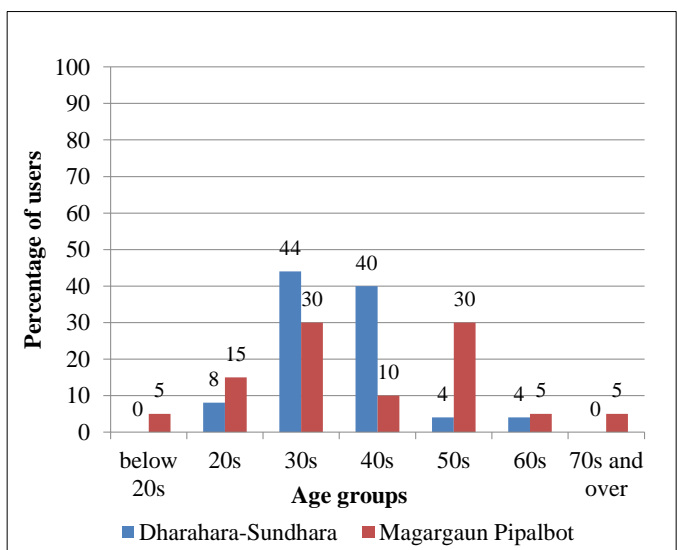
In Dharahara-Sundhara, out of the total users, 44% are in their



**Figure 7.4: Users in market squares by age groups**



**Figure 7.5: Users in neighbourhood squares by age groups**



**Figure 7.6: Users in community squares by age groups**

Source: Questionnaire conducted on users

30s followed by 40% in their 40s, 8% in their 20s, and 4% each in their 50s and 60s (Figure 7.6). Comparing the age groups of users with respect to the area of residence and involvement in the activities (see Appendix 7.5 i and ii), most of the users in their 30s were from TUC and many of them were involved in the activities. Those who are in their 40s have similar proportions of the users from TUC and the periphery. Many of the users in their 40s were the passers-by. The users in their 50s and 60s were from TUC and were involved in the activities and passers-by respectively. The users in their 20s were from the periphery and passers-by. The Magargaun Pipalbot has 30% users each in their 30s and 50s followed by 15% in their 20s, 10% in their 40s, and 5% each in their below 20s, 60s and 70s and over. The users in all age groups except a few in their 30s were from the periphery. Among these users, the majority were in their 50s and were involved in the activities. The minimum numbers of users were in their below 20s, 60s, and 70s or over, but they were also involved in the activities. The users in their 30s and 40s have equal proportion of users involved in the activities as well as the passers-by.

### *Discussion*

Reviewing the age group of residents in Kathmandu Metropolitan City and Sainbu, information is available only at the Municipal and VDC level and is from the 2001 census for both cases. Again the distribution of age group into three categories as below 15 years, 15-59 years, and 60 and above years, has constrained an analysis of the case study results against overall population in the selected city areas since the census does not give the exact figures as per the researcher's classifications of age group. However, an attempt to contextualise and explain the results is provided below insofar as was possible.

According to the 2001 census, out of the total population of 671,846 in Kathmandu Metropolitan City, 68.6% are in 15-59 years age group, 26.4% are below 15 years of age and 5.1% are in 60 years and above (Subedi, 2010). Likewise, in Sainbu VDC, out of the total population of 8337, 65.8% are in 15-59 years, 28.7% are below 15 years, and 60 and above are 5.5% (KVUDC, 2003). At national level, the figures of these age groups in 2001 are 54.1%, 39.4% and 6.5% for 15-59 years, below 15 years, and 60 years and above respectively (CBS, 2001). If these figures are analysed further, in both

areas, higher percentage of people are found in 15-59 years followed by below 15 years and the 60 years and above.

In TUC, the market square Ason has 80% of users in their 20s-50s and 20% in their 60s and above. High percentage of users was found in the age groups of 30s and 40s. No age group of below 20s were found. According to the locals of Ason who were interviewed, the reason behind the minimum use of the square by the young generations (especially below 20s and 20s) include their inclination towards indoor space activities and the fact that the square does not provide activities that address their needs. The existence of religious and commercial activities attracts users especially in their 40s, who are more inclined towards religious activities. In the neighbourhood square Tebahal, all users are in their age group of 20s-50s. Analysing in depth, many users in their 30s and 40s were found in this space. The influence of religious and social activities may have encouraged these users to visit Tebahal. As discussed earlier, old people are inclined more towards the religious activities. However, the questionnaire also shows that there were very few users in their 50s and no age groups in their 60s and 70s and above. This may be due to several reasons: lack of spaces that fail to address the needs of old age groups (resting places, social spaces); and congestion created by parking spaces. The users in their 20s were also few; this may be because the space does not address the needs of this age group. The square, though it has a basketball court and is favoured by this age group, is not in a good condition. In the community square Dharahara-Sundhara, 96% of users are in their 20s-50s and 4 % in their 60s and above. Many users are in their 30s and 40s. The lack of facilities to meet the needs of the young and elderly people could have caused less use by these groups.

In SA, the market square Bhaisepati Chowk has 76% of users in their 20s-50s followed by 20% in their below 20s, and 4% in their 60s or above. However, the Chowk has many (52%) young people (below 20s and 20s) because the Chowk is popular as a meeting point for the young people and the existence of table tennis could have attracted these age groups further. In the neighbourhood square Sainbu Awas Chhetra, 88% of users are in their 20s-50s and 12% are in their below 20s. The absence of activities to meet the needs of the users may be the prime reason for the lesser involvement of young people. Nonetheless, the users in their 40s and 50s may have attracted to this space for social gatherings due to the availability of green space. In the community square

Magargaun Pipalbot, 85% of users are in their 20s-50s followed by 10% in their 60s or above, and 5% in their below 20s. Like in Dharahara-Sundhara, lack of facilities to meet the needs of the young and elderly people could have caused lesser use by these groups.

In summary, all open spaces in TUC as well as SA were mostly used by the age group between 30s and 50s. No users in below 20s were found in open spaces of TUC, whereas a few of this age group were found in open spaces of SA. Likewise, a very few users in their 20s were using the spaces in both TUC and SA. A few users in their 60s and 70s and over were also found in open spaces of TUC and SA, except the neighbourhood squares in both areas.

### *By gender*

Comparing the users according to gender, Ason has a higher percentage of male respondents than female whereas a smaller difference is found between the male and female respondents in the Bhaisepati Chowk. The percentages of male and female respondents in Ason are 76% and 24% respectively and it is 60% and 40% respectively in Bhaisepati Chowk. Tebahal has 82% male and 18% female respondents, whereas Sainbu Awas Chhetra has 50% male and 50% female respondents. In case of Dharahara-Sundhara, the male and female respondents were 88% and 12% respectively, whereas they were 80% and 20% respectively in Magargaun Pipalbot.

**Table 7.4: Male and Female population in wards of KMC and Sainbu VDC**

Location	Case study	Ward no.	Male population nos. (%)	Female population nos. (%)	Total population
TUC (Kathmandu Metropolitan City)	Ason	27	4058 (53%)	3534 (47%)	7592
		30	4420 (52%)	4143 (48%)	8563
	Tebahal, Dharahara-Sundhara	22	3126 (55%)	2573 (45%)	5699
SA (Sainbu VDC)	Bhaisepati Chowk, Sainbu Awas Chhetra	4	931 (52%)	850 (48%)	1781
		5	746 (51%)	735 (49%)	1481
	Magargaun Pipalbot	9	163 (54%)	135 (46%)	298

Source: CBS (2012) for TUC and CBS (2001) and KVUDC (2003) for SA

### *Discussion*

Reviewing the gender-based population at ward levels of Kathmandu Metropolitan City for 2011 census and of Sainbu VDC for 2001 census, the male population is slightly

higher than female population in all wards as shown in Table 7.4. Comparing the users by genders in all case study open spaces, the male respondents were more than female; however, this does not mean that these spaces are less used by female. Since visual safety is maintained in all spaces (also refer to Chapter 6) and there is no restriction in the use of commercial, religious, social and other activities for male or female, all spaces are used by both male and female. It is already defined in the methodology chapter that responses to questionnaire conducted on users depend on what was happening in a particular day.

### ***By ethnic/caste group***

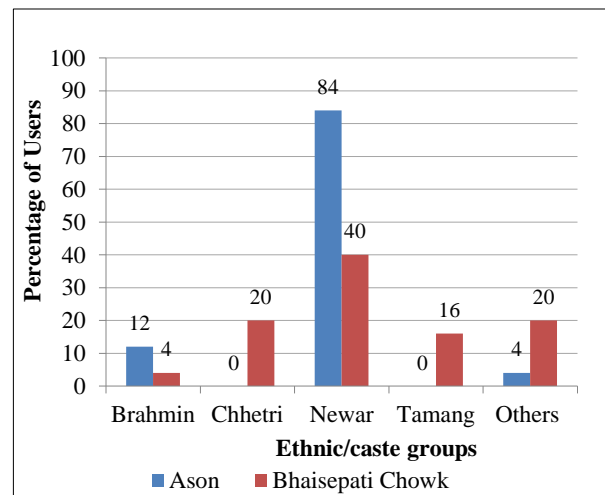
Identifying the user groups based on ethnicity, Ason has a majority of Newar (84%) users followed by Brahmin (12%) and others (4%) (Figure 7.7). The Newars include 44% of users from TUC, 36% from periphery and the rest (4%) from other areas (see Appendix 7.3 iii). The questionnaire also shows that the 36% of Newars from the periphery further include 28% of users who had originally resided in TUC and moved to the periphery, 4% born in the periphery and the rest (4%) having moved from the other areas. The 12% of Brahmins include 8% users from TUC and the rest 4% from other areas, and the 4% of other ethnic/caste groups were from TUC. Similarly, Bhaisepati Chowk also has a majority of Newars (40%) followed by Chhetris (20%), others (20%), Tamangs (16%), and Brahmins (4%). The 40% of Newars includes 16% from TUC and 24% from the periphery. Again, these Newars from the periphery include 12% users who moved from TUC, 8% born in the periphery, and the rest (4%) from other areas. Apart from these ethnic/caste groups, Brahmins, Chhetris, Tamangs, and other ethnic groups were from the periphery.

Tebahal has the Newars as the predominant users. Out of the total users who participated in the questionnaire, 64% were Newars followed by 18% Chhetri, 14% Brahmin, and 4% others (Figure 7.8). Analysing further, out of the total (74%, refer Figure 7.2) users from TUC, 58% were Newar, 6% each Brahmin and Chhetri, and 4% others. The 58% Newars include 40% from the neighbourhood itself and the rest (18%) from nearby areas in TUC. Again, 16% users from the periphery include 8% each Brahmin and Chhetri, and the 10% users from other areas include 6% Newar and 4%

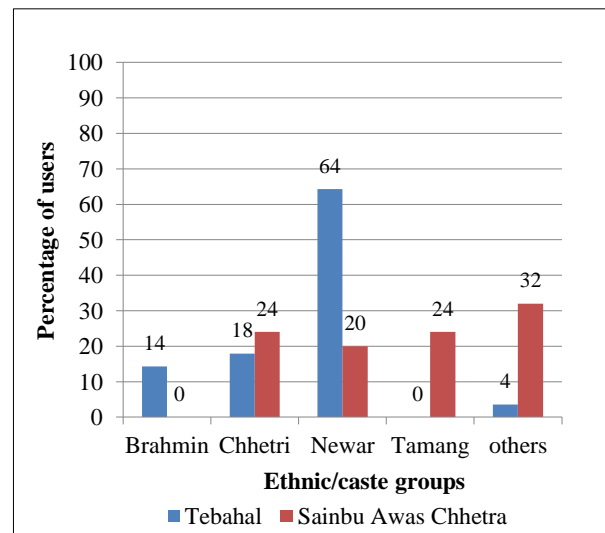


Chhetri (see Appendix 7.4 iii). Sainbu Awas Chhetra was primarily used by the ethnic/caste groups that belong to the category of 'others'. Users include the following ethnic/caste groups: 32% others, 24% Tamang, 24% Chhetri, and 20% Newar. The users in the 'others' category include 12% Achhami, 14% Magar, and 6% Thapa. Out of the total users, only 14% were from the neighbourhood, these being comprised of 8% Chhetri and 6% Tamang.

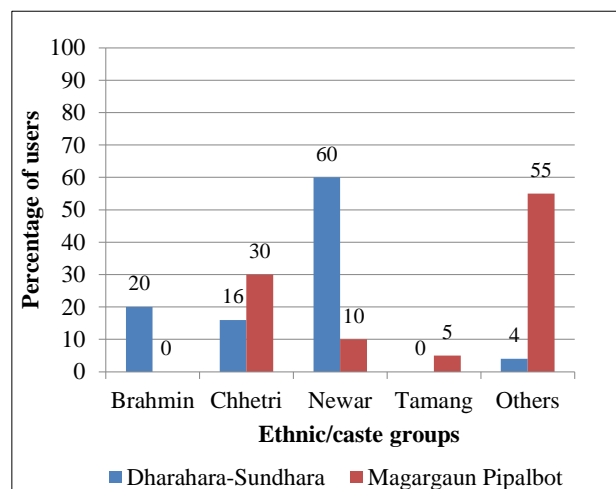
Dharahara-Sundhara also has a majority of Newar (60%) users followed by Brahmin (20%), Chhetri (16%) and others (4%) (Figure 7.9). Analysing further, out of the total (60%, refer Figure 7.3) users from TUC, 56% were Newar and 4% Brahmin. Again, 40% users from the periphery include 16% each Brahmin and Chhetri, 4% each Newar and others. In Magargaun Pipalbot, the majority of the users (55%) belong to the other ethnic/caste groups followed by Chhetri (30%), Newar (10%), and Tamang (5%). All the users in other ethnic/caste groups and Tamang were from the periphery, whereas the Newar included 5% each from TUC and the periphery.



**Figure 7.7: Users in market squares by ethnic/caste groups**



**Figure 7.8: Users in neighbourhood squares by ethnic/caste groups**



**Figure 7.9: Users in community squares by ethnic/caste groups**

Source: Questionnaire conducted on users

## Discussion

Reviewing the ethnic/caste composition of Kathmandu Metropolitan City, Newars are the largest group (31.8%) followed by Brahmin (21.5%), and Chhetri (16.4%) (2001 census). These three groups share almost 70% of the total population of the city (Subedi, 2010). The Tamangs and Magars comprise 5.7% and 3.2% respectively. The ethnic/caste composition of wards, where the case study open spaces are located, is shown in Table 7.5. All three wards have majority of Newar ethnic group. There is no information about the ethnic/caste composition at ward level of Sainbu, but when reviewing at VDC level of 2001, Chhetri is the largest group (38.23%) followed by Newar (16.12%), Brahmin (9.44%). The Tamangs and Magars comprise 7.58% and 8.41% respectively (KVUDC, 2003).

**Table 7.5: Ethnic/caste composition in wards of Kathmandu core area**

Ward no.	Ethnic/caste groups		
	Brahmin	Chhetri	Newar
27	< 5%	5-10%	> 66.7%
30	5-10%	5-10%	> 66.7%
22	5-10%	5-10%	50-66.7%

Source: Subedi (2010)

Contextualizing the case studies of TUC, all open spaces have Newars as the predominant users. The percentage of Newar users in market square (wards 27 and 30) is also higher as it is provided at ward level (Table 7.5), whereas it is within the range in neighbourhood and community squares. The market square, Ason is situated in the then Malla town also known as Newar town and predominantly used by the Newars since that time. The neighbourhood squares of the core area, according to Tiwari (1989), belong to one family or clan group (refer Chapter 5). Since Tebahal is the Vihar (refer chapter 6 for detailed information) since the past, it must have belonged to the Newar clans. Dharahara-Sundhara despite situated at outside of the Malla town, many Newars resided in the surrounding areas in the past. Although, in migration of other ethnic/caste groups and out migration of Newars have been taking place in the core area in the recent years, many Newars are still residing in the core.

Regarding the case studies of SA, the market square, Bhaisepati Chowk has many Newar users and do not correspond with the ethnic/caste composition provided at VDC level. According to the ethnic/caste composition at VDC level, Chhetris are the largest

group. Hence, when the users are analysed according to their area of residence, there is only a slight difference between Chhetris (20%) and other groups from the periphery (Table 7.6). Regarding the Newars, out of 40% users, 16% were from TUC and 24% were from the periphery. The Newar users from TUC were only passers-by. Again the 24% Newars who were from the periphery include 16% moved from other place of the Valley and 8% born in the area. This shows that the migration of Newars to this area have contributed the increase in the Newar users in this space. When the percentage of these Chhetris and Newars are analysed according to their involvement in activities, all (20%) Chhetris and 20% of Newars were involved in the activities.

**Table 7.6: Percentages of users in Bhaisepati Chowk by ethnic/caste group and area of residence**

Area of residence	Ethnic/caste Groups					Total
	Brahmin	Chhetri	Newar	Tamang	Others	
TUC	0	0	16	0	0	<b>16</b>
Periphery	4	20	24	16	20	<b>84</b>
<b>Total</b>	<b>4</b>	<b>20</b>	<b>40</b>	<b>16</b>	<b>20</b>	<b>100</b>

Source: Questionnaire conducted on users

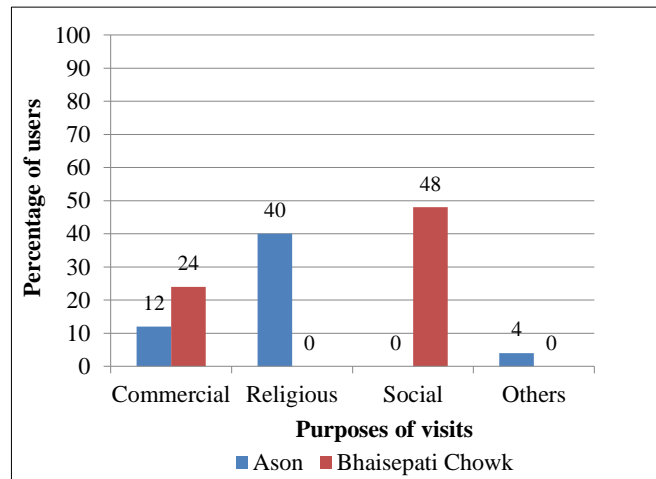
In the case of Sainbu Awasi Chhetra, the other ethnic/caste group is the largest user category. The presence of the lineage deity of Achhami caste group in the space and the possibility of diverse ethnic/caste groups in the newly developed residential area may have caused this result. In Magargaun Pipalbot, although the ethnic/caste composition at VDC level shows very low population of Magars, it is predominantly used by this group because it is located in the Magar village. Out of 55% of users that belong to other ethnic groups (Figure 7.9), 50% were the Magar users.

In summary, the open spaces of TUC are predominantly used by the Newars whereas the open spaces of SA are used by other ethnic/caste groups except in Bhaisepati chowk where many Newars also seemed to be using the space.

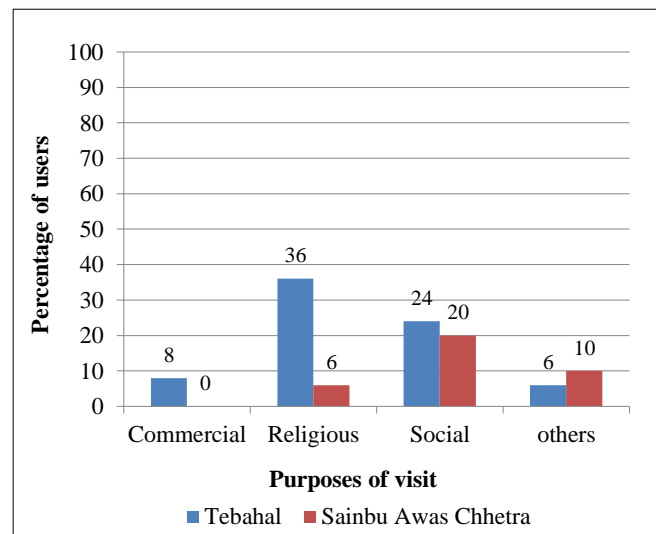
### 7.2.2 Purposes of visit

The purposes of visit are analysed for – i) the involvement of activities in a particular day when the questionnaire was conducted and ii) the visit, which the users usually do – in the spaces. The responses on the purposes of visit show that the market square Ason, though it has an amalgamation of commercial and religious structures, appears to be predominantly used for the religious purposes. Among the 56% of users who were

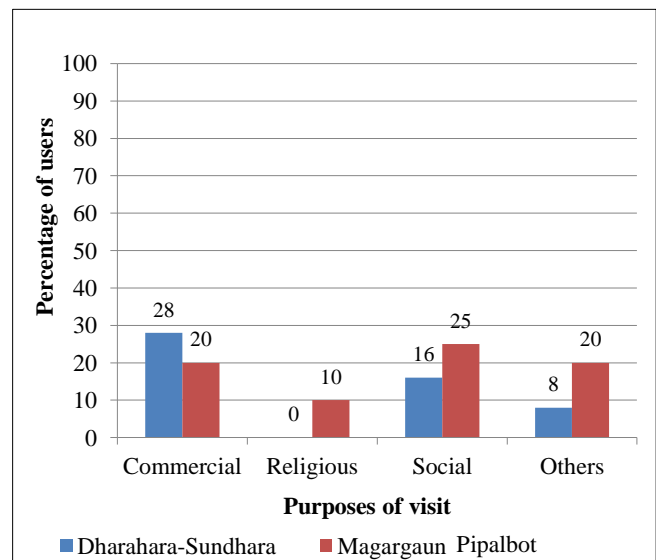
involved in activities in Ason (Table 7.1), 40% visited for religious, 12% for commercial, and 4% for other purposes on the day of the survey. In Bhaisepati Chowk, among the 72% of users who were involved in activities, 48% visited for social activities and 24% for commercial on the day of the survey (Figure 7.10). The results also show that in Ason, 84% of users usually visit the place for commercial, 40% for religious, 36% for social, and 4% for other activities. Ason, being one of the old markets, it has provided commercial opportunities, activities involved in both shops and open markets. The existence of religious structures has encouraged users to worship everyday as well as in their associated religious ceremonies (refer Chapter 6). The religious events also provide the social opportunities when the users meet their relatives, friends, and family. In Bhaisepati Chowk, 44% of users usually visit the space for social, 36% for commercial, and 24% for other purposes. The presence of Chautara, the growing commercialization, and presence of a table tennis board has



**Figure 7.10: Users in market squares by purposes of visit**



**Figure 7.11: Users in neighbourhood squares by purposes of visit**



**Figure 7.12: Users in community squares by purposes of visit**

Source: Questionnaire conducted on users

provided social, commercial, and recreational opportunities in the Chowk respectively.

In the neighbourhood square Tebahal, the mix of socio-cultural, commercial and religious activities has provided various opportunities for the local people. Out of the 76% users who were involved in the activities, 36% visited for religious, 24% for social, 8% visited for commercial, and 6% for other purposes (Figure 7.11). However, out of the total users, 64% responded that they usually visit the square for religious purposes, 46% for social, 24% for commercial, and 24% for other purposes. Tebahal is gaining popularity for its religious purposes (especially for worshipping). The presence of a club building, a small café, and the tree with seating have provided social opportunities for people. The festivals that occur on various dates according to the Nepalese lunar calendar have also encouraged social activities in the square. Recently, the Bahal is gaining popularity for the commercial activities. The commercial purposes include vending in shops and in open markets such as flower vending, vegetables vending, and mobile vending. In addition, the Bahal also provided other opportunities such as parking and recreation. The Sainbu Awas Chhetra on the other hand had more users, who visit the space for social purposes. Out of 36% users who were involved in activities, 20% visited for social, 10% for other, and 6% for religious purposes. However, out of the total users, 50% of users responded that they usually visit for social purposes, 44% for other purposes, and 24% for religious. A green space could have encouraged users (especially from outside of neighbourhood, since only 14% were from the neighbourhood) to use it as a social gathering and recreation space.

In the community square, Dharahara-Sundhara, out of 52% who were involved in activities, 28% visited place for commercial purposes, 16% for social, and 8% for other purposes (Figure 7.12). Of the total users, 60% users responded that they also usually visit the space for commercial purposes, 56% for other purposes, 48% for social, and 28% for religious. The religious purposes here is the participation in the festival and ritual route (also refer Chapter 6) that occur only in specific festivals. The growing commercialization and a restaurant have provided commercial opportunities and seating provisions have social opportunities in the space. Furthermore, the space at the periphery provided opportunities for parking. Likewise, in Magargaun Pipalbot, out of the 75% users, who were involved in activities, 25% visited the space for social, 20% for commercial, 20% for others, and 10% for religious purposes. Of the total users, 50%

users responded that they usually visit the space for social, 40% for commercial, 40% for religious, and 30% for other purposes. The Chautara that has socio-religious significance has provided social and religious opportunities, the commercial development in the Chowk has provided commercial opportunities, and the existence of bus stand in the adjacent area has provided other opportunities such as bus services.

### **7.2.3 Frequency of visit**

The following sections analyses the frequency of the summer and winter visits and visits in different times of a day by the users.

#### ***Summer and winter visit***

Ason, the market square of TUC has a large percentage of users visiting every day in summer as well as in winter (Table 7.7). There is no change between summer and winter visits. This pattern is explicable as Ason is predominantly used for commercial and religious purposes regardless of any seasonal influence. The visits greatly depend upon the needs of the people. In contrast, the frequency of winter visits in Bhaisepati Chowk differs from that in summer; a large percentage of users seldom use the space in winter. Since Bhaisepati Chowk is predominantly used for socialization, it is less preferred in winter.

There is only a slight difference between the summer and winter visits in the neighbourhood square of TUC and SA (Table 7.8). Tebahal has a high number of every day users in both seasons. This could be because it has several opportunities such as religious, social, cultural, and commercial. While in Sainbu Awas Chhetra, a high number of users seldom visit the place in both seasons. This may be because of the absence of facilities for all groups of people.

There is also a slight difference between the summer and winter visits in the community square of TUC and SA (Table 7.9). In Dharahara-Sundhara, a high number of users visit the space every day. Several commercial, social, and other opportunities could have caused the use of this space every day. In Magargaun Pipalbot, also a high number of users visit the space every day. Like in other spaces, the commercial, social, religious opportunities may have caused people to use it every day.

**Table 7.7: Summer and winter visits in market squares**

	Summer visit		Winter visit	
	Ason	BC	Ason	BC
Everyday	56	40	56	28
Most Days	12	4	12	4
Once or twice a week	4	24	4	20
Once every two weeks	8	-	8	4
Once a month	16	-	16	-
Seldom	4	32	4	44
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table 7.8: Summer and winter visits in neighbourhood squares**

	Summer visit		Winter visit	
	Tebahal	SAC	Tebahal	SAC
Everyday	64	6	64	6
Most Days	20	12	14	0
Once or twice a week	4	18	8	20
Once every two weeks	0	18	4	6
Once a month	4	0	4	12
Seldom	8	44	6	56
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table 7.9: Summer and winter visits in community squares**

	Summer visit		Winter visit	
	DS	MP	DS	MP
Everyday	84	50	80	45
Most Days	16	20	20	20
Once or twice a week	0	20	0	15
Once every two weeks	0	0	0	10
Once a month	0	0	0	0
Seldom	0	10	0	10
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

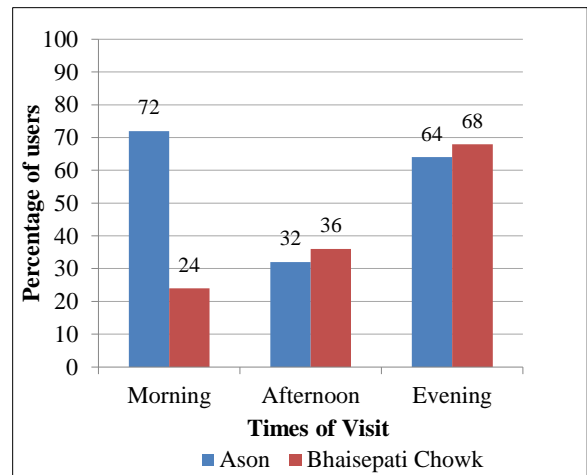
Source: Questionnaire conducted on users

### *Visits in a day*

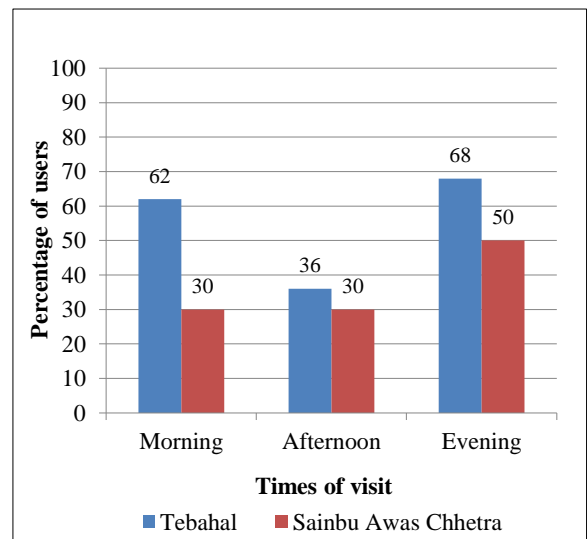
Again analysing the frequency of visits in a day, 72% of users in Ason visit the space in the morning followed by 64% in the evening and 32% in the afternoon. On the other

hand, in BC, 68% of users visit the space in the evening followed by 36% in the afternoon and 24% in the morning (Figure 7.13). There is no significant difference in the percentages of users between the morning and evening in Ason. This could be due to the religious and commercial activities that occur mainly in the morning and evening. Afternoon is the least used; this could be because most of the people are at their work and in addition, no commercial activities occur at that time except in the shops, whereas at other times the entire square is full of open vending (this has been discussed in the previous Chapter 6). The Bhaisepati Chowk on the other hand is used by many users in the evening especially for the social and commercial purposes. All these results also could be justified by the researcher's observations discussed in Chapter 6.

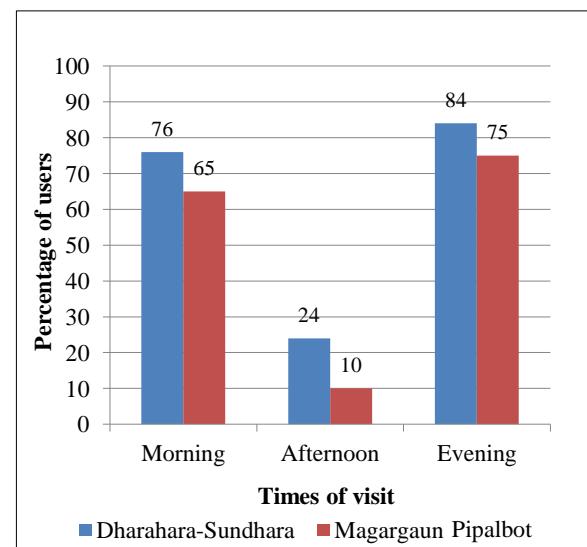
Again analysing the frequency of visits in a day in Tebahal, 68% of the respondents normally visit the square in the evening, 62% in the morning, and 36% in the afternoon (Figure 7.14). It is a practice in the Nepalese culture that the worshipping of gods is done generally in morning; however, this is also done in afternoon and evening but to a lesser extent. This is why many users could have visited the square for



**Figure 7.13: Frequency of visit in market squares in a day**



**Figure 7.14: Frequency of visit in neighbourhood squares in a day**



**Figure 7.15: Frequency of visit in community squares in a day**

Source: Questionnaire conducted on users



religious purposes in the morning. The evening is used mostly for social rather than commercial and religious purposes. It is the time when most of people return from the work and gather in the square to meet friends. The square is less used in the afternoon; this could be because most of the people are at their work and in addition, the intense parking at this time could have discouraged users to visit the space. In Sainbu Awas Chhetra, 50% of users visit the space in the evening followed by 30% each in the morning and afternoon. Like in Tebahal, evening is used mostly than other times of a day. The social and recreational opportunities in the space could have resulted the use of space mostly in evening when people have leisure time after their work.

In Dharahara-Sundhara, most of the users visit the space in the evening than any other times of the day. 84% of users visit the space in the evening, 76% in the morning, and 24% in the afternoon (Figure 7.15). The evening is the time when people return from work, time to meet friends, and in addition, the use as a transit space could bring many users at this time. In Magargaun Pipalbot, also most of the users visit the space in the evening. 75% of users visit the space in the evening, 65% in the morning, and 10% in the afternoon. As in other spaces, the same reason applies in this space too that the opportunities in the space as well as a leisure time of people in the evening have caused the use of space mostly in the evening.

In summary, all open spaces of TUC as well as SA are used mostly in the evening than any other times of a day. The afternoon is the least used time by the users in all open spaces.

### **7.3 Impression of users on open spaces of TUC and SA**

The impression of users on open spaces are analysed based on safety level, accessibility of spaces, perceptions of physical structures and activities, and satisfaction level. The satisfaction level of users can vary depending upon different criteria such as users' area of residence, their age, and ethnic/caste background. Hence, further analysis was conducted by comparing satisfaction level with area of residence, age group, and ethnic/caste group (refer iv,v, and vi of Appendix 7.3, 7.4, and 7.5).

### 7.3.1 Perceptions of safety level

Ason is considered as a safe square by the majority of the users. 60% of users feel safe in the space while 28%, 8%, and 4% of users feel neither safe nor unsafe, unsafe, and very safe respectively. Due to the presence of a police booth within the space and a security patrol throughout the day, the users feel safe, but according to the local users, there still are cases of pick pocketing in the crowds and conflicts among the vendors and customers. Bhaisepati Chowk on the other hand is also considered as a safe place by the users. 56% of users feel safe while 20%, 16%, and 8% of users feel neither safe nor unsafe, very safe, and unsafe respectively (Figure 7.16). Due to the presence of a police station nearby, many users feel safe in the space, but there still are the occasional cases of conflicts between the users, which tend to lower the feeling of safety especially in the evening.

