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Chapter 1 INTRODUCTION

1.1 BACKGROUND

Nepal has been undergoing the process of rapid urbanization since the last two decades. However, the growth trend has become increasingly an unbalanced one; it is concentrated mostly either on the Kathmandu Valley or on other larger cities of Terai or on the fertile Valley of country. The unbalance growth is visible, either ecological region wise or development region wise. Instead of an industrial or economic growth induced urbanization, much of the urbanization in the country is rather induced by migration with limited economic base created by the community services and improved facilities in these urban areas and conversely caused by the lagging facilities of the rural areas.

Consequently, out-migration of the people from rural to urban areas or from small towns and municipalities to larger municipalities remains unabated causing a wider ramification for the economic development of the country. The problem is further compounding as haphazard urbanization is taking a toll on the fertile agricultural land of Terai or the Valley, leaving behind most hinterlands of hills and terai in short supply of agricultural labor force. These areas show dwindled productivity and remain underdeveloped or undeveloped, while urban areas due to an increasing influx of new migrants are failing to cope up with the demand of infrastructure service and employment. The growing inability of urban centers to create new jobs is further accelerating out-migration of youths, especially abroad.

As a result, most urban centers still exhibit a rural ambience largely; large cities are increasingly reeling under the externalities of the haphazard urbanization. Environmental degradation, urban poverty, congestion, squatter settlements, unemployment and lagging provisions of infrastructure service have become increasingly visible phenomenon in these large cities. Hence, much of the economic gains acquired from urbanization have been eroded from its negative externalities. Despite non-agricultural sector being a major contributor to gross domestic product (GDP), urban centers in the country are yet to emerge as the engines of economic growth and contribute to reduction of urban or rural poverty alike.

Keeping in view of this context, the Government of Nepal has already enacted and implemented National Urban Policy in the year 2007. The policy is conspicuous by prioritizing investment to the lagging regions of the country, while fostering development of regional cities and intermediate towns as well. The government prioritization of the development of Mid-Hill Highway (MHH) and the recent policy intention through its budget speech for the development of new towns along the MHH comprising of significant economic base must be seen from this perspective.

Hence, the Government of Nepal, Ministry of Urban Development, Department of Urban Development and Building Construction (DUDBC) initiated a mega project in the history of Urban Planning in Nepal. The project is termed as New Towns, developing along Pushpalal Mid-Hill Highways across the intersecting nodal point of North-South Corridor. The 10 selected new town project sites is a result of detailed study, screened from 54 pre-selected towns/market centers. The screening project is an outcome of extensive study over pre-defined criterion like availability of land, water supply, vicinity to nearest towns, hinterland zone of influence, and so. The New Town project have grafted several stages like pre-feasibility study, feasibility study, preparation of urban base

map, appraisal of land pooling, establishment of New Town project site, site development works and so. Government have recently restricted on land subdivision to regulate and control land speculation.

Therefore as a long-term policy initiative, GON is providing technical and financial support to facilitate the Integrated Development Plan preparation, urban base map and profile of base information, building bye-laws and to promote their planned development and improvement in the quality of life of the people of new towns located along mid hill highway (MHH).

1.2 RATIONALE OF THE STUDY

The Project is focusing on forming urban centers, appropriate urban density to live, work and recreate with an aim of preserving the local environment. The attempt in a way will reduce the urban primacy and to certain extent will bring the regional urban balance as per NUP, 2007.

● Effective use of scarce resources

● The IDP will help the town to focus on the most important needs of local communities taking into account the resources available at local level.

● The town must find the most cost-effective ways of providing services and money will be spent on the causes of problems in local areas.

● It helps to speed up delivery

● The IDP will identify the least serviced and most impoverished areas so as to do investment in a rational way. Implementation is made easier because the relevant stakeholders have been part of the process.

● The IDP will provide deadlock-breaking mechanisms to ensure that projects and programmes are efficiently implemented. The IDP helps to develop realistic project proposals based on the availability of resources.

● It helps to attract additional funds

Also donor agencies and the private investors are feel safe to invest where GoN have clear development plans. It also strengthens democracy through the active participation of all the important stakeholders, decisions are made in a democratic and transparent manner which will help to integrate rural and urban areas and to extend services to the poor and will promote co-ordination between local and central government.

1.3 OBJECTIVES OF THE WORK

The main objective of the proposed assignment is to prepare Integrated Development Plan and Building Bye-Laws of all proposed ten new towns. However, the specific objectives are:

- To set out Long-term Vision and overall Goal, Objective and Strategies for new town development.

- To prepare Physical development plan, Land Use Plan, Social, Cultural, Economic, Financial, and Institutional Development Plan; Environmental and Risk Sensitive Land use Plan, Climate Change Perspective Plan, Multi-Sectoral Investment Plan (MSIP) etc. on the basis of Sectoral Goal, Objectives, Output and Programs.

- To prepare building bye-laws to regulate development in the town integrating Land Use and road network plan and long-term vision of the town.

- To prepare detail feasibility report of different categorically prioritised sub-projects (3 in each NT which is not declared as municipality).

1.4 SCOPE OF WORKS

The scope of works for the preparation of Integrated Development Plan & Building Bye-Laws are as follows:

1. GIS based base maps of NTs , which are recently declared as municipality by GoN , are updated.

2. The Vision of the town has been set. The Vision articulates the desires of Town and its citizens, and provides the guiding principles and priorities for the Plan's implementation.

3. Integrated Development plan of entire area including existing and future (5, 10 and 20 years) land use plan will be prepared in cadastral maps. This will be based on land use plan and followed by narrative description, analysis, facts and figures.

4. Additional study on local economy will be conducted and its activities based on the study completed by NTPCO that may also change in demographics and migration trend for 5, 10 and 20 years period.

5. Potential areas for urban development, based on land suitability and other factors, are identified. Present and future (5, 10, 20 years) housing needs/market, stock, conditions will be analyzed and strategies for land acquisition, distribution of land and housing in future will be recommended.

6. Studies on present and future (5, 10 and 20 years) demand in infrastructures (such as transportation, communication, electricity, water supply and sewerage system) and their supply are conducted. Demand analysis will be for different scenarios with facts and figures. The recommended complete street pattern, major and minor roads, highways, arterial roads, traffic circulation, truck yard, bus bays and bus parks will be worked out in details. Based on land use and other factors, road network plan prepared by NTPCO will be revised. The network plan of infrastructures, both existing and proposed will be shown in cadastral maps with other detailed drawings and unit rate cost estimates. Landfill site, treatment plant location will be identified and their detail drawings and cost estimate will be prepared. A management scheme of both water supplies, solid waste management system and landfill site will also be worked out.

7. Existing social infrastructure such as health/ education/ sports/ communication/ security centers and other community facilities have been carried out by addressing present deficiencies and future (5, 10 and 20 years) demands. The location and area of land required for all these infrastructures will be identified in cadastral maps.

8. Critical, sensitive and other natural resources including parks, green belts, and recreational areas are identified and assessed along with strategies for their protection, preservation and community ship against the adverse impact of future development and land use changes. The cost estimate on unit rate basis will be calculated for their preservation and protection. Locations and future requirements of such resources will be calculated.

9. Government, Guthi and Public Land identified by NTPCO are verified and the area required for future development and expansion of the town will be assessed including land required for government and public purposes. Appropriate plan and policy will be produced to protect such land from private/public encroachment and others.

10. Natural hazards, including how significant weather events have and will impact these assessments, which may cause a threat to the Vision of the Integrated Development Plan, will be identified and assessed , along with, strategies for avoidance/mitigation of such hazards in the course of future development and the cost estimate on unit rate basis will be calculated.

11. Proposed Land Use Plan for 5, 10 and 20 years will be prepared based on the existing cadastral maps (plans) . The plans are based on: i) The policies enunciated for different urban activities, ii) Population to accommodate minimum one hundred thousand; iii) Requirement of additional social and physical infrastructure, iv) Transportation and work centres, v) Parks, green belts, recreational areas, vi) Cultural and historic resources, vii) Others.

12. A detail study of following Land Use Zone will be provided and byelaws for the construction of building and other infrastructures will be recommended. The land use zones are i. Residential zone, ii. Institutional zone, iii. Industrial zone, iv Preserved zone, v. Airport zone, vi. Sport zone, vii. Urban expansion zone, viii. Stream/river banks zone, ix. Green zone, x. Apartment housing, xi. Petrol pump/ Electric line/Cinema theatres and xii. Others.

13. Building bye-laws that clearly spells minimum in the following areas regarding the construction of building will be prepared : (a) Minimum land area (b) maximum ground coverage (c) maximum floor area ratio (FAR) (d) maximum building height (e) maximum no. of floors (f) right of way of roads (g) set back in four sides of the building (h) minimum parking area (i) lift (j) minimum distance to be left in both sides of stream/river.

14. The building bye-laws of the towns will be prepared in accordance with "Bye-laws 2064, of Kathmandu valley" prepared by Kathmandu Valley Town Development Committee, model building bye-laws prepared by MoUD, NBC, Building Act and Apartment Act of Nepal.

15. An implementation strategy (including a suggested action program that generally describes the actions, costs, time frames, responsibilities, procedures and the Town's capacity to use them) necessary for implementing the Integrated Development Plan of the town will be recommended. Separate report by volume each Integrated Development Plan, Building bye-laws, infrastructures etc for each town, also prepare investment and cost recovery Plan will be prepared.

Chapter 2
METHODOLOGY

2.1 STUDY METHOD

The study method of the project has been described in the following phases. The method has been described in flow chart.

2.1.1 Field Survey and Study

Preparation of Field Programs

Appropriate plan to accomplish the job within the agreed time frame will be discussed within the team members to prepare the field work plan. The team will setup the field office as per the field work plan. This field work plan will include preparation of fieldwork plans, route plans and programs, arrangement of field equipment, staff logistics, arrangement of transportation, data collection methodology, survey methodology. This field work plan will be informed to the client.

Orientation and Formation of Sub-Steering Committee

The planning team consisting of the experts from the consultant and technical personnel from NTPCO/NTPO and local bodies will organize a one day orientation/ preliminary preparedness workshop at the TDC office of study NT about the Integrated Development Planning process. TDC representatives, representatives from line agencies and a number of invitees from different walks of life will be oriented on the role of TDC and line agencies in each phase of preparation of Integrated Development Plan.

A sub-steering committee will be formed at the orientation workshop, consisting of the representatives from TDC, bodies, government agencies and political parties/leaders, civil societies such as NGOs, CBOs, TLOs, intellectuals, prominent citizens, professional bodies, and the planning team. The Sub-Steering Committee will be formed by the election or nomination at workshop. Working sub-committees will also be formed in the same workshop. An orientation about the role and responsibilities of the Working sub-committees will also be clarified at the same workshop. Key informants will be identified.

Secondary Data Collection

Data & information related to the physical, socio-economic, Municipality/VDC revenue and expenditure, development budgets for the last five years will be extracted from the secondary sources, and published reports, VDC/ municipality yearly report etc. Physical and Socio-economic information of the study NT will also be collected from other line agencies and partner organizations working in the study area. Satellite image from the open source as well as maps from different agencies will be collected to update digital base map. Base map will be used to prepare the existing land use of the town. Land transaction and land value information will be collected from different related institutions

Primary Data Collection

Primary Data mainly related to the physical infrastructure, existing land use pattern, extent of newly opened roads, their standards and quality, prevailing land values and environmental sensitive areas and areas with existing environmental problems will be gathered during field survey through physical mapping using GIS/ cadastral map, on site observation, technical investigation/ test and interview. NT level problems and developmental issues will be identified through opinion survey and interviews of prominent citizens, officials of the local and government agencies (Key Informant Survey), and through NT level meetings which may include meetings of the TDC and Sub-committee meetings. VDC/NT level urban and rural problems and needs will also be identified through Participatory Rapid Appraisal (PRA) by holding citizens gatherings at the TDC offices or at the convenient location of the NT.