Tebahal is considered a safe square by the majority of the users; 60% think it is safe, 36% very safe, and 4% as neither safe nor unsafe

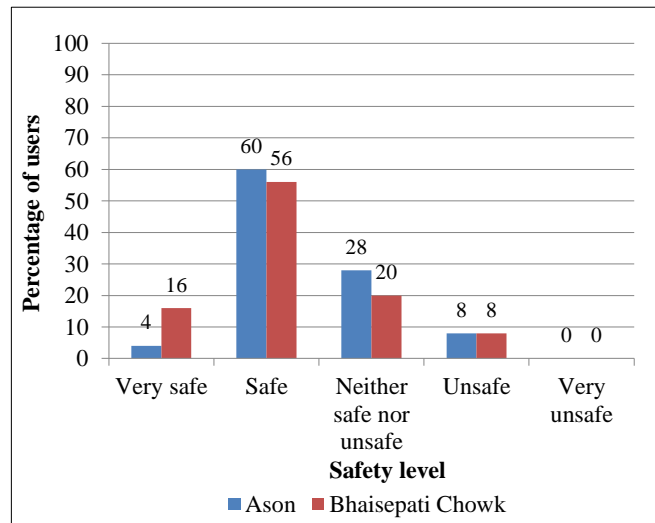


Figure 7.16: Users' perceptions of safety level in market squares

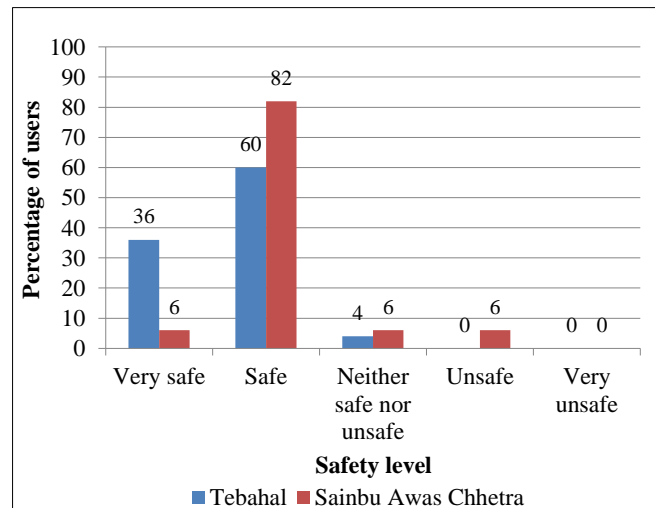


Figure 7.17: Users' perceptions of safety level in neighbourhood squares

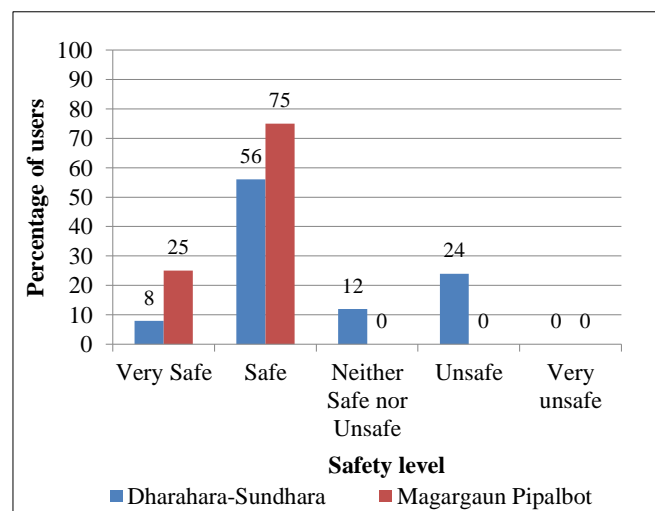


Figure 7.18: Users' perceptions of safety level in community squares

Source: Questionnaire conducted on users

(Figure 7.17). The openness and the presence of the club may have strengthened the perception of safety in the square. In Sainbu Awas Chhetra, 82% of users feel safe, 6% of users feel very safe, 6% neither safe nor unsafe, and 6% of users feel unsafe. The location of open space in the safe residential area could have enhanced people's feeling of safety in the space.

Both Dharahara-Sundhara and Magargaun Pipalbot are considered as a safe space by the majority of the users (Figure 7.18). In Dharahara-Sundhara, out of the total users, 56% of users feel safe in the space while 24%, 12%, and 8% users feel unsafe, neither safe nor unsafe, and very safe respectively. The presence of a police booth in the space and a security patrol throughout a day could have enhanced people's feeling of safety in the space. In Magargaun Pipalbot, out of total users, 75% users feel safe and the rest (25%) feel very safe. In this case, also the presence of a police booth in its proximity and the social integration between the local residents could have enhanced people's feeling of safety in the space.

### **7.3.2 Accessibility of the spaces**

Ason and Bhaisepati Chowk both are easily accessible according to all users. Out of total users in Ason, 48% travelled to this space by walking, 32% by private transport, and 20% by public transport. The density of neighbourhood and pedestrian network has made it accessible to many people living nearby and the good transportation links has made it accessible to people elsewhere in the Valley. In Bhaisepati Chowk, 76% of users travelled by walking, 20% by private transport, and 4% by public transport. Since Bhaisepati Chowk is used predominantly by the users from the periphery (especially those residing in the nearby areas of the Chowk), a higher percentage of users travelling on foot is to be expected. On the other hand, the users in Ason come from a wider geographic area; hence, the users traveled by public and private transports in Ason are more than in Bhaisepati Chowk.

Tebahal and Sainbu Awas Chhetra both are easily accessible according to all users. Out of the total users in Tebahal, 58% travelled to this space by walking, 32% by private transport, and 10% by public transport. In Sainbu Awas Chhetra, 88% travelled by walking and 12% by private transport. Since both squares are located in the residential neighbourhood, many users are expected to travel on foot. However, the

commercialization in Tebahal has attracted people from a wider geographic area. Hence, people travelling by public and private transports were also found. Sainbu Awas Chhetra on the other hand is located in the pure residential neighbourhood and used by the users from the surrounding areas. Hence, the users travelling by public and private transports are only a few.

Dharahara-Sundhara and Magargaun Pipalbot both are easily accessible according to all users. Out of the total users in Dharahara-Sundhara, 48% travelled to this space by walking, 28% by private transport, and 24% by public transport. Dharahara-Sundhara is located in the prime junction and has good pedestrian network; that is why many users were on foot. The existence of public transport node near this space has also helped it to become a transit space by the users. In Magargaun Pipalbot, 90% travelled by walking, 5% public transport, and 5% by private transport. Since the predominant users were from the periphery, especially those residing in the surrounding areas, a higher percentage of users travelling on foot is to be expected.

### **7.3.3 Perceptions of physical structures**

The meaning of each space is already defined in chapter 6. Though Ason and Bhaisepati Chowk are used for markets, Ason has religious meaning and the Bhaisepati Chowk has social meaning in addition. The meanings are also associated with the types of structures these spaces have. It is important to understand how the users perceive these structures: the structures they like most and the structures they think are particularly belonging to the space. In Ason, the result shows that 80% of the total users like the religious structures, 72% like the commercial structures, and 4% like structures with other functions. 80% of users also think that the religious structures are particularly belonging to the square. In Bhaisepati Chowk, 60% like the social structures, 16% like the commercial structures, and 24% like the structures with other functions. 68% of users think that social structures are also particularly belonging to the space.

Of the total users in Tebahal, 80% responded that they like religious structures, 22% like the structures with other functions, and 10% like the commercial structures. Although the square is liked for various structures, all users think that the religious structures particularly belong to the square. In Sainbu Awas Chhetra, of the total users, 62% responded that they like the social structures, 26% like the structures with other

functions, and 24% like the religious structures. When asked to identify which structures particularly belong to the square, out of the total users, 62% users responded with the religious structures, 26% responded with the social structures, and the rest (12%) responded that they do not know.

In Dharahara-Sundhara, of the total users, 88% like the monuments (Dharahara and Sundhara), 12% like the commercial structures, and 12% like the social (including open green areas). All users responded that the monuments particularly belong to the space. Likewise, in Magargaun Pipalbot, of the total users, 84% like the social structures (Chautara) and 16% like the commercial structures. All users think that the Chautara is particularly belonging to this space.

#### **7.3.4 Perceptions of activities**

Out of the total users in Ason, 60% users responded that they like both the religious and commercial activities and 40% like the commercial activities only. Again, out of the total users, 64% of users have concerns about undesirable activities in the square. The disliked activities according to them are congestion created by the open markets (28%), congestions generated by parking (28%) and the encroachment of religious structures by incompatible activities (8%). In Bhaisepati Chowk, out of total users, 68% like the social activities and 32% like the commercial activities. Again, 56% in Bhaisepati Chowk are concerned about undesirable activities such as encroachment of the spaces by informal markets (48%) and the sports structure (8%).

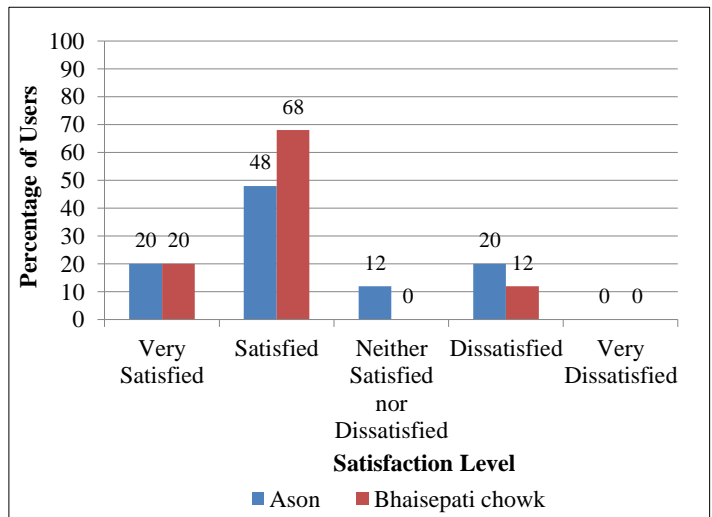
Out of the total users in Tebahal, 58% like the religious activities, 28% the commercial activities, and 14% the social activities. However, 64% of users have concerns about several activities that take place in the square. These include 36% for parking and 28% for the encroachment of cultural and religious artefacts by informal markets. On the other hand, in Sainbu Awas Chhetra, 82% like the social activities and 18% like the religious activities. The users in SAC expressed no concerns about any activities.

Out of the total users in Dharahara-Sundhara, 36% responded that they like other activities, 24% users like commercial activities, and 40% like social activities. Again, out of the total users, 64% of users have concerns about undesirable activities in the

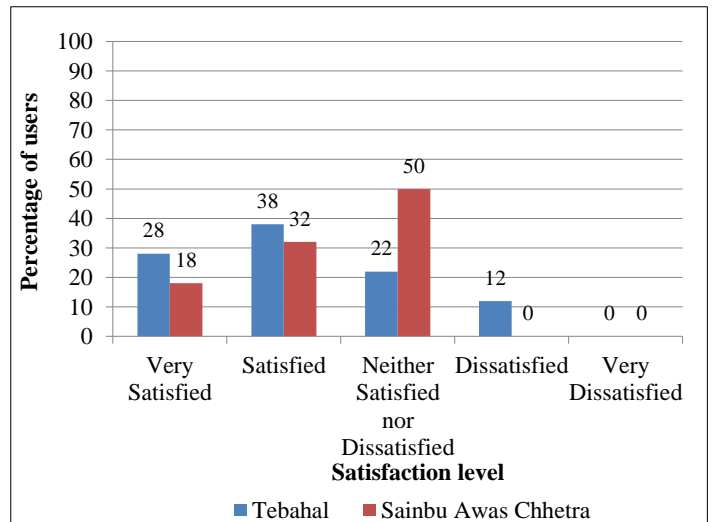
plaza. The disliked activities according to them are growing commercialization (44%), congestions made by parking (20%). In Magargaun Pipalbot, out of total users, 50% like social activities, 25% like religious activities, 15% like commercial activities, and 10% other activities. Again, out of the total users, only 25% are concerned about undesirable parking in the space.

**7.3.5 Overall perception: satisfaction level**

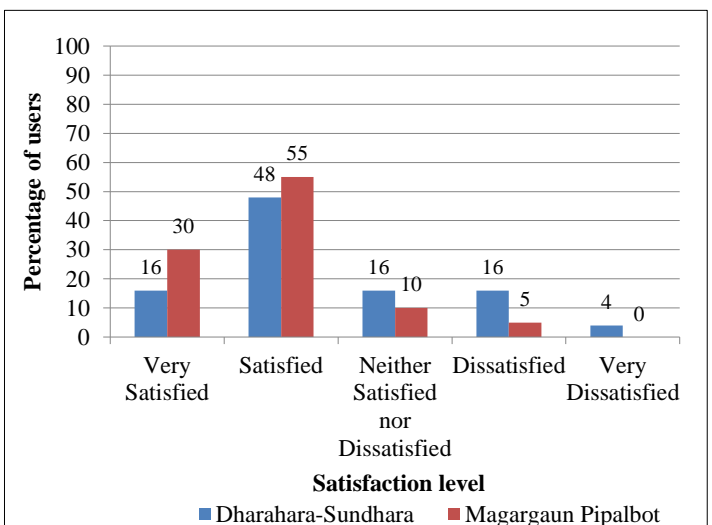
Analysing the overall impressions of users in market squares of TUC and SA, the majority of users seemed to be satisfied with the space (Figure 7.19). In Ason, 48% of the users were satisfied, 20 % very satisfied, 20% dissatisfied, and 12% neither satisfied nor dissatisfied. In Bhaisepati Chowk, 68% were satisfied, 20% very satisfied and 12% dissatisfied. Comparing the figures for both cases, Bhaisepati Chowk has more numbers of satisfied users than Ason. In Ason, those who were most satisfied with the



**Figure 7.19: Users in market squares by satisfaction level**



**Figure 7.20: Users in neighbourhood squares by satisfaction level**



**Figure 7.21: Users in community squares by satisfaction level**

Source: Questionnaire conducted on users

spaces were from TUC, whereas in Bhaisepati Chowk, they were from the periphery. According to the age group, most satisfied users in Ason are in their 40s, whereas in Bhaisepati Chowk, they are in their 20s. According to the ethnic/caste group in both cases, more Newars seemed to be satisfied with the spaces than other groups (refer Appendix 7.3 iv, v, and vi).

Analysing the satisfaction level of users in Tebahal, 38% were satisfied, 28% very satisfied, 22% neither satisfied nor dissatisfied, and 12% dissatisfied (Figure 7.20). In Sainbu Awas Chhetra, all users were from the periphery and out of the total users, 50% were neither satisfied nor dissatisfied, 32% satisfied, and 18% very satisfied. Many users in Tebahal, who were satisfied with the space, are from the TUC. Among the users from the periphery, many of them were neither satisfied nor dissatisfied. Those who are from the other areas were also satisfied with the space. Regarding the satisfaction in relation to age groups in Tebahal, the users in their 30s and 40s were more satisfied than other age groups. Newars seemed to be more satisfied than other ethnic/caste groups. In Sainbu Awas Chhetra, those who were satisfied include users mainly below their 20s, and who were very satisfied include users mainly in their 40s. The users in 'other' ethnic/caste groups seemed to be satisfied with the space most than other groups (refer Appendix 7.4 iv, v, and vi).

Analysing the overall impressions of users in both cases of community squares, many users seemed to be satisfied with the space (Figure 7.21). In Dharahara-Sundhara, 48% were satisfied, 16% were very satisfied, 16% were neither satisfied nor dissatisfied, 16% dissatisfied, and 4% very dissatisfied. Most of the users from TUC as well from the periphery are satisfied with the space. Those who are in their 30s are most satisfied than other age groups. Regarding the satisfaction of the space with respect to the ethnic/caste groups, the Newars are most satisfied than other groups. In Magargaun Pipalbot, 55% were satisfied, 30% were very satisfied, 10% were neither satisfied nor dissatisfied, and 5% were dissatisfied. Majority of the users belong to the periphery and most of them were satisfied. The users in their 30s and 50s were most satisfied with the space and the users from that belong to other ethnic/caste groups were most satisfied (refer Appendix 7.5 iv, v, and vi).

Further analyses were done to identify if satisfaction of users in open space is associated with any other aspects such as users' area of residence, age, ethnic/caste group, and safety and accessibility of the space. For this, a Kruskal Wallis test was conducted for each of these aspects (refer Appendix 7.6). The results shown in Table 7.10 reveal that the relationships of satisfaction with other variables are different for different open spaces. In market square of both TUC and SA, there is a significant relationship between satisfaction and safety of the spaces. There is also a significant relationship between the area of residence and satisfaction in market square of SA, which in case of TUC seems to be insignificant. The other variables in both cases do not have relationship with satisfaction. In neighbourhood square of both TUC and SA, only ethnicity has relationship with satisfaction. In case of the community square of both TUC and SA, none of the variables has relationship with the satisfaction of users.

**Table 7.10: Relation between satisfaction of users and other variables in public open spaces of TUC and SA**

Kruskal Wallis test: Satisfaction						
Hierarchy of open space	Case study	Asymp. Sig.				
		Area of residence	Age	Ethnic/ caste group	Accessibility	Safety
Market square	Ason	.957	.848	.327	.261	<b>.028</b>
	Bhaisepati Chowk	<b>.036</b>	.524	.169	1.000	<b>.026</b>
Neighbourhood square	Tebahal	.780	.511	<b>.029</b>	.424	.465
	Sainbu Awas Chhetra	1.000	.238	<b>.032</b>	.607	.659
Community square	Dharahara-Sundhara	.856	.623	.899	1.000	.427
	Magargaun Pipalbot	.845	.194	.133	.506	.267

Source: Questionnaire conducted on users

#### 7.4 Relationship of various aspects with the use of spaces in TUC and SA

For identifying the relationship between the use of open spaces in TUC and SA and different aspects such as users' area of residence, age, ethnic/caste group, and accessibility, safety, and satisfaction of the space, a Chi Square test and Kruskal Wallis test were conducted depending upon their types of scale (Table 7.11). A Chi-square test was done for the variables that have nominal scales such as area of residence, ethnic/caste group, and accessibility. The results for area of residence and accessibility of space show that 33.3% and 50% of the cells in the table have expected count less than 5 respectively (Appendix 7.7 i and iii), which means by theory, the Chi-square test is not accurate. Hence, a Fisher's exact test was also done for these cases. For other



variables such as age, safety, and satisfaction Kruskal Wallis test was done since age is in continuous scale and safety and satisfaction are in ordinal scales.

**Table 7.11: Relation between use of spaces in TUC and SA and different variables**

		Chi-square test Asymp. Sig.			Kruskal Wallis test Asymp. Sig.		
TUC	SA	Area of residence	Ethnic/caste group	Accessibility	Age	Safety	Satisfaction
		.000	.000	.466	.033	.341	.249

Source: questionnaire conducted on users

The result revealed that there is a significant relationship between area of residence, age, and ethnic/caste group with use of open spaces in TUC and SA. A significant proportion of users from TUC (36%) (refer to Appendix 7.7 i) used the open space of the urban centre and a significant proportion of users from periphery (40.3%) used the space in SA. Regarding the ethnic/caste group, a significant proportion of Newar groups (38.8%) (Appendix 7.7 ii) used open spaces of TUC compared to other ethnic/caste groups. The other variables such as accessibility, safety, and satisfaction do not have any significance with the use of open spaces of TUC and SA.

## **7.5 Impacts on users: A result of transformations of public open spaces of TUC and SA**

The impacts on users in each case studies of TUC and SA are analysed with respect to changes in user group, physical changes, uses, and management level. The analysis is based on the interview conducted on 15 users in each case of TUC and SA. It is worth noting here again that the interviewees were selected based on their area of residence – a) born as well as currently residing in the neighbourhood, b) moved from the neighbourhood and residing in the periphery or others, and c) moved from other areas and currently residing in the neighbourhood or periphery, – and the purpose of visits.

### **7.5.1 Change in user groups**

From the analysis based on the questionnaire conducted on the users, it is clear that a significant percentage of Newars were using the open spaces of TUC. The Newars are considered as the indigenous and major group in the core area since the Malla period. The interview conducted on the users of TUC has also highlighted some of the concerns of these Newar groups in few cases. These are discussed in the following sections.

## **i. Market squares**

### ***Social bond and belongingness***

‘As a residential neighbourhood, Ason has remained almost totally Newar’ (Lewis, 1995, p. 45). In the recent years, the in migration of other groups and out migration of Newar groups has started in the neighbourhood. The major concern of the interviewees in Ason is the impact due to change in user group by ethnicity. According to the responses of most of the interviewees who were born and currently residing in Ason, the square was predominantly used by the Newars in the past and the social mix of these Newars had established a social bond; their socio-cultural and religious respect had also strengthened the society. This long established social bond today has been diluted due to an increasing trend of moving out of the local users (in this case Newars) and in-migration of other groups enhancing ethnic pluralism. This trend potentially has both positive and negative strands. The main concern of the users who were born as well as currently residing in Ason is about the migrants, mostly tenants with different cultures. According to interviewees, the tenants have less sense of belongingness and have less feeling of any (religious, social, and cultural) responsibilities towards society and the square in particular. While on the other hand, according to the users who have moved from other areas and are currently residing in Ason, they have become more familiar with the space and its culture associated with religious and social aspects. For example, they also celebrate the festivals that belong to the residents of core and co-operate with the local residents.

Bhaisepati Chowk has experienced the trend of in-migration only. There is also change in the user groups, but unlike Ason, no ethnic issues are reported by the interviewees. According to the users, most of the people residing in this area preferred indoor lifestyles and no social bond has been established like in Ason.

### ***The identity of the market***

Another prominent issue expressed by the interviewees in Ason is about the change in the ethnic identity of the market. With the commercial intensifications in Ason, open vendors emerged along with the shops. The shops, generally kept on the ground floor (occasionally extended to first floor) and facing the street, have a separate ownership than the building they are housed in. These ownerships, according to the locals, were

gifted to the local Newars by the then Kings to promote commercialization and since then the shops had been run by the Newars. The user of square by the majority of Newars can also be justified by the study by Lewis (1995), which traced that in 1980, 85% of the shop owners were Newars and are from Kathmandu. According to the interviewees, there has not been much change in this situation as the shops have been continued by the subsequent generations. The open vendors on the other hand, do not have any ownership or license for the spaces they use. According to one of the interviewees, the spaces used for open vending at present considered as their own spaces by the vendors because they have been continuing their markets since the past; they even sell their spaces to other vendors. These open spaces for vending in the past used to be owned by the Maharjans, one of the indigenous groups of Newars<sup>89</sup>. They were farmers by occupation, possessed many lands, cultivated, and used to sell products in the square. However, with time most of this group have been influenced by other business practices, the old generations could not continue their vending practices due to their old age and the new generations are not willing to continue the same occupation for their own pursuits. This has been a pull factor for the other groups to start their business in the square and has led to the change in the ethnic identity of the market. This change, however, has been taken both positively and negatively by the users. One of the interviewees expressed concern about the difference in the quality of products sold by the Newars and the other groups; reportedly, the Newars are good in cultivating and maintaining quality of the products whereas the others group purchase imported products which are cheaper and of low quality.

Unlike Ason, in Bhaisepati Chowk the ethnic identity of the market could not be traced because of the recent development of the market. No concerns about the identity have been expressed by the users. This may be because the locality is composed of diverse people and users are more concerned about the services than ethnicity.

## ii. Neighbourhood squares

### *From monoculture to a multicultural neighbourhood*

From the literature, it is clear that 'Baha' in the past were used by Newar Buddhists. Since it is a neighbourhood square, it used to belong to one clan or family in the past

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<sup>89</sup>This can be also supported from the study by Lewis (1995) that the proportion of Newar residents in the Ason neighbourhood is higher among other groups residing in the neighbourhood.

and hence was a mono-cultural space. Today, the neighbourhood consists of a mix of people from different cultural background. According to the local residents, in-migration is taking place at a steady pace in this neighbourhood than any other neighbourhoods of the core area. As a result, the mono-cultural space has changed into a multi-cultural space. This is taken both positively and negatively by the local residents. According to them, the square has become a place for interactions between diverse people. Since the neighbourhood is associated with its own religious cultures and traditions, it has given an opportunity to know new cultures for those who migrated into this neighbourhood. According to the interviewees, less social bond has been emerged between long-standing residents and migrants. On the other hand, there is a strong social bond between those who originally belonged to the neighbourhood.

The open space in Sainbu Awas Chhetra, in the past, belonged to a particular ethnic/caste group. The space was used for worshipping their lineage deity. With the development of the housing in this area, this space is used as an open space with the religious shrine in the neighbourhood. The space, which was mainly used by this group in the past, is today used by the local residents of different cultural background. It has given religious as well as social opportunities to all users.

### **iii. Community squares**

In Dharahara- Sundhara, no written evidences have been found about the use of space by any particular ethnic/caste group in the past; however, the location of space at the edge of the Malla town and existence of Newar as the major inhabitant of that time indicate that the space must have been greatly used by the Newars. The existence of intercity bus terminal during the 1950s shows that users with different cultural background from different parts of Nepal must have used the space. It is hard to argue which ethnic/caste groups have been using the space since the past. However, according to the local users, there used to be many Newars, who used Sundhara as well as Dharahara to dry grains and a social bond was established among these groups. Today, the local users think that despite of people coming from 75 districts of Nepal, not such social ties seemed to exist with these users. The most noticeable user groups in terms of functions were the shoe repairers. The shoe repairers, who were continuing their business since long, were asked to move after the redevelopment of the space. Since this space has a great potential for generating income, it is not easy for them to leave the

space. They instead relocated themselves in the footpath at the periphery of the space and the congestion created by these shoe-repairers were reduced in the plaza. However, they always have fear about the evacuation by the Municipality.

The Magargaun Pipalbot, though it is existed in the Rana period (according to the interviewed users), has been recently developed. Like in Dharahara-Sundhara, no written evidences have been found about the use of this space by any particular ethnic/caste group in the past. At the present context, the existence of different villages named after different ethnic/caste groups and their networking shows that the space could have been used by people from different ethnic backgrounds<sup>90</sup>. The local residents perceive it as positive aspects as it has given them opportunities to interact and know each other's culture and traditions.

## **7.5.2 Physical changes**

### **i. Market squares**

The recent paving of Ason square is admired by all users since it has facilitated all vending activities. One of the open vegetable vendors recalled how the square used to be muddy during the rainy season making it difficult for vending. Today it is much easier for all vendors as well as the customers. According to the shop owners, their commerce has been boosted in comparison to 10 years earlier. However, due to the growth of supermarkets, and changing lifestyles of people, who are slowly attracted to the supermarkets, the vendors think that there will be a decrease in their commerce after 10 years. Other physical changes are the visual appearance of few religious structures and the surrounding neighbourhoods and these according to the users are not visually appealing as it used to be in the past. The changes in skyline of the buildings, going vertical, not following the traditional styles of the buildings, are a cause for concern to the users. The family structure in the core used to be the extended type. The inadequate space for the family members in the traditional building, the motivation towards increasing commercial spaces in the number of floors, and the scarcity of the land in the densely populated area has caused the building go vertical.

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<sup>90</sup>When the ethnic backgrounds of users who participated in the questionnaire are examined, the users from other villages named after ethnic group are found.

Like Ason, Bhaisepati Chowk has also undergone physical changes. According to the users, the open grassland in the past had been completely paved and this helped in bringing markets and other activities. This has a positive response from the users because the Chowk has become cleaner than before. The concrete table tennis constructed to fulfil the youths' needs is considered as improper and noisy by the elderly users. Also, the bus shelter according to the local users is not in the proper location as it creates congestion in the Chowk. Regarding the style of the surrounding buildings, the respondents think that no harmony in style has been maintained.

## **ii. Neighbourhood squares**

### ***Architectural harmony in Tebahal***

According to the respondents, in the past, harmony was maintained in the neighbourhood in terms of continuous building skyline. The façades of each building were also built with the same material: brick for walls, dhjingati tiles for roofs and timber for doors and windows. The respondent felt that these not only had strengthened the visual quality of the courtyard, but also had given the sense of enclosure of the square. They also held the view that discordant visual backdrop with changing façade seems to be not complying with the concept of traditional neighbourhood.

### ***Addition of structures in Tebahal and Sainbu Awas Chhetra***

The added structures such as basketball court and clubhouse, according to the local people, have reduced the courtyard space, thus decreasing the spaces for children to play and elderly people to bask in the sun during winter. They also think that the basketball court, which occasionally is used for playing basketball, the clubhouse, and health clinic, do not integrate with the Bahal environment.

Though the open space in Sainbu Awas Chhetra is recently developed, it has undergone several physical changes. The open green space has provided a place of socialization for the people. This has been considered as one of the positive aspects in the space by the users. The addition of a multipurpose building has served for several purposes to those people who do not have enough space at their home.

### iii. **Community squares**

#### *Addition of structures in Dharahara-Sundhara and Magargaun Pipalbot*

The redevelopment of Dharahara-Sundhara has entirely changed the area. The additions of commercial structures, seating, pavement of the plaza has caused both positive and negative impacts in the users. The local residents seemed to be against the addition of commercial structures (the majority of the shops are for clothes) as it is making congestion and deteriorating the environment in the locality, whereas people who migrated to this locality seemed to be in favor as their main intention is to make earn money and make profits. Quoting one of the local residents,

‘no one, either it is the local people or tourist, would like to buy clothes after climbing Dharahara. Instead of clothes shops, it would be better if there are the places, where people can rest, eat or drink’.

For the provision of seating in the entire plaza, all of the users who were interviewed have positive responses as it has given them the social opportunities such as mixing and interacting with each other. The paved plaza, according to the users, has made them convenient to walk, the only concern here is about the change in levels and not considering the movement of disabled people.

Most of the users in Magargaun Pipalbot seemed to be very positive about the transformations taken place; however, a few users have concerns about some added structures. According to which, the addition of shed like structure for the religious purpose is visually unpleasant and has minimized the social space. The club building is also visually inappropriate in the space and they think if it is dismantled, there will be more Chautara space.

### **7.5.3 Change in uses**

It is clear from the discussions made earlier in Chapter 6 that open spaces of TUC and SA have changed over time. The interview conducted on the users has confirmed this and has outlined how they are affected by the changes in use in these spaces. These are discussed in the following sections.

**i. Market squares**

***From socialization to commercialization in Ason***

According to the local users, Ason has experienced a drastic change regarding its use. The square in the past used to be empty. The local people used to organize bull fighting in the square to bring liveliness in the square. With the progressive increase in socialization over time, outdoor life became more prominent in the Nepalese society in the past. There used to be share of space by the adolescents and elderly people. Today, the intense commercialization, reduced socialization space, and changing behaviour of the different age groups have decreased outdoor social life. The square has completely changed into a vibrant commercial square. For the changing behaviour of the users, the respondents think that technological advancements have played a great role. The internet and online games have confined adolescents to indoor life whereas TVs and online religious programmes have encouraged the elderly people to stay indoors.

***Encroachment of religious structures by commercial activities in Ason***

Activities in the square were less in the past and limited mostly to religious activities. As commercialization started in the square, the indoor shops as well as the open vendors developed and the encroachment of religious structures started to occur in the recent years. The side Dabali in Ason that used to be a cultural asset and strictly used for social and cultural activities has been encroached by the shops, which according to the local users are incompatible. These shops, though they provide a mix of items meeting all needs of people from shoes to spices and incenses and provide diverse choices, they are changing the square's commercial identity because the market has been replaced by imported products.

***From a rest place to a mix of socialization and commercialization in Bhaisepati Chowk***

Bhaisepati Chowk has also undergone changes in its use. It has changed from a rest place to a mix of social and commercial space. This change has been taken positively by almost all interviewed users as it has fulfilled their requirements. It has provided a meeting place for all age groups, markets and in addition a bus shelter for travellers. According to the interviewees, the space is used mostly by the adolescent and especially



in the evening for meeting friends and enjoying a fast food. The elderly people also use the space but occasionally.

### ***Encroachment of Chowk by informal markets in Bhaisepati Chowk***

The informal markets offering fast food and snack vending mainly occur in the evening, targeting the young generations. These vendors are migrants who cannot establish large businesses due to their poor economic conditions. The users were disappointed with the vendors since these vendors do not contribute to cleanliness in the Chowk, their main concern being just to earn money. One of the interviewees expressed concern about the litters made by informal vendors in the square.

‘I usually go to the Chowk in the morning to buy vegetables. Every time I go to there, I find litters left by the snack and corn vendors. I feel bad. I have no complaint with the use of Chowk by those vendors, but they should maintain cleanliness’.

## **ii. Neighbourhood squares**

### ***From socio-religious space to a parking space in Tebahal***

The sacred and secular complexes, deities and objects, priests and devotees, are the main focus of all the activities in the Bahal (Bajracharya, 1995) and provides the sphere for socio-religious affairs of the entire Buddhist community (Slusser, 1982, p. 288). Tebahal, being one of such examples, has the series of activities from regular worshipping of gods by the priest and devotees to the number of people gathering for the social interactions. However, the social space is encroached mostly by pay parking. The use of Bahal as a parking space is perceived differently by different users. The members of the club seemed to be in favour of parking as it generates income that is used for the sports development, maintenance of religious buildings, and social services. While on the other hand, the local users have negative insight towards it. According to these users, the parking has not only created environmental pollution but also has reduced social space due to congestion. The essence of this square such as the sense of living together with the divinities is greatly dominated by the parking. According to the devotees who do not reside in the neighbourhood, they do not have feeling of the religious ambiance in the square due to the use of the square as parking space.

### ***A drift of commercialization in Tebahal***

In the recent (not more than 5) years, Tebahal has experienced a drift towards commercialization. The residential neighbourhood started commercialization due to the influence from the adjacent commercial areas. Particularly, the new residential buildings are being converted into guesthouses. The ground floors of both new and old buildings are opened up for commercial activities. This includes small shops, cafes, restaurant, tailoring shop, metal works, electronic goods, informal markets etc. This trend of commercialization according to the local residents is weakening the Bahal characteristics. However, shops that provide basic needs of the people and cafés are liked by them. Similarly, the open vending such as flower and vegetable vending are liked by the users, but these need to be properly managed. The open teashop and open tailor that has encroached the cultural artefacts are not liked by the users as these have created congestion and environmental pollution in the square.

### ***From socio-religious space to multi-purpose space in Sainbu Awas Chhetra***

The socio-religious open space has changed into a multi-purpose open space. The existence of one storey small building has provided opportunities for all groups such as performing rituals and social activities. Similarly, the outdoor space is used for different ceremonial functions like weddings, cultural events etc. According to the users, these opportunities are considered to be appropriate.

### **iii. Community squares**

#### ***Change in realms in Dharahara-Sundhara after redevelopment***

During the initial phase of redevelopment of Dharahara-Sundhara, public access to the green space was allowed after paying an entry fee. Today, the access is made free; this is taken positively by most of the users as they feel that it has helped them to be engaged in the space. It also has provided the space to relax. Quoting one of the users,

‘After the access is made free, I always go to the park, especially in the morning, sit for a while, and watch other activities in the space. I feel refreshed. It is also a time-pass’.

A few of the users have concern about prohibiting access in the Sundhara. This is clear in the statement given by one of the users,

'I am living in this neighbourhood after marriage. It is more than 40 years. I used to go to Sundhara every morning. There are few gods placed above the taps of the sunken waterspout. Every morning I used to go there to worship and then fetch water from the tap. Today, there is no water and no access is given to the public. I feel bad. However, even today I go for morning walk, circumambulate the waterspout, buy milk, and then go home'.

***From open space to intensification of commercialization after Privatization of Dharahara-Sundhara space***

The Dharahara-Sundhara that was an open ground in the past is today occupied by many institutional and commercial buildings. According to the local residents of this area, the open area was used for drying grains, play field for the children, meeting point for the adults, but today many buildings has emerged in the space reducing the open area. There are not any spaces in the core area, where children can play. Disappearance of drying rice grains in the open area is not considered as the major concern by most of the local users. According to them, people no longer are practicing this trend due to easy availability of imported rice. The local residents, though have positive reaction about the redevelopment of the space that was abandoned for more than a decade and encroached by the informal market at one time making congestion in the space, they are not in favour of the current trend of intensification of the commercial spaces in the plaza. According to these users, the commercialization that includes mainly retail shops of clothes and shoes has extensively lessened the historic as well as socio-cultural significances of the space. Moreover, it is also weakening the social bond of the community as it is bringing many people from different parts of the Valley.

The local residents have opposed the plan for making a commercial hub by the private sector and the Kathmandu Municipality. According to these users, these institutions are more business-oriented than promoting cultural tourism. The shop owners, especially who are not the local resident, have no problems with the commercial intensifications as long as they are profited from their businesses. On the other hand, the private sector, which is involved in the redevelopment, has different view. According to which, the commercialization has made the space more vibrant than it used to be before. It has

helped many people to generate their income. In addition, the commercialization in this space has helped in the development of other adjacent commercial areas.