Government, Guthi and Public Land identified by NTPCO study of the same will be verified and the area required for future development and expansion of the town including land required for government and public purposes will be assessed. Appropriate plan and policy to protect such land from private/public encroachment and others will be formulated.

Community and Different level Consultation

Community and different level consultations will be carried out mainly for the collection of baseline information of the study area NTs, preparation of Town Profile, defining the development vision of the NTs and preparation of long term development plans. Participatory approach will constitute consultation from NT level to settlement level. Problems and potentials in the NT, major settlement level/ municipal level will be collected through different level of consultation. These consultations will also be used for collecting data and information in local level.

TDC of the study NTs will function as Sub-Steering Committees. It will be the key body to formulate policies and guidelines related to plan preparation. TDC will advise the consultant on various aspects of plan preparation including identifying problems and issues of the municipality, formulating and reviewing of NT vision, goals, objectives, and programs. Sub-Steering Committee will be the key forum to set the vision of the municipality.

Focal Group Discussions with different partner organizations working in the district will be organized for the identification of problems and potentials. Community consultations will be held for the special groups like indigenous, disadvantaged groups, Dalits, Janjatis and special groups such as women, children, disabled etc.

Output of Phase I and Phase II: Town Profile

The primary and secondary data collected from field survey and study and data and information collected from Community and different level consultations will help the consultant in preparation of an up-to date Town Profile, comprising of base-line information of the existing physical, social, economic, environment, financial, and organizational state of the NT. Apart from the key statistics, the baseline information will also include textual descriptions, maps, charts, diagrams and key problems prevailing in the settlements and the municipality/VDC. Baseline information of at least two time points- having minimum interval of (past) five years will be included.

2.1.2 Plan, Program and Project Formulation

Several meetings with sectoral committee members have been organizing in different phases for the plan preparation. One day workshop will be organized for the finalization of the plans and programs. Each committee will work out by themselves for plan preparation, which will be facilitated by the co-coordinator and member secretary of each committee. The plan of each sector will be presented by the coordinator and get comments from each committee. Logical Framework Approach will be used for plan formulation. Different subjective plans will be prepared with separate plan, policies, projects and programs so to form a master plan and MSIP for each proposed project. The plan and programs will be located in the map with the help of GIS.

A seminar will be organized to finalize the plan and programs. The plan will have to be approved by the steering committee. Comments and suggestions will be received and incorporated in the preparation of draft final report. Integrated Plan with Land use plan, phase wise urban development plan, physical infrastructure plan, social infrastructure plan, cultural and tourism development plan, economic infrastructure plan, environment management plan, disaster management plan, climate change adaptation plan, financial development plan, institutional development plan are the standing outputs of this phase.

2.1.3 Project screening and TDC budget

Through the workshop, working sub-committee & the planning team will conduct the discussion on the town level programs, projects, TDC development budget, screening of identified projects. Similarly, prioritization of the projects is prioritized for Detail Feasibility Study of Prioritized Major Sub-Projects which may be limited to three in each town.

B. Preparation and Updating of GIS-based Base Map of New Towns

The approach procedures for base map preparation will be from the followings.

- Acquisition of Data
- Digital compilation of secondary data
- Topograpical Maps
- Generation of Contours and Digital Elevation Model
- Satellite Imagery Orthopolo
- Updating from Satellite Imagery
- Field verification
- GIS Database Creation

Acquisition of Data

The data to be used for this project will be collected from both primary and secondary sources.

Primary Sources

A high resolution satellite image of Patan and Sanfebagar New Towns will be captured from open source software such as Google Earth, Bing Maps etc. and the captured images will be stitched together by doing mosaic through appropriate software. Topographical maps or digital data will be collected from Survey Department. GCPs for vertical control (topographical spot) will be collected from sprit leveling.

Secondary Sources

Existing analogue cadastral from respective NT Survey Offices and electricity network single line diagram will be obtained from NEA office within/ near the study area, if available. Telephone network design maps will be collected from NTC office within/near the study area, if available. Likewise, Water supply and sewerage network design drawings will be collected from DWSSC office within/near the study area, if available.

Digital Compilation of Secondary Sources Data

The secondary maps acquired in analogue format will be scanned using wide format scanner at 200 dpi resolutions. The scanned maps will be appropriately geo-referenced with geo-rectified high resolution satellite image captured and will be vectorized in GIS environment. Digital maps and design drawings acquired from various sources will be converted into compatible CAD and/or GIS formats.

Topographical Maps

The Sprit Levelling with double tertiary Survey was will be carried out connected from Benchmark established by Survey Department to determine the elevation of each GCP for vertical control point. Topographical spot level point will be collected with Auto Level or Total Station from these GCPs in the study area. These topographical spot point will be used to generate contours at 1m intervals in the study area.

Generation of Contours and Digital Elevation Model

From the above field surveyed spot levels, contours at 5 meter interval will be generated for core areas, and 10 meter interval for the rest of the areas will be generated using specialized DTM software compatible in AutoCAD or GIS environment. Contours generated will be used in generating the Digital Elevation Model (DEM) of the entire study area. This DEM will be used for ortho-rectification and generative other derivative terrain maps (slope, aspect etc.).

Updating Data from Satellite Image

The updating will be done using the latest high resolution satellite imagery, captured from free sources, by digitizing the features over the ortho-rectified imagery. Land use map will be prepared from high resolution satellite Imagery by digitizing the existing land cover. Proposed land use map will be prepared by interacting with the key stakeholders and through community meetings/ consultations.

Field Verification

During the field visit and plan making process of the IDP of the study NTs, updated data will also be verified field for completeness of data in the entire NT/ municipal area. The features which are not identified in the ortho-photo and ortho-images will be collected from field verification with Hand GPS survey. Attribute of data such as collection of road name and its categories, places, institutions will be collected from field survey. This collected information will be updated and linking attribute into relative data. Field verification will be done by the consultant during the field visit, in co-ordination with and in presence of the representatives from NTPCO.

GIS Database Creation

GIS database for all the base map features will be developed based on the data model in accordance with the "Specifications for Geographic Information Service and National Topographic Database" and the "Specification for National Urban Geographic Information Service in Nepal" prescribed by the Survey Department. The feature and attribute codes will be adopted as these standard specifications.

Database will be generated in ArcGIS software as file geo-database. All these data collected above will be incorporated into this geo-database. During the process of creating topologies, topological rules may be defined to remove the various errors such as overshoot, undershoot, pseudo node, misplaced or missing label such as id, name etc.

The prepared geo-database will be validated or updated with generated topological rules for error free data in geo-database so that the vectorized features will be cleaned to remove redundant The cleaned feature vectors will be used to create respective topologies (point, line or polygon). Attribute databases will be created for each feature class in the data model.

Updating of GIS based Base Map

GIS based base maps will be prepared at 1:2,500 scale for core areas and 1:5000 scale for remaining areas with appropriate cartographic representations using "database driven cartography" technique in ArcGIS 10 platform. The maps will be composed with appropriate legends, cartographic layouts and elements, symbology and descriptive notes. Maps will be composed following the national grid standards. The maps will be printed/ published in A1 size paper.

C. BLOCK PHYSICAL MODEL OF TOWN

The consultant will prepare a block physical model with 1:5,000 of the study area will be prepared to display the NT vision, land use plan and effect of implementation of bye-laws to the common public. CBD and important landmarks objects will be displayed in 1:5000 or higher scale. The base map prepared earlier will be used extensively for the preparation of physical block model. Thematic maps prepared for the long term development plan will be utilized to prepare the proposed land use, and proposed physical infrastructure in the study NT. The block physical model will be prepared using different materials, mainly wood/ cardboard and model making paper

Chapter 3 LITERATURE REVIEW

3.1 MODERN URBAN PLANNING PRACTICES- INTERNATIONAL CONTEXT

The one thing that is most notable in many of today's larger cities is that all of the styles described here are often all present together and co-existing. Certainly the "City Beautiful" movement admired several aspects of the "Grand Manner" - as well as having its roots in "The Gothic Revival" movement. Modernism has placed its stamp with a network of highways and system of graduated roads, along with forests of glass skyscrapers and odd-shaped cantilevered buildings. And once again, there is a 'gothic revival' of sorts going on with a popular movement towards preserving older buildings, building on a smaller or more 'human' scale and mixed-use zoning laws with less reliance (and favoritism) upon automobiles for inner city transportation. One thing is certain - large urban cities remain as popular as ever with major cities continuing to grow ever larger as more and more people are attracted to the bright lights of the big city.

Contemporary cities are post-modernist cities that seek to function on the base of innovation and technological advancement. These cities at one end seek to achieve technological and financial advancement and on the other end also seek to incorporate the sense of inclusiveness and social justice. These cities are focused more towards the efficient management of urban amenities and infrastructural services to its residents. The city managers/urban managers/ policy makers of contemporary cities acknowledge the shortcomings of earlier authoritarian and vehicle centric planning that had given rise to the problem of social segregation, loss of sense of place as well as massive destruction of built and cultural heritage in urban areas of these cities. The urban managers/policy makers are developing areas which are planned and managed with an aim of building living environments to its dwellers. These contemporary cities are more focused on the principles of sustainability, inclusiveness and social justice and create economic opportunities for development. These cities are developed with a conscious effort to being environment-friendly, based on good urban governance and with provision of recreational and environmental facilities to its inhabitants along with adequate urban infrastructure and services. These cities are developed as mega-urban areas that are created with the agglomeration of different metropolitan or sub-regional areas. Examples: New Delhi and NCR development through DDA, Delhi 2021 (with the agglomeration of Delhi and parts of Haryana, Uttar Pradesh and Rajasthan states), NENT-NDA Planning Study in Hong Kong SAR through Planning Department (with the agglomeration of North East New Territories: Ku Twung North, Fan Ling North and Ping Che/Ta Kwu Ling as suitable New Development Areas.

3.1.1 Urban Planning Practice in Hong Kong

Hong Kong's planning hierarchy has a three tiered system of plans consisting of

- Territorial / strategic planning
- Sub-regional planning
- District planning/local planning

The planning system comprises development strategies at the territorial level and various types of statutory and departmental plans at the district/local level. Guiding the preparation of these plans is the Hong Kong Planning Standards and Guidelines.

Territorial Development Strategy

The Territorial Development Strategy aims at providing a broad planning framework to guide future development and the provision of strategic infrastructure in Hong Kong. It also serves as a basis for the preparation of district plans.