### ***Growing commercial uses in Magargaun Pipalbot***

As discussed earlier, the space in the past was open land and used as resting area, play field for children, meeting point for adults, and religious purposes due to presence of a Pipal, a sacred tree. There are not many differences in these uses from the past; the only difference found in this space is the steadily growing commercial trend. It has facilitated the users with all kinds of daily necessities. According to one of the users,

‘There were a very few shops in the past and those that existed have very limited items. Today, the shops are growing, but not like in other area, include all necessary items for daily use. You can find a food store, vegetable store, meat store, photocopying shop, cafés, and saloon. What else? These are what we need for daily purposes.’

#### **7.5.4 Management and security level**

Today, open spaces of TUC and SA are managed by local club, organization or the government. However, the users of these spaces have concerns about the management as well as the security. These are discussed in the following sections.

##### **i. Market squares**

*‘The space in Ason is precious and the open vendors must struggle with competitors and police to maintain it’* (Lewis, 1995, p. 45). Even the crowds had made difficulty for the pedestrians. In order to minimize the congestion in the square, the open markets have been managed by the local club known as Ason Service Committee. A security person has been hired to manage the markets and make sure that the open markets do not disturb the access for the public. Time has also been allocated for the open markets and the security person has to ensure that these open markets leave in that time. The open markets must run their market in the morning and evening and the afternoon is for pay parking purposes, which helps in generating income. The time allocation, according to the open vendors, is creating a problem, as they cannot continue their market throughout the day. They have to look for alternative places to run their market in the afternoon. Sometimes they do not get other places and since their income source solely

depends on these markets, it is difficult for them to sustain. Because of the security person and the police booth, which was added later in the square, the crime rate has been reduced largely. According to the local users, there used to be many cases of pick pocketing over 10 years ago. The cultural events are also considered to be managed better than before. The allocation of time for the events, arranging the security guards have made the cultural events more systematic than before.

In Bhaisepati Chowk, informal markets in the evening have become chaotic due to lack of management of the space. There used to be small fights between the youths, however due to the presence of police nearby, these are less frequent. The users in both cases think that the government should provide clear guidelines for management of these open spaces. In order to increase the safety levels, the users in both cases have recommended providing CCTV.

## **ii. Neighbourhood squares**

The Sankata Boys Sports club in Tebahal which mainly was established for sports development, has also looked into managing pay parking, cleanliness, security as well as social issues (such as disputes among the users). The club members who were interviewed do not have any problems regarding parking provisions as it has helped in income generation that is used for the sports team (Sankata football team), one of the national football teams in Nepal. However, the other users complained that the club has not become strict on managing parking, due to which there is always congestion in the square.

In Sainbu Awas Chhetra, Karyavinayak guthi is responsible for maintaining cleanliness and security. The space that is rented helps in generating income; this is used for any developments that are needed in the space. Since the space belongs to a particular ethnic/caste group, the revenue is also used for their cultural practices such as during the events of their annual festivals. These are considered positively by most of the users, however a few users complained about the necessary facilities such as water and sanitation that are lacking in the space. According to the users in these cases, the government should provide clear guidelines for proper management of these open spaces. For the security options, the provision of 24-hrs security guard and CCTV was

suggested by the users in Tebahal, whereas the need for a security guard was suggested by the users in Sainbu Awasi Chhetra.

### **iii. Community squares**

In Dharahara-Sundhara, the private sector is fully responsible for the management of the space, however if any additions, alterations or any major changes need to be made, they have to get the approval from the KMC and DoA. The private sector is allowed to make profits from the developments, but in return, it has to provide a fixed payment to KMC that is responsible for using this generated revenue for the community development. The local residents' disappointment is towards the KMC for not becoming the authority responsible for community development. Regarding the security level in Dharahara-Sundhara, according to the local residents it used to be unsafe to pass space in the evening and at night, especially for women. Theft, vandalism, and other crimes used to happen in this area before the development; due to this reason one had to return home during daylight or choose alternative routes, but after the redevelopment this has been decreased drastically and people feel it is convenient to use/ pass by the space.

Despite the reduction in crime rate after redevelopment, this project has become very controversial with lengthy disputes between the local community and the private company. The failure to meet the demands of the public and a lengthy project completion period has further encouraged the local community against the redevelopment project. Recently an agreement between KMC and the same private company under the public private partnership programme has been made which proposes to combine the tourist fee for climbing Dharahara and visiting the Darbar square. This has again raised disputes between the local community, KMC, and the private company (The Kathmandu Post, 2013). The KMC and the private company defended the proposal as a bid to promote the heritage zones standing close to each other, while the locals claim that it is a deception in order to privatize the space that may hinder the tourism later.

The Magargaun Pipalbot is managed by the club, which is responsible for social, religious as well as financial management. The club is responsible for organizing everything in most of the events taking place in the Chautara. According to the local

users, the club has not only looked into the activities but also helped to maintain the social bond in the local community and safety in the space.

The users in these cases also think that the government should provide clear guidelines for management of these open spaces. In addition, according to the users in Dharahara - Sundhara, the private sector, who is responsible for management of the space, should promote tourism rather than commercialization. For the security, the users in Dharahara-Sundhara recommended the provision of CCTV and 24-hrs security guard in the space. Though the users in Magargaun Pipalbot feel safe in the space, they also recommended a security guard, especially for the night time.

The above discussions on the management and security level in public open spaces shows that local government as well as local clubs/organizations were involved in the management of selected case study open spaces. However, the government seemed to be less involved in the management than the local clubs/organizations in both TUC and SA.

## **7.6 Summary of findings on the users' dimension in open spaces of TUC and SA**

The users in public open spaces in TUC are from TUC itself, the periphery as well as from the other areas (except in the community space, where no users from other areas were seen). There is only a low difference between the users from TUC and periphery in all cases in TUC, except in neighbourhood square (that has predominant users from the neighbourhood itself). In all the TUC cases, most of the users from TUC were involved in activities and from the periphery were passers-by. All open spaces in TUC were mostly used by the age group between 30s and 50s and predominantly used by the ethnic group known as Newar. The purposes and time of visits depend upon the functions of each space; however, the analysis shows that all spaces were mostly used in the evening and almost every day in summer as well as in winter seasons. Furthermore, most of the users seemed to be satisfied and had feeling of safety in all spaces. The structures and activities that are liked most depend upon the nature of each space; however, the analysis shows that the liked structures include mostly those that exist since the past and for which the spaces are popular. In all cases, certain incompatible

structures and activities which were seen as incompatible, such as parking and informal activities were not liked by the users.

In the SA, the predominant users are from the periphery and were involved in activities in the spaces. Regarding the age group, many users between 30s and 50s seemed to be using the spaces, except in the market space (where many users were in their 20s and below 20s). Most of the users belonged to 'other' ethnic/caste groups in all spaces except in the market square (where Newar seemed to be many). Most of the users visited the spaces for social purposes and mostly in the evening. Most of the users visit every day in all spaces in summer as well as winter seasons, except in Sainbu Awas Chhetra, where the users in both seasons seldom visit. Like in TUC, most of the users seemed to be satisfied and felt safe in the spaces. The most liked structures in all cases in SA also include mostly those that exist since the past and for which the spaces are popular. Like in TUC, the incompatible structures as well as the activities such as parking and informal activities were not liked by the users.

**Table 7.12: Impacts on users due to change in user groups**

Case study open spaces	Changes	Impacts
<b>Market squares</b>		
Ason, TUC	- Change in the Newar population. Newars were the predominant ethnic group in the core in the past	- Weak social bond and belongingness
	- Change in the market owned predominantly by the Newars	- Change in identity of market
Bhaisepati Chowk, SA	- Change in users. (However no ethnic issues have been reported)	- No social bond
<b>Neighbourhood squares</b>		
Tebahal, TUC	- Change from mono-cultural to multicultural space. Newars were believed to be the users in the past	- Weak social bond
Sainbu Awas Chhetra, SA	- Change from the use by a particular ethnic/caste group to diverse cultural group	- Religious and social opportunities to all groups
<b>Community squares</b>		
Dharahara-Sundhara, TUC	- Change in the Newar users - The shoe repairer who were using the space located themselves at the periphery	- No social bond - Congestion reduced - Fear of evacuation by the Municipality
Magargaun Pipalbot, SA	- No clear evidence about the particular ethnic/caste groups using the space in the past .Use by different ethnic/caste groups at present	- Social opportunities to all groups

Source: questionnaire/interviews conducted on users

In all case studies, the change in user groups, physical changes, uses, and management and security level have affected the users positively or negatively or both. The impacts due to change in ethnic/caste groups have become a prime concern in TUC (refer Table



7.12). The physical changes have provided opportunities as well as constraints in all cases (Table 7.13). Commercialization is taking place in all open spaces, with rapid pace in TUC than in SA. Most of the users in both TUC and SA are affected due to the commercialization (refer Table 7.14). The current management and security have helped to improve the safety level in all cases (refer Table 7.15).

**Table 7.13: Impacts on users due to physical changes**

Case study open spaces	Changes	Impacts
<b>Market squares</b>		
Ason, TUC	Paving of the square	Convenient in using
	Visual appearances in religious structures	Visually not appealing
	Change in skyline of the building	
Bhaisepati Chowk, SA	Paving of the square	Convenient in using
	Addition of structures with other function	Congestion, noisy
	No harmony in the building style	
<b>Neighbourhood squares</b>		
Tebahal, TUC	Change in skyline of the building	No sense of enclosure
	Addition of structures	Reduce in social space
Sainbu Awas Chhetra, SA	Addition of structures with other function	Provide several opportunities
<b>Community squares</b>		
Dharahara-Sundhara, TUC	Addition of commercial structures	Congestion Deterioration of the environment
	Addition of social structures	Social mix
	Paving of the square	Convenient in using
Magargaun Pipalbot, SA	Addition of religious structures	Visually not appealing
	Addition of structures with other function	Visually not appealing

Source: questionnaire/interviews conducted on users

**Table 7.14: Impacts on users due to change in uses**

Case study open spaces	Changes	Impacts
<b>Market squares</b>		
Ason, TUC	Socialization to commercialization	Reduced social space
	Encroachment of religious structures by commercialization	Provide diverse commercial choices. Reduced social space
Bhaisepati Chowk, SA	mix of socialization and commercialization	Provide diverse opportunities
	Encroachment of Chowk by informal markets	Environmental Pollution
<b>Neighbourhood squares</b>		
Tebahal, TUC	Socio-religious space to parking space	Income generation Environmental pollution Reduce in social space
	Commercialization	Reduce Bahal characteristics Congestion Environmental pollution
Sainbu Awas Chhetra, SA	Socio-religious space to multi-purpose space	Provide diverse opportunities
<b>Community squares</b>		
Dharahara-Sundhara, TUC	access to public in green space after redevelopment	More engagement

Contd...

	Commercialization after privatization	Congestion Lessen the historic image Weaken social bond Profit from the commercial activities Commercial development of adjacent commercial areas
Magargaun Pipalbot, SA	Commercialization	Provided commercial opportunities.

Source: questionnaire/interviews conducted on users

**Table 7.15: Impacts on users due to change in management and security**

Case study	Involved group	Roles and Responsibilities	Impacts	Recommendations from users
<b>Market squares</b>				
Ason, TUC	Ason Service Committee	- neighbourhood development - appointed security person to manage market and parking	- reduction in crimes, pick-pocketing - systematic cultural events	- clear guidelines from the government - need of CCTV
	Police booth	- manage/organize cultural events		
Bhaisepati Chowk, SA	Police booth nearby	- security	- Less crime	- Clear guidelines from the government - Security guard - need of CCTV
<b>Neighbourhood squares</b>				
Tebahal, TUC	Sankata Boys Sports Club	- sports development - pay parking - appointed security person to manage parking	- revenue generation - congestion as a result of no strict rules for parking management	- clear guidelines from the government - need of CCTV
Sainbu Awas Chhetra, SA	Karyavinayak guthi	- management of the space - manage income generated by giving space for rent - maintaining cleanliness, security	- well maintained, cultures in use	- clear guidelines from the government - security guard
<b>Community squares</b>				
Dharahara-Sundhara, TUC	Private sector KMC DoA	- development and management of space	- Reduction in crime - Feeling of safety than before	- clear guidelines from the government - promote tourism - need of CCTV, security guard
Magargaun Pipalbot, SA	Local club	- Social, religious, and financial management	- help in maintaining social bond, cultural practice	- clear guidelines from the government - need of security guard

Source: questionnaire/interviews conducted on users

## 7.7 Conclusion

The open spaces in TUC and SA are visited by the users for different purposes such as commercial, religious, social, or others. Most of the open spaces in TUC serve all of these four purposes in one space, whereas the open spaces in SA do not serve all of

these purposes (except in few cases) in one space. The use of open spaces in TUC and SA is also dependent on area of residence, age, and ethnic/caste group. In TUC as well as in SA, the users are affected mostly due to weak social bond between them. The Newars, who were the inhabitant of the core since past seemed to be most affected than other groups in the TUC. The absence of the sense of belongingness in the users who migrated to the core has become the prime concern. Most of the open spaces in TUC are associated with the Newar cultures. With the lack of social bond between the Newars and migrated users, engagement in open spaces has become difficult. In the SA, many of the users are the migrants. The weak social bond is the result of less communication between these users. Unlike TUC, no ethnic issues seemed to have much affected the users.

All open spaces in TUC and SA have undergone changes. Both cases have similar kinds of physical changes such as paving of open spaces, addition of structures, and change in skyline of the building. The impact on users due to physical changes also seemed to be similar in all open spaces such as convenience in using, visual and sound impact, reduction of social space etc. The change in uses has provided different opportunities to the users in all open spaces of TUC and SA. The common changes observed in open spaces of TUC and SA is growing commercialization (except neighbourhood square of SA), due to which the open spaces (mostly in TUC) are experiencing less social space. Regarding the management, all of the open spaces in TUC and SA are managed by different local clubs, guthis, government or private sector. The security provisions in all open spaces have helped in reducing crime rates. In some cases of TUC and SA, these groups even are responsible to maintain the cultural practice of the past. However, there are no clear guidelines from the government for proper management or development of the open spaces. The users in all case study open spaces also mentioned about further security need in all spaces. The security can be enhanced by providing CCTV or security guard.

## **Chapter 8 : Institutional frameworks for managing urban growth and open spaces in Kathmandu Valley**

### **8.1 Introduction**

This chapter analyses the institutional frameworks for managing urban growth and open spaces in the Kathmandu Valley. For this, it reviews the existing policies on urban growth, open spaces and conservation of cultural heritages of the Kathmandu valley, and the vision of government bodies towards the preservation and transformation of open spaces. The first three reviews are based on the literature and the latter is based on the interviews conducted with government bodies at central and local level. At the central government level, the Director General of the Department of Urban Development and Building Construction (DUDBC), Town Controller for Kathmandu district and Town Controller of Lalitpur District were interviewed. At local government level, the Department Head of Urban Development from Kathmandu Municipality and Head of Building and Heritage Division of Kathmandu Municipality were interviewed.

### **8.2 Urban institutions and their roles**

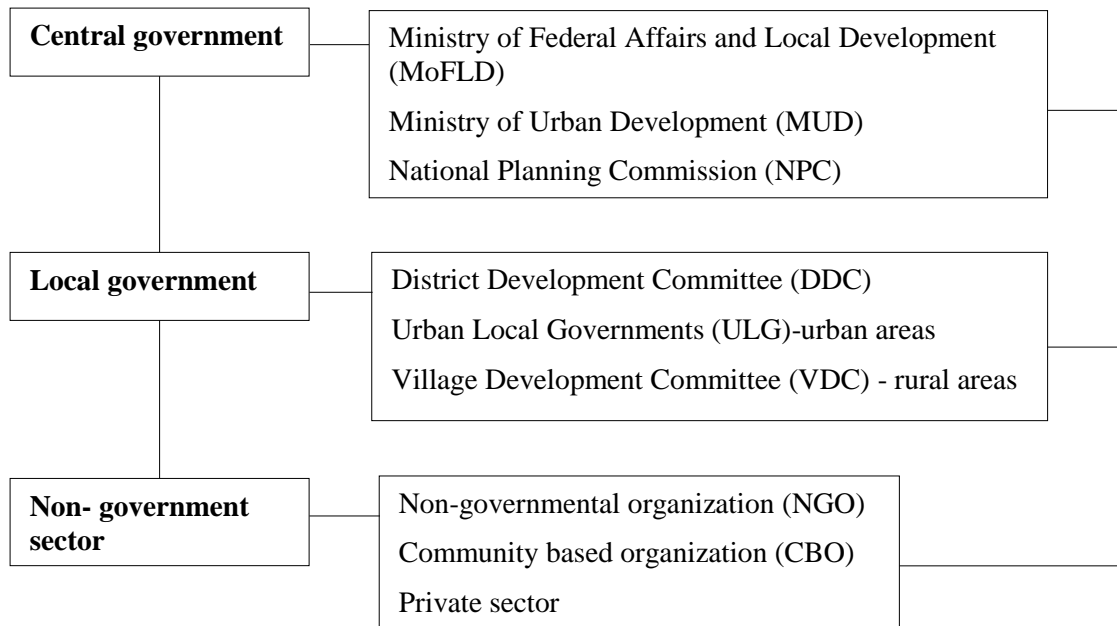
Nepal has a very complex institutional framework for urban planning and management (Choe and Pradhan, 2010). The institutions for the urban sector can be broadly classified in to three types: i) central government operating at national, regional, district, and grass-root levels; ii) local government; and iii) non-government organizations (NGOs), community based organizations (CBOs), and the private sector (Figure 8.1).

The central government includes different ministries and agencies, out of which the Ministry of Federal Affairs and Local Development<sup>91</sup> (MoFLD), Ministry of Urban Development (MUD) and National Planning Commission (NPC) are the prime organizations responsible for the urban sector. NPC is the apex planning and advisory body that is associated with the comprehensive planning and inter-sectoral linkages for urban development. It formulates the development plans and policies of the country under directives of the National Development Council (NDC) (NPC, 2012). MoFLD is the principal organization that integrates the local and central government. Its main role includes co-ordination, cooperation, facilitation, monitoring, and evaluation of activities

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<sup>91</sup>Ministry of Federal Affairs and Local Development was previously known as Ministry of Local Development.

undertaken by local bodies and it is responsible for local development, local governance and decentralization (MoFLD, 2013).

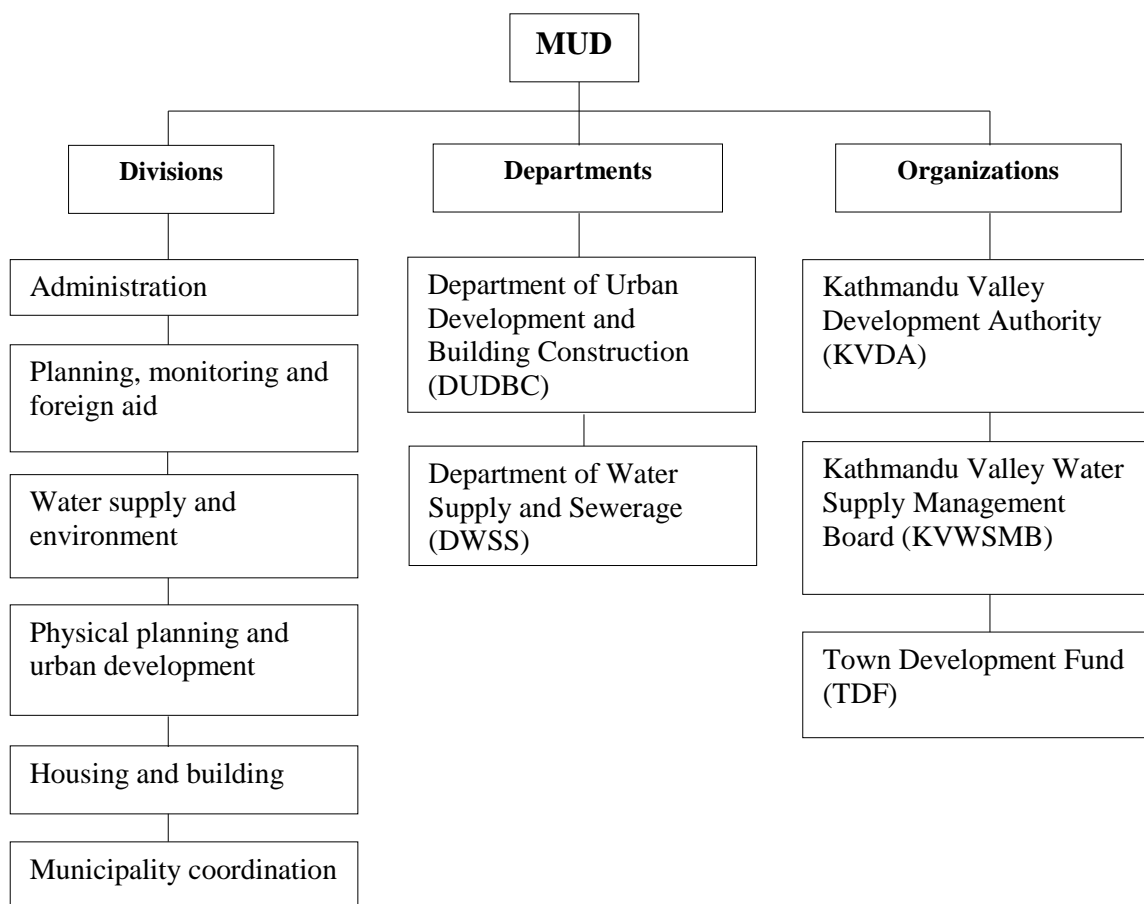


**Figure 8.1: Hierarchy of institutions in Nepal**

Before 2012, the Ministry of Physical Planning and Works (MPPW) was involved in urban development and management and aimed to provide services to municipalities as well as small towns that are not categorized as municipalities through DUDBC and the Town Development Committee (TDC) (The World Bank, 2007). This MPPW was restructured and the responsibilities were divided between two ministries known as Ministry of Physical Infrastructure and Transport (MPIT) and Ministry of Urban development (MUD). MPIT deals with the infrastructural development, harmonizing the policies and bringing effective infrastructural services (MPIT, 2012). MUD deals with urban development and consists of various divisions, departments, and organizations (Figure 8.2).

The DUDBC is responsible for preparing plans for urban areas, formulating national policies on urban development (The World Bank, 2007), financial analysis of municipalities, land use zoning, structure and/or physical plans, integrated actions plans, classification of towns into hierarchical levels for investment purposes, physical development of emerging small towns etc (Choe and Pradhan, 2010). The KVDA established recently in 2012 has power to conduct land development programmes for the urban activities (Sharma, 2013). The KVDA before restructuring was known as the Kathmandu Valley Town Development Committee (KVTDC), which was the regional

planning body responsible for planning and implementing urban development in the Valley since 1976. The KVTDC, in coordination with local municipalities and village development committees (VDCs), formulate and update Valley development plans and land use plan for the region (EMI and DKKV, 2010). The KVTDC implements physical development plans of three district level Town Development Implementation Committees (Kathmandu, Lalitpur and Bhaktapur) of the Valley; these are responsible for enforcing land use regulations and to promote and regulate urban development activities (ICIMOD et al., 2007). The jurisdiction of the KVTDC over all three districts Kathmandu, Lalitpur and Bhaktapur still remains the same under KVDA.



**Figure 8.2: Organizational structure of MUD**

Source: [www.moud.gov.np](http://www.moud.gov.np)

Local government is divided into two tiers – District Development Committee (DDC) at district level, ii) Urban Local Governments<sup>92</sup> (ULGs) in urban areas and Village Development Committee (VDC) in rural areas. The ULGs and VDCs are self-governing local governments within a district. These are responsible for planning and management

<sup>92</sup>The ULGs are classified as: metropolitan, sub-metropolitan, and municipality (also refer Chapter 4).

within their jurisdictional boundaries. However, the overall development within the district is controlled by the DDC. The DDCs stimulate and strengthen urban rural linkages and coordinate the activities of ULGs and contiguous VDCs (ADB, 2001). Nepal had 75 DDCs, 58 municipalities, and 3915 VDCs<sup>93</sup>. The government again in 2014 declared 72 municipalities making the total of 130 municipalities in the country (The Himalayan Times, 2014). According to ADB (2001), the private sector, NGOs, and CBOs have no significant role in urban development in Nepal; however, a trend of collaborative efforts between ULGs and NGOs has started to emerge. ADB also stated that there have been many attempts to attract the private sector to support the efforts of local government in managing and maintaining municipal service and facilities<sup>94</sup>. Only a few NGOs have been active in urban areas. NGOs are involved in activities related to social mobilization of communities while CBOs involved in planning, implementing and managing urban services and infrastructure provision and maintenance in the communities. These CBO in Nepal are primarily involved in water, sanitation, and solid waste management projects. There are two types of CBOs: those that have emerged spontaneously through community initiatives such as women's group, youth clubs, traditional groups for credit or other purposes; and those formed under government-linked programs such as water supply system in municipalities.

Regarding the actors involved in management/security of public open spaces in the selected case studies, local clubs, organizations, and private sector were also involved besides local government (refer to Table 7.15 in Chapter 7).

### **8.3 Government policies on urban growth**

#### **8.3.1 Planning Mandates**

The government of Nepal for the first time developed a planning Act known as the Town Development Committee Act, 1963 with the proposal of zoning to regulate urban growth. Due to lack of political commitment, it was not implemented. This act was

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<sup>93</sup>Each district in Nepal is divided into a minimum of 9 to maximum of 17 areas (Ilakas) and has DDC and District council. VDC is the lowest tier that is divided into 9 wards and is an executive body of the village council. While on the other hand the municipality is divided into a minimum of 9 wards, but this number could increase depending on the size, strength, population and boundary of the municipality. The wards of municipalities as well as VDCs have a ward committee (Acharya, 2010).

<sup>94</sup>The Ninth Five-year Plan and Local Self Governance Act (LSGA) 1999 had set out the policies to foster the participation of the private sector in development activities, including the provision, operation and maintenance of urban facilities, services and infrastructure (ADB, 2001, p. 16).

amended in 1973 and established as the Town Plan Implementation Act, 1973. Local institutions called Town Plan Implementation Committees (TPIC) were established for urban development. This act was again amended in 1988 and named Town Development Committee Act (TDCA), 1988 with the aim to provide legal authority to the government to implement town development plans. The Kathmandu Valley Development Authority Act, 1988, was also approved in this year, but it did not come into practice. The TDCA was again amended in 1996 and renamed as the Town Development Act, 1996. Its main objective is to support the institutions that are involved in construction, development and expansion of towns (Pradhan and Perera, 2005). The Municipality Act, 1992 changed the criteria of designated urban areas that were previously formulated under Nagar Panchayat Act, 1962 (refer Chapter 4). In 1999, the Local Self Governance Act, 1999 (LSGA) was initiated, the main strategy of which is to institutionalize people's participation in decision making processes and development activities and mobilize the resources of non-government organizations, communities, user groups and the private sector (ADB, 2001). It has obliged the municipalities to formulate planning activities. The activities of a municipality range from generating revenues from different sources, to improving physical, economic, and social conditions, and conserving environmental, cultural, and historical sites within its boundaries (Choe and Pradhan, 2010). In addition, according to Rai and Paudel (2011), the principle of the LSGA was also to make local government autonomous and independent in preparing and implementing plans. However, the lower tiers of governing units with autonomous powers are over shadowed by upper tiers. The LSGA provisioned that the VDC and Municipality governments need to consider the DDC's directives for making local development plans, while DDC planning has to abide by the directives of the central government. The upper tiers have power to control the lower tiers; the lower tiers cannot prepare and implement any development plans independently.

After the peace agreement between the Maoist and the Government of Nepal in 2006, Nepal has observed a complex set of demands and needs from multiple constituencies (Rai and Paudel, 2011, p.5). Concept papers have been submitted by the Constitution Assembly (CA). Although the papers propose decentralized governance with three governance tiers (federal, provincial and local), almost all of the political bodies primarily emphasized the provision of power on provincial level than the lowest governing units. Only a limited attention has been established for the power on the



lowest governing units. This suggests that the government structure at the local level is very weak. However, this proposal had not yet been approved at the time of writing, in mid-2014.

### 8.3.2 Planning Approaches

#### *National Development Plans*

Despite the legislation described above, in Nepal there have been no proper planning attempts to manage urban growth. For the first time in Nepal's history, in 1935, a development agency called Udyog Parishad (Development Board) was formed to manage growth and expansion of the agricultural, economic and industrial sectors of the country. Then after 1956, an effective first National Development Plan was implemented with the main objective of increasing agricultural production and growing the economy. To date, 13 National Development Plans have been implemented. The first four plans (1956-1975) were focused on infrastructure (road and electricity) development. The Third plan (1965-1970) also incorporated the environment- related policies and plans and also declared temple and historical places as heritage sites and prepared a plan to protect these sites in the Kathmandu Valley. The fifth and sixth plans (1975-1985) were focused on agricultural and industrial sectors. The issue of urbanization and housing policy was emphasized in the Seventh Five-year Plan (1987-1992), but due to political disturbances, actions addressing these issues were interrupted. Poverty again became a major objective of development planning (Pradhan and Perera, 2005). The Eighth Five-year Plan (1992-1997) has emphasized on the planned development of urban areas through updating the physical plans of all municipalities (ADB, 2001).

The Ninth Five-year Plan (1997-2002) highly prioritized poverty alleviation with long-term concepts and objectives of providing infrastructure and services, and employment opportunities for improving urban living conditions. It had also proposed to develop an integrated physical and social infrastructure in urban areas and emphasized private sector involvement in housing development in urban areas (Pradhan and Perera, 2005). Another important strategy that had been considered in this plan is the decentralization<sup>95</sup>

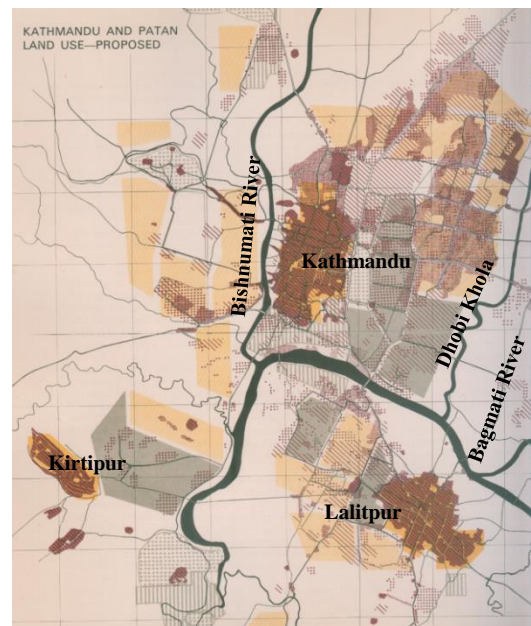
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<sup>95</sup>Institutionalization of people's participation in decision making process and development activities and mobilization of the resources of non-government organizations, communities, private sector are major elements of the government's decentralization strategy (ADB, 2001)

of urban administration and participatory development (ADB, 2001). The Tenth Five-Year Plan (2002-2007) also had emphasized on poverty alleviation and had four main goals to alleviate poverty – broad-based economic growth, social sector development, targeted programs, and good governance. In addition, it has proposed long term vision on development of strategic road network, hydropower, and tourism (Pradhan and Perera, 2005). The recent Eleventh interim Plan (2007-2010) considered urban development issues such as to manage haphazard and uncontrolled growth of urban settlements and transform dispersed rural settlements into a compact form (Choe and Pradhan, 2010). Another interim plan (2010-2013) aimed to develop safe, clean and economically dynamic cities and to link urbanization with basic urban services (NPC, 2010). The thirteenth Plan (2013-2015) aimed to bring a positive change in living standards of the public by reducing the economic and human poverty prevalent in the nation. For the urban development, the plan also aimed to develop safe, clean and prosperous cities with adequate infrastructure (NPC, 2013).

### *The physical development plan for the Kathmandu Valley, 1969*

The first attempt to introduce the concept of regional development of Kathmandu Valley was initiated by a team of native and foreign planners with United Nations' urban planning expert Carl Pruscha in the form of a comprehensive planning document known as the Kathmandu Valley Physical Development Plan 1969. The plan aimed for the preservation of historical and cultural heritage, guided urban development through land use planning, and densification of fringe areas. The Valley was considered as a single planning unit and a land use plan was proposed for Kathmandu and Lalitpur



**Figure 8.3: The physical development plan for the Kathmandu Valley, 1969**  
Source: HMGN (1969)

districts<sup>96</sup> for the next 20-30 years. When this plan was prepared, Kathmandu City was confined to the highlands between two rivers: Bishnumati River in the west and the

<sup>96</sup> Bhaktapur district was not included in the plan.

Dhobi Khola in the east, and between Bagmati River in the south and Maharajgunj in the north (Figure 8.3). Zoning and infrastructure development were proposed with the intention to stimulate growth towards the designated areas. The historic city core was designated as a special preservation zone. This master plan was not implemented (Burathoki, 2001).

#### ***Kathmandu Valley Town Development Plan, 1976***

With the guiding principle of the physical development plan, 1969 and its revision to incorporate the proposed ring road around Kathmandu-Lalitpur City, the Kathmandu Valley Town Development Plan was prepared in 1973. This was further developed as the Kathmandu Valley Town Development Plan 1976 with detailed land use plans and regulatory measures. This plan formulated three zoning concepts: Zone A as city core (Kathmandu and Lalitpur); Zone B as city fringe; and Zone C as planned settlements in the rural villages of the region (Thapa et al., 2008). This plan became the first legally binding plan. The plan incorporated mainly the Greater Kathmandu area lying within the ring road and regulatory functions were limited to controlling the building volume. Though the urban areas were demarcated into various zones, the unclear zone boundaries, vague allowable land uses and weak implementation led to laissez faire planning and the resource constraints prevented the government from playing a proactive role in the development process (Burathoki, 2001).

#### ***Kathmandu Valley Physical Development Concept, 1984***

Urbanization after 1980s had stretched towards the peripheral areas of the cities, especially along the arterial roads. The urban growth spread along different areas (such as Bansbari, Boudha, Koteshwore and Kalanki-Thankot of Kathmandu, Sainbu-Bhaisepati and Sunakothi of Lalitpur), and the transport corridor of Kathmandu-Bhaktapur. In order to accommodate the increasing urban population in compact planned settlements instead of allowing unplanned urban sprawl beyond the city limits, and to fill the gaps of the earlier plan, the Kathmandu Valley physical development concept 1984 was introduced. The main concept of this plan was to develop Kathmandu as a prime centre of administration, trade, and tourism. It proposed urban expansion to be confined to the geographically feasible areas within Greater Kathmandu and aimed to develop new planned settlements at several locations. It also proposed zoning

regulations, however due to lack of clarity and difficulty in implementation, the plan was not approved (Burathoki, 2001).

### ***Kathmandu-Lalitpur Structure Plan, 1987***

The Kathmandu-Lalitpur structure plan 1987 was prepared with the proposal for consolidation of urban areas and protection of fertile agricultural lands and river flood plains. A revised land use plan, detailed area plans, zoning regulations and infrastructure guidelines and standards were proposed, but were not officially approved and could not be implemented due to political situations (Burathoki, 2001).

### ***Kathmandu Valley Urban Development Plans and Programs, 1991***

In 1991, with the technical assistance of the Asian Development Bank (ADB), the Department of Housing and Urban Development prepared a strategy plan for Kathmandu Valley known as Kathmandu Urban Development Plans and Programs, with the aim of developing Kathmandu Valley as a government centre and a centre of culture, tourism and historic preservation. It proposed to control urban growth through planned infrastructural development. It suggested developing residential areas within the ring road, industrial areas beyond the ring road, and relocation of existing institutional areas to reduce the pressure from the city core. Unfortunately, this plan was also not endorsed officially (Burathoki, 2001).