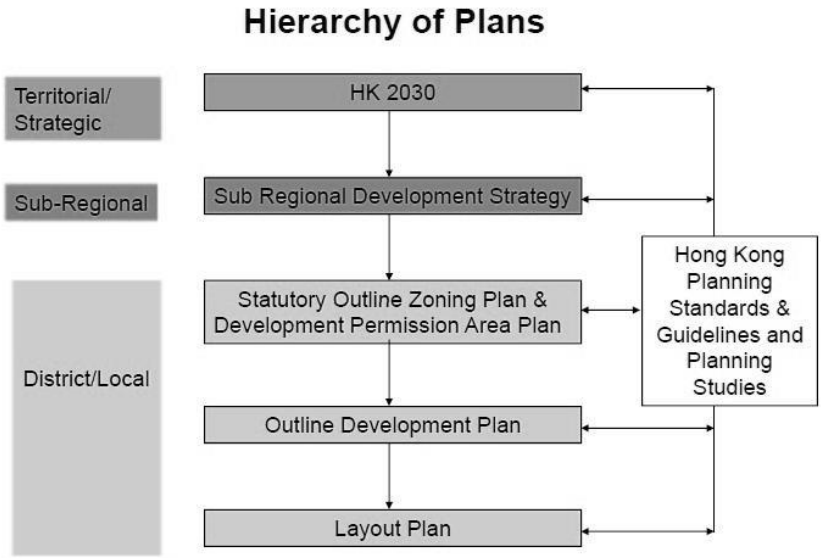

Figure 1: Hierarchy of Planning in Hong Kong

1984 TDS provides a long term planning framework for sub regional and district planning and for integrating other government policies including land, transport infrastructure and environment. The plan advocates integrated land use and transport model for development. TDS 1984 was reviewed in 1991-1998. The review document advocates sustainable development principles of integrated land use-transport-environment model for development. It also suggests the development strategy keeping in mind the Pearl River Delta factor, with the change in the status of HK and the change in the relationship with mainland and HK's hub function.

Hong Kong 2030 is the latest addition to territorial development strategy. It envisions strengthening the position of Hong Kong as Asia's World City. The planning document has the goal of adhering to the principles of sustainable development to balance social, economic and environmental needs to achieve better quality of life for present and future generations.

Sub Regional Development Strategy

These strategies aim to develop long-term comprehensive land use, transport and environment plans to guide medium and long-term development. They also serve as a bridge between the TDS and district plans through the translation of long-term, broad-brush territorial development visions and themes into district planning objectives for the five sub-regions in Hong Kong. The five sub-regions are the Metro Area, North-East New Territories (NENT), North-West New Territories (NWNT), South-East New Territories (SENT) and South-West New Territories (SWNT).

Various Types of Town Plans

At the district level, statutory plans in the form of Outline Zoning Plans (OZP) and Development Permission Area Plans (DPA Plan) are prepared and gazette under the Town Planning Ordinance. These plans regulate development through specifying the types of permitted land-uses and in some cases development parameters on individual parcels of land within Hong Kong..

Outline zoning plans (OZP), DPA and URA Development Scheme Plans are the Statutory Plans and are enforceable by law. OZPs are prepared under sections 3(1) and 4(1) of the Town Planning Ordinance. OZPs consist of three components, the outline zoning plan, the notes attached to the plan and an explanatory note for the plan. The zoning plan shows the proposed land uses and major road systems of the individual planning scheme areas. The notes set out the uses which are always permitted and other uses for which the Town Planning Board's permission must be sought.

Development Permission Area Plans are implemented since the enactment of the Town Planning (Amendment) Ordinance 1991. They provide interim planning control and development guidance pending the preparation of OZPs. Any development not permitted in terms of the plan and without the necessary planning permission constitutes an unauthorized development (UD) and is subject to enforcement and prosecution by the Planning Authority. These plans are interim in nature and are effective for a period of three years from the date of first publication

Urban Renewal Authority (URA) Development Scheme Plans considered by the Town Planning Board under section 25(6) of the URA Ordinance as suitable for publication under the Town Planning Ordinance are deemed to be draft plans prepared by the Board. It Includes a Land-Use Diagram indicates broadly the types of planned uses, and a set of Notes setting out the permitted uses and the requirements for submitting a master layout plan to the Board.

Hong Kong Planning Standards and Guidelines

The Hong Kong Planning Standards and Guidelines is a government document of planning criteria and guidelines for determining the quantity, scale, location and site requirements of various land uses and facilities. It applies to planning studies, and the preparation or revision of town plans. The document is under constant review to take account of changes in government policies, demographic characteristics and social and economic trends. During the year, planning standards and guidelines for petrol filling stations, liquefied petroleum gas filling stations, electricity supply, telephone service and greening were revised or in the process of formulation.

3.1.2 Urban Planning Practice in India

Indian planning hierarchy has two tiered system of plans consisting of

- Socio-Economic Development Planning System
- Spatial Planning System

Socio-Economic Development Planning System

Socio-Economic Development planning system consists of National Five Year Plans that are prepared by National Planning Commission. These Five Year Plans provide policies and public programmes supported by outlays. Outlays include Central Assistance to states and union territories and also the own resources of the various states.

Within the framework of National Five Year Plan, State Five Year Plans are prepared by each state's State Planning Commission. Socio-economic Development Plans basically covers policy issues of economic sectors such as agriculture, industry, energy, transport, communication, rural development and urban development. It also covers policy issues of social sectors such as health, education, employment and skill development, women and child development and social inclusion.

Spatial Planning System

Spatial Planning System focuses on judicious use of land. According to the constitution of India, land falls within the legislative competence of the states. Spatial planning, therefore, is the responsibility of various state governments in India. Spatial planning system has six tiers: National, Inter-state, State, Metropolitan Area, District, and Local level spatial plans.

Figure 2: Spatial Planning System Hierarchy in India

National Level Plans:

- Prepared by Central Government Agencies: National Planning Commission, Ministry of Urban Development and Ministry of Housing and Urban Poverty Alleviation along with the Town and Country Planning Organization in coordination with other central ministries and departments
- Limited to evolving policies, guidelines and model laws for adoption by the states; formulating development plans and policies for union territories.