### ***By-laws for Greater Kathmandu, 1994***

The Kathmandu Valley Town Development Committee revised the by-laws for Greater Kathmandu in 1994. The jurisdictional area was limited to the municipal boundaries of Kathmandu and Lalitpur cities by the legal plan. Provisions were made in the by-laws to encourage densification and vertical growth in areas other than the historic zones and planned area development was encouraged with mandatory provisions for open spaces (Burathoki, 2001). The building bylaws have become the only tool for regulating urban development in the Valley (Karki, 2004).

### ***Regulating growth in Kathmandu Valley, 1995***

The world conservation union (IUCN) and National Planning Commission (NPC) jointly conducted a comprehensive study to provide policies for regulating unplanned

urban sprawl and protecting forest reserves, prime agricultural land, open space, cultural and historic sites, riverbanks and environmentally fragile areas. It suggested de-concentrating development activities to the peripheral areas to reduce the pressure from the core areas of the Greater Kathmandu. It recommended private sector involvement in planned area development and housing and proposed using Guthi<sup>97</sup> land for this purpose. Though the study had useful strategies, it was not officially endorsed by the government (Burathoki, 2001).

### ***Long term development plan for Kathmandu Valley (2020)***

In 2002, the Kathmandu Valley Town Development Committee (KVTDC) with the Department of Urban Development and Building Construction prepared a Long-Term Development Plan for Kathmandu Valley (2020) with the proposal of strategies and programmes for the future. The plan recommended the densification of existing urban settlements to curb the current urban sprawl in order to protect the natural environment and the agricultural land. It also proposed the delineation of rural and urban boundaries so that separate planning standards can be enforced in rural and urban areas (KVTDC, 2002). In addition, the other policies included in this plan are high-density development nodes in major road intersections along the ring road, promotion of mixed land use within the city and location of industrial activities in the peripheral areas (Burathoki, 2001). The plan also recommended forming a separate and powerful Valley-wide apex body with proportionate representation of local bodies to administer all planning exercises in the Valley (ICIMOD et al., 2007). According to the interview conducted on government actor at central level, only a few works have been implemented due to lack of financial investment. According to Muzzini (2013), this Long Term Development Plan for the Kathmandu Valley failed in implementation because of lack of adequate implementation and financing plans. Lack of enforcement and monitoring power at the central and metropolitan levels and political instability were among the factors that caused failure in implementation of this plan.

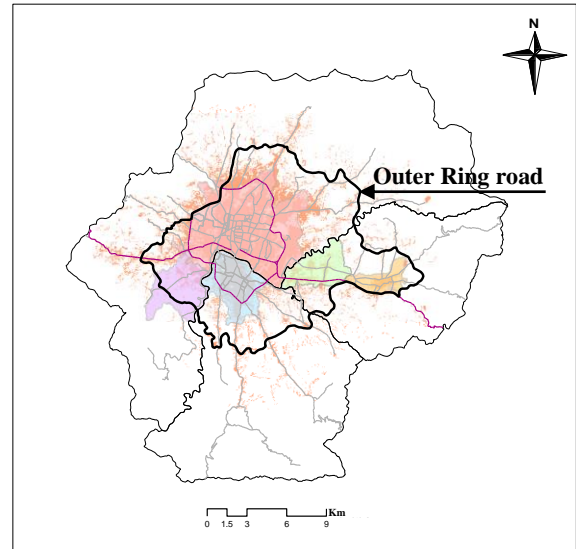
### ***Proposed outer ring road (ORR) development project***

In 2005, the government of Nepal unveiled the ambitious Outer Ring Road (ORR) development project to regulate the accelerating urban population growth (especially

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<sup>97</sup>Guthi is a public corporation responsible for maintenance and renovation of ancient monuments and religious sites as well as for continuing traditional and cultural practices (DoA, 2011).

outside of existing Ring road) through planned development in the next 15-20 years (Shrestha and Shrestha, 2008). The ORR will pass through the traditional compact settlements of the Valley. The road will function not only as the arterial road but also as the backbone for future urban growth (ICIMOD et al., 2007). Furthermore, it also aims to delineate a rural urban boundary (Shrestha and Shrestha, 2008). Though this project proposed to manage urban growth, it may have negative consequences in the long term such as those of the existing ring road. The existing ring road was constructed to regulate the urban growth of the Valley, but instead it has facilitated growth in the peripheries. In addition, there is a high probability that the ORR will result in the loss of historical and cultural identity of the traditional settlements that are inter connected with it. Since the project started, it has been



**Figure 8.4: Outer Ring road**

Source: Map based on GIS data of KVTDC (2002)

halted due to protest from the local residents and some political parties. The implementation of the project has become uncertain due to land acquisition disputes and higher compensation demanded by the locals for their property (Bayalkoti, 2014).

### ***Vision Paper 2007***

The then Ministry of Physical Planning and Works proposed the Vision Paper 2007, the main focus of which is to improve infrastructures such as road transport, water supply, building and housing and to replace the centralized and feudal state structure by a new federal state structure. According to this vision paper, urban development will be guided through industrialization; the government's role will be made people friendly by promoting public private partnership; planned urban development will be achieved through identification of small, medium and large urban centres; and considering the increasing urbanization of the country, efforts will be made to create a new Ministry of Urban Development (MPPW, 2007). This plan has remained as a challenge as it could not get the necessary legal assistance.

***National Urban Policy, 2007***

The government introduced a National Urban Policy (NUP) in 2007 with three objectives: balanced urban structure, clean and developed urban environment, and effective urban management. Separate strategies for all three objectives and their working policies within each strategy have been proposed. Only a few of these strategies are discussed in this section which is significant for this research. The NUP views urban centres as catalysts for economic development and places urban local government at the core of the urban development agenda (Muzzini and Aparicio, 2013). The implementation of this policy involves government institutions, local body, non-government organization, as well as private sector.

The strategies for a *balanced urban structure* include:

- To develop urban areas, emerging at periphery into medium size urban centres. This will be done by discouraging settlement development along the highway and encouraging settlement development in the areas that are accessible from the highway;
- To conserve and develop Kathmandu valley into a natural, cultural, touristic and political capital centre, and encouraging development activities in urban centre outside the valley. For this, the policy recommends the conservation and development of traditional skills and methods that conserve and protect the culturally valuable physical infrastructure in Kathmandu Valley and encourages private investment in such activities, emphasizing development of urban centre close to Kathmandu Valley to reduce haphazard urbanization in the valley.

The strategies for *improving the urban environment* include:

- To contribute to conservation of cultural, historical and social characteristics of urban areas while executing urban development activities. For the urban areas, the policy recommends to develop a separate plan for conservation of cultural and archaeological heritage and implement it, identifying uniqueness of core areas and developing and implementing land use planning for conservation and protection of their unique characteristics and conservation and utilization of existing historical, archaeological, social and cultural uniqueness in urban areas as a source of income from tourism.

The strategy for *effective urban management* includes

- Identification of concerned agencies and their responsibility, physical development plan preparation, approval and implementation within the legal framework of law. The policy also recommends initiating a system of declaring municipality only those urban centres having permanent physical infrastructure and institutional structure and dependent on non-agricultural economic activities, and to establish a system for formulation and implementation of urban planning of urbanizing VDCs which are not yet declared municipality.

**Figure 8.5: National Urban Policy, 2007**

Source: NUP, 2007

## 8.4 Review of government policies for open spaces

### 8.4.1 At Central level

The Vision Paper 2007 by the then MPPW proposed different short term (1year), medium term (3 years) and long-term (20years) programmes for the Valley. These programmes seemed to be more focused on physical infrastructure development such as road, water supply and sanitation, and housing. There are not such programmes proposed for the open spaces. However, the vision paper includes a strategy for the expansion of greenery along the roads, riverbanks and public spaces to make a healthy and green city. Similar considerations have been established by the urban environment management guidelines 2010, according to which, in order to make the urban environment pollution free, open spaces, riverbanks and green areas should be identified. A separate unit must be established for the management of these identified areas, and there must be provision of at least 2.5% land for open or green areas in each neighbourhood. These programmes seemed to have considered strategies about new open spaces only, not for the existing open spaces.

Regarding the existing open spaces, only a few studies have been conducted. The Kathmandu Valley Urban Development Plans and Programs 1991 had studied the open spaces within the core area of the Kathmandu city, according to which the city level, community level, and neighbourhood level may be considered as permanent open space and residential level open space is privately owned land. The plans had no specific strategies for open spaces, however they proposed the preservation of systems of streets and courtyards access and pedestrianisation<sup>98</sup> of the core area, which have implicit influence in protecting the open spaces. Furthermore, they also proposed to designate conservation areas and monument zones (refer Figure 6.12 in Chapter 6). Most of the public open spaces in Kathmandu core area incorporated monuments, which form the identity of those spaces. Hence protecting the monuments entails protecting the open spaces. Another study was conducted in 1995 by the Department of Housing and Urban Development<sup>99</sup> (DHUD) under MPPW, with technical assistance from Joshi Associates,

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<sup>98</sup>The plan proposed a vehicular free zone in the core area of Kathmandu city between 9am and 7pm. It also emphasized Darbar square and Ason square, where the traffic may create problems for the pedestrians. This pedestrianisation of Kathmandu core area has been reconsidered in the Kathmandu Sustainable Urban Transport Project (KSUTP) conducted by MPPW and ADB.

<sup>99</sup>DHUD was renamed and at present it is known as Department of Urban Development and Building Construction (DUDBC)



for the environmental study and assessment of public open space under public use for Kathmandu municipality. The study highlighted the encroachment of most of the public open spaces by government construction, the registration of the public open areas under ownership of various organizations, the need of steps for the preservation of public open spaces, and the concerns of local people for preserving public open spaces. It is only in a form of physical inventory, the purpose of which is to help in the master plans of public open spaces for improving the environmental condition of the areas surrounding the public open spaces. However, master plans are not prepared yet.

Likewise, the study conducted by the International Organisation for Migration (IOM), as lead of the Camp Coordination and Camp Management (CCCM) cluster under Ministry of Home Affairs (MoHA), identified the open spaces within Kathmandu that could be used for humanitarian purposes in the event of an earthquake. It predicted that any major earthquake, it could leave 40,000 dead, between 100,000 and 200,000 injured, 60% buildings destroyed, and between 600,000 and 900,000 left homeless. The scarcity of vacant lands in Kathmandu could result in the impossibility to accommodate the displaced people; hence, this study identified the open spaces, which could be used as the assembly centres (MoHA and IOM, 2011).

#### **8.4.2 At Municipal level**

At the municipal level, the KMC together with the World Bank prepared short term, medium term, and long-term proposals for the city development of Kathmandu City in 2001. Its main focus was on the parks and gardens and their encroachment by the traders and street hawkers. The short term and long-term strategies were proposed for managing and developing open spaces, but no comprehensive study had been done. The short-term proposals included the review and halt of all unwarranted conversion of existing open spaces within KMC and setting up a study to determine the optimum locations of open spaces as per relevant norms. The long-term proposals included the development of parks and open spaces according to the existing land use plan.

### **8.5 Analysis of government failures for implementing the plans and programmes**

It is clear from the above discussions that government at all levels has failed to implement the plans and programmes regarding the urban development. Hence, this

section reviews the reasons about these failures based on the available documents at the time of this research and the interview conducted with the government actors.

### **8.5.1 Ambiguous policy**

The implementation of policies on urban development has always been a challenging task in the context of Nepal. Central policies and programmes are formulated by the government bodies like MUD, MPPW, and NPC. There is no clarity about the responsibility of central and local bodies for urban development. They often propose overlapping strategies. The NUP, 2007 has tried to fill this gap, clarified the roles of different institutions, and addressed all the urban development issues in an integrated and coordinated way; however, it has not yet been operationalized due to lack of coordination between different tiers of government. The current restructuring of ministries (such as dividing one ministry into two ministries) has also created more confusion about the roles and responsibilities of different institutions at central level.

### **8.5.2 Ineffective institutional coordination between the different levels of government**

The institutional fragmentations have caused the lack of coordination between the governmental bodies. Under different ministries, the urban planning institutions, DUDBC, implementing agencies, and municipalities have remained fragmented in relation to each other and due to unclear responsibility defined for these institutions, the implementations of any plans and programmes has been impossible. The municipal capabilities are weak due to their limited planning responsibilities. They are bound by the guidelines stipulated by the central government. All power is centralized despite the LSGA having given autonomy to the local bodies for planning and implementation of urban projects.

The disputes between different levels of government over urban development projects also explicate that there is no co-ordination between these institutions. The central government asserts that the municipalities are oriented towards income generating projects only, rather than towards projects that are for the development of the city, while the municipalities assert that the reluctance in providing sufficient funds from the central government has made it difficult to process any kind of development project.

### **8.5.3 Institutional capacity**

Though the LSGA has devolved responsibilities to the municipalities, the lack of financial and technical resources within these has made it difficult to work on and implement any planning programmes. These local bodies have to rely on financial support from the central government. The management of the financial resources from the central government is often difficult due to lack of co-ordination between these institutions. Even the financial supports provided by the central government are spent mostly for the revenue of the municipality, leaving insufficient money to manage urban growth (ICIMOD et al., 2007). As a result, most municipalities have to deal constantly with crisis management and rarely have the opportunities to work on long-term plans and projects. Therefore the municipalities are more interested in short term projects than long term projects and continue to remain focused on day to day problem solving, rather than on a visionary approach of urban development (Koirala and Subba, 2009). Furthermore, no emphasis is given to equip the officials with training that is needed to confront the challenges of the urban developments.

## **8.6 Perceptions of government actors on preservation and transformation of open spaces of the Kathmandu valley**

From the previous analysis of six public open spaces conducted by the researcher, it is clear that these spaces have gone through different stages of transformation, both positive and negative, with the corresponding effects on the users. From the reviews of policies at different levels of government, it is found that no policies have been considered for managing and preserving of both existing and new open spaces. No priority for open spaces is considered by the governmental bodies despite of their importance in Nepalese life (refer to Chapter 5 for the significance of the open spaces in the Nepalese context). The interviews conducted with government actors (refer Appendix 8.1 for the semi-structured interview) tried to clarify why the open spaces are not prioritized in the city development process.

### **8.6.1 Lowest priority for open spaces**

All the government bodies who were interviewed reckoned that increasing urban growth has been the key challenging issue for the Kathmandu valley. These governments realized that there are not any effective regulatory measures to manage the urbanization

pressures; as a result, urban growth is occurring haphazardly. The local government also added that Byelaws, which are the only regulatory tool for urban growth, are also not up-to-date and there are no legal basis and institutional capacity to enforce any laws regarding land use and zoning.

According to the interviewee at municipal level, it is the prime responsibility of the government to manage and develop the urban areas effectively with due respect to all physical, social, cultural, economic, and political issues. From the literature, it was found that the emphasis is given for the infrastructural development/management such as for roads, water supply, sewage, and electricity at both central and local government level. Though the government officials are aware of the importance of open spaces in daily life, they are not considering managing or developing open spaces substantially. When asked about this issue, as a response the government officials at both central and local government referred to the current development situation of the city and the demands of the public. According to a government official at the municipal level,

‘the valley is in the early stage of development and depending upon the current expanding situation<sup>100</sup> of the valley, it is important that the infrastructures should be developed first and this is also what the public demand for their areas. The basic infrastructure services are always the primary concerns of the public; nobody wants the settlement without proper roads, water, and electricity.’

The local government thinks that the existing public open spaces, especially in the urban core, can only be managed or conserved; no new public open spaces are possible because of shortage of land. However, regarding the conservation, according to the interviewees at both central and local level, it is unfortunate that the existing conservation policy of the Valley does not consider conserving the space as a whole. It is principally the Monumental approach that is taken, focusing only on the monuments per se, rather than on the spaces surrounding them.

### **8.6.2 Perceptions of transformations of open spaces**

The different levels of government have several perceptions towards the transformations of open spaces, a generalized summary of which is discussed in this section. Both private and public open spaces (especially in the core area) are transforming from their

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<sup>100</sup>The current expanding situation according to the official means the rapid ad-hoc urban growth pattern.

original state. The physical, social, and cultural transformations of open spaces are not a new phenomenon. The transformations have both positive and negative consequences for society. It is important to know who are the responsible actors that are directly or indirectly associated with causing the transformations. According to the local government, the actors can be the users, the government or the private sector:

*i) Government and users being responsible for transformation of spaces:* The users are always attracted to the spaces for conducting activities. When there are no enforcements for managing these activities from the government side, it could lead to negative consequences, for example encroachment of spaces by incompatible activities by the users. On the other hand, the government could also encourage appropriate activities as per needs of the particular spaces.

*ii) Government being sole responsible:* The government solely is responsible for transforming spaces that is different from the previous state. The approach could lead either success or failure. The failure and success depend on the research conducted about the space, meaning studying about the prerequisites for meeting the demands of the users.

*iii) Government and private sector being responsible:* It is not always possible for the government to initiate the development/management of open spaces due to lack of resources. Thus, a concept of Public Private Partnership (PPP) programme has emerged, which has the right to develop, transform, and manage the open spaces, but under the guidelines of the government. These programmes may also have strengths and drawbacks.

The government at both central and local levels also agreed that due to transformation, the identity of the historic city is fading in the recent years. The public open spaces that used to be the integral parts of the city are declining due to the encroachment and use for other purposes. There are the examples, where the cultural spaces of the city are being transformed into commercial spaces (these can also be illustrated by the analysis done in Chapter 6). Most of these activities are even supported by the government to generate revenue. There is however control in use of these spaces in some cases, but no consciousness for preserving them as cultural spaces. There are also the cases where the government ignores the growing illegitimate trends. For example, the traditional concept of networking of courtyards in the core area is disappearing as the result of

encroachment of these by private buildings. This shows that the government is very ineffective and the regulatory measures that exist at present are not adequate. Several government interviewees shared the view that if the transformations satisfy the needs of the users, they are compatible with the built environment and within the government regulations and standards, and do not cause any negative consequences in the society, then this will lead to success of the open space. They also realize that no policy on transformations of open spaces exists for the Kathmandu Valley.

### **8.6.3 Perception on conservation of open spaces considered as cultural heritage**

According to byelaws, selected case study open spaces in TUC are situated in the protected monument /conservation heritage zones of Kathmandu. These are the cultural heritages and have separate guidelines if any construction/conservation needs to be done in the designated area.

Heritage in the Nepalese context, according to Tiwari (2001b), includes man made *physical heritage*, which are monument and sites of international, national, local and clan importance such as palaces, temples, Chaityas, Bahals and other edifices of community importance, and *emotional heritage* that exhibit sentiments of the residents such as natural sites with stones known as piths. Besides, festival, rituals, and cultural processes are also considered as the heritage.

According to the Ancient Monument Act 2013 (1956 A.D.), the ancient monuments are classified as public ancient monument and private ancient monument based on the ownership. Based on importance, they are classified as of international, national and local importance. The conservation, maintenance and renovation of the ancient monuments under private ownership are carried out by the concerned person if they are inside a Protected Monument area, and by the local or concerned person with the direction of DoA if they are outside the Protected Monuments area. Anyone who owns land within the Preserved Monument Area and is willing to construct a new house or building or to repair, alter or reconstruct a house or building to make changes on its original shape, must consider the harmony with the surroundings in terms of style and comply the standards recommended by the DoA. The failure to meet the standards will result to stop the work (DoA, 2011).

At the central level of government, the responsibilities for cultural heritage conservation are assigned among the DoA, MUD, and the Guthi Sansthan. The DoA is responsible for protection of the cultural heritage and ancient monuments under Ancient Monument Preservation Act 1956 (DoA, 2011), protection of World Heritage Protected Monument Zones (PMZs), preparing cultural heritage inventories, and prescribing building bylaws and approving building permits in the PMZs (Muzzini and Aparicio, 2013). Muzzini and Aparicio added that MUD exclusively deals with monuments rather than conservation of historic urban fabric. The MUD conducts various development and infrastructure projects within the PMZs and other historic areas through its departments for urban infrastructure, water supply, and sewerage; these must comply with DoA guidelines. In addition, the DUDBC plays a role in conserving and developing areas that have religious, cultural, and touristic importance (ADB, 2010). The Guthi Sansthan, under the Ministry of Land Reform and Management (MLRM), is the custodian of religious and cultural sites, monuments, and historic and religious buildings and is responsible for their preservation (Guthi Sansthan, 2013). It has responsibility for supporting religious festivals and rituals. The Nepal National Commission for UNESCO (NNCU), under the Ministry of Education and Sports is responsible for preserving tangible and intangible cultural heritage with the financial support of UNESCO Headquarters in Paris (Diwasa et al., 2007). At the ULGs and VDCs level, these institutions are responsible for managing PMZ buffer zones, recording, maintaining, and preserving the tangible and intangible heritage outside the PMZs (Muzzini and Aparicio, 2013). For any work related to the monuments and historic buildings in PMZs, the permits have to be approved by DoA.

The heritage in Kathmandu City is limited to conservation of monuments of national importance, reconstruction of small public building like patis and restoration of stone water conduits through DoA, Municipal and ward initiative (Tiwari, 2001b). Tiwari also added that the town level heritage, as reflected in built spaces (eg. courtyards), routes of heritage (eg. festivals, procession routes), service spaces (eg. Khyos, wells), and family and clan level heritage (eg. Bahals, private shrines), have not been specifically and strategically addressed. The project, 'Regulation growth: Kathmandu Valley, 1995' prepared National Conservation Strategy Implementation project emphasized conservation of cultural heritage. It stated that changes in people's attitude and perceptions, cultural transformations, lack of public awareness, poor management of

cultural endowments are at the root of continuing loss of heritage of archaeological, architectural, religious, social, and historical significance (p.230).

According to the interviewee at local government, there are only a few conservation policies for the protection of monuments of the open spaces, which are categorized under PMZs or Conservations zones. There are not adequate researches conducted for conservation of the cultural heritage. Moreover, lack of coordination between various agencies involved in the conservation of religious and cultural heritage and sufficient investment in heritage conservation have caused loss of heritage. The local government also asserted that the changing façade and increasing height of the buildings which are not complying as per building regulation has resulted the dissonant visual backdrop in World Heritage Site (WHS).

## **8.7 Further recommendations from the government bodies**

### **8.7.1 For Institutional gap**

In the present context, the institutional fragmentation has been the prime concern of municipal government. All the authorities are centralized despite of the existence of the decentralized local governance act that provides power to the municipalities. This is the main concern of the officials at municipal level. In addition, municipalities not being allowed to consider issues beyond their institutional boundary create a gap in the co-ordination between other municipalities. In order to resolve this issue, the interviewee at local government suggested an integrated approach that brings all the municipalities together. This would not only help in maintaining good co-ordination, but also would be easier to achieve their goals. The central government on the other hand suggested that there must be transparency in the government interventions. Since the central government is the prime facilitator and is most responsible for development projects, this aspect must be taken very seriously at the central level. Another aspect that must be taken seriously according to one of the interviewees at central government is to promote the consciousness of all government levels towards the city; the government must always work taking into consideration the needs of the city, rather than their own personal interest.



### **8.7.2 For urban growth**

All governments realize that immediate actions must be taken to regulate the rapid growth. The interviewees at central and local governments think that government must introduce strict regulatory development controls. Since the valley lacks proper land use planning, necessary steps should be put forward. All levels of government should take their own responsibility and avoid the possibility of replications. The existing byelaws account for the regulations of new building constructions only; hence, there must be effective regulatory tools that encompass both existing and new constructions. For the fringe area, which is more prone to urban growth, the government must provide effective regulations. Although the government has formulated Long-Term Development Plans for the Valley for regulating urban growth by 2020 (refer section 8.3.2); the interviewee at central government thinks that only 5% of the works have been accomplished to date due to lack of investment in the project. The central government official further added that if the same pace continues, it may go beyond the specified period and may no longer be efficient due to its obsolescence. Hence, the government must look for alternative sources and increase the implementation pace.

### **8.7.3 For open spaces**

All governments realize the need for preserving as well as managing the open spaces. Different projects have been already initiated at different levels of the government and different scales. The central government is involved in national or regional scale while the local government is involved in local scale projects. At the central level, the eco-corridor concept has been introduced under the environmental guidelines and aims to protect the environment and to promote the tourism. At municipal level, the projects on open spaces are focused on use without any guidelines. Sometimes the projects terminate without being implemented and remain only on paper. According to the official at municipal level, the projects appear and leave at the same time because of the difficulty in attaining economic resources. Hence, it is very important to boost the economic conditions of the local government prior to commencing any projects. The local government also thinks that the government at present is mostly interested in developing and beautifying the traffic islands that includes high budget.

Furthermore, the local government also mentioned that all levels of government must pay attention towards open space development in besides other infrastructure works.

According to the all levels of government, adequate research must be conducted for designing the new open spaces from the government side. The success of any open spaces greatly depends upon the research that answers questions such as for whom to design, how to design, and the allocation of proper financial plan. For the preservation of existing open spaces in the core area, the interviewee at central government thinks that different regeneration concepts can be used. However, these must be carried out by respecting the historic image and with effective urban design principles. If the transformations are occurring inappropriately, then immediate control must be taken against it.

Reviewing the available plans and policies for urban development of Kathmandu Valley, there are no clear policies available at central as well as local government level. Only a few studies on open spaces have been done at both levels (Table 8.1). Reviewing the perceptions of government actors on preservation and transformation of open spaces, similar as well as different views between the government at central level and local level were observed (Table 8.2). Government at both level accept that due to lack of stringent guidelines, there is no proper management, preservation of open spaces as well as their transformation. It also seems that no co-ordination has been established effectively between the central and local level government. Both level governments complain about each other for the failure of preparing and implementing plans and programmes. Not only the governments, also the local clubs/ organizations, private sectors were involved in managing open spaces (as discussed in Chapter 5). Like the local government, the researcher also thinks that the users, government, and private sectors are responsible for the transformations of public open spaces. Lack of clear and strict guidelines have caused these actors to be irresponsible towards proper use of the public open spaces. The increasing commercialization as a result of profit-oriented projects could also lead negative consequences; the case of Dharahara-Sundhara is the best example for this. For the budgetary controls, the researcher thinks that the government has to be careful in expenditures. Instead of spending much on beautifying traffic islands, priorities has to be given on preserving and managing open spaces.

In most of the selected case study open spaces, the local clubs seemed to be more involved than the government in managing the spaces; for this, the researcher thinks that this could be taken as a solution for management of open spaces where open spaces

are given low priority by the government and when limited resources are available in the government.

**Table 8.1: A summary of Plans and programmes of Kathmandu Valley at different level of government**

Tier of Government	Involved Institution	Plans and Programmes	Public open space study
Central government	National Planning Commission	National Plans (5-year plan), interim plans	
		Regulating growth in Kathmandu Valley, 1995	
	Kathmandu Valley Town Development Committee	Long Term Development Plan, 2020	
		By-laws for Greater Kathmandu, 1994	
		Kathmandu-Lalitpur Structure Plan, 1987	
		Kathmandu Valley Physical Development Concept, 1984	
	Department of Urban Development and Building Construction	Kathmandu Valley Town Development Plan, 1976	
		National Urban Policy, 2007	
		Report on Environmental study and assessment of public open space under public use in Kathmandu Municipality, 1995	Assessment of public open space under public use
	Ministry of Home Affairs (MoHA), International Organisation for Migration	Kathmandu Valley Urban Development Plans and Programs, 1991	General definition on different levels of open space
Physical development plan for the Kathmandu Valley, 1969			
Ministry of Physical Planning and Works	Report on Identification of Open Spaces for Humanitarian Purposes in Kathmandu Valley, 2012	Identification of open spaces within Kathmandu for humanitarian purposes in the event of an earthquake	
	Vision paper, 2007		
Local government Kathmandu Municipality	Kathmandu Metropolitan City	Short and long term proposals for open spaces but only for parks and gardens	

Source: Literature review on available policies of Kathmandu Valley

**Table 8.2: A summary of perceptions of government actors on preservation and transformation of open spaces of Kathmandu Valley**

Descriptions		Central government	Local government
Lowest priority for open spaces	Causes	Priority given to infrastructural development, management	
Transformation of open spaces	Causes	Government ignores illegitimate trends	Responsible actors: users, government, or private sector
	Consequence	Transformation in open spaces has faded the Malla characteristics of core. Transformations may lead success of open space if these satisfy the needs of users, compatible, within government regulations and standards	
Conservation of existing open spaces that are considered as cultural heritage	Approach	Monumental approach focusing only the monuments than the space	
	Causes for loss of heritage	No stringent guidelines	No adequate research No sufficient fund
	Consequence		Dissonant visual backdrop that do not comply with the guidelines

Contd.....

Recommendations	Resources		Need to boost economic resources
			Manage budgetary control to avoid surplus cost on unnecessary projects
		Adequate research needed for new open spaces	
		Regeneration concepts for existing open space in the core.	Must formulate detailed policies and action plans associated with open spaces that are considered as cultural heritage
		Government must be stringent in its own guidelines	

Source: Interviews conducted on government actors at central and local government

## 8.8 Conclusion

The institutional framework for urban planning and management in Nepal is very complex. There have been many planning exercises for the Valley since 1960s; however, none of these were endorsed or implemented due to several reasons such as ambiguous proposals, lack of institutional coordination, institutional capacity, as well as political instability. Building bylaws have become the only tool for regulating the urban development in the Valley, but they are also not up to date. This shows that the institutional framework in Nepal is very weak. As a result, urban growth has increased haphazardly and taken the form of urban sprawl. The long-term development plan for Kathmandu Valley (2020) has recommended the densification of existing settlements to curb the current urban sprawl, but the project is very slow due to lack of investment. Most of the plans and programmes seem to emphasize services such as roads, water supply, electricity etc. and less priority is given to open spaces. The plans that considered open spaces dealt mainly about the expansion of greenery along roads and riverbanks in order to make the city healthy and green. The few studies conducted on open spaces include an inventory of public open spaces in Kathmandu core only and identification of open spaces that could be used for humanitarian purposes in the event of earthquake. There is no policy on transformations of open spaces in the Valley. However, only a few conservation policies for the protection of monuments of the open spaces, categorized under PMZs or Conservations zones exist in the Valley. At present, no new open spaces are designed from the government side. For the new open spaces, the government thinks that users' needs in open spaces as well as the budget are very important. For the existing open spaces, the government thinks that preservation of spaces could be done with different urban design principles, for example urban regeneration of open spaces in case of the core area.

## Chapter 9 : Synthesis

### 9.1 Introduction

Based on the discussions made in the previous chapters of literature (at global and local context) and data analysis, this chapter synthesizes as well as validates the findings of this research with existing literatures. In doing so, it focuses on the changes in urban growth pattern, consequences due to transformations occurred in the open spaces, and institutional role in development of open spaces of TUC and SA. It is worth noting here that the changes in growth pattern of the settlement of Kathmandu Valley from traditional to contemporary periods has been studied in order to understand how the change in urban form can bring new dimensions of open spaces.

### 9.2 Urban growth pattern from traditional to contemporary period

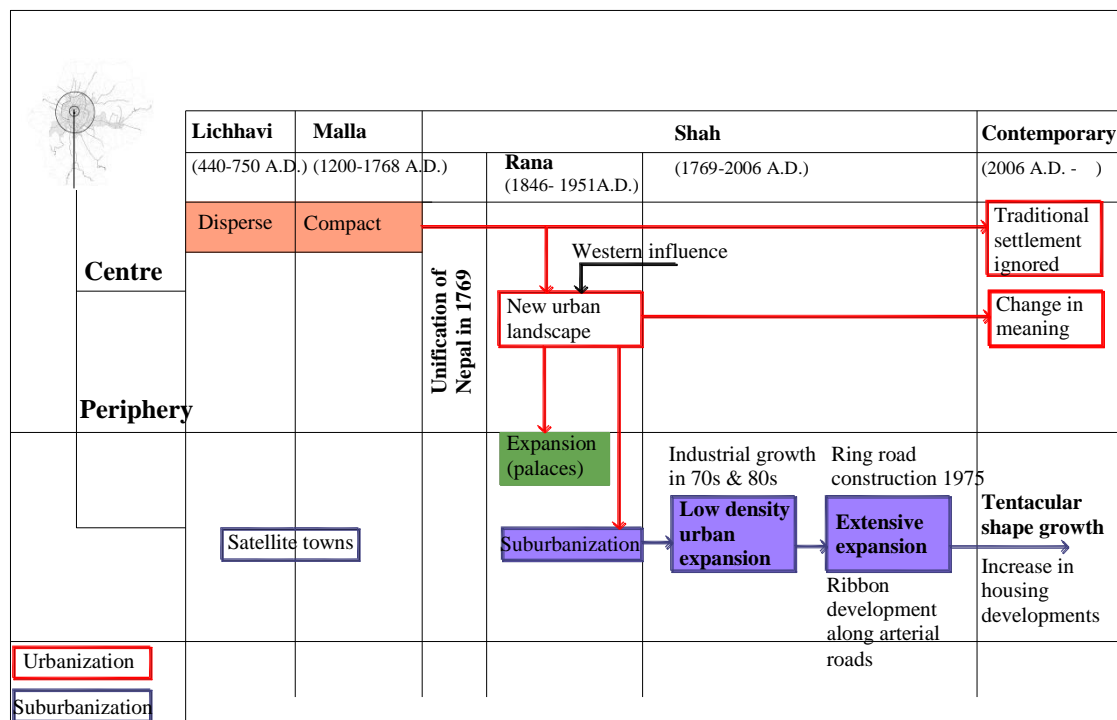
From the literature on the Nepalese context, it is clear that the Lichhavi and Malla settlements were confined to what is now the TUC. The Lichhavi settlements, which were dispersed, changed into compact in the Malla period and continued in the Rana period, but in addition, new urban landscapes in TUC and grand palaces at the periphery were introduced as the result of the western influences. A few satellite towns started to emerge in the periphery during the Lichhavi and the Malla periods. Suburbanization started in the Rana period, which after industrial growth changed into low-density spread after construction of the Ring road in the modern period. In the contemporary period, urban growth has taken a tentacular shape with increasing trends of low-density housing developments<sup>101</sup> (from both government and private sector). Regarding the core area, there have not been many changes in terms of new forms of the settlement except the degradation of the image of the core due to densification, a few cases of conversion of open spaces into built form, and change in appearances of buildings around the existing open spaces (also refer Figure 9.1).

Although this research does not aim to study the urban growth of Kathmandu as such, it discusses some of the findings regarding the urban growth that have impacts on the use of the open spaces, for example, migration pattern have had a distinctive effect on users' share of open spaces (this will be discussed further in later sections). The questionnaire

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<sup>101</sup>This was also illustrated by the Transect-Walk conducted by the researcher (refer to Chapter 6).

conducted on the users of six case study open spaces shows that among the users who migrated, many did so from the core area to the periphery and from other areas to the core. This reflects Mckenzie's (1925) concept of 'invasion and succession process' in the cities. The model best illustrates the relationships between socio-economic conditions of people and the CBD; the more the residents become affluent, the higher the tendency to move outward from core and be replaced by other less affluent residents. In the Nepalese context, in addition to the affluence of people, the transition of social system from the extended family to nuclear family units, insufficient space in traditional dwellings, and desire of modern dwelling all have forced people to move outward. Glaeser and Kahn's (2003) concept of 'flight from blight' is also seen in the Nepalese context, but not at the same level/degree as in Western societies. With congestion in the core, traffic related problems have supported the move out from the core, but car ownership has not become a major issue as it has in Western societies.



**Figure 9.1: Change in urban growth pattern from traditional to contemporary periods in TUC and SA**

Source: Researcher's interpretations based on available literature and analysis

Urban growth of Kathmandu valley is increasing. The population density of the Valley has also been increasing in the recent years. There is no control over densification; as a result, there has been conversion of non-built areas to built areas. The trends of infilling

or division of the single housing unit into several units<sup>102</sup> in the core areas have even made the areas denser. The use of public open spaces may also be affected by these changes, especially the neighbourhood squares that are enclosed by residential buildings. Although this research did not study densification and its role in the use of public spaces, it was found that the selected case study open spaces of TUC situated in dense core area seemed to be used more than those in the SA. This confirms the concept of Miao (2001) that high density is linked to intensive use of public space. However, the analysis of the selected case study open spaces shows that there are also other factors that contributed the use of spaces (refer to Chapter 7).

### 9.3 Publicness of public spaces

#### 9.3.1 Conceptualization

The concept used to define open spaces by Woolley (2003) for western societies (with three groupings: domestic, neighbourhood, and civic spaces), and by Tiwari (1989) for TUC (private, market, neighbourhood, Darbar or civic square) have some characteristics in common; both have considered the concept of home range, however the approach is different. Woolley expressed it in terms of social experiences such as familiarity, sociability and anonymity whereas Tiwari expressed it in terms of a gradient of privacy and communality. The other difference between the western and the Nepalese could be that in the latter case the religious values play a significant role in socio-cultural life (refer to Chapters 6 and 7) and use of public open spaces. Miao (2001), in his study about public places in Asia Pacific cities, has also identified religion as one of the factors that can influence the use of public spaces and they can be different in different regions. Comparing with western open spaces as defined by Gehl (1987) based on *necessary, optional, and social activities*, the study of six open spaces of the Valley shows that the open spaces of both TUC and SA include more necessary and social activities than optional activities, except the neighbourhood square of SA (which seems to have optional activities). The large-scale parks and plazas as in the western concept do not seem to be popular yet in the Nepalese context. However, it must be noted here that there was an influence of the West among the Rana rulers, who introduced parks into the city landscape, but these are not of the scale found in the West, and the use of these parks at present is limited or privatized.

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<sup>102</sup>In Nepalese context, it is common practice to carry out the equal division of housing unit/land/property between heirs (sons) as inheritance.

If the five dimensions of publicness (ownership, control, civility, physical configuration, and animation) defined by Varna and Tiesdall (2010) are taken into account, all the public spaces of TUC and SA belong to a public body except the community plaza of TUC, which is vested in a public-private partnership programme. No overt and oppressive controls are found in any of the spaces of TUC and SA, except for a few security guards in a few cases of TUC for safety reasons. Regarding civility, considerable maintenance is undertaken in all cases, however there is little provision of facilities such as seats and toilets, which seem to be lacking wherever needed. Concerning physical configurations, all public open spaces of TUC are well networked with the surrounding areas as well as other public realms, which in the case of SA have less networking. Similarly, the spaces of TUC and the spaces of SA have respectively strong and weak visual connections with the surroundings. Furthermore, the animation of the spaces of TUC and SA involves both active and passive engagement. Active engagement in this research is represented by direct experience with a place such as shopping, socializing, worshipping, etc. whereas passive engagement is represented by encounter with the setting such as passers-by. The spaces of TUC provide more opportunities for discovery than the spaces of SA. The discovery provided the opportunities to observe the different things that people are doing when moving through a site Carr et al. (1992a). The remarkable structures (temples, monuments, markets), activities (religious, social, commercial) has offered a variety of experiences in TUC more than SA. These opportunities for engagements and discovery according to Carr et al.(ibid) are the human functioning aspects.

### **9.3.2 Degree of publicness in spaces from traditional to contemporary periods**

The hierarchies of open spaces classified by Tiwari (1989) only focused on the traditional (Malla) towns of the valley. Tiwari's study was primarily based on the degree of publicness that is determined by social and cultural functions (refer to Chapter 5). The degree of publicness and social activities increases accordingly from the point of departure from the house towards the crossroads. In the traditional period, the private square involved only a family and hence there was no publicness. The neighbourhood square engaged family and clans (homogenous groups), the market square engaged more neighbourhood groups (4-8 neighbourhoods) and the Darbar square engaged larger heterogeneous groups (24 neighbourhoods or more). In the contemporary period, the study carried out by the researcher shows that this degree of publicness has been



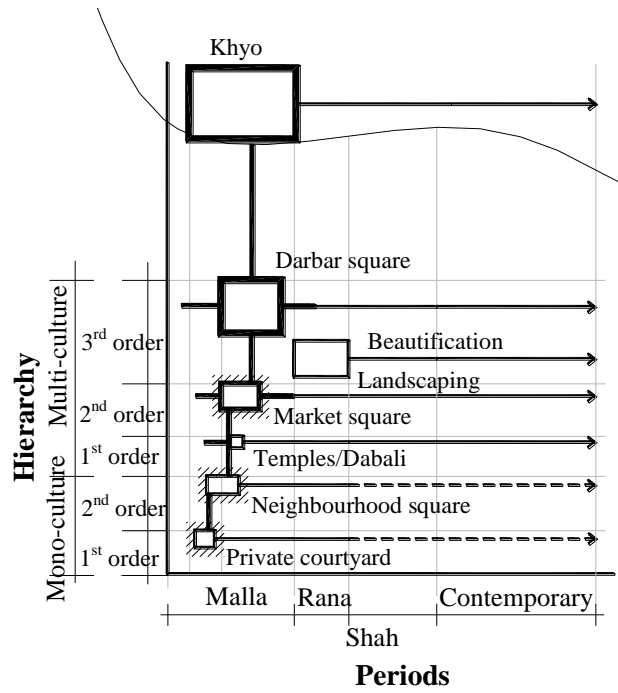
changed in most of the open spaces of TUC. The private<sup>103</sup> and neighbourhood squares that used to be mono-cultural spaces are today shared by diverse cultural groups. The involvement of more neighbourhoods is currently apparent in the market squares. This shows that the multicultural market squares that existed since the Malla period have not changed in terms of their cultural diversity; only the gradient (number of people) regarding the publicness has been changed. The mono-cultural spaces on the other hand, have transformed into multicultural spaces. Regarding the open spaces of the Rana period, power and monumental impressions that used to be more significant, today have gained publicness; this is clearly shown by the study of Dharahara-Sundhara. Due to the private-public partnership project, it has now become an intermediate level (community) plaza<sup>104</sup> rather than just a monumental space.

This research does not include a study of Darbar square and open space at the boundary (Khyo) of the Malla period. However, with the help of available documents and visits to several open spaces by the researcher during the Transect-walk, it can be concluded that the Darbar square, a multicultural space, though no longer serving as the palace complex and not used for socio-political gatherings, is still today considered as the nucleus of the city and is used by larger heterogeneous groups. The Khyo on the other hand that was used specially by a particular ethnic/caste group to worship their ancestral deity is today used by the diverse cultural groups and for different purposes. Unlike in traditional towns, there are no clear definitions and exact recorded dates of origin for the open spaces of SA. If the open spaces of the SA at present are analysed on the basis of the survey and interviews, the degree of publicness has increased in relation to what it used to be in the past. The market and the community squares that used to be open grounds, and neighbourhood space that was used by one particular cultural group for worshipping the ancestral deity, today are used by diverse cultural groups. Almost all of the structures in case study open spaces of TUC and SA are given access to the public.

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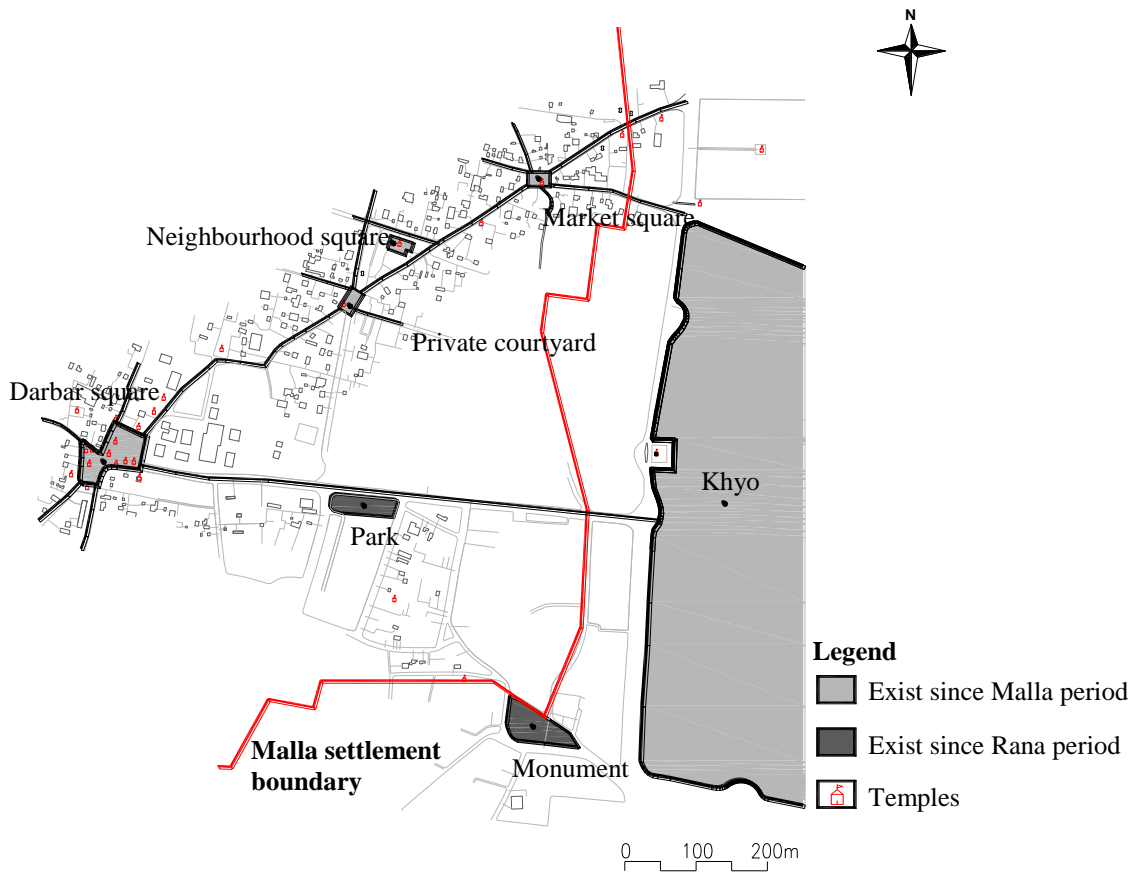
<sup>103</sup>This research does not include the study of private squares; however while conducting the Transect Walk to determine the hierarchy of open spaces in the Valley, the researcher noticed that the private squares today have been shared by many cultural groups. This could be because of increase in renting trends in the core area. The single dwelling unit is even occupied by many family units, especially by those, who have migrated to the core. In most of the cases, tenancy is on a room basis; one family occupies a room/s depending upon the affordability.

<sup>104</sup>Stanley et al. (2012) classified plazas into three different levels: city, intermediate, and residential levels according to size, use, and positions. City level plazas are large scale, centrally positioned and associated with major civic or religious buildings, and play a critical political and symbolic role. Intermediate plazas are of smaller scale, relative abundance and more localized use. Residential plazas are the smallest plazas normally private or semi-private areas for the residents.



**Figure 9.2: Diagrammatic Interpretation of changing hierarchies of open spaces in TUC from traditional to contemporary periods**

Source: Interpretations based on available literature, cartography, and researcher’s analysis



**Figure 9.3: Hierarchies of open spaces in TUC existed since traditional to contemporary periods**

Source: Interpretations based on available literature, cartography, and researcher’s analysis

## **9.4 Socio-cultural and spatial transformations and consequences**

### **9.4.1 Elements of urban interest: Spatial and perceptual meanings**

The literature on the Nepalese context has clearly described elements of urban interest in the Malla open spaces. The analyses of case study open spaces of both TUC as well as SA also show that these spaces are still today comprised of various elements of interest, which the researcher had classified according to religious, social, cultural or commercial significances of the structures. Regarding the open spaces of TUC, the commercial and religious structures of market squares, religious structures of neighbourhood squares, and the monuments of the Rana period have remained the elements of interest, although some physical transformations (alterations, additions) in these structures have taken place. The building enclosures that housed the shops in both neighbourhood and market squares have become elements of less interest due to their drastic changes (no harmony with the surrounding environment) from the past. A few new structures that were added in these spaces with time have also become elements of less/no interest to the public. The elements of urban interest in open spaces of TUC and SA have contributed meaning in the spaces. These elements in both TUC and SA are found to be permanent structures.

In the open spaces of TUC, the majority of the structures that are elements of urban interest (such as religious structures of neighbourhood and market squares) mostly generate pleasant sensory perceptions whereas the structures that are of less interest (such as building enclosures) mostly generate unpleasant/neutral sensory perceptions. Again, the added structures that have less/no public interest mostly generate unpleasant or no notable sensory perceptions. Similar characteristics are also found in open spaces of SA. In the open spaces of SA, though recently developed or transformed, many elements (for example, the Chautara in the market and community squares and the religious structure in the neighbourhood square) that existed since the past have maintained their importance until the present and have become the elements of interest. They also generate pleasant sensory perceptions.

From these findings, it seems that the sensory perceptions of structures and elements of public interest are inter-related. The elements of urban interest as discussed before have preserved the images of all spaces. Hence, this can be related to Lynch's (1960) concept

of place and imageability, according to which, the image of the place is determined by identity, structure, and meaning and the quality of physical structures always evokes a strong image in any observer.

#### **9.4.2 Use and perceptual meanings**

##### ***Vitality and diversity***

The market squares of TUC in the past used to come to life with cultural activities more than with commercial activities. This means that the vitality of the square was determined by cultural activities such as festivals, worshipping gods, celebrations etc., but today it is well known for commercial activities rather than for its cultural activities. Regarding the activities in the neighbourhood square of TUC, there has been a shift in activities. The social and cultural activities that used to be associated with one family/clan of the neighbourhood squares today are shared by the diverse groups. In some cases, even new commercial activities have started to emerge. In the case of the community square, the privatization of space has helped to intensify commercial activities more than other activities. Likewise, a drift towards commercialization has also influenced the open spaces of SA, except in the neighbourhood square that is located in the purely residential area. All these show that the open spaces of TUC as well as SA have been influenced by the recent commercialization. The change of activities in these spaces with time also reflects the change in determinants for bringing vitality; a clear example could be the market square, which has already been discussed in the beginning of this section. Referring to Montgomery's (1998) view that vitality and diversity are interlinked and Jacobs's (1961) dense concentration of residents as the condition for generating diversity, the open spaces of TUC resemble these conditions more than SA. Being dense and having intensive use of spaces by multicultural groups in the core compared to SA, it means that the level of vitality in open spaces of TUC is also more than that of SA.

##### ***Identity***

Regarding the daily activities, the open spaces of TUC always have the same types and in the same location every day with few exceptions (this has been already discussed in Chapter 6). Referring to Relph (1976) that the identity of place refers to a persistent sameness and unity that distinguish it from other, the existence of the same types of

activities in two consecutive years 2012 and 2013 in TUC signifies that these activities have become part of the identity of the open spaces. It further signifies that same spatial pattern is followed every day<sup>105</sup>. Again referring to Lynch (1981), identity is ‘the extent to which a person can recognize or recall a place as being distinct from other places’ (p.131). This is quite relevant in the case of open spaces of TUC; the uniqueness of spaces have made them recognizable as well as helped to be in a memory. This further helps in building sense of place, as Lynch (1960, p.119) defined ‘sense of place in itself enhances every human activity that occurs there, and encourages the deposit of a memory trace’. In the open spaces of the SA, the majority of the same types of activities over two years are seen in the market square only; the other two squares had many new activities in the year 2013. No explicit spatial patterns have been followed by the activities in any of the open spaces in SA (also refer to Chapter 6).

### *Sensory experience*

Sensory opportunities are provided not only by the physical structures but also by the activities; this is very important to understand the spaces. That is why Montgomery (1998) referred success of urban place to three fundamental elements – physical space, sensory experience, and activity. The sensory experiences of the activities in these spaces have helped in making sense of place, which Steele (1981) had referred to as stimulated, excited, joyous and expansive experiences in particular setting. These experiences are perceived through visual, sound, smell, and touch perceptions involved in the activities. Analogous to the occurrence of the same types of activities every day in open spaces of TUC, the sensory perceptions could also be assumed to remain the same every day, as has been discussed in Chapter 6. The open spaces of SA, except market square, may not have similar sensory perceptions every day due to discrepancies in activities each day. Based on the sensory perceptions of activities, no activities are found that are perceived as pleasant to all sensory perceptions throughout the day in case study open spaces, except market square of TUC. Parking in most of the case study open spaces are perceived as unpleasant to all sensory perceptions. This signifies that religious activities have become the spirit of market square of TUC and parking in all cases has become undesirable activities. It must be worth noting here that the neighbourhood square of TUC though has many religious structures, not many religious

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<sup>105</sup>This has been also confirmed with the users while conducting the questionnaire.

activities were seen in the bahal complex. This could be because the shrines have main deity which are in the first floor or not given access to the public all the time.

## **9.5 Exploring the consequences due to change in users**

The changes in physical setting, uses, management, and security in the public open spaces of TUC and SA from the past have affected the users positively and negatively. The analyses showed that the open spaces of both TUC and SA have some parallels and contrasts in terms of their physical settings, use values, networking with the surroundings (refer to Chapter 6) as well as in the impacts due to transformations taking place in these spaces (refer to Chapter 7). Marcus and Francis (1998) also argued that though the modern and traditional open spaces are different, they have some relevant contextual and functional parallels. In the following sections, the researcher will focus only on the major concerns of the users, i.e the consequences as the result of change in users in both cases.

### **9.5.1 Ethnic pluralism and the sense of community**

The traditional neighbourhoods at present are ethnically diverse, unlike in the past, during which the Newar urbanism had immensely flourished in the core. The daily activities and rituals were mostly defined by the Newars' culture, religion and traditions. The outdoor activities were part of the lifestyle of the residents (Newars) of the core area. The analysis regarding the users' dimensions in the present context shows that many ethnic/caste groups are now using the open spaces of TUC. A social mix is seen in the spaces. The analysis showed that there were the users who originally belonged to, currently still residing, frequent visitors, and were involved in the activities in the open spaces of the TUC. These users considered themselves with a strong sense of community. They seemed to comprise all the four elements – membership, influence, integration and fulfilment of needs, and shared emotional connections – as defined by McMillan and Chavis (1986). There were also the users, who moved from other places to TUC. Considering the four elements (defined by McMillan and Chavis, 1986), although these groups considered themselves – as a member of society in TUC, are influenced by the culture of this society, and have integrated and fulfilled their needs – they seem to have less emotional connections with the local residents (see Chapter 7). This result in a weak social bond between these users, which may further affect in the

perception of social or cultural obligations of these users towards the spaces. The open spaces are associated with various cultures and traditions that encourage users to get involved in the events related to these. Without social bonding, engagement becomes difficult.

Most of the users in the SA are from the periphery. Regarding their ethnic identity, no written evidences have been found; however, the existence of areas named after ethnic/caste groups and their networking at present shows that the space could have been used by people from different ethnic/caste backgrounds. Hence, in this case also, a social mix is seen in the spaces. The users of the market and neighbourhood squares also include the users who do not originally belong to the SA; they moved from other places including TUC. Among the users who moved from TUC to SA, some are still visiting the open spaces of TUC in order to fulfil their needs. It seems that in this case, the users seem to have only two elements of the sense of community: membership and influence. Everyone seems to have become individualistic, but due to the influence of the culture of TUC, these users are still sharing the open spaces in TUC. In contrast, in the case of community square, where the majority of users are the Magars, the social bonding has been greatly maintained and everyone considered themselves as part of the community. Hence, the sense of community in this case seems to be very strong. Referring to Hummon's (1992) concept of rootedness which brings a strong feeling of community attachment, the users who originally belonged to TUC are strongly rooted with the spaces and are still involved in social and cultural affairs. In the SA, due to the lack of ethnic references, it is difficult to draw any conclusions; however, the analysis shows that the Magars, who were the dominant users of community squares in the case study area, feel themselves strongly rooted with the space.

### **9.5.2 Spatial continuity and sharing of open spaces**

It is already clear from the analysis that the open spaces in TUC are inter-related either commercially or culturally, whereas a weak or limited networking has been established between the open spaces of SA. Almost all of the users who are residing in the TUC visit most of the open spaces of TUC. The location (positioning of open spaces based on the point of departure from home and communality) and networking (considering functional integrity determined by culture, commerce, religion, traditions etc.) have facilitated the spatial continuity in these spaces. Considering the same aspects in SA,

spatial continuity is missing because no concept of home range is established, and the networking of open spaces is weak or limited.

Moreover, from the analysis, it is also found that the users who are residing in SA, including those who were born in the SA and who moved from TUC to SA, are still using the open spaces of TUC. The users who moved from TUC to SA are affected both commercially and culturally, meaning these users are still visiting TUC for shopping and socio-cultural purposes, for example celebrating festivals, meeting relatives and friends, worshipping etc. It seems that these users are even now attached to the spaces of TUC. For the users who were born in SA and the residents of SA, they are mainly affected commercially since their visit to TUC is for shopping purposes and they have no cultural attachments with the spaces of TUC.

## **9.6 Exploring the reasons for the social, cultural, and spatial transformations**

### **9.6.1 Migration and cultural change**

Urbanization and suburbanization have been due to both push as well as pull factors for people to migrate towards and away from the city core respectively. Both cases account for the intermixing of people from same/different cultural backgrounds. In TUC, everyday life is very influenced by the society and the cultures associated with it. It was already mentioned that outdoor life (being involved in outdoor activities especially in open spaces) is one of the essences of the core area. For the people who migrated to core, there is always a question of cultural competence; Padilla and Peres (2003) have referred to this as the 'learned ability to function in a culture in a manner that is congruent with the values, beliefs, and customs of the majority of members of the culture' (p.42). According to Shrestha (1998/99), the migration might displace the Newars and threaten the art, culture of Kathmandu. The users of the core area also have same feelings as Shrestha mentioned. Nonetheless, according to the users, they get accustomed to the cultures of the core and are also following their own culture; hence, it seems that there is a cultural integration in the core area. On the other hand, in SA, new residential neighbourhoods with many newcomers from diverse ethnic/caste backgrounds and lack of social identity (except in case of the Magargaun neighbourhood) appear to have influenced people to be individualistic rather than uniting.



### 9.6.2 Technological advancement and social interactions

In most of the open spaces of both TUC and SA, the involvements of young generations seem to be less compared to the old generations. One of the prime reasons for this is the attraction towards new technologies such as computer games, internet services, television, etc. The obsessions towards online social networking have confined them indoors, which could further leave them isolated from social life in the city's open spaces. Plowman et al. (2010) also referred to negative impacts caused by technology advancement among children; the technology leads to risks of social development and virtual, screen-based experience rather than real experience. Therefore, technological development in recent years has played a great role in reducing face-to-face social interactions in open spaces, especially among the young generations. Referring to Movius (2010), online communities enabled by technology as a result of globalisation, have introduced new forms of sociability that departed from previously spatially bounded social interaction.

### 9.6.3 Commercialization

The increasing commercialization in both TUC and SA has greatly affected the open spaces. The open spaces of TUC are affected most due to intensification of commercial activities. The encroachments of cultural artefacts in most of the spaces by commercial activities have encouraged the sense of place. On the other hand, in most of the open spaces of SA, though the intensity of commercialization is less compared to TUC, the litters created by commercial activities have an adverse effect on environment.

The commercialization seems to have weakened the historic as well as socio-cultural significances of the space in most of the public open spaces in TUC. Many of the heritage monuments are being encroached by incompatible activities (such as commercial, parking). This may affect in the economic growth associated with tourism. Bjønness (1998, p.6) also asserted that the historic city like Kathmandu, the tourist potential and income, will be seriously affected if the charm and historical appearances of the city is lost. In wider perspective, according to Muzzini and Aparicio (2013, p.9), Nepal's economic growth driver is linked with the country's tangible and intangible cultural heritage – the effective management of Nepal's cultural heritage is vital for the competitiveness of cultural tourism. There have been approaches to develop Kathmandu Valley as a centre of culture, tourism and historic preservation such as Kathmandu

Valley Physical Development Concept, 1984 and Kathmandu Valley Urban Development Plans and Programs, 1991, but these were not endorsed. There has also been the PPP approach to develop and manage the open spaces, for example DS of TUC, which has been successful to develop the space, but not completely able to satisfy the local residents. Recently, another PPP with an agreement between KMC and the private company has been made that proposes to combine the tourist fee for climbing Dharahara and visiting another space, Darbar square. This has again raised disputes between the local community, KMC, and the private company (The Kathmandu Post, 2013). The KMC and the private company defended the proposal as a bid to promote the heritage zones standing close to each other, while the locals claim that it is a deception in order to privatize the space that may hinder the tourism later. From these examples of PPP, it raises questions around whether community involvement is needed in developing and planning process, together with the involvement of government and private sectors.

#### **9.6.4 Transition in social system and physical changes in buildings**

From the analysis, it is clear that in the TUC, no harmony in terms of height, scale, proportion, and materials used has been maintained in the buildings surrounding the public open spaces. There are changes in skyline of the buildings, going vertical and not following the traditional styles of the buildings. These changes in house structure may affect the use of open space. Also from the literature, it is clear that the positioning of different functional rooms, openings such as windows and doors and their sizes in the traditional buildings not only allowed natural light and ventilation but also enabled social interaction between people inside of building and outside in the open space. The research, although it studied the transformations of physical settings and uses and their impacts on users, it did not study the changes taking place in individual house as well as household structures and their impacts on the uses of public open spaces. However, it was found from the interviews that the scarcity of land in the TUC together with transition of social system from extended family to nuclear family units has driven the vertical partition in the traditional buildings. Moreover, no consideration is given to maintaining harmony with existing buildings during (re)construction of further housing. As a result, the uniformity in architectural style in TUC seems to be diluted. In the case of SA, buildings are constructed with due considerations of family structures (either extended or nuclear family) and the architectural styles of buildings depend on individual preferences.

## **9.7 Institutional/community involvement in open spaces of TUC and SA**

The open spaces of the Valley have always been a low priority from the government side because their prime concerns are always with the big infrastructural projects. The study of open spaces of TUC clearly shows that not many initiatives have been undertaken by the government regarding their development. Only a few measures such as conservation of monuments and regulation of traffic are being looked after by the government; however, these also seemed to be ineffective due to lack of strict guidelines, rules, and regulations. In many cases, local clubs are more actively involved than the governmental bodies. According to ADB (2001), CBOs may include youth clubs and in many public open spaces, these clubs were involved in managing spaces. These have played an important role in preserving the norms and values associated with the culture and religion and in doing so also have built the social network and bonds among the people; this further has become one of the factors maintaining safety in the space.

In the SA, the local clubs seemed to be less involved in management of open spaces compared to those in the TUC. Though two of the case studies of SA (market and neighbourhood squares) are located in government-initiated neighbourhoods, the involvement of government seem to be less than in TUC. Neither government nor local clubs seemed to have been successful in building any kind of social or cultural bonds in any case and hence these have not become a measure for maintaining safety in the neighbourhood. The community square on the other hand has kept a good social network, which further has become one of the factors maintaining safety in the space.

## **9.8 Conclusion**

Urban growth is increasing in the contemporary period. The compact Malla walled settlements and the urban landscapes of the Rana period still exist in the TUC. Not many changes have taken place regarding the new urban layout of the settlement in the TUC, however there are a few cases of conversion of open spaces into built ups, aesthetic degradation of the core due to densification, and change in appearances of façades around the existing open spaces. In the periphery, the growth has taken a form of urban sprawl in a tentacular shape. Compared to western societies, where the socio-economic conditions have played an important role in causing sprawl, in the Nepalese context, in addition to this, the change in culture (transition of social system from the

extended family to nuclear family units) also caused sprawl. Regarding the public open spaces, there are similarities and contrasts between those in TUC and SA of Kathmandu Valley. The structures that contributed meaning are the elements of urban interest that existed since the historical periods and most of these elements of urban interest contribute pleasant sensory perceptions in both TUC and SA. Many activities in TUC have become a part of the identity of all spaces than those in SA. No activities are found that are pleasant to all visual, smell, and sound perceptions in both cases except market square of TUC. Parking seems to be common in both cases and have been perceived as unpleasant to all sensory perceptions in most of the case study open spaces. Ethnic pluralism has a strong role in the sense of community in both cases. A stronger community attachment is found in the users of TUC than SA. The location and networking of open spaces in TUC have supported spatial continuity, which in case of SA, is missing. Migration, technological advancement, commercialization, and transition in social system have caused the socio-cultural and spatial transformations of public open spaces in TUC and SA. Not many initiatives have been undertaken by the government for the development of open spaces in both cases. CBOs are more involved in development of open spaces in TUC compared to those in the SA. There are also similarities and contrasts in the concept of public open spaces between the Nepalese context and the western societies. The prime difference is that in the Nepalese context, the religious values play an important role in socio-cultural life and use of public open spaces, which may not be significant in the West. Maio has also distinguished the public open spaces in the Asian cities and the Western cities, where he asserted that Asian public places often bring together religious, commercial, and recreational uses. In contrast to western societies, the ethnic pluralism in the Nepalese context has a great influence in sense of community.

## **Chapter 10 : Conclusion and recommendations**

### **10.1 Introduction**

This research has illustrated how the public open spaces in TUC and SA are transforming individually and in respect to each other over time, particularly during the period of suburbanisation. The research makes an original contribution in generating new knowledge on both sprawl-related and open space-related discourses in the Nepalese context, where research is very limited. Regarding the open spaces-related research in the Nepalese context, the literature that exists is limited to a study of the hierarchy of open spaces by Tiwari (1989; 2012), the focus of which is only on the traditional towns of the Valley. Since no studies about the open spaces in recently developed areas exist, this research has contributed wider knowledge to this discourse. This chapter provides a summary of the findings with respect to the research objectives and questions presented in Chapter 1. These are based on the literature review, field study and the analyses of selected case studies. This chapter also concludes with recommendations and opportunities for further research in the public open space-related discourse.

### **10.2 Key findings of the research**

The research found that transformation is taking place in all typologies of public open spaces in both TUC and SA and in relation to each other. It was found that there are socio-cultural and spatial transformations taking place in these spaces, which have both positive and negative impacts on the users. The key findings are discussed under two sections as: i) summary of the findings from the literature review based on Chapters 1 and 2; and ii) summary of the findings from the analyses in relation to research objectives and questions – based on Chapters 4,5,6,7, and 8. Chapter 9 was about the synthesis that related generic literature with the findings of the Valley.

#### **10.2.1 Summary of the findings from the literature review - Generic**

Chapter 1 identified research that addressed the issues of public open spaces in sprawl-related discourses in broader perspectives. To my knowledge, there has been no study of the transformation of public open spaces from the traditional urban centre to the sprawled areas and their impacts on the society.

Chapter 2 - a literature review on sprawl and open spaces from the Western to the Eastern world found that a weak sense of community and social segregation are the key social issues caused by sprawl. The low-density development and higher car dependency play a role in reducing the social interactions and urban activities, thus result in weak sense of community. The flight from blight plays a role in reducing social segregation between the affluent people and low-income people, residing in the core area. Findings from the literature on the physical, social, cultural, perceptual, and institutional dimensions of public open spaces provided insights on how the physical, social, and cultural meanings attached to the places signify the importance of public open spaces. The literature showed that the studies regarding the differences between open spaces in the traditional urban centre and sprawled areas are greatly ignored in both sprawl-related and open space-related discourses.

### **10.2.2 Summary of the findings from the analyses in relation to research objectives and questions - Kathmandu Valley specific**

#### **Objective 1: Analysis of the historical morphogenesis of open spaces from TUC to SA in Kathmandu Valley based on their physical, social, and cultural significances.**

The historical morphogenesis of open spaces from TUC to SA of the Kathmandu Valley addressed the morphological development of the Valley, hierarchies of open spaces that existed in the past, and their physical, social, and cultural significances. The Lichhavi, Malla, and Rana settlements were known as the remarkable periods in the Nepalese history. The gradual growth of these settlements established new typologies of open spaces over different periods. The Malla open spaces were more influenced by social and cultural life, whereas the Rana open spaces by power and monumental expressions. Two hierarchies of open spaces were found in the Malla period – mono-cultural and multi-cultural; each of these was further classified into different orders. The private courtyards and neighbourhood squares were the first and second orders of mono-cultural spaces, whereas the temples and Dabalis, market squares, and Darbar squares were the first, second and third orders of multi-cultural spaces respectively. These spaces were situated in the walled town, however Khyos were also found in the hinterland. The multi-cultural spaces have helped to establish cultural assimilation in the traditional towns. On the other hand Rana open spaces had been emphasized in the city landscape, representing their power and strength. Regarding the selected case study area in the SA, there is lack of evidence to trace its morphological growth, however the

available literature on settlements shows that this was predominantly agricultural fields in the Malla period, since the settlements were primarily concentrated in three principal cities (Kathmandu, Lalitpur, and Bhaktapur) and other secondary cities (Chapter 5). In the Rana period, a very low density existed in this part of the SA (according to the users who were interviewed). There was no specific hierarchy of open spaces, except the private spaces, open agricultural lands, and the open rest places known as Chautara. All these open spaces in TUC and SA in the past had elements of interest and specific activities that signified their importance. The temples, rest places, water spout, Chautara all are considered as the elements of interest.

**Objective 2: Investigation of the transformations of public open spaces in TUC and SA in Kathmandu Valley individually and in respect to each other during the recent period of suburban growth.**

The transformations of public open spaces in TUC and SA and between these spaces were investigated. The typologies of open spaces in the present context, meaning of place, and transformations of selected public open spaces were addressed. The research found that the selected public open spaces in both TUC and SA have social, cultural and spatial transformations over time. The Transect Walk method conducted from TUC to SA identified currently existing open spaces in both areas. The method also showed that the open spaces of the past still exist in TUC (particularly from the Malla period) as well as in SA (the exact date is not known, however according to local people few of these existed before the end of the Rana period). Some new spaces were also found in the latter case. The physical structures (places of commercial, religious, social, and others), use (morning, afternoon, and evening), and their respective sensory perceptions, and the patterns of activities have epitomized the public open spaces in both TUC and SA. Majority of open spaces in TUC as well as SA have religious connection regardless of their hierarchies. Most of the religious and social structures in open spaces of TUC and SA have contributed meaning in the spaces whereas the commercial (with few exceptions) and structures with other function have become function rather than contributing meaning to the space. Regarding the activities, the existence of many similar types of activities in the same location (with a few exceptions) and following the same pattern in two consecutive years (2012 and 2013) in TUC spaces show that these have become a part of the identity of the spaces. The open spaces of SA also have similar types of activities over two years with many new activities in the year 2013, but no explicit spatial patterns have been followed by the activities. The activities added in

the latter year differ in each of the case study open spaces; however, social activities seemed to be common in all spaces that were added. Only a few activities have become a part of the identity in SA spaces. Based on the sensory perceptions of activities, no activities are found that are perceived as pleasant to all sensory perceptions throughout the day in all case study open spaces, except market square of TUC. Parking in most of the case study open spaces are perceived as unpleasant to all sensory perceptions. Furthermore, almost all structures in open spaces of TUC and SA are given access to public except those that are not given due to religious and cultural belief. Both symbolic and visual accesses are maintained in all case study open spaces.