Inter-State Level Plans:

- Prepared for the National Capital Region/ National Capital Territory and parts of Haryana, Rajasthan and Uttar Pradesh. It is prepared by High-powered National Capital Region Planning Board. Eg: Regional Plan 2021, Delhi Masterplan 2021.

State Level Plans:

- Prepared by the ministry in charge of urban development of each state in coordination with the department/directorate of Town and Country Planning, Urban and Regional Development Authorities and other specialized agencies. These plans consist of state level masterplans and development plans.

Metropolitan Area level Plans:

- Prepared by Metropolitan Development Authorities such as Mumbai Metropolitan Region Development Authority, Chennai Metropolitan Region Authority, Kolkata Metropolitan Region Development Authority. These plans are coordinated spatial plans of the metropolitan areas addressing issues such as sharing of water and other physical and natural issues, integrated development infrastructure and environmental considerations in those metropolitan areas.

District Level Plans:

- Prepared by Municipalities and District Panchayats. These are also coordinated spatial planning at district level. Out of 31 states, 26 states have implemented district level planning system.

Local Level Plans:

- Prepared by Department/Directorate of Town and Country Planning or City Development Authorities. These plans are basically master plans of urban centers. These plans are implemented through Urban Local Bodies (ULBs)/ municipalities. However, only a few states have devolved this power to ULBs. All over India, 7,935 urban centers have masterplans.

3.2 Modern urban planning practices- National context

Present approaches and initiatives in urban planning and development process are very much guided by the principal objectives of the Eighth Plan (1992-1997), which are: Sustainable economic growth; alleviation of poverty; and reduction of regional imbalance. The sectoral objectives related to housing and urban development are stated as: promotion of urban and rural complementary; positive linkages between planning and management of urban centers, and growth of local economy; development of small towns and market centers; integrating of infrastructure and urban development; participation of private sectors and NGO's strengthening the roles of the municipalities; local resource mobilization; development of urban financing mechanism.

An important initiative during this period was ADB's involvement which commenced in 1990, with a grant funded technical assistance study in collaboration with the Department of Housing and Urban Development (DHUD)/ MHPP. The study completed in 1991, came up with a comprehensive study – Kathmandu Valley Urban Development Plans for specific areas.

3.2.1 Current Planning Trends

Nepal adopted various planning tools to institute balanced urban growth and planned towns. Basically, Nepal adopted problem oriented planning and came up with projects responding such problems. In this section, we have tried to mention various planning trends adopted so far in urban sector.

- Master Plan

- Strategic Planning

- Integrated Action Plan

- Physical Development Plan

- Periodic Plan

- Land Use Plan and Building Bye Laws

Beside this, Periodic District Development Plan (PDDP) and District Transport Master Plan (DTMP) is practiced in district level, whereas, Municipal Transport Master Plan is also being practiced in municipal level. The aim of these plans is to regulate balanced urban and regional growth. The planning effort in Nepal is shown chronologically in the table below:

Table 1 Chronology of planning efforts in Nepal

Timeline	Urban Planning efforts in Nepal
1944	Rajbiraj as first planned administrative town
1956	National level periodic planning started
1962	Kathmandu beautification Program: Visual Beautification of Kathmandu valley on the occasion of Royal Visit of Queen Elizabeth under UN technical Assistance
1963	Town Development Committee Act, 1963
1965	Third National Plan (1965-70) divided country into 3 watershed, namely, Koshi, Gandaki and Karnali River
1969	Physical Development Plan of Kathmandu Valley prepared under technical assistance from UNDP, led by Karl Pursha
1973	1969 PDP of Kathmandu Valley revised by national professionals and land use plan for Kathmandu valley prepared
1975	Construction of Ring Road in Kathmandu Valley without prior study and planning
1974-1984	Bhaktapur Development Project (Successfully Implemented) with German assistance
1976	Comprehensive general plan for Kathmandu 1969/73 revised again, provided minimum zoning proposal
1987-88	Structural plan for major urban centers including greater Kathmandu (20 years plan) was prepared with the support of GTZ/MSUD)
1990	Integrated Action Plan (IAP) preparation initiated
1991	Kathmandu Valley Urban Development plans and programs – Hal Crow Fox/ DHUD/ADB
1993	The study of Kathmandu Valley Urban Road Development –JICA
1999	Kathmandu Valley Mapping Program (KVMP)
2002	Long Term vision for Kathmandu Valley development, widely known as Vision 2020, Approved by Government of Nepal
2005 till date	Periodic Planning of Municipalities in Practice

As a follow-up of this study, a five year Kathmandu Urban Development Project (1994-99) was initiated in 1994 as a result of Loan Negotiation between HMG, ADB and Kathmandu Metropolitan City. The project comprising of several components (infrastructure and environment improvement works, link road and implementation assistance and institutional strengthening) is an important initiative towards implementation of the strategy plan for the Kathmandu Valley.

Since the first plan in 1956, Ten five-year plans have been implemented, with the Tenth five year plan implemented from 2002-2007. After 2007, due to political instability, a new five year plan has not been able to be formulated and implemented in the country since 2007. The government has, however has now announced Three Year Interim Plan (2012-2015), known as the thirteenth three-year plan, for the interim period.

NPC's 13th three-year plan aims to transform Nepal into a developing country from least developed one. The proposed plan has a goal of reducing the number of people under the poverty line to 18 per cent from the existing 23.8 per cent. Development of hydropower and energy sectors, productivity growth of agro sector and its diversification and commercialization, basic education, health, drinking water and sanitation, good governance, expansion of roadways, development of physical infrastructures, tourism and trade are the priorities of the upcoming three-year development plan,

Reducing the existing trade deficit and attaining the higher economic growth rate are the main challenges of upcoming development plan that has a strategy of increasing the contributions of private, government and cooperate sectors, partners of three-pillar economic policy, to the sustainable, broad and inclusive economic development of country. Empowerment of targeted groups of people and minimization of negative impacts of climate change are other strategies of the 13th three-year development plan.