Regarding the changes, all open spaces in TUC and SA had undergone transformations in terms of physical structures and uses. In case study open spaces of TUC and SA, only a few structures have been added or altered in recent years due to needs of society. Most of the added structures in the recent years are commercial and structures with other functions and those that are altered (change in physical appearances) are mostly religious structures. These added structures have not become elements of interest as those structures that existed since the past. Regarding the social and cultural use, the vitality and diversity in the public open spaces have changed notably with time in both cases. The mono-cultural spaces in TUC have changed into multicultural spaces. This is best illustrated by the neighbourhood squares that used to belong to one clan or family are today used by multi-cultural groups. In addition to the various religious, social, cultural, and commercial activities that have been in practice since the past, other activities (especially for commercial purposes) have influenced all public open spaces in TUC. In most of the cases, commercialization has replaced other uses such as religious and cultural that were accustomed in the past. Likewise, a drift towards commercialization has also influenced public open spaces of SA, except the neighbourhood square (that is located in a purely residential area). It was also found that the networking of the open spaces plays a role in transformation of these spaces; change in one space could bring change in another space. This is best illustrated by the public open spaces in TUC, where change in the use of the adjacent spaces has influenced their uses. Despite the changes taken place in public open spaces in TUC as well as in SA, there is continuation of cultures that are associated with the spaces.



**Objective 3: Analysis of the impacts of transformations of public open spaces in TUC and SA in Kathmandu Valley on users.**

The impacts of physical, social, and cultural transformations of public open spaces on users were analysed. The changes in user groups, physical characteristics, and uses have affected the users of public open spaces in TUC and SA both positively and negatively. The weak social cohesion and sense of belonging because of change in user groups, especially in the TUC, have also affected the use of spaces. Ethnic pluralism has become one of the key issues in TUC that has an effect on the use of public open spaces, as there has been a strong influence of ethnic/caste groups since the past. The changing uses in TUC such as from socialization to intense commercialization and encroachment of various structures by incompatible activities such as informal vending and parking have weakened the identity of spaces, thus resulting in loss of sense of place. The commercialization of public open spaces in SA is slowly increasing. The encroachment of various structures by mobile vending also exists in these spaces; however, it has not played a role in weakening of the identity of spaces as in TUC. The physical changes in the public open spaces of TUC as well as SA include additions, alterations or improvement of structures. In both cases, these have both positive and negative impacts. The positive impacts include the attraction of diverse activities that further help in bringing vitality, and visually appealing structures due to alterations or improvement of structures. The negative impacts include congestion due to additions of structures. The change in uses has also affected the users in all open spaces of TUC and SA. It has offered different opportunities to the users. The common changes observed in open spaces of TUC and SA is growing commercialization (with few exceptions), due to which the open spaces (mostly in TUC) have reduced social space. Although the current security provisions have helped in minimizing the crime rates, the users recommended about the needs of several means of security such as CCTV and security guards.

**Objective 4: Investigation of the visions of institutional bodies on the transformations of public open spaces in the Kathmandu Valley.**

The visions of institutional bodies on the transformations of public open spaces of the Valley were investigated. The key research questions regarding the existing policies about the transformations of public open spaces, and how do the institutional bodies perceive the transformations, were addressed. It was found from the review of existing

policies that open spaces are given the lowest priority in government institutions in comparison to other issues. Only a few studies have been conducted at government level and at superficial level. No clear and concrete guidelines or strategies have yet been introduced for preservation of existing open spaces and for new open spaces at any level of government. The ambiguous policies, lack of institutional co-ordination among different levels of government and institutional capacity have caused failure in preparing and implementing plans and policies. The government regards the transformations of open space as having both positive and negative aspects. They think that the users and private sector are also equally responsible for managing public open spaces. The government realizes that there are no clear guidelines on transformations of open spaces of the Valley and the byelaws, which is the only regulatory measure at present, is not adequate. For the new open spaces, the government thinks that urban design principles must be followed and the priority should be given to the users' need. For the existing open spaces in the core, the government thinks that regeneration of open spaces could be undertaken.

**Objective 5: Synthesis of all the findings and draw conclusions on the evolving nature of open space in the Kathmandu Valley during the current period of urban growth and formulate recommendations based on the above discussed research objectives and questions.**

Chapter 9 synthesized and validates several aspects regarding changes in urban growth pattern, consequences due to transformations occurred in the open spaces, and institutional roles in the development of the open spaces of TUC and SA. In TUC, there are not many changes regarding the new forms of the settlement, except the degradation of image of the core and in a few cases conversion of open spaces into built form, whereas in the periphery, the growth has taken a form of urban sprawl in a tentacle shape. The cultural change is one of the factors that result in sprawl. Regarding the public open spaces, the prime difference between the Nepalese context and the western societies is the socio-cultural and religious values that play an important role in the everyday life of the Nepalese people. The CBOs including local clubs seemed to be more actively involved than the governmental bodies; they have played an important role in preserving the norms and values associated with the culture and religion.

All the above discussions show that the public open spaces in the traditional urban centre as well as in the sprawled area are undergoing physical, social, and cultural transformations. However, it must also be noted here that in both cases, some of the physical, social, and cultural aspects also remain the same as in the past. No clear guidelines exist at the government level for regulating these transformations of public open spaces, as well as for creating new public open spaces.

### **10.3 Recommendations**

It is evident from the earlier discussions that the Kathmandu Valley lacks clear plans and policies for both urban growth and open spaces (new as well as existing). Furthermore, the inefficient regulatory control measures at present coupled with lack of urban design principles have resulted in haphazard growth as well as incompatible uses in the public open spaces. Hence, the government should prepare plans and policies for regulating growth as well as managing open spaces. For this, an integrated approach that includes participation of all level government, CBOs including local clubs and private sector should be conducted. All these actors must be made aware of their responsibilities. The existing regulatory control should be updated; these should take account of zoning of different areas, for example PMZ or newly developed area. Urban design guidelines that encourage preservation of physical, social, and cultural artifacts and discourage activities that are incompatible should be introduced for existing as well as new public open spaces.

### **10.4 Future research**

The growth of the Valley has resulted in sprawled areas in different locations. Since, this research has considered only one of these areas, there is scope for future research to study the public open spaces in other SAs to explore whether the same findings prevail in these areas. Furthermore, this research has not considered a study of any private open spaces; however, in the research it was found that the residents in the SA use private gardens more than the public spaces. Hence, another possible line of research could be how these private spaces have affected the use of public spaces by these residents. In the case of TUC, the younger generations do not seemed to be using the public open spaces, hence further research would be useful analysing the reasons behind this and whether they are influenced by any other cultures, for example the recent emerging mall culture

and socio-economic factors. Moreover, the systematic method developed by the researcher could be used and developed further for the study of public open spaces and their transformations elsewhere.

Finally, this thesis has provided comprehensive inquiries regarding socio-cultural and spatial transformations of public open spaces by comparing such changes in the public open spaces of the traditional urban centre (TUC) and the sprawled area (SA) of the Kathmandu Valley. To my knowledge, this is the first study that investigates transformations of public open of TUC and SA of the Kathmandu Valley individually and in respect to each other over time, using a systematic approach. Despite all of the open spaces in TUC and SA having structures that existed since the past, many of these were altered in the recent years. There are also structures that have been added in recent years due to needs of society. The activities in each open space of TUC and SA have also changed over time with many commercial activities being added in recent years. Although there are changes in physical structures and uses, cultures that are associated with open spaces are still continued in both cases. The change in users, physical changes, uses, and management and security level have affected the users either positively or negatively, or both in TUC and SA. Ethnic pluralism has played a strong role in providing a sense of community in both cases, however a stronger community attachment is found in the users of TUC than SA.

This thesis has not only provided a methodological framework for analysing the transformations of public open spaces, but also it is the author's hope that it will bring the significance of public open spaces to the attention of the public as well as the government in Nepal.

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## Appendix 2.1 Sprawl-related researches

<b>Western Context : U.S.</b>		
	<b>Researchers</b>	<b>Key aspects</b>
<b>Economic</b>	Wassmer (2002)	<ul style="list-style-type: none"> <li>• private and social cost and benefits</li> </ul>
	Wassmer (2000)	<ul style="list-style-type: none"> <li>• cost and population growth</li> </ul>
	Glaeser and Kahn (2003)	<ul style="list-style-type: none"> <li>• decentralization and density</li> </ul>
	Brueckner and Kim (2003), Song and Zenou (2006)	<ul style="list-style-type: none"> <li>• property tax</li> </ul>
	Glaeser and Kahn (2003)	<ul style="list-style-type: none"> <li>• demand for land and flight from blight</li> </ul>
	Brueckner and Helsley (2011)	<ul style="list-style-type: none"> <li>• urban blight</li> </ul>
	Burchell et al. (1998)	<ul style="list-style-type: none"> <li>• physical, monetary, temporal, and social/psychological cost</li> </ul>
	RERC (1974)	<ul style="list-style-type: none"> <li>• infrastructure, housing, transportation, energy, environmental and quality of life costs</li> </ul>
	Carruthers and Ulfarsson (2003)	<ul style="list-style-type: none"> <li>• cost of services</li> </ul>
	Putnam (2000), Brueckner and Largey (2006)	<ul style="list-style-type: none"> <li>• social cost</li> </ul>
<b>Urban planning</b>	Ewing (1994)	<ul style="list-style-type: none"> <li>• development pattern: scattered, leapfrog, ribbon or continuous, low density</li> </ul>
	Ewing (1997), Harvey and Clark (1965), Galster et al. (2001)	<ul style="list-style-type: none"> <li>• development process</li> </ul>
	Pendall (1999)	<ul style="list-style-type: none"> <li>• land use controls</li> </ul>
	Sierra Club (1998), Gordon and Richardson (1997)	<ul style="list-style-type: none"> <li>• density</li> </ul>
	Ewing (1994), Burchell et al. (1998), Hasse and Lathrop (2003), Hasse and Kornbluh (2004)	<ul style="list-style-type: none"> <li>• accessibility</li> </ul>
	Bruegmann (2008), Newman and Kenworthy (1989)	<ul style="list-style-type: none"> <li>• automobile</li> </ul>
<b>Environment</b>	Benfield et al.(2001), Babcock (2008), Ewing et al. (2005), Squires (2002)	<ul style="list-style-type: none"> <li>• threat to natural resources: habitat loss, fragmentation, extinction of species</li> </ul>
	Kahn (2000)	<ul style="list-style-type: none"> <li>• degraded quality of life</li> </ul>
	Ewing (1994), Nechyba and Walsh (2004), Ottensmann (1977)	<ul style="list-style-type: none"> <li>• air pollution</li> </ul>
<b>Institutional/ policy</b>	Anas and Rhee (2006), Anas and Pines (2008), Brueckner (2007)	<ul style="list-style-type: none"> <li>• UGBs in U.S.</li> </ul>
	Benfield et al. (2001), Carruthers and Ulfarsson (2008), Resnik (2010), Squires (2002)	<ul style="list-style-type: none"> <li>• smart growth in U.S.</li> </ul>
	Nelson (2004)	<ul style="list-style-type: none"> <li>• urban containment in U.S.</li> </ul>
<b>Western Context : Europe</b>		
<b>Economic</b>	Hortas-Rico and Solè-Ollè (2010)	<ul style="list-style-type: none"> <li>• public spending</li> </ul>
<b>Environment</b>	SCATTER Project	<ul style="list-style-type: none"> <li>• Environmental impact</li> </ul>
	URBS PANDENS	<ul style="list-style-type: none"> <li>• social, economic, environmental, and spatial</li> </ul>
<b>Planning</b>	Arribas-Bel et al. (2011)	<ul style="list-style-type: none"> <li>• connectivity, decentralization, density, scattering, availability to open space, land-use mix</li> </ul>
<b>Institutional/ policy</b>	Gennaio et al. (2009)	<ul style="list-style-type: none"> <li>• UGBs in Europe</li> </ul>
	EEA (2006)	<ul style="list-style-type: none"> <li>• urban containment in Europe</li> </ul>
	Anas and Pines (2008) Couch et al. (2005)	<ul style="list-style-type: none"> <li>• green belt planning policy in UK</li> </ul>

<b>Eastern Context</b>		
China	Zhao (2010)	<ul style="list-style-type: none"> <li>• mobility patterns</li> </ul>
	Deng and Huang (2004)	<ul style="list-style-type: none"> <li>• uneven land reform</li> </ul>
Japan	Sorensen (1999)	<ul style="list-style-type: none"> <li>• land readjustment</li> </ul>
Iran	Ebrahimpour-Masoumi (2012)	<ul style="list-style-type: none"> <li>• zoning, network, accessibility, developments</li> </ul>
Malaysia	Osman et al.(2008)	<ul style="list-style-type: none"> <li>• financial cost of sprawl</li> </ul>
	Abdullah (2012)	<ul style="list-style-type: none"> <li>• socio-economic developments and cultural aspects</li> </ul>
Philippines	Kelly (1999)	<ul style="list-style-type: none"> <li>• Culture of work</li> </ul>
Thailand	Askew (2000)	<ul style="list-style-type: none"> <li>• patterns of lifestyle, livelihood and landscape change</li> </ul>
Nepal	Bjonness and Subba (2008)	<ul style="list-style-type: none"> <li>• fragmentation of land</li> </ul>
India	Sudhira et al. (2004)	<ul style="list-style-type: none"> <li>• pattern and nature of sprawl</li> </ul>

### **Appendix 2.2 (Public) Open space-related researches**

<b>Western Context</b>	<b>Based on (suburban)sprawl</b>	
	Cho et.al. (2009)	<ul style="list-style-type: none"> <li>• shared open space at neighbourhood level</li> </ul>
	Wu and Plantinga (2003)	<ul style="list-style-type: none"> <li>• publicly provided open space</li> <li>• urban spatial structure</li> </ul>
	Stahle and Marcus (2009)	<ul style="list-style-type: none"> <li>• densification</li> <li>• the need for public open (green) space</li> </ul>
	Lichtenberg (2011)	<ul style="list-style-type: none"> <li>• open space preservation and sprawl</li> </ul>
	Grose (2009)	<ul style="list-style-type: none"> <li>• spatial form</li> </ul>
	Hall (2010)	<ul style="list-style-type: none"> <li>• size of backyard</li> </ul>
	Duany and Plater-Zyberk (1995)	<ul style="list-style-type: none"> <li>• suburban open/ public space</li> <li>• neighborhood open/ public space</li> </ul>
	Girling and Helphand (1997)	<ul style="list-style-type: none"> <li>• private yards</li> <li>• development (playgrounds, parks)</li> </ul>
	Kresl (2012), Patterson (2011), Crawford (2002), Parlette and Cowen (2010)	<ul style="list-style-type: none"> <li>• mall culture</li> </ul>
	Miller (1995)	<ul style="list-style-type: none"> <li>• family isolation</li> <li>• home-centred entertainment</li> </ul>
	Duany Plater-Zyberk & Company (1999)	<ul style="list-style-type: none"> <li>• Transect</li> </ul>
	PPS (2000)	<ul style="list-style-type: none"> <li>• community-building places</li> </ul>
	URBED (2006)	<ul style="list-style-type: none"> <li>• paving, lighting, greenery and public art</li> </ul>
		<b>Based on traditional /contemporary cities</b>
	Efroymson et al. (2009)	<ul style="list-style-type: none"> <li>• Modern city, no address of psychological needs</li> </ul>
	Francis (1987)	<ul style="list-style-type: none"> <li>• characteristics of traditional and innovative open spaces</li> </ul>
	Thompson (2002)	<ul style="list-style-type: none"> <li>• urban open space of 21st century (lifestyles, values, ecology)</li> </ul>



	Marcus and Francis (1998)	<ul style="list-style-type: none"> <li>• pedestrian public realm</li> </ul>
<b>Eastern Context</b>	<b>Based on (suburban)sprawl</b>	
Japan	Aikoh et al.(2012)	<ul style="list-style-type: none"> <li>• Social and meteorological factors- day of the week, school vacations, temperature and the weather</li> </ul>
	Davidson (2013)	<ul style="list-style-type: none"> <li>• Individual freedom and expression</li> </ul>
	<b>Based on traditional /contemporary cities</b>	
Malaysia	Sulaiman and Shamsuddin (2001)	<ul style="list-style-type: none"> <li>• erosion of streets, sense of enclosure</li> </ul>
Hong Kong	Kinoshita (2001)	<ul style="list-style-type: none"> <li>• street and market</li> </ul>
Taiwan	Miao (2001)	<ul style="list-style-type: none"> <li>• traditional spaces revived as a modern memorials</li> </ul>
Nepal	Tiwari (1989)	<ul style="list-style-type: none"> <li>• hierarchy of open spaces of traditional towns</li> </ul>
	DHUD and ADB (1991)	<ul style="list-style-type: none"> <li>• preservation of system of streets and courtyard access</li> </ul>
	DHUD (1995)	<ul style="list-style-type: none"> <li>• inventory of public open spaces for improving environmental conditions</li> </ul>
	MoHA and IOM (2011)	<ul style="list-style-type: none"> <li>• identification of open spaces for humanitarian purposes in the event of earthquake</li> </ul>

### Appendix 3.1 Rating guidelines for physical structures

Senses	Very Pleasant (1)	Pleasant (2)	Neutral (3)	Unpleasant (4)	Very Unpleasant (5)
<b>Visual</b>	The structure that you think has remarkable individual characteristics (form/colour/ artistic values) and is well integrated with the surrounding environs (i.e. maintaining harmony in skyline, use of materials, and proportion).	The structure that you think has remarkable individual characteristics (form/colour/ artistic values) and moderate integration with the surrounding environs (i.e. maintaining harmony in skyline, use of materials, and proportion).  Also, the structure that could have been shaped by minor alteration/addition of new features (for whatever reasons), but no visual disturbance as a whole.	No effect on visual quality under any circumstances.	The structure that you think has no remarkable individual characteristics (form/colour/ artistic values) and slight integration with the surrounding environs (i.e. maintaining harmony in skyline, use of materials, and proportion).  Also, the structure that could have been shaped by minor alteration/addition of new features (for whatever reasons), but with slight visual disturbances in its form.	The structure that you think has no remarkable individual characteristics (form/colour/ artistic values) but no integration with the surrounding environs (i.e. maintaining harmony in skyline, use of materials, and proportion). In addition the whole structure could be in a deteriorated state.  Also, the structure that could have been shaped by major alteration/addition of new features (for whatever reasons), and with extensive visual disturbances in its form.
<b>Sound</b>	The instant joy and lively environment that you feel from the sound emanated from the structure.	The lively environment that you feel from the sound emanated from the structure, but no feeling of joy.	No effect from sound under any circumstances.	The sound emanated from the structure that is loud, noisy and tolerable for you.	The sound emanated from the structure that is very loud, very noisy and intolerable for you.
<b>Smell</b>	A smell from the structure that attracts you/ you feel a pleasing environment/ gives you sense of persistent invitation.	A smell from the structure that attracts you/ you feel a pleasing environment but no feeling of persistent invitation.	No effect from smell under any circumstances.	A smell from the structure that is unpleasant for you, but tolerable.	A smell from the structure that is intolerable and discourages you to come.
<b>Touch</b>	A touch of the structure that is comfortable for you/gives you feeling of welcoming/ invite you persistently.	A touch of the structure that is comfortable for you but no feeling of welcoming and inviting persistently.	No effect on touch under any circumstances.	A touch of the structure that makes you uncomfortable, but tolerable.	A touch of the structure that makes you very uncomfortable, intolerable, and discourages you to come.

### Appendix 3.2 Rating guidelines for activities

Senses	Very Pleasant (1)	Pleasant (2)	Neutral (3)	Unpleasant (4)	Very Unpleasant (5)
<b>Visual</b>	Activity that you feel is visually very appealing, which is characterised by the colours and patterns, the use of space effectively, and the coherence with other surrounding activities.	Activity that you feel is visually pleasing in terms of colours and pattern, effective space organisation but moderate coherence with the surrounding activities.	No effect on visual quality under any circumstances.	Activity that does not fascinate you visually because no considerations of space organization, slight coherence with the surrounding activities as well as any pleasing colours and pattern are reflected.	Activity that is very unimpressive for you because no considerations of space organization, no coherence with the surrounding activities as well as any pleasing colours and pattern are reflected. In addition, you feel it has a negative effect on visual perception of adjacent spaces.
	<p><b>Example:</b></p> <p>The activity of flower vending that has colourful flowers kept in certain pattern and uses the space effectively next to the worshipping activity can be visually very pleasant, whereas the same space can be attributed visually very unpleasant by an unmanaged parking that not only diminish the visual essence of its own but also the worshipping space.</p>				
<b>Sound</b>	Activity that brings you a feeling of instant joy, as a result of lively, calm, and engaging nature.	The activity that give you a feeling of lively, calm, and engaging, but you don't have feeling of instant joy.	No effect from sound under any circumstances.	The activity that you feel is loud, noisy but tolerable.	The activity, which are very loud, very noisy and intolerable.
	Note: the sound can include conversations of people, sound from vehicles, e.t.c..				
<b>Smell</b>	A smell from the activity that attracts you/ you feel a pleasing environment /invite persistently.	A smell from the activity that attracts you/ you feel a pleasing environment but moderate feeling of persistent invitation.	No effect from smell under any circumstances.	A smell from the activity that is unpleasant for you, but tolerable/slight feeling of invitation.	A smell from the activity that is intolerable and discourages you to come.
<b>Touch</b>	A touch involved in an activity that you feel is comfortable/ gives you feeling of welcoming/ invite you persistently.	A touch involved in an activity that is comfortable for you/t moderate feeling of welcoming/ moderate feeling of invitation.	No effect on touch under any circumstances.	A touch involved in an activity that is uncomfortable for you, but tolerable/ slight feeling of invitation.	A touch involved in an activity that is very uncomfortable, intolerable, and discourages you to come.

### Appendix 3.3 Trial and error processes in developing the systematic method

#### Phase 2 - Data collection

The trial and error process for this phase include only for denominative and perceptive surveys. The researcher at first recorded all data – location (number 1,2,3...), meaning of place ('C' for places of commercialization; 'S' for socialization; 'R' for religious; and 'O' for others) and all the respective sensory perceptions (eg: very pleasant for visual, v-vp; pleasant for visual, v-p... so on and for all senses) in one drawing grid (as in step 1). The public

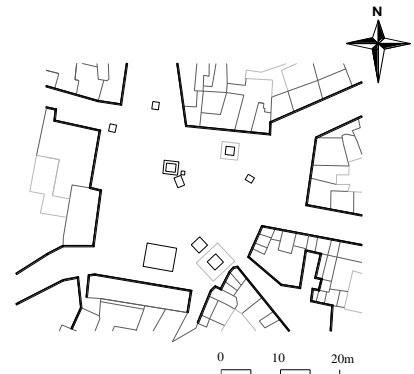
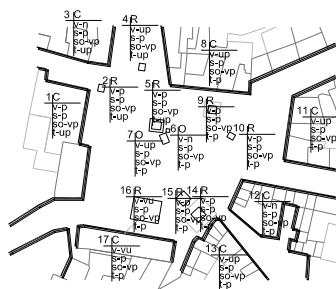


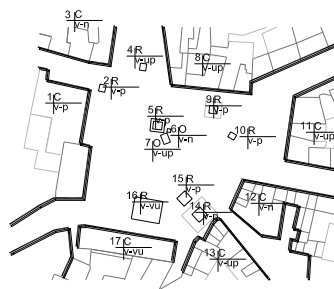
Figure A3.1 A drawing grid

open spaces may have numerous structures (sometimes clustered together) and activities, if all data are recorded in one drawing, then the output map will be very complex and difficult to read. Hence, in order to make it easy for reading, another option was exercised, i.e. recording data on separate drawing grids for each of the four senses (as in step 2 for physical settings and step 3 for activities). This option though it provides clear information than with all four senses in a single map, it still seemed to be complex because of existence of many structures and activities in the open space. Therefore, it was proposed that the location to be listed in database grid and drawing grid and denominative survey and the perceptive survey only in the database grid.



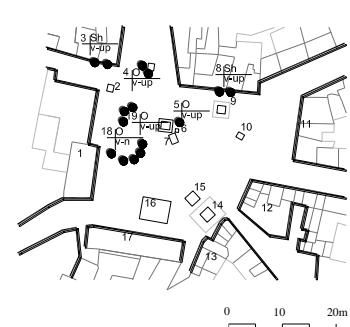
Physical settings - including denominative and perceptive survey (with all senses) in one map.

Step 1



Physical settings - including denominative and perceptive survey according to theme of sense. In this case is visual. Likewise, other senses are also mapped.

Step 2



Use/activities - including denominative and perceptive survey according to sense.

Step 3

Note: The illustrations are just the examples to develop a method and do not represent the actual observations. For activities, the step applies to all times, morning, afternoon, and evening

Figure A3.2 A Phase 2-Data collection

## ***Phase 2- Data interpretations, analysis, and outputs***

### *For physical settings*

The next step is to interpret the field data. For the *physical settings*, to make the maps simpler and easy to read, the locations of the structures were numbered. The shapes representing different structures depend upon if the structure represent a point, line or area. In this example (see step 4), the structures represent area, so square shapes were used. Different meanings of places (including both permanent and temporary structures) were given different square shapes and different colour coding were given to different scales of sensory perceptions. The maps for all senses were prepared in the same way. However, the maps did not give clear information. Hence, to make it simpler, several steps were undertaken and this had been already discussed in Chapter 3. The meanings of places of the physical settings were illustrated with their corresponding colour codes (see step 5). The maps on sensory perceptions of the physical structures illustrated the senses that each of the physical structures possessed. The four senses were given different colours and their respective scales of perceptions were given a varying tone of one color.

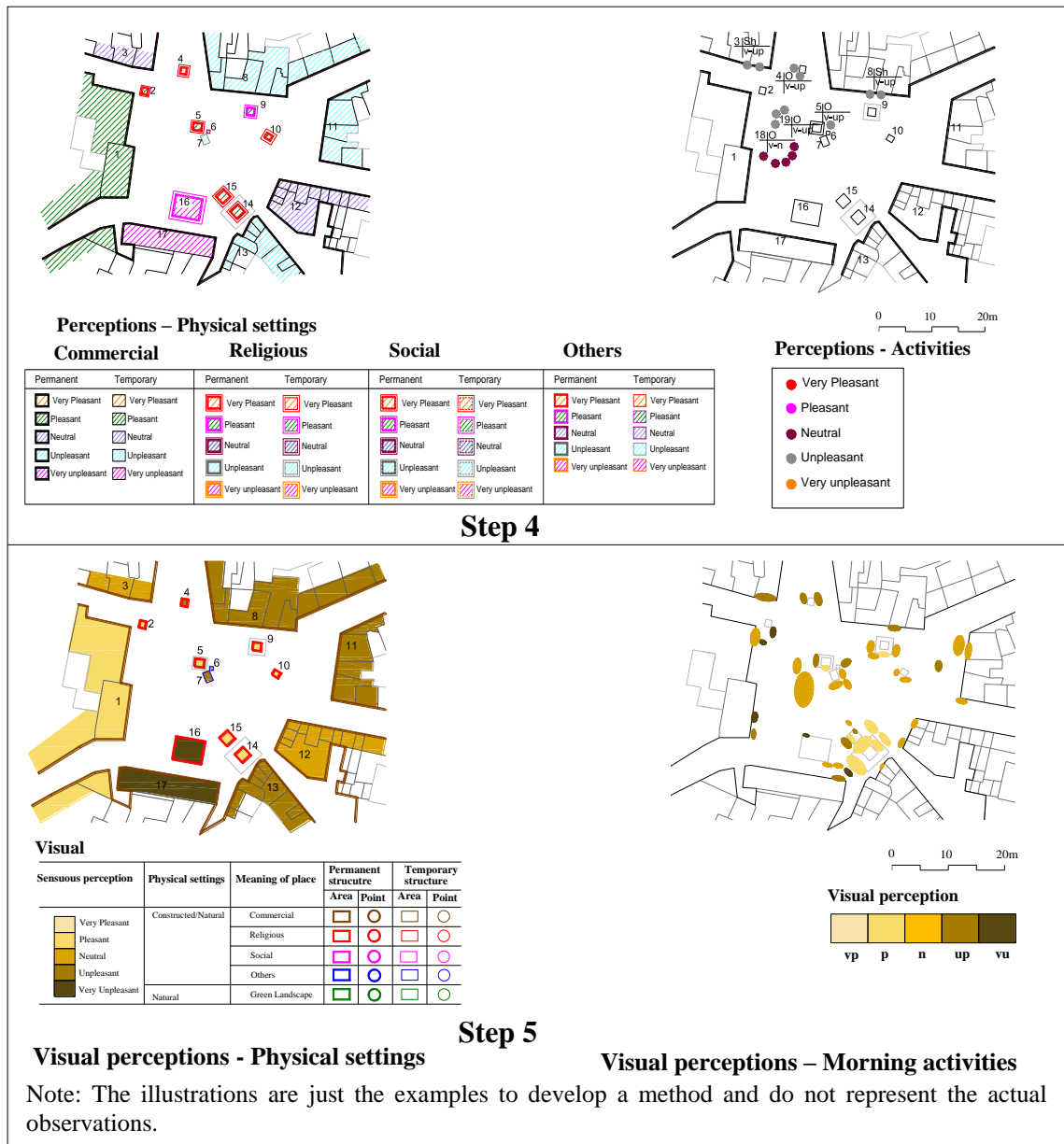
### *For activities*

For the activities, the same colour-coding as the physical structures (step 4) was given for the scales of sensory perceptions. The location and the types of the activities (only the initials of each types of activities, eg. 'Sh' for shopping) were written in text in the drawing. The separate maps for four senses were interpreted in the same way. The maps again seemed to be complex since there were several activities, and the dots that defined the space used by the activities represent as if they are the numbers of activities (see step 4). In order to avoid this confusion, the dots were replaced by the oval shapes and each of the activities is given different colours according to their types. It must also be noted that activities that come under same category are represented by different gradients of one true color. For example, vending may be open vending or shops, in this case these activities were given gradient of red color. The four senses were also given different colours and their respective scales of perceptions are given a varying tone of one colour (see step 5).

### *For patterns of activities*

Before finalizing the graphical outputs for the patterns of activities, several options were studied by the researcher (refer drawing A3.4). Option 1 includes all the activities in one map based on the time of activities. The researcher realized that the occurrences of

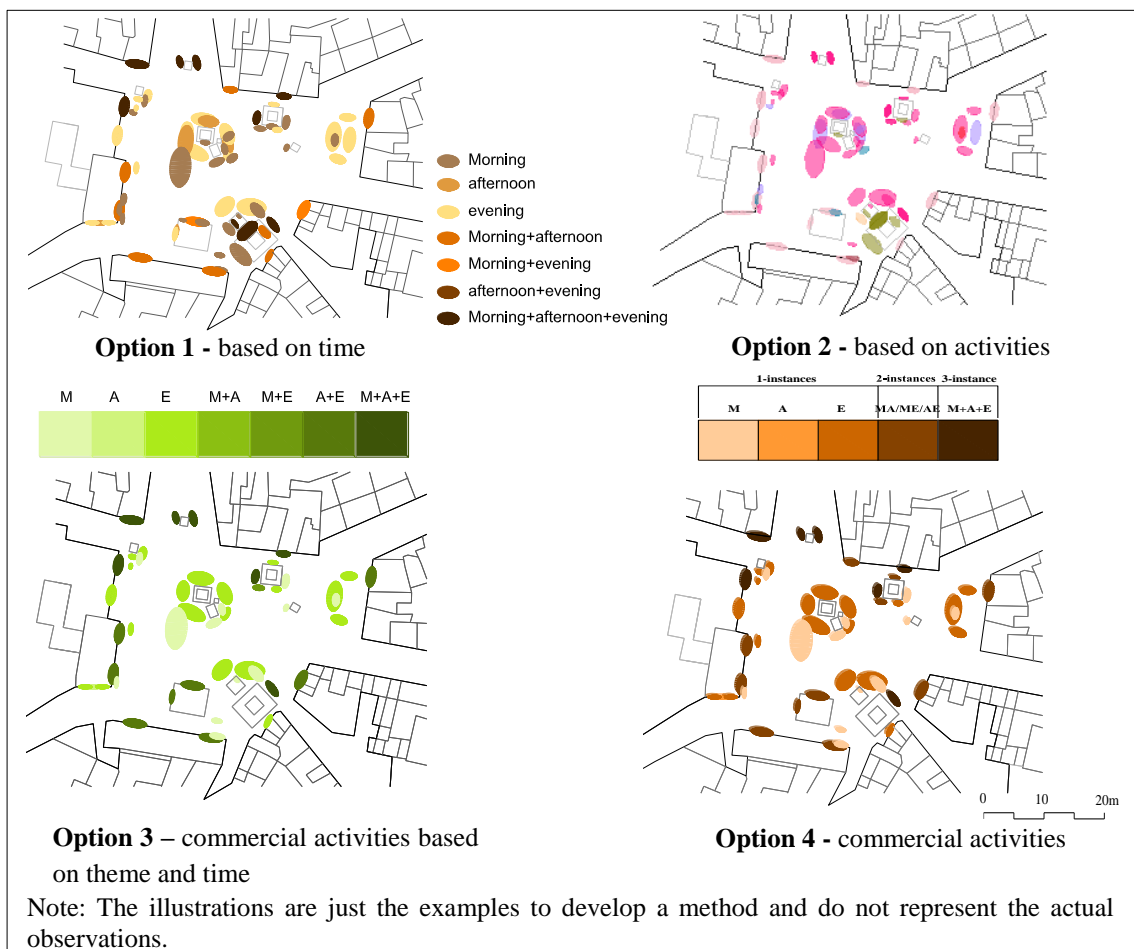
activities could have several probabilities- morning, afternoon, evening, morning+afternoon, afternoon+evening, morning+evening, and morning+afternoon+evening. Hence, different colours were assigned for these times. Since, it emphasizes on the time, no specific types of activities became distinct and the map seems to be complex.



**Figure A3.3 Phase 2-Data interpretations, analysis, and outputs**

Option 2 includes the mapping of all activities of a day based on activity theme. The map does not show the time of the activities. In order to avoid these problems, Option 3 was proposed that is based on mapping of activities based on theme and time. All the activities are classified with a theme of activities in places - commercial, religious, social, and others. The colour code is assigned for all seven classified times (as mentioned in the option 1). Again, since there are several occurrences of the activities,

the map may not provide clear information, hence, the seven classifications of time changed into five classifications (option 4). All two occurrences (eg. morning+afternoon) are grouped into one classification. Therefore, the final classifications are: 1-instances (consist of activities taking place at only one time – morning, afternoon or evening); 2-instance (includes activities taking place at two times – morning and afternoon, afternoon and evening or morning and evening); and 3-instance (includes activities taking place at three times – morning and afternoon and evening). For the colour-coding, each instances were given a colour-code with respect to the meaning of places. For example, the brown colour, which was used for places of commercialization, is also used for the patterns of commercialization and the gradient of this colour was assigned to each of the classifications of the activities as 1-instance, 2-instances, and 3-instances.

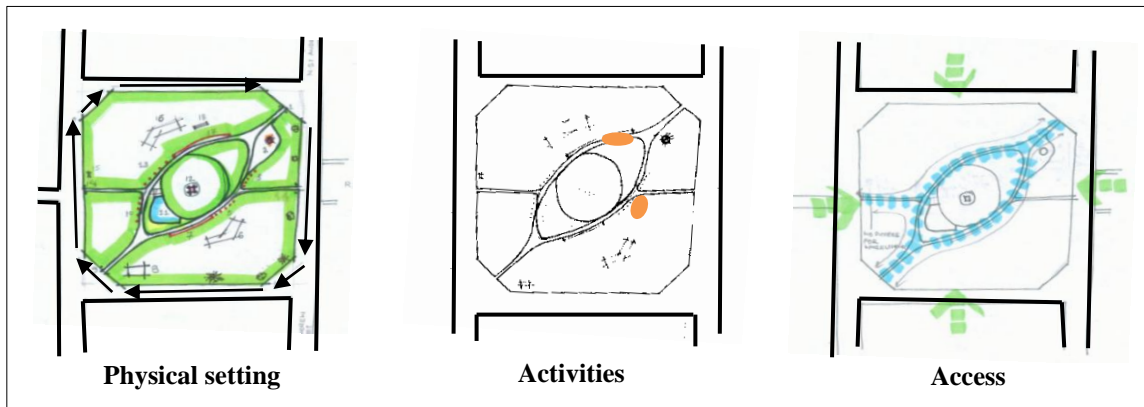


**Figure A3.4 Phase 2 - Patterns of activities (2012)**

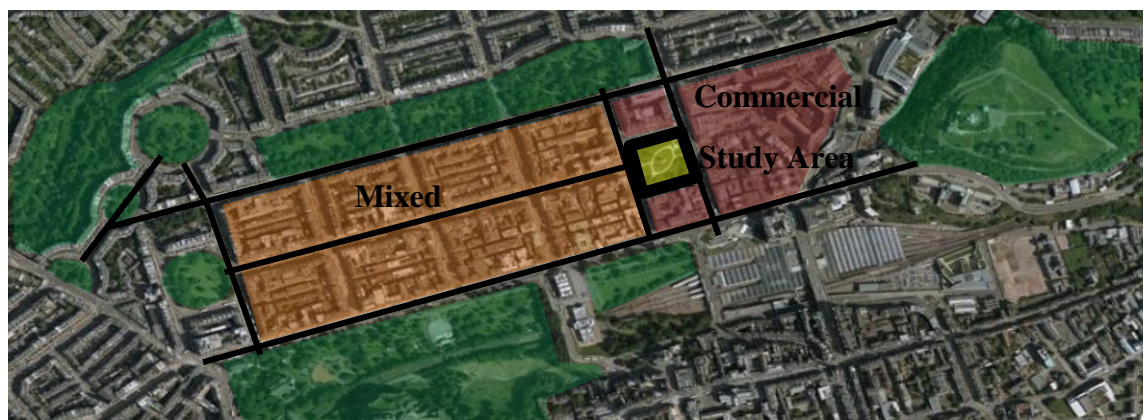
### **Appendix 3.4 Pilot study-St. Andrew Square, Edinburgh, UK**

The pilot study done in St. Andrew Square only involved phases 1, 2, 4, and 5 of the developed method. The pilot study was conducted as the trial for developing a method. It has mainly helped to refine the steps for data collection (which have been already

discussed in the previous sections) rather than the data analysis and interpretations. The followings steps were involved in the pilot study.



**Phase 2 - Surveys**



**Phase 4 - Urban scale analysis**



**Phase 5 - Transformations**

Source: Google Earth

### Appendix 3.5 Example of activities reoccurrence - 2012/13

Location		Activities-2012	Added Activities-2013	A	B	C	D	E	F	G	H	Count
1	Sheltered Shops	Open vending		✓	✓	✓	✓	✓	✓	✓	✓	8
		People Chatting		✓	-	-	-	-	-	-	-	1
		Bike parking		✓	-	-	-	✓	-	-	-	2
2	Higa Dyo	Vegetable vending		✓	✓	✓	✓	✓	✓	✓	✓	8
3	Sheltered Shops	Shopping		✓	✓	✓	✓	✓	✓	✓	✓	8

Note: Only a few examples are illustrated here. All other activities were also analysed in the similar way.



### Appendix 3.6 Example on perceptions of professionals on structures

For visual perception

Location	Descriptions	A	B	C	D	E	F	G	H	Mean
1	Sheltered Shops	3	2	2	2	3	2	2	4	2
2	Higa Dyo	2	2	2	2	2	2	3	3	2
3	Sheltered Shops	2	3	3	3	2	3	3	3	3
4	Uma Maheswor Temple	4	3	4	4	3	2	3	3	4

Note: Only a few examples are illustrated here. All other senses were also analysed in the similar way. A, B, C,..... represents the professionals who conducted field study including the researcher

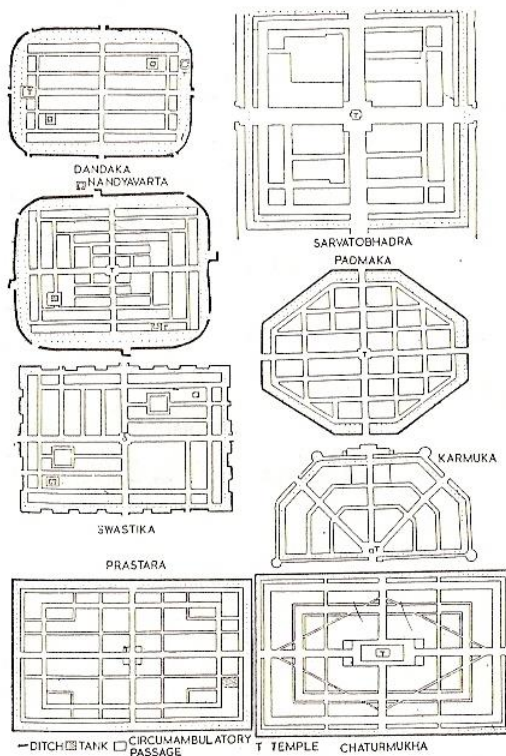
### Appendix 3.7 Example on perceptions of professionals on activities

For visual perception

Location	Activities 2012	Activities 2013	Perceptions of Professionals								Mean
			A	B	C	D	E	F	G	H	
1	Sheltered Shops	Open vending	4	4	4	4	4	3	3	3	4
		Bike parking	5	-	-	-	-	-	-	-	5
2	Higa Dyo	Vegetable vending	4	4	4	5	5	4	5	5	5
3	Sheltered Shops	Shopping	3	3	3	3	2	3	2	3	3

Note: Only a few examples are illustrated here. All other senses were also analysed in the similar way for morning, afternoon, and evening.

### Appendix 5.1 Plan of Hindu City



Source: Tiwari (2001a)

## Appendix 6.1 Recurrence of activities in Ason 2012/13

### Morning

Location		Activities-2012	Added Activities-2013	A	B	C	D	E	F	G	H	count
1	Sheltered Shops	Open vending		✓	✓	✓	✓	✓	✓	✓	✓	8
		Chatting		✓	-	-	-	-	-	-	-	1
		Bike parking 1a		✓	-	-	-	-	-	-	-	1
		Shops		✓	✓	✓	✓	✓	✓	✓	✓	8
		Bike parking 1b		✓	-	-	-	-	-	-	-	1
2	Higa Dyo	Vegetable vending		✓	✓	✓	✓	✓	✓	✓	✓	8
3	Sheltered Shops	Shops		✓	✓	✓	✓	✓	✓	✓	✓	8

### Afternoon

Location		Activities-2012	Added Activities-2013	A	B	C	D	E	F	G	H	count
1	Sheltered Shops	Shops 1a		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1b		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1c		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1d		✓	✓	✓	✓	✓	-	-	-	5
2	Higa Dyo	NA	Open vending	-	-	-	-	-	-	✓	✓	2
3	Sheltered Shops	Shops		✓	✓	✓	✓	✓	✓	✓	✓	8

### Evening

Location		Activities-2012	Added Activities-2013	A	B	C	D	E	F	G	H	count
1	Sheltered Shops	Open vending		✓	✓	✓	✓	✓	-	-	-	5
			Open vending	-	✓	-	✓	-	-	-	-	2
		Shops 1a		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1b		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1c		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1d		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1e		✓	✓	✓	✓	✓	✓	✓	✓	8
		Shops 1f		✓	✓	✓	✓	✓	✓	✓	✓	8
			Parking	-	-	-	-	-	-	✓	-	-
2	Higa Dyo	Vegetable vending		✓	✓	✓	✓	✓	✓	✓	✓	8
3	Sheltered Shops	Shops		✓	✓	✓	✓	✓	✓	✓	✓	8

Note: Only a few examples are illustrated here. All other activities were also analysed in the similar way.

## Appendix 6.2 Detail study of neighbourhood squares

### i. Tebahal, neighbourhood square in TUC

Tebahal<sup>106</sup> in the past belonged to two Buddhist monasteries: Sri Tedo Vihar (also known as Tebaha) and Bandhudatta Vihar. Today it is popularly known as Tebahal. The evidences dated to Lichhavi and Malla periods in the Bahal complex have made confusion about when it was built. However, according to Locke (1986), it was more likely to have been built in the Lichhavi period. The entire Bahal consists of several shrines, Chaityas<sup>107</sup>, and residences.

#### a. Physical settings

##### Places of religious meanings

##### *Shrines/Chaityas*

The entire complex consists of two Bahal shrines, Tebaha and Bandhudatta Mahavihara. The three-storey main shrine<sup>108</sup> of Tebahal stretched along with other residences in the west. This stretch has no uniformity in the style of the buildings. The Bandhudatta Mahavihara shrine is located centrally facing main shrine and is integrated with other shrines; however, the metal bars surrounding it have created visual disturbances. At the southwest corner of the complex, there is a two-storey house-type structured shrine, popularly known as Sankata<sup>109</sup> temple. This architecturally appealing shrine houses a Red Machhindranath<sup>110</sup> on the ground floor and the famous deity Sankata on the upper floor. The other religious structures in the Bahal include a two-storey shrine (Bhadrakali

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<sup>106</sup>The Viharas in Nepal are classified into three types: Baha; Bahi; and Baha-bahi. These are newari words which in nepali word are called Bahal, Bahil, and Bahal-Bahil respectively. These are the Buddhist monasteries with enclosed courtyard surrounded by the buildings. The word Baha is a modification of the Sanskrit word Vihara whereas Bahi is also modified from the Sanskrit word bahiri that means outside. The monasteries are the religious learning centre for the celibate monks and nuns. Baha-bahi is the rare combination of Baha and Bahi' (Korn, 1976). According to Locke (1986), the Bahas are Buddhist institution with a consecrated Buddha (kwapa-dya) shrine and a secret clan god (agama deity) to which a community of monks or nuns (Sangha) are attached. The Viharas in Nepal existed since Lichhavi period. Korn (1976) has also categorized Viharas as family Bahas, great Bahas, and temple Bahas. The family Baha is normally a small chowk surrounded by only few houses. A small shrine is affixed in to one wing. The great Bahas are wide squares surrounded by two or three storeyed residential quarters with at least one shrine attached to one side of the quarters. The square also contains other shrines and chaityas. Tebaha is one of the examples of this type. The temple Baha contains an important temple at the centre of a square surrounded by residential or rest houses.

<sup>107</sup>Chaityas are Buddhist shrines that incorporate the Buddhist philosophy and the way of living.

<sup>108</sup>The shrine houses the Kwapa-dya, which is the main deity of this Bahal. In most of the Bahals, the main deity is Akshobhya Buddha, one of the five wisdom Buddhas.

<sup>109</sup>The word Sankata is derived from a Sanskrit word 'Sankat' meaning 'plight'. Sankata means who eliminates plight (Pokharel et al., 2010). The deity Sankata is worshipped especially on Saturdays and on ones' birthday to protect from any ill fortune in life.

<sup>110</sup>Red Machhindranath is the goddess known for rain.

shrine) on the eastern side, one-storey shrine of Hindu god (Nasa Dya) at north-west, a large Stupa, Chaityas clustered at the centre and western stretch, Saraswati<sup>111</sup>, and three images of Surya (sun). Among the religious structures, the Bandhudatta Mahavihara and the Stupa have plinths, where people can rest, chat or carry out the activities. The Bhadrakali temple at the time of observation was in the renovation state and was closed for the public.



**Figure A6.1: Place of religious meaning - Tebahal**

### Places of commercial functions

Three different typologies<sup>112</sup> of residential buildings were found based on their physical characteristics, materials used, and height. The ground floor of majority of the residences and in a few cases the upper floor is used for the commercial purposes. The Bahal has diverse ranges of shops such as grocery, computer accessories, tailor, motorbike repairing workshops, guesthouses, beauty parlours, restaurants, and small cafés. None of these buildings seems to integrate with each other.



**Figure A6.2: Places of commercial functions - Tebahal**

<sup>111</sup>In Hinduism, Saraswati is worshipped as the goddess of knowledge.

<sup>112</sup>The typologies of buildings found in this Bahal are old traditional buildings, renovated buildings, and new buildings. The old buildings are three storey high with attic at top. These traditional styled buildings are made of traditional building materials such as brick, mud, and timber. The renovated buildings are the one whose façade are mostly plastered, have glass windows and corrugated sheets or R.C.C slab roof. These buildings are mostly five storey high. The new buildings are high and constructed in R.C.C. The façade is either brick exposed or plastered and has glass windows and projected louver (Chajja) or balcony.

### **Places of social functions**

The seat with plastered surface around the tree at the eastern side and the metal seat provided at south of Sankata temple were used as social spaces by the visitors, worshippers, and the informal vendors. The circular seat is visible from all sides, whereas the location of the metal seat is hidden.



**Figure A6.3: Place of social functions- Tebahal**

### **Places of structures with other functions**

The other structures that exist in the Bahal complex are the clubhouse, basketball court, ward office, a heart clinic, and the wells. The basketball court was added to meet the needs of the young generations. A building that houses ward office on the ground floor and the primary school on the upper floors is located at the south of Sankata temple. There are numbers of wells located near Sankata temple, near southeast side of bahal, and near Bhadrakali temple and are used for fetching water.

### **Places of natural elements**

In addition to all physical structures, the Bahal also has two trees, one next to Sankata temple and the other next to the clubhouse. There is no purpose behind planting these trees; however, the one next to Sankata temple serves as a shade during summer.

## **b. Activities**

### ***Interpreting morning activities***

Only a few devotees were seen in the Bahal. The entire complex was echoed with the pleasing bell chimes. The priests were concentrated near the Sankata temple; some were seen reading religious books and some waiting for those people who want them to read their palm and tell about their fortune. The bell chimes together with the sound emanated from the priest reading religious books brought vitality in the Bahal. A beggar was seen begging near Saraswati temple.

The commercial activities taking place at this time include both shops and open vending. The open vending includes selling flowers<sup>113</sup> near Sankata temple and eastern entrance of the Bahal, vegetables at southern stretch and near the Bhadrakali temple,

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<sup>113</sup>The flower together with red colored powder, dried rice and the aromatic incense for worshipping the gods and goddess were seen selling in a leaf plates or a plastic basket.

and grains in Chaityas. The pleasant smell from a mix of flowers and incense was emanated from the open flower vending. Only a few shops and cafés were open. Pleasing smell was emanated from all tea/coffee shops. Among the café, the one that is located at northern and eastern stretches provided the chair outside in the Bahal space, whereas the open teashops in an open plinth of Chaitya near the eastern entrance of Bahal and near Bhadrakali temple have no seats. People were seen enjoying coffee in the cafés and open teashops. A few people were seen interacting with each other near Sankata temple and near the well next to the Surya image. The basketball court was used by children for playing football. In addition, the Bahal was also used for parking purposes. All earlier discussed activities were on the weekday, the researcher when visited the Bahal on Saturday for conducting questionnaire found that the Bahal had different environment. The entire Bahal was crowded with devotees, priests, and informal vending (Figure A6.5).



**Figure A6.4: Morning activities in weekday - Tebahal**



**Figure A6.5: Activities on Saturday - Tebahal**

### *Interpreting afternoon activities*

In the afternoon, there were only a few devotees and the priests were mainly concentrated near the Sankata temple. The entire Bahal was used as a pay parking area, and had created congestion in the Bahal, thus reducing the play areas for the children and social spaces for the adults. In addition, these parking had unpleasant visual perception as well as created noise pollution. Only a few open vending were seen this time. These include a few flower vending near Sankata temple, an open tailor near the Surya image and the Bandhudatta Vihar, and an informal mobile vending near the circular seating. All the shops, cafés, and teashops were open but they had only few customers.



**Figure A6.6: Afternoon activities - Tebahal**



**Figure A6.7: Afternoon activities on strike day - Tebahal**

A few other shops such as metalwork and motorbike repairing workshop were seen doing their business in the Bahal space. Both of these activities emanated unpleasant sound. The adults were seen chatting with each other near Chaityas and Surya image. Children were playing in the basketball court and near western stretch and a woman was seen basking in the sun in the basketball court. The researcher also visited the square on a strike day and found a different environment (Figure A6.7). The Bahal was free of parking and many people were seen socializing.



**Figure A6.8: Women basking in sun - Tebahal**

### ***Interpreting evening activities***

The Bahal in the evening was used a social space more than any other functions. Devotees were also seen performing religious activities. People were seen interacting in the spaces of Basketball court, Surya image, circular seating area, and on the plinths of the buildings. Children were playing in the Basketball court, areas near Chaityas as well as the pathways. Regarding the commercialization, many commercial activities were seen or (re)appeared in same location as they were in the morning and afternoon. For example, the open flower vending continued their business from morning until evening, some of the open vegetable vending near southern stretch reappeared in the evening and in the same location as they were in the morning. The cafés, shops, open tailor and

teashop were also seen in the same location as they were in the morning and afternoon. The mobile fast food stall appeared near the Nasa dyo emanating pleasant smell from the foods. The pay parking of the afternoon was replaced by the private parking of the local residents, but in less numbers.



**Figure A6.9: Evening activities - Tebahal**

## ii. Sainbu Awas Chhetra, neighbourhood square in SA

The space, Sainbu Awas Chhetra, located in a quiet neighbourhood, has religious, social as well as cultural significances. These are discussed in the following sections.

### a. Physical settings

#### Places of religious meanings

The open space consists of two small shrines. The main deity of this space is goddess Kumari and is considered as the lineage deity of a specific ethnic/caste group, known as Achhami. It is also known as ‘Chhetrapal Devi Mandir’. The main shrine has images of different gods on its wall. This shrine area was kept clean that makes people convenient for worshipping.



**Figure A6.10: Places of religious meaning - SAC**

#### Places of structures with other functions

This space consists of one storey multipurpose building and the covered shed. According to the local users, the multipurpose building is used by people during ritual performances - religious, ceremonial or even for mourning<sup>114</sup>. In return, a certain amount of money has to be paid to the organization that is responsible for taking care of this space. The shed is also used for multiple purposes such as resting, gathering or cooking during functions.

<sup>114</sup>In Nepalese culture, if any member of a family dies, then the entire family consider themselves as impure and has to mourn for 10 days (this may differ according to ethnic groups) and keep themselves away from any kind of ceremonies or religious activities.





**Multipurpose building**



**Covered shed**

**Figure A6.11: Places of structures with other functions - SAC**

No harmony in the building style has been maintained in the neighbourhood. The modern concrete multipurpose building is different from its surrounding buildings. The blue-coloured truss shed, though is visually distinct, seemed to be less appealing. All these structures were well maintained and clean.

**Places of natural elements and social functions**

The space has green ground that is used as a gathering space. There were two trees at north-west corner with bright coloured circular concrete bands. These bands were used as a seat by the users as they were clean.



**Figure A6.12: Places of natural elements and social functions - SAC**

**b. Activities**

*Interpreting activities*

Not many activities were seen throughout a day in this open space. In the morning, only a few activities were seen; these include worshipping in the shrines and a person resting in the covered shed. The entire space had quiet environment, except a sound from a bell from the religious activities. A good smell of incense was also emanated from worshipping gods.



**Figure A6.13: Morning activities - SAC**



**Figure A6.14: Afternoon activities - SAC**

In the afternoon, few elderly women were seen sitting on the ground and interacting with each other. While in the evening, only a few teenagers were seen interacting in the covered shed.

The entire space was unoccupied in most of the time. Because of difficulty to find the users for the questionnaire, the researcher visited the space several days and on one of the afternoons, the researcher found the use of space differently. The entire space was hired and used as the venue for the wedding party. The chairs were kept on the ground. The multipurpose building was used as a store, and the covered shed and the green space adjacent to it were used as a cooking and washing area respectively.



**Figure A6.15: Evening activities - SAC**



**Figure A6.16: Open space hired for the event - SAC**

### **Appendix 6.3 Detail study of community squares**

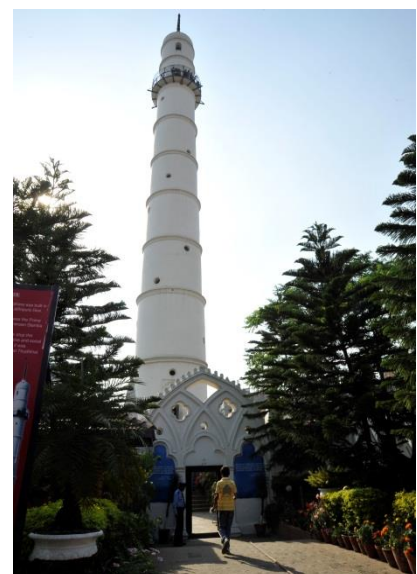
#### **i. Dharahara-Sundhara, community square in TUC**

Dharahara- Sundhara, a public plaza developed under PPP, is known for its remarkable monuments since history. Today, this plaza is under great influence of commercialization.

##### **a. Physical settings**

###### ***Dhararhara***

The nine storey white tall minaret popularly known as Dharahara is distinguished from almost every part of Kathmandu city. This minaret is derived from the



**Figure A6.17: Dharahara**

word “Dharoharo”, meaning free standing column, was erected by first prime minister of Nepal, Bhimsen Thapa as a watchtower in B.S. 1882. The Dharahara has a fusion of different architectural styles; the minaret in the Mughal style and the boundary wall in the European style. It has a non-stop spiral staircase and a balcony at the seventh level, from where the 360 degrees panoramic view of the entire city of Kathmandu can be observed. At the top level, there is a Hindu god. For the safety and the stability reasons of the more than hundred years old monument, only fifteen numbers of people are allowed at one time.

### ***Sundhara***

Sundhara, one of the largest and oldest sunken waterspouts situated at the northern side of Dharahara, was constructed in 1828-1829 A.D. by the Queen Lalit Tripura Sundari, so it is also known as ‘Tripurdhara’. The artistic gold plated tap (Makara) gave its name ‘Sundhara’. The sunken spout was constructed in the concept of Mandala with four layers. The lowest layer consists of five taps of which only three taps at



**Figure A6.18: Sundhara**

the northern face exist today and the two taps each in eastern and western faces is lost. The main central tap in the northern face is the most artistic one with the idols of gods (Amatya, 2011). Today, none of the tap has water flow.

### **Places of commercial functions**

Apart from the monuments, the precinct includes the numbers of commercial spaces; the row of varieties of clothes and shoes shops at northwest, the ice-cream and cold drinks stall in the boundary wall of Dharahara at north, the restaurant (with seating and kitchen) in the park, and the temporary mobile fast food stalls at the south of Sundhara.



**Figure A6.19: Places of commercial functions - DS**

The one storey building that accommodates the numbers of shops is in the traditional style concept. The restaurant also has adopted some of the traditional styles for wall, and roofing, these seemed to be visually appropriate. On the other hand, the use of metal sheet wall together with the traditional style roofing in the mobile fast food stall seemed to be mismatched with each other. The restaurant and the mobile stalls are provided with the metal seats that are not comfortable to sit.

### **Places of social functions**

The plaza includes the numbers of places designated for the social interactions; the main social point is concentrated in the park. The entire plaza is furnished by the fixtures; some are fixed on the ground and some are mobile. The rows and clusters of seating positioned at different places following a landscaping design in the park were inviting, whereas seating near Sundhara and in front of shops were not inviting.



**Figure A6.20: Places of social functions - DS**

### **Places of structures with other functions**

The places of others include the police booth at western corner, ticket counter at the northern entrance of the park, checkpoints in front of Dharahara and southern entrance, the pump house near the restaurant, the sculpture of queen, stone sculptures, information board with texts about brief history of Dhararhara, and the toilet inside the monument area. No structures seem to integrate with the surroundings.

### **Places of natural elements**

The greenery spaces are provided only in the Dharahara side. These are provided not only for the landscaping purposes but also for the buffering against the noise pollution from the traffic. In the Sundhara side, only few trees are provided.



**Figure A6.21: Places of natural elements - DS**

## **b. Activities**

### ***Interpreting morning activities***

The plaza in the morning seems to be less busy. Only a few people were seen climbing the watchtower. Almost all shops were open, but with few customers. Few people were seen relaxing in the seats provided in the space in front of these shops. The seats provided in the spaces near the Sundhara were occupied by the users; most of these users were relaxing and few were chatting and reading newspaper. Most of the green spaces were empty. Few spaces at western edge of the plaza were occupied by the parked vehicles.



**Figure A6.22: Morning activities in the park - DS**

### ***Interpreting afternoon activities***

The activities in the afternoon seemed to be more than in the morning. Relatively more people were seen climbing the watchtower than in the morning. Some people were waiting for their turn since only few numbers are allowed to climb the tower at one time. There was no significant difference in the vending activities in the shops. The open vending appeared at the western boundary. The colourful clothes displayed in the roof projection do not seem to be well integrated in the historically important plaza. Few customers were seen in the cold drinks stall. Like in the morning, the users were seen chatting and relaxing in the seats provided near Sundhara and in the park area. Few users were seen in the restaurant. The security guards were seen in the two checkpoints, one at the main entrance at northern side and the other at the entry point of the Dharahara. Unlike morning, the western as well as eastern boundary of the Dharahara was entirely occupied by the parked vehicles and obstructed pedestrians. These vehicles created noise as well as smell pollution. Not many users were seen inside the park.



**Figure A6.23: Afternoon activities in the park - DS**

### ***Interpreting evening activities***

The plaza in the evening is the busiest in a day. Many vending activities were seen in the shops. An open vending selling meat roast that has unpleasant visual and emitting smoke appeared at the southwest boundary of the Dharahara. Unlike morning and afternoon, many users were seen using the park as an eating space rather than as a social space. The park, though was noisy due to the crowds of the people, the good smell of food seemed to be enticing people.



**Figure A6.24: Evening activities in the park - DS**

In the fast food stalls in front of Sundhara, many users were seen enjoying fast foods in comfortable seats. A good smell was coming from the food. The seating provided in front of the shops were occupied by the users for relaxation and interaction. The eastern and western edges of the plaza were occupied by the parking creating congestions and obstructions to the pedestrians.



**Figure A6.25: Evening activities in the plaza - DS**

### **ii. Magargaun Pipalbot, community square in SA**

Magargaun Pipalbot, located in the quiet neighbourhood is known for its Chautara that has both socio-religious significances. The commercialization has also started to emerge in this area, but at a steady pace.

#### **a. Physical settings**

##### **Places of religious meanings**

The Chowk consists of a Chautara with a big sacred tree known as 'Pipal'. This tree is considered as the Hindu god and thus is worshipped by people, especially by women for prosperity of their family<sup>115</sup>. Besides, it also has shading and cooling effects during

<sup>115</sup> People build Chautaras and plant trees to be merited in the next birth (Adhikari, 2004) as Hindus believe in the rebirth.

summer season. The Chautara is divided by a triangular shaped wall into spaces for different functions – space for activities involved with religious tree and space for other religious practices. The latter is covered by the galvanized sheet roofing supported on the poles at four corners. A small gap is provided between the tree and the wall for the purpose of circumambulation of the sacred tree. The raised platform is brick paved and seems to be integrated with the surroundings. It was well maintained and clean. A small Ganesh shrine is located at the south of the Chowk and is also integrated with the surrounding.



Ganesh shrine



Sacred tree



Religious structure

**Figure A6.26: Places of religious structures - MP**

### Places of commercial functions

The west and southeast of the Chowk consist of dwellings with ground floors used for commercial functions and the upper floors for residential purposes. The western stretch has vegetable and stationary shops and a café, whereas the southeast stretch has small canteen, restaurant, a butcher shop, and a shop that has necessary items for daily use. These stretches include a mix of old and new buildings. Commercialization just started in this area.



**Figure A6.27: Commercial stretch - MP**

### Places of social meanings

The Chautara is also used for socializing purposes. Its plinth is used by people for meeting friends and resting.



**Figure A6.28: Social space - MP**

## Places of structures with other functions

The structure with other function includes the clubhouse (Shree Lali Guransh Youth Club). The one storey building with metal bars used for the entrance is not in a good condition. According to the local residents, a proposal for shifting the clubhouse in the adjoining Sainbu Awas Chhetra has been already prepared. The aim of this proposal is to provide more space in the Chautara.

### b. Activities

#### *Interpreting morning activities*

The morning in the Chowk was quiet; only few activities were seen. Most of the shops, café, and canteen were open. People were seen enjoying morning tea/coffee in these café. A nice smell was coming from the café and canteen. An open vegetable vending was also seen in the open space. Other activities in the morning included worshipping in front of the Ganesh temple, woman (with burden) resting in the Chautara and a kid sitting on the plinth at western stretch.



**Figure A6.29: Morning activities - MP**

#### *Interpreting afternoon activities*

Not many activities in the Chowk were seen in the afternoon. Few people were chatting in front of southeast and west stretches, a few resting in the Chautara, and a few involved in the commercial activities. However, the commercial activities were less and social activities were more compare to the morning.



**Figure A6.30: Afternoon activities - MP**



### *Interpreting evening activities*

The activities in the evening were more than in the morning and afternoon. Social activities were concentrated in the western stretch. People were seen chatting at west and southeast stretches. Children were playing in front of western stretch; people were resting in the Chautara and in an open land near Ganesh shrine. The commercial activities were taking place in the shops; a few customers were in the café and the canteen. Few motorbikes were also seen parked near Chautara.



(a) Children playing



(b) Women taking rest

**Figure A6.31: Evening activities - MP**

On the Saturday, the Chautara was occupied by teenagers. The metal bars were used as a seat. The Chowk was also used by health programme for providing oral polio vaccines for the children.



**Figure A6.32: Activities on Saturday - MP**

## **Appendix 7.1 Questionnaire for the ‘Users of Open Space’**

### **Description of Study**

This research is carried out as a part of PhD study. It aims to investigate the socio-cultural and spatial transformations of public open spaces by comparing such changes in the public open spaces of the traditional urban centre and the sprawled area of the Kathmandu Valley.

### **Purpose of Questionnaire**

The purpose of this questionnaire is to understand how open spaces are being used by users and how they perceive these.

### **Target Group**

This questionnaire is mainly targeted to the users of open spaces. The users have diverse meaning. They can be from visitors to local users.

### **Approval from the Ethics Committee**

The ethical considerations have been already approved from the ethical committee according to research ethical guidelines and procedures of the university.

### **Confidentiality and Disclosure of information**

Any information provided by you will be used for the study purposes only. It will remain confidential and will be disclosed only with your permission. I would also like to ensure that under no circumstances will any personal data be given to any other third party without your consent.

### **Your participation is very much appreciated.**

If you have any questions or would like to discuss about the research, please contact me in the following address,

Correspondence Address: Pooja Shrestha, PhD candidate, Centre of Excellence in Sustainable Building Design, School of Energy, Geoscience, Infrastructure and Society, Heriot Watt University, email: ps206@hw.ac.uk.

And if you have any additional questions that you would like to discuss with research Supervisor, please contact Reader Dr. Harry Smith, Centre of Excellence in Sustainable Building Design, School of Energy, Geoscience, Infrastructure and Society, Heriot Watt University, email: h.c.smith@hw.ac.uk, phone number: +44 (0) 131 451 4616.

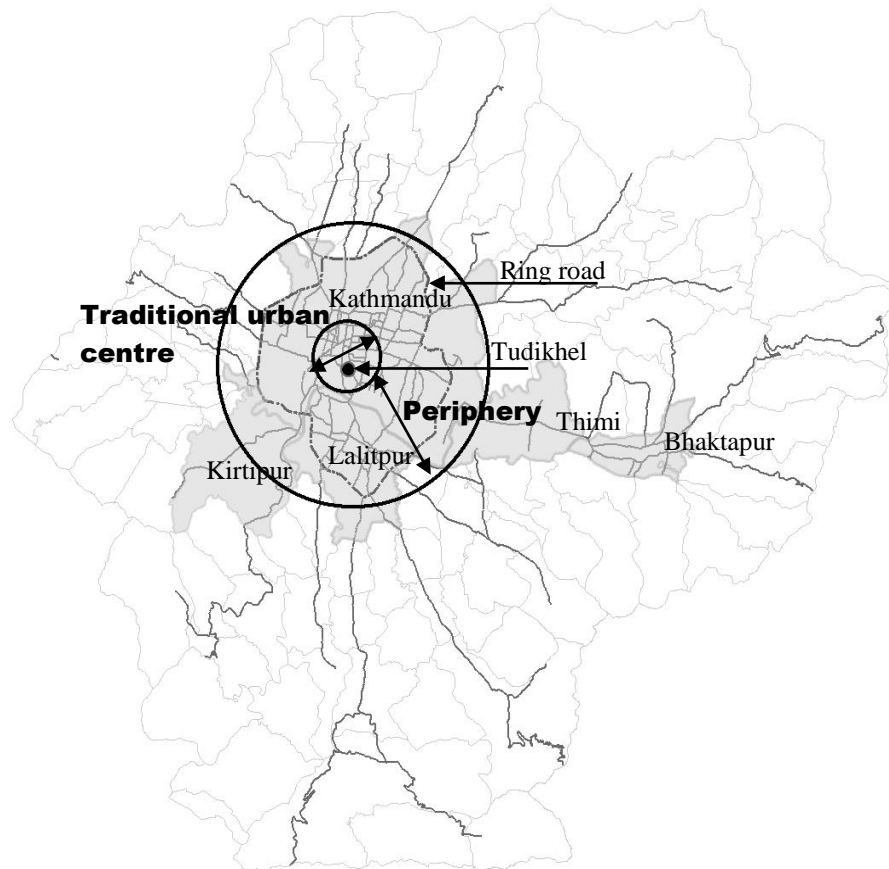
Study Area:.....

**Part A: About You**

1. Please indicate where you reside (Please refer the figure below).

- Traditional urban centre       Periphery       Others

If 'Others' please specify.....



Note:

The delineation of urban centre is based on the vision of the Long term Development Plan for the Kathmandu Valley prepared by KVTDC (2002), which had considered Kathmandu Valley as the single physical unit and proposed different functional hierarchy for municipal cities and villages. According to this plan, Kathmandu Metropolitan City (KMC) is considered as the central city core.

2.	a.	Please mention your place of residence. .....					
	b.	Which of the following categories best suit you regarding your current place of residence? <input type="checkbox"/> Born in the area <input type="checkbox"/> Moved from other place <input type="checkbox"/> Visitors					
	c.	If you moved from other place, Please specify your origin. .....					
	i.	When did you move to this current place of residence?					
		<input type="checkbox"/> Less than a year		<input type="checkbox"/> 1-5 years		<input type="checkbox"/> More than 5 years	
	ii.	Do you have any plan to move to any other places?					
		<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Don't know	
iii.	If yes, can you specify where are you planning to move? .....						
d.	If you are Visitor, please specify where do you belong to, .....						
	.....						
3.	Which of the following categories best describes your age? (Please mark $\checkmark$ for the appropriate answer)						
	Below 20s	20s	30s	40s	50s	60s	70s and over
4.	Please mention your gender.						
	<input type="checkbox"/> Male			<input type="checkbox"/> Female			
5.	a.	Which of the following best describes your ethnic/caste group? <input type="checkbox"/> Brahmin <input type="checkbox"/> Chhetri <input type="checkbox"/> Newar <input type="checkbox"/> Tamang <input type="checkbox"/> Others					
	b.	If 'Others' please specify .....					