3.2.2 Some examples of Planning Efforts in Nepal

Kathmandu Valley Physical Development Plan 1969

The Physical Development Plan for the Kathmandu Valley was prepared by the Department of Housing, Building and Physical Planning, with the technical assistance from the United Nations. This was the first study that introduced the concept of physical planning for regional development and to undertake the comprehensive study of the Kathmandu Valley. The main objectives of the plan were the preservation of historical and cultural heritage, guided urban development through land use planning and densification of fringe areas. The plan was a guiding principle for ordered development in the Kathmandu valley and government promulgated a Town Development Implementation Act in 1972 to implement it. Kathmandu Valley Town Development Committee (KVTDC) was established under this Act and was entrusted with the overall responsibility of planning and regulating urban growth in Kathmandu valley. However, the 1969 plan was not formally adopted and implemented by the government (Burathoki, 2001).

Kathmandu Valley Urban Development Plans and Programs 1991

In 1991, the Kathmandu Valley Urban Development Plans and Programs were prepared, with assistance from the Asian Development Bank. It tried to envision the concept of Greater Kathmandu with Kathmandu and Lalitpur as a planning boundary, with the goal of developing Kathmandu Valley as a government center and a center of culture, tourism and historic conservation. The plan divided the area into 5 development zones with a proposal of a new Central Business District encompassing the areas of Durbar Marg, Jamal, Kamaladi, Bagbazarand Putalisadak, with an aim of relieving the pressure of business and commercial activities from the Kathmandu historic city core.

Unfortunately, this plan too was not endorsed officially, as a result of which, the 1976 Physical Development Plan is still the statutory plan for the development of Kathmandu Valley, which is supported by the building regulations to guide the development of the Kathmandu Valley (Ibid.).

Integrated Action Planning (IAP)

Against the backdrop of a series of planning initiatives of the past, the IAP approach is relatively a new introduction and has evolved through a process of application as training programs from 1989 to 1992; and operationalization in 22 municipalities.

The IAP as an alternative planning paradigm is defined as a community-driven, participatory planning process to facilitate development through the identification of realistic and affordable projects, integrated within a multi-sector development plan (MSIP) to support the goals of a physical and environmental development plan (PEDP).

Integrated Action Planning was expected to promote the use of spatial planning as well as to improve investment programming. This it had not succeeded in doing to any great extent. Efforts to use a fixed schedule of expenditures over 5 years as a guide were enormously weakened by the inabilities of municipalities to know the funds that would be available. The differences between the concept and practice of Integrated Action Planning, such as: Use of an MSIP without annual revisions, so that it remained a fixed schedule over 5 years; Closing of ward level meetings after cessation of the IAP exercise; Unsatisfactory participation of central government line agencies, perhaps the greatest obstacle to effective application of the IAP concept. Integrated Action planning focused on planning and development in local level. The plans and projects focused mainly on the development of local infrastructures and failed to address the development issues in a municipal or regional level (Mattingly et al.).

Long Term Development Concept for Kathmandu Valley (Vision 2020)

The Government of Nepal approved the Long Term Development Concept for Kathmandu Valley prepared by KVTDC in 2002**,** with an emphasis on consideration of a whole valley as single entity. It has highlighted that all development works should be carried out in context of the whole valley taking care of heritage, environment and ecology. The policies of the vision plan are:

- A valley-wide apex body to be formed with proportionate representation of local bodies;
- Job opportunities shall be decentralized so that people can settle in any location of the valley;
- Delineation of rural and urban boundaries so that separate planning standards can be enforced in rural and urban areas;
- Investments should be channelized to certain sectors only, so that densification, development of new towns, and allocation of future land can be delineated;
- A system of planning permits and environmental impact assessment shall be introduced;
- Tourism-related activities shall be promoted and polluting industries shall be relocated to other towns outside Kathmandu valley;
- Bhaktapur and other traditional settlements to be declared cultural towns, Kathmandu to be declared a single administrative entity;
- Protection of public parks and watershed areas;
- Development of cottage industries; and relocation of security establishments to fringe areas from urban core.

The plan (Vision 2020) has adopted the containment approach which mentions that urban development of Kathmandu valley should adopt compact urban form, conservation of heritage and protection of surrounding agricultural land for the ecological balance of the valley. If the concept is fully adopted and implemented by all sectors, the conservation of urban heritages and development of the valley could be achieved significantly.

Municipal Periodic Planning

Municipal plans based on integrated action planning technique have focused mostly on physical aspects only. The IAP's attention aimed towards ward level problems has become the cause of neglect in municipal level

vision and desires. Although some municipalities have seen progress in physical aspects, issues such as social exclusion, urban poverty, environmental conservation, economic development, financial mobilization and municipal capacity building have almost been ignored in the previous planning efforts.

Local Self Governance Act (1998) has outlined the need of a participatory and comprehensive periodic plan for the municipalities, consisting sectoral goals and programs with a long-term vision and physical development plan of the municipality. As per the Local Self Government Regulations (1999), the periodic plan must propose activity schedule for five years as well as plan-making and approval procedures. The Municipal Periodic Planning Guideline 2002 prepared by Ministry of Local Development (current MoFALD) also requires and guides municipalities to prepare municipal periodic plans. Regarding the need of technical support to the municipalities, the Tenth Plan 2002-2007 has prioritized the preparation of periodic plans of municipalities. Nevertheless, none of the municipalities were found to have initiated the periodic plan as per the guidelines. Concerted efforts have been put by Department of Urban Development and Building Construction (DUDBC) in coordination with former Ministry of Local Development and the municipalities. The support includes preparation of municipal periodic plan, digital maps and profile of base line information. Organizations like GTZ/ UDLE and RUPP (Rural Urban Partnership Program) are also providing technical and financial assistance to municipalities in technical capacity building.