**Part B: Your impression on this space**

6.	What is your overall impression of this place?				
	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very Dissatisfied
7.	What are the elements that you like most about this space and why? .....				
8.	Please mention any elements that you feel particularly belonging to this place and why do you feel so? .....				
9.	Do you have any memories associated with this space?				
	<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Can't Remember
10.	If yes, can you explain? .....				

<b>11.</b>	<b>Many spaces in the valley have relationship with other spaces in different aspects, for eg: religion,culture etc.</b>
	<b>a. Do you know that this place has relationship with any other place/s?</b>
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
	<b>b. If your answer is 'Yes', Please indicate where they are.</b> .....
<b>c. With which aspects do you think these spaces have relationship?</b> .....	
<b>12.</b>	<b>a. Are there any activities that you like in this place?</b>
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
	<b>b. If yes, what are the activities that you like and why?</b> .....
<b>c. If no, what are the activities that you do not like and why?</b> .....	
<b>13.</b>	<b>If you could change anything what would you do?</b> .....

**Part C: Use of Open Space**

<b>14.</b>	<b>Which of the following best describes you,</b>
	<input type="checkbox"/> Activity involved <input type="checkbox"/> Passers-by
<b>15.</b>	<b>Is this place easily accessible?</b>
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
<b>16.</b>	<b>Why did you think is this place accessible?</b> .....
<b>17.</b>	<b>How did you travel here today?</b>
	<input type="checkbox"/> Public Transport <input type="checkbox"/> Private Transport <input type="checkbox"/> Walk
<b>18.</b>	<b>For what purpose/s have you visited this place today?</b>
	<input type="checkbox"/> Social interaction <input type="checkbox"/> Religious <input type="checkbox"/> Commercial <input type="checkbox"/> Others
	If others please specify.....
<b>19.</b>	<b>Usually for what purpose/s do you visit this place?</b>
	Social <input type="checkbox"/> Cultural Ceremonies/ Festivals <input type="checkbox"/> Picnic <input type="checkbox"/> Sun bathing <input type="checkbox"/> Playing
	<input type="checkbox"/> Meeting friends <input type="checkbox"/> Drying grains
	Religious <input type="checkbox"/> Worshipping <input type="checkbox"/> Religious ceremony
	Commercial <input type="checkbox"/> Informal markets <input type="checkbox"/> Pay Parking Space <input type="checkbox"/> Shops
	Others <input type="checkbox"/> Sports <input type="checkbox"/> Music <input type="checkbox"/> Drama <input type="checkbox"/> Exercise
	Please Specify if any other purposes than the above mentioned. .....

20.	a.	<b>How often do you visit this place? (NA if first time user)</b>						
		Summer	Everyday	Most days	Once or twice a week	Once every two weeks	Once a month	Seldom
		Winter	Everyday	Most days	Once or twice a week	Once every two weeks	Once a month	Seldom
		If 'Others' please specify .....						
21.	b.	<b>Normally what time do you visit this place?</b>						
		<input type="checkbox"/> Morning (6:00am-8:00am)	<input type="checkbox"/> Afternoon (12:00pm-2:00pm)	<input type="checkbox"/> Evening (5:00pm-6:00pm)				
		If 'Others' please specify .....						
21.	a.	<b>Have you noticed any changes of any thing upon your frequent visit to this place? (NA for first time user)</b>						
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Can't Remember				
	b.	<b>If yes, please describe the changes.</b> .....						
	c.	<b>Over what time have you noticed the changes?</b>						
		<input type="checkbox"/> Less than 6 months	<input type="checkbox"/> 6 -12 months	<input type="checkbox"/> 1-5years	<input type="checkbox"/> More than 5 years			
21.	d.	<b>Why do you think these changes have taken place?</b> .....						

**Part D: Safety of Open Space**

22.	a.	<b>How safe do you feel in this open space?</b>				
		<input type="checkbox"/> Very safe	<input type="checkbox"/> Safe	<input type="checkbox"/> Neither safe nor unsafe	<input type="checkbox"/> Unsafe	<input type="checkbox"/> Very unsafe
	b.	<b>What are the reasons for your answer?</b> .....				
22.	c.	<b>Do you think if any further actions needed to be taken for safety of this place?</b> .....				

There will be follow up interviews with some of these surveyed.

In case if any further details on the above-discussed questions are needed, you might be contacted.

If you wish to participate for interview, Tick if 'Yes' or leave blank if 'No',

Name:	
Address:	
Telephone:	
Email:	

Note: Under no circumstances will any personal data be given to any other third party without your consent.

## **Appendix 7.2 Semi-structured interview for ‘Users of Open Space’**

### **Description of Study**

This research is carried out as a part of PhD study. It aims to investigate the socio-cultural and spatial transformations of public open spaces by comparing such changes in the public open spaces of the traditional urban centre and the sprawled area of the Kathmandu Valley.

### **Purpose of Interview**

The purpose of this interview is to understand how the users perceive about the open space they use.

### **Target Group**

This interview is mainly targeted to the users of open spaces. The users in this research have diverse meaning. They include visitors to local users.

**Your participation is very much appreciated.**

If you have any questions or would like to discuss about the research, please contact me in the following address,

Correspondence Address: Pooja Shrestha, PhD candidate, Centre of Excellence in Sustainable Building Design, School of Energy, Geoscience, Infrastructure and Society, Heriot Watt University, Email: ps206@hw.ac.uk.

And if you have any additional questions that you would like to discuss with research Supervisor, please contact Reader Dr. Harry Smith, Centre of Excellence in Sustainable Building Design, School of Energy, Geoscience, Infrastructure and Society Heriot Watt University, email: h.c.smith@hw.ac.uk, phone number: +44 (0) 131 451 4616.

### **Approval from the Ethics Committee**

The ethical considerations have been already approved from the ethical committee according to research ethical guidelines and procedures of the university.

### **Confidentiality and Disclosure of information**

Any information provided by you will be used for the study purposes only. It will remain confidential and will be disclosed only with your permission. I would also like to ensure that under no circumstances will any personal data be given to any other third party without your consent.

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**A. About You**

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**1. Where do you currently reside?**

<b>Prompts:</b>	i. Were you born in this place?
	ii. Have you moved from other place? Or are you a visitor?
	iii. If so, can you mention your original location?
	iv. When did you move to this current place?
	v. How long have you moved to this place?

**2. Can you mention your ethnic/caste group?****3. Can you mention your occupation?****4. Can you mention your age group?**

---

**B. Uses of Open space**

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**5. Are you a regular user of this space?**

<b>Prompts:</b>	i. How often do you visit this place?
	ii. For what purpose do you visit this place?
	iii. If you have visited this place for the first time, what is the reason behind for not visiting this place frequently?
	iv. Are there any other spaces that you visit most frequently and if so, for what purposes?

**C. Effects**

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**6. What do you like most about this place?**

<b>Prompts:</b>	For what reasons do you like them?
-----------------	------------------------------------

**7. What do you dislike most about this place?**

<b>Prompts:</b>	For what reasons do you dislike them?
-----------------	---------------------------------------

**8. Have you noticed any changes in this place upon your frequent visit?**

<b>Prompts:</b>	i. if yes 'can you please mention them?
	ii. How long have it been that you noticed these changes?
	iii. Why do you think these changes are taking place?

**9. Are these changes affecting you in any ways?**

<b>Prompts:</b>	i. If so, can you please mention how are they affecting you?
	ii. Do you think these changes are necessary?
	iii. How are you coping with these changes?

**D Management of Space**

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**10. In your opinion, who is responsible for managing these open spaces?****11. What further actions do you think should be taken for proper planning and managing this open space and why?**

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## Appendix 7.3 Comparisons of market squares in TUC and SA

### Ason

### Bhaisepati Chowk

**i. Age category by Area of residence**

Age	Current Area of residence			Total	Age	Current Area of residence			Total
	TUC	Periphery	Others			TUC	Periphery	Others	
Below 20s	0	0	0	0	Below 20s	0	20	0	20
20s	4	4	0	8	20s	0	32	0	32
30s	16	4	4	24	30s	8	12	0	20
40s	20	12	0	32	40s	8	8	0	16
50s	8	8	0	16	50s	0	8	0	8
60s	8	8	0	16	60s	0	0	0	0
70s and over	0	4	0	4	70s and over	0	4	0	4
<b>Total</b>	<b>56</b>	<b>40</b>	<b>4</b>	<b>100</b>	<b>Total</b>	<b>16</b>	<b>84</b>	<b>0</b>	<b>100</b>

**ii. Age category by activity-involved users**

Age	Description of users		Total	Age	Description of users		Total
	Activity-involved User	Passer-by			Activity-involved User	Passer-by	
Below 20s	0	0	0	Below 20s	16	4	20
20s	4	4	8	20s	28	4	32
30s	12	12	24	30s	8	12	20
40s	24	8	32	40s	8	8	16
50s	8	8	16	50s	8	0	8
60s	8	8	16	60s	0	0	0
70s and over	0	4	4	70s and over	4	0	4
<b>Total</b>	<b>56</b>	<b>44</b>	<b>100</b>	<b>Total</b>	<b>72</b>	<b>28</b>	<b>100</b>

**iii. Ethnic/caste group by Area of residence**

Ethnic/caste group	Current Area of residence			Total	Ethnic/caste group	Current Area of residence			Total
	TUC	Periphery	Others			TUC	Periphery	Others	
Brahmin	8	4	0	12	Brahmin	0	4	0	4
Chhetri	0	0	0	0	Chhetri	0	20	0	20
Newar	44	36	4	84	Newar	16	24	0	40
Tamang	0	0	0	0	Tamang	0	16	0	16
Others	4	0	0	4	Others	0	20	0	20
<b>Total</b>	<b>56</b>	<b>40</b>	<b>4</b>	<b>100</b>	<b>Total</b>	<b>16</b>	<b>84</b>	<b>0</b>	<b>100</b>

**iv. Comparison of satisfaction level by Area of residence**

Area of residence	Very satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	A	BC	A	BC	A	BC	A	BC	A	BC	A	BC
Traditional Urban centre	12	0	24	8	8	0	12	8	0	0	56	16
Periphery	4	20	24	60	4	0	8	4	0	0	40	84
Others	4	0	0	0	0	0	0	0	0	0	4	0
<b>Total</b>	<b>20</b>	<b>20</b>	<b>48</b>	<b>68</b>	<b>12</b>	<b>0</b>	<b>20</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>

**v. Comparison of satisfaction level by age group**

Age	Very Satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	A	BC	A	BC	A	BC	A	BC	A	BC	A	BC
Below 20s	0	4	0	16	0	0	0	0	0	0	0	20
20s	0	4	8	24	0	0	0	4	0	0	8	32
30s	8	0	8	16	4	0	4	4	0	0	24	20
40s	8	8	12	4	0	0	12	4	0	0	32	16
50s	4	4	8	4	4	0	0	0	0	0	16	8
60s	0	0	8	0	4	0	4	0	0	0	16	0
70s and over	0	0	4	4	0	0	0	0	0	0	4	4
<b>Total</b>	<b>20</b>	<b>20</b>	<b>48</b>	<b>68</b>	<b>12</b>	<b>0</b>	<b>20</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>

**vi. Comparison of satisfaction level by ethnic/caste group**

Ethnic/caste group	Very Satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	A	BC	A	BC	A	BC	A	BC	A	BC	A	BC
<b>Brahmin</b>	0	4	8	0	0	0	4	0	0	0	12	4
<b>Chhetri</b>	0	8	0	8	0	0	0	4	0	0	0	20
<b>Newar</b>	16	0	40	32	12	0	16	8	0	0	84	40
<b>Tamang</b>	0	8	0	8	0	0	0	0	0	0	0	16
<b>Others</b>	4	0	0	20	0	0	0	0	0	0	4	20
<b>Total</b>	<b>20</b>	<b>20</b>	<b>48</b>	<b>68</b>	<b>12</b>	<b>0</b>	<b>20</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>

**vii. Selection of Interviewee -Ason**

S.N	Area of residence	Current place	Remarks		Purpose of visit
			Born in the area	Moved from	
1.	TUC	Ason		Dolkha (Others)	Open vendor
2.	TUC	Ason		Kavre (Others)	Security guard
3.	TUC	Ason	✓		Shop owner
4.	TUC	Naradevi	✓		User
5.	TUC	Ason	✓		Shop owner
6.	TUC	Ason	✓		Shop owner
7.	TUC	Ason	✓		User
8.	TUC	Makhan	✓		User
9.	TUC	Khichapokhari	✓		User
10.	Others	Bhaktapur	✓		Open vendor
11.	Periphery	Kapan		Ason (TUC)	Passer-by
12.	Periphery	Maitidevi		Ason (TUC)	Passer-by
13.	Periphery	Kopundole		Ason (TUC)	Shop owner
14.	Periphery	Maharajgunj		Ason (TUC)	Passer-by
15.	Periphery	Lazimpat		Ason (TUC)	Passer-by

**viii. Selection of Interviewee -BC**

S.N	Area of residence	Current place	Remarks		Purpose of visit
			Born in the area	Moved from	
1.	Periphery	Bhaisepati		Ason (TUC)	User
2.	Periphery	Bhaisepati		Dhading (Others)	Shop owner
3.	Periphery	Bhaisepati		Ason (TUC)	User
4.	Periphery	Bhaisepati	✓		User
5.	Periphery	Bhaisepati	✓		User
6.	Periphery	Bhaisepati	✓		Passer-by
7.	Periphery	Bhaisepati	✓		User
8.	Periphery	Bhaisepati	✓		User
9.	Periphery	Bhaisepati	✓		Passer-by
10.	Periphery	Bhaisepati		Ason (TUC)	User
11.	Periphery	Nakhudole		Dhading (Others)	User
12.	Periphery	Ekantakuna		Dang (Others)	User
13.	Periphery	Nakhudole		SindupalChowk (Others)	User
14.	TUC	Khichapokhari	✓		Passer-by
15.	TUC	Srigha	✓		Passer-by

## Appendix 7.4 Comparisons of neighbourhood squares in TUC and SA

### Tebahal

### Sainbu Awas Chhetra

**i. Age category by Area of residence**

Age	Current Area of residence			Total	Age	Current Area of residence			Total
	TUC	Periphery	Others			TUC	Periphery	Others	
Below 20s	0	0	0	0	Below 20s	0	12	0	12
20s	4	4	4	12	20s	0	12	0	12
30s	28	0	6	34	30s	0	26	0	26
40s	38	12	0	50	40s	0	32	0	32
50s	4	0	0	4	50s	0	18	0	18
60s	0	0	0	0	60s	0	0	0	0
70s and over	0	0	0	0	70s and over	0	0	0	0
<b>Total</b>	<b>74</b>	<b>16</b>	<b>10</b>	<b>100</b>	<b>Total</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>100</b>

**ii. Age category by activity-involved users**

Age	Description of users		Total	Age	Description of users		Total
	Activity-involved User	Passer-by			Activity-involved User	Passer-by	
Below 20s	0	0	0	Below 20s	0	12	12
20s	12	0	12	20s	6	6	12
30s	20	14	34	30s	6	20	26
40s	44	6	50	40s	12	20	32
50s	0	4	4	50s	12	6	18
60s	0	0	0	60s	0	0	0
70s and over	0	0	0	70s and over	0	0	0
<b>Total</b>	<b>76</b>	<b>24</b>	<b>100</b>	<b>Total</b>	<b>36</b>	<b>64</b>	<b>100</b>

**iii. Ethnic/caste group by Area of residence**

Ethnic/caste group	Current Area of residence			Total	Ethnic/caste group	Current Area of residence			Total
	TUC	Periphery	Others			TUC	Periphery	Others	
Brahmin	6	8	0	14	Brahmin	0	0	0	0
Chhetri	6	8	4	18	Chhetri	0	24	0	24
Newar	58	0	6	64	Newar	0	20	0	20
Tamang	0	0	0	0	Tamang	0	24	0	24
Others	4	0	0	4	Others	0	32	0	32
<b>Total</b>	<b>74</b>	<b>16</b>	<b>10</b>	<b>100</b>	<b>Total</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>100</b>

**iv. Comparison of satisfaction level by Area of residence**

Area of residence	Very satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	T	SAC	T	SAC	T	SAC	T	SAC	T	SAC	T	SAC
Traditional Urban centre	24	0	28	0	14	0	8	0	0	0	74	0
Periphery	4	18	0	32	8	50	4	0	0	0	16	100
Others	0	0	10	0	0	0	0	0	0	0	10	0
<b>Total</b>	<b>28</b>	<b>18</b>	<b>38</b>	<b>32</b>	<b>22</b>	<b>50</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>

**v. Comparison of satisfaction level by age group**

Age	Very Satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	T	SAC	T	SAC	T	SAC	T	SAC	T	SAC	T	SAC
Below 20s	0	0	0	12	0	0	0	0	0	0	0	12
20s	4	0	4	6	4	6	0	0	0	0	12	12
30s	10	6	18	6	6	14	0	0	0	0	34	26
40s	10	12	16	0	12	20	12	0	0	0	50	32
50s	4	0	0	8	0	10	0	0	0	0	4	18
60s	0	0	0	0	0	0	0	0	0	0	0	0
70s and over	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>28</b>	<b>18</b>	<b>38</b>	<b>32</b>	<b>22</b>	<b>50</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>

**vi. Comparison of satisfaction level by ethnic/caste group**

Ethnic/caste group	Very Satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	T	SAC	T	SAC	T	SAC	T	SAC	T	SAC	T	SAC
<b>Brahmin</b>	0	0	0	0	10	0	4	0	0	0	14	0
<b>Chhetri</b>	4	6	6	0	4	18	4	0	0	0	18	24
<b>Newar</b>	20	0	32	0	8	20	4	0	0	0	64	20
<b>Tamang</b>	0	0	0	12	0	12	0	0	0	0	0	24
<b>Others</b>	4	12	0	20	0	0	0	0	0	0	4	32
<b>Total</b>	<b>28</b>	<b>18</b>	<b>38</b>	<b>32</b>	<b>22</b>	<b>50</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>

**vii. Selection of Interviewee -Tebahal**

S.N	Area of residence	Current place	Remarks		Purpose of visit
			Born in the area	Moved from	
1.	TUC	Tebahal		Sindhuli (Others)	User
2.	TUC	Tebahal	✓		Passer-by
3.	TUC	Tebahal		Makhan (TUC)	Security guard
4.	TUC	Tebahal	✓		Shop owner
5.	TUC	Tebahal	✓		Flower vendor
6.	TUC	Tebahal	✓		User
7.	TUC	Newroad	✓		User
8.	TUC	Lagan	✓		User
9.	TUC	Khichapokhari	✓		Passer-by
10.	Periphery	Gyaneswor		Jhapa (Others)	User
11.	Periphery	Manmaiju		Sarlahi (Others)	User
12.	Periphery	Maitidevi	✓		User
13.	Periphery	Naxal		Okhaldhunga (Others)	User
14.	Others	Bhaktapur	✓		User
15.	Others	Bhaktapur		Dhading (Others)	Passer-by

**viii. Selection of Interviewee - SAC**

S.N	Area of residence	Current place	Remarks		Purpose of visit
			Born in the area	Moved from	
1.	Periphery	Sainbu	✓		User
2.	Periphery	Sainbu	✓		User
3.	Periphery	Sainbu		Budhanilkantha (Others)	User
4.	Periphery	Sainbu	✓		User
5.	Periphery	Magargaun	✓		Passer-by
6.	Periphery	Sainbu		Balaju (Others)	User
7.	Periphery	Nakhu		Sindhupalchowk (Others)	Passer-by
8.	Periphery	Sainbu	✓		Passer-by
9.	Periphery	Sainbu	✓		Passer-by
10.	Periphery	Nakhudol		Nawalparasi (Others)	Passer-by
11.	Periphery	Sainbu	✓		Passer-by
12.	Periphery	Bhaisepati	✓	Ason (TUC)	Passer-by
13.	Periphery	Sainbu	✓		Passer-by
14.	Periphery	Sainbu	✓		Passer-by
15.	Periphery	Sainbu	✓		Passer-by

## Appendix 7.5 Comparisons of community squares in TUC and SA

### Dharahara-Sundhara

### Magargarun Pipalbot

#### i. Age category by Area of residence

Age	Current Area of residence			Total	Age	Current Area of residence			Total
	TUC	Periphery	Others			TUC	Periphery	Others	
Below 20s	0	0	0	0	Below 20s	0	5	0	5
20s	0	8	0	8	20s	0	15	0	15
30s	32	12	0	44	30s	5	25	0	30
40s	20	20	0	40	40s	0	10	0	10
50s	4	0	0	4	50s	0	30	0	30
60s	4	0	0	4	60s	0	5	0	5
70s and over	0	0	0	0	70s and over	0	5	0	5
<b>Total</b>	<b>60</b>	<b>40</b>	<b>0</b>	<b>100</b>	<b>Total</b>	<b>5</b>	<b>95</b>	<b>0</b>	<b>100</b>

#### ii. Age category by activity-involved users

Age	Description of users		Total	Age	Description of users		Total
	Activity-involved User	Passer-by			Activity-involved User	Passer-by	
Below 20s	0	0	0	Below 20s	5	0	5
20s	0	8	8	20s	10	5	15
30s	32	12	44	30s	15	15	30
40s	16	24	40	40s	5	5	10
50s	4	0	4	50s	30	0	30
60s	0	4	4	60s	5	0	5
70s and over	0	0	0	70s and over	5	0	5
<b>Total</b>	<b>52</b>	<b>48</b>	<b>100</b>	<b>Total</b>	<b>75</b>	<b>25</b>	<b>100</b>

#### iii. Ethnic/caste group by Area of residence

Ethnic/caste group	Current Area of residence			Total	Ethnic/caste group	Current Area of residence			Total
	TUC	Periphery	Others			TUC	Periphery	Others	
Brahmin	4	16	0	20	Brahmin	0	0	0	0
Chhetri	0	16	0	16	Chhetri	0	30	0	30
Newar	56	4	0	60	Newar	5	5	0	10
Tamang	0	0	0	0	Tamang	0	5	0	5
Others	0	4	0	4	Others	0	55	0	55
<b>Total</b>	<b>60</b>	<b>40</b>	<b>0</b>	<b>100</b>	<b>Total</b>	<b>5</b>	<b>95</b>	<b>0</b>	<b>100</b>

#### iv. Comparison of satisfaction level by Area of residence

Area of residence	Very satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	DS	MP	DS	MP	DS	MP	DS	MP	DS	MP	DS	MP
Traditional Urban centre	8	0	28	5	12	0	8	0	4	0	60	5
Periphery	8	30	20	50	4	10	8	5	0	0	40	95
Others	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>16</b>	<b>30</b>	<b>48</b>	<b>55</b>	<b>16</b>	<b>10</b>	<b>16</b>	<b>5</b>	<b>4</b>	<b>0</b>	<b>100</b>	<b>100</b>

#### v. Comparison of satisfaction level by age group

Age	Very Satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	DS	MP	DS	MP	DS	MP	DS	MP	DS	MP	DS	MP
Below 20s	0	0	0	5	0	0	0	0	0	0	0	5
20s	4	0	0	5	4	10	0	0	0	0	8	15
30s	4	5	24	20	8	0	8	5	0	0	44	30
40s	8	10	16	0	4	0	8	0	4	0	40	10
50s	0	15	4	15	0	0	0	0	0	0	4	30
60s	0	0	4	5	0	0	0	0	0	0	4	5
70s and over	0	0	0	5	0	0	0	0	0	0	0	5
<b>Total</b>	<b>16</b>	<b>30</b>	<b>48</b>	<b>55</b>	<b>16</b>	<b>10</b>	<b>16</b>	<b>5</b>	<b>4</b>	<b>0</b>	<b>100</b>	<b>100</b>

**vi. Comparison of satisfaction level by ethnic/caste group**

Ethnic/caste group	Very Satisfied		satisfied		Neither satisfied nor dissatisfied		Dissatisfied		Very dissatisfied		Total	
	DS	MP	DS	MP	DS	MP	DS	MP	DS	MP	DS	MP
<b>Brahmin</b>	8	0	8	0	0	0	4	0	0	0	20	0
<b>Chhetri</b>	0	20	8	10	4	0	4	0	0	0	16	30
<b>Newar</b>	4	0	32	5	12	5	8	0	4	0	60	10
<b>Tamang</b>	0	5	0	0	0	0	0	0	0	0	0	5
<b>Others</b>	4	5	0	40	0	5	0	5	0	0	4	55
<b>Total</b>	<b>16</b>	<b>30</b>	<b>48</b>	<b>55</b>	<b>16</b>	<b>10</b>	<b>16</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>

**vii. Selection of Interviewee -DS**

S.N	Area of residence	Current place	Remarks		Purpose of visit
			Born in the area	Moved from	
1.	TUC	Dharahara	✓		User
2.	TUC	Dharahara	✓		User
3.	TUC	Ason	✓		Shop owner
4.	TUC	Naradevi	✓		User
5.	TUC	Ason	✓		Shop owner
6.	TUC	Ason	✓		Shop owner
7.	TUC	Ason	✓		User
8.	TUC	Makhan	✓		User
9.	TUC	Khichapokhari	✓		User
10.	TUC	Khichapokhari	✓		User
11.	Periphery	Kapan		Ason (TUC)	Passer-by
12.	Periphery	Maitidevi		Ason (TUC)	Passer-by
13.	Periphery	Kopundole		Ason (TUC)	Shop owner
14.	Periphery	Maharajgunj		Ason (TUC)	Passer-by
15.	Periphery	Lazimpat		Ason (TUC)	Passer-by

**viii. Selection of Interviewee -MP**

S.N	Area of residence	Current place	Remarks		Purpose of visit
			Born in the area	Moved from	
1.	Periphery	Magargaun		Dolkha (Others)	Shop owner
2.	Periphery	Magargaun		Sindhuli (Others)	Passer-by
3.	Periphery	Magargaun	✓		Shop owner
4.	Periphery	Bungmati	✓		Passer-by
5.	Periphery	Sainbu	✓		Shop owner
6.	Periphery	Sainbu	✓		Passer-by
7.	Periphery	Magargaun	✓		User
8.	Periphery	Bhaisepati	✓		User
9.	Periphery	Bhaisepati	✓		User
10.	Periphery	Bhaisepati	✓		User
11.	Periphery	Magargaun		Baitadi (Others)	User
12.	Periphery	Magargaun		Dolkha (Others)	User
13.	Periphery	Sainbu		Ason (TUC)	Passer-by
14.	Periphery	Magargaun	✓		User
15.	Periphery	Magargaun		India (Others)	Mobile vendor

## Appendix 7.6 Relation between satisfaction of users and other variables in public open spaces of TUC and SA

### i. Ason, market square of TUC

Test Statistics<sup>a,b</sup>

	Current Residing area	Age Categories	Ethnic/caste Group	Accessibility of space	Experiences on safety
<b>Chi-Square</b>	.315	.807	3.455	4.000	9.108
<b>df</b>	3	3	3	3	3
<b>Asymp. Sig.</b>	.957	.848	.327	.261	.028

a. Kruskal Wallis Test

b. Grouping Variable: Satisfaction

### ii. Tebahal, neighbourhood square of TUC

Test Statistics<sup>a,b</sup>

	Residing area	Age Categories	Ethnic/caste Group	Accessibility of space	Experiences on safety
<b>Chi-Square</b>	1.086	2.306	9.004	2.796	2.560
<b>df</b>	3	3	3	3	3
<b>Asymp. Sig.</b>	.780	.511	.029	.424	.465

a. Kruskal Wallis Test

b. Grouping Variable: Satisfaction

### iii. Dharahara - Sundhara, community square of TUC

Test Statistics<sup>a,b</sup>

	Residing area	Age Categories	Ethnic/caste Group	Accessibility of space	Experiences on safety
<b>Chi-Square</b>	1.333	2.619	1.068	.000	3.848
<b>df</b>	4	4	4	4	4
<b>Asymp. Sig.</b>	.856	.623	.899	1.000	.427

a. Kruskal Wallis Test

b. Grouping Variable: Satisfaction

### iv. Bhaisepati Chowk, market square of SA

Test Statistics<sup>a,b</sup>

	Residing area	Age Categories	Ethnic/caste Group	Accessibility of space	Experiences on safety
<b>Chi-Square</b>	6.633	1.292	3.557	.000	7.315
<b>df</b>	2	2	2	2	2
<b>Asymp. Sig.</b>	.036	.524	.169	1.000	.026

a. Kruskal Wallis Test

b. Grouping Variable: Satisfaction

### v. Sainbu Awas Chhetra, neighbourhood square of SA

Test Statistics<sup>a,b</sup>

	Residing area	Age Categories	Ethnic/caste Group	Accessibility of space	Experiences on safety
<b>Chi-Square</b>	.000	2.869	6.878	1.000	.835
<b>df</b>	2	2	2	2	2
<b>Asymp. Sig.</b>	1.000	.238	.032	.607	.659

a. Kruskal Wallis Test

b. Grouping Variable: Satisfaction

### vi. Magargaun Pipalbot, community square of SA

Test Statistics<sup>a,b</sup>

	Residing area	Age Categories	Ethnic/caste Group	Accessibility of space	Experiences on safety
<b>Chi-Square</b>	.818	4.712	5.603	2.333	3.954
<b>df</b>	3	3	3	3	3
<b>Asymp. Sig.</b>	.845	.194	.133	.506	.267

a. Kruskal Wallis Test

b. Grouping Variable: Satisfaction

## Appendix 7.7 Relation between use of spaces and different variables in TUC and SA

### i. Area of Residence: Chi square test

Area of residence \* TUC\_SA Crosstabulation

		TUC_SA		Total	
		TUC	SA		
Area of residence	TUC	% of Total	36.0%	3.6%	39.6%
	Periphery	% of Total	17.3%	40.3%	57.6%
	Others	% of Total	2.9%	0.0%	2.9%
Total		% of Total	56.1%	43.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	52.322 <sup>a</sup>	2	.000	.000		
Likelihood Ratio	59.362	2	.000	.000		
Fisher's Exact Test	56.326			.000		
Linear-by-Linear Association	30.232 <sup>b</sup>	1	.000	.000	.000	.000

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.76.

b. The standardized statistic is 5.498.

### ii. Ethnic/caste group: Chi square test

Ethnic/caste Group \* TUC\_SA Crosstabulation

			TUC_SA		Total
			TUC	SA	
Ethnic/caste Group	Brahmin	% of Total	8.6%	0.7%	9.4%
	Chhetri	% of Total	6.5%	10.8%	17.3%
	Newar	% of Total	38.8%	10.8%	49.6%
	Tamang	% of Total	0.0%	6.5%	6.5%
	Others	% of Total	2.2%	15.1%	17.3%
Total		% of Total	56.1%	43.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54.081 <sup>a</sup>	4	.000
Likelihood Ratio	61.465	4	.000
Linear-by-Linear Association	21.347	1	.000

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.95.



iii. **Accessibility: Chi square test**

**Accessibility of space \* TUC\_SA Crosstabulation**

			TUC_SA		Total
			TUC	SA	
Accessibility of space	Yes	% of Total	51.8%	42.4%	94.2%
	No	% of Total	4.3%	1.4%	5.8%
Total		% of Total	56.1%	43.9%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.229 <sup>a</sup>	1	.268	.305	.233
Continuity Correction <sup>b</sup>	.550	1	.458		
Likelihood Ratio	1.301	1	.254	.305	.233
Fisher's Exact Test		1		.466	.233
Linear-by-Linear Association	1.220 <sup>c</sup>	1	.269	.305	.233

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.51.

b. Computed only for a 2x2 table

c. The standardized statistic is -1.105.

iv. **Age: Kruskal Wallis test**

**Test Statistics<sup>a,b</sup>**

	Age Categories
Chi-Square	4.565
df	1
Asymp. Sig.	.033

a. Kruskal Wallis Test

b. Grouping Variable: TUC\_SA

v. **Satisfaction: Kruskal Wallis test**

**Test Statistics<sup>a,b</sup>**

	Satisfaction
Chi-Square	1.327
df	1
Asymp. Sig.	.249

a. Kruskal Wallis Test

b. Grouping Variable: TUC\_SA

vi. **Safety: Kruskal Wallis test**

**Test Statistics<sup>a,b</sup>**

	Safety level
Chi-Square	.907
df	1
Asymp. Sig.	.341

a. Kruskal Wallis Test

b. Grouping Variable: TUC\_SA

## **Appendix 8.1 Semi-structured interview for ‘Government bodies’**

### **Description of Study**

This research is carried out as a part of PhD study. It aims to investigate the socio-cultural and spatial transformations of public open spaces by comparing such changes in the public open spaces of the traditional urban centre and the sprawled area of the Kathmandu Valley.

### **Purpose of Interview**

The purpose of this interview is to understand the visions of government on planning and management of open spaces and their transformations, both in traditional urban centre and sprawled areas of the Kathmandu Valley.

### **Target Group**

This interview is mainly targeted to the members of government institutions, at both central government and local government level.

### **Approval from the Ethics Committee**

The ethical considerations have already been approved from the ethical committee, according to research ethical guidelines and procedures of the university.

### **Confidentiality and Disclosure of information**

Any information provided by you will be used for study purposes only. It will remain confidential and will be disclosed only with your permission. I would also like to ensure that under no circumstances will any personal data be given to any other third party without your consent.

**Your participation is very much appreciated.**

If you have any questions or would like to discuss about the research, please contact me in the following address,

Correspondence Address: Pooja Shrestha, PhD candidate, Centre of Excellence in Sustainable Building Design, School of Energy, Geoscience, Infrastructure and Society, Heriot Watt University, Email: ps206@hw.ac.uk.

And if you have any additional questions that you would like to discuss with research Supervisor, please contact Reader Dr. Harry Smith, Centre of Excellence in Sustainable Building Design, School of Energy, Geoscience, Infrastructure and Society, Heriot Watt University, email: h.c.smith@hw.ac.uk, phone number: +44 (0) 131 451 4616.

Interview with:.....

Date:.....

<b>A. Professional Background</b>	
1.	Name of institution:
	Your Position:
	Years of Service:
2.	Can you please briefly mention your roles and responsibility?
<b>B. Policy on Urban Growth</b>	
3.	<b>Are there any planning policies for managing urban growth of Kathmandu Valley?</b>
Prompts:	i. If there are policies, what strategies are taken in to account?  - Are these strategies being implemented?  <i>-If yes, have these been successful or not, why?</i>  - If these strategies are not being implemented, what are the reasons?
	ii. If there are no policies, what do you think are the reasons?
	iii. Are you in any process of preparing proposals at the moment?
<b>C. Policy on Open Space</b>	
4.	<b>Are there any policies that have considered planning and managing open spaces of Kathmandu Valley?</b>
Prompts:	i. If there are, what strategies are taken in to account?  - Are these strategies being implemented?  <i>- If yes, have these been successful or not, why?</i>  <i>- Have these strategies considered both for existing and new open spaces?</i>  - If these strategies are not being implemented, what are the reasons?
	ii. If there are no policies what do you think are the reasons?
	iii. Are you in any process of preparing proposals at moment?
<b>D. Perceptions on Transformation of Open Space</b>	
5.	<b>Do you think the open spaces of the valley today are transforming?</b>
Prompts:	What are your visions about it?
	What do you think are the causes for transformations?
	Do you have any idea about the policies that have considered issues of transformation of open spaces? Can you please explain?
	Have these policies considered all physical, social and cultural factors? Can you please explain?
<b>E. Further Actions</b>	
6.	<b>In your opinion, what further actions should be taken for planning and managing urban growth of the valley and why?</b>
7.	<b>In your opinion, what further actions should be taken for planning and managing open spaces of the valley and why?</b>