Long Term Development Planning

The concept of long term development planning has been derived from National Urban Policy 2007, which advocates the necessity of long term development plan through the strategy for balanced national urban structure: developing one regional economic center in development regions for the consolidation of industrial and trade related activities as well as social structure through infrastructure development.

Long term development plan is a planning document which not only consists of plans and programs for physical, social, economic and environment development of a particular region (generally an area with several VDCs and municipalities within same district, sharing a common resource base for development and livelihood)., but also a clear understanding of settlement network of those areas, transportation network, roles and function of the settlements. Likewise, a continuation to the earlier structure plans, land use and bye law framework for the settlements according to their identified roles and functions in the regional context is taken up in long term development plans.

Table 2 Brief comparision of planning approach in Nepal

Contents	Master Plan/ Physical Development plan	Integreted Action plan	Municipal Periodic Plan	Long term Development Plan
Plan Content	Vision, Goals, Policy, Maps-urban form	Maps-growth areas, Investment plan	Vision, goal, policy, map-growth plan, investment plan	Vision, Goals, Policy, Maps-urban form, urban growth as well as investment plan
Nature of Plan	Comprehensive	Strategic & incremental	Comprehensive	Comprehensive
Planning process	Rational-technocratic/ goal seeking	Participatory-need matching	Rational and participatory	Rational-technocratic/ goal seeking as well as participatory
Data collection and analysis	Extensive and lengthy	Rapid and short	Extensive	Extensive and comprehensive

Planning horizon	Long-range	Short-range	Short range on plans and programs, long range vision, goals and investment plan	Long-range
Link to implementation			Link to resource, program, & performance indicators	Link to resource, program, & performance indicators

3.3 REVIEW OF ACTS AND POLICIES

Planning Norms and Standards 2013 (2069 B.S.)

Planning Norms and Standards was prepared by DUDBC in 2013, after completing a comprehensive literature review of national and international planning documents, existing norms and standards and policy of urban development related agencies and after a series of discussions with experts from related planning agencies. The Planning Norms and Standards draft has been prepared in context of the lack of coherence between physical development plans and the need for providing appropriate norms and standards of urban infrastructure and services. It has been formulated to manage an urban environment, improve an economic efficiency and the quality of life of urban areas, and also to make built environment functional and desirable.

Town Development Act 1988 (2045 B.S.)

This Act authorized the government to establish as autonomous and corporate committee acting through a management board. According to this Act, town development committee can control, restrict any development work in its planning area. Without the permission of Town Planning Committee, nobody can use forests, natural resources, agricultural resources, animals, ancient monuments, pilgrim' rest houses and religious places, public land and any kind of new development. The act contains plan for integrated physical development of town, plan for renewal/redevelopment of towns, plans for extension and expansion of towns/conservation plans, plan of new towns and plan for land use/zoning. The approval of plans is done by TDC through MHPP.

National Urban Policy 2007 (2064)

National urban policy of Nepal has the objectives to promote a balanced urban structure, sustainable urban environment and effective urban management. The national urban policy views urban centers as catalysts for economic development and places the role of local governments at the core of urban development agenda, while recognizing that investments have not kept in pace with the urban growth.

The policy advocates the need for coordination and cooperation among the related central government agencies, local government bodies, non-government organizations, related private sectors and financial institutions responsible for planning, execution of physical infrastructures, provision of urban services and facilities and operation of urban economic activities. To achieve balanced national urban structure, the policy proposes the strategy of developing self-reliant development regions through planning and developing urban settlement systems in each region. The policy advocates for the development of infrastructure services and facilities along the north-south growth corridors to promote trade between Himalayan and Terai regions. The policy also proposes the development of at least one large urban center to serve as regional economic center for export promotion of industrial and consumption goods and to provide specialized services. The policy advocates the development of linkages of smaller and medium urban centers with regional economic centers.

To strive towards effective urban management, the policy proposes to strengthen the institutional capacity of local bodies for the implementation of urban plans and programs. The policy also proposes the development of urban management system based on integrated and collective approach for the urban centers bonded by geographical proximity, sharing common natural and physical resources and interlinked through similar activities.

National Urban Development Strategy 2015

National Urban Policy 2007 is the principal document for guiding urban development in Nepal. Endorsing all from NUD 2007, NUDS 2015 was formulated which aims to fulfill the existing necessity of a systematic approach for urban development. It provides a strategy for urban development for the next fifteen years (up to 2030) in various urban sectors such as infrastructure, finance, economy, investment, land, environment, transportation, solid waste management, water supply and sanitation and governance. It assesses the existing urban situation and proposes the intended urban system for the next fifteen years. Major milestones by 2031 include annual investment of 2 percent of GDP in urban infrastructure development, access to piped water and 100 lpcd in urban wards, sewerage in all urban core areas, total electrification in all urban areas with 80% of households with alternative sources, road density of 7.5km/sq.km and 80% paved road in existing municipalities, 50% of new residential housing through land readjustment, 100% solid waste collection, high speed internet availability in all large and medium towns, at least 2.5% of land as open space at ward level in old and 5% in new municipalities, disaster risk management plan and capability in all municipalities, and 70% contribution to GDP from urban areas.

The main objective of the National Urban Development Strategy (NUDS) is to develop medium and long term strategic vision of a desirable national and regional urban system based on existing trends and regional resource potentials. It assesses the existing conditions and establishes benchmarks and desirable standards and identifies prioritized strategic initiatives for investment in infrastructure and environment to realize the comparative advantages of urban areas. The objective of national urban development is also to achieve a balanced national and regional urban system that strengthens economic and functional base of urban centers through enhanced inter-urban and urban-rural linkages, establish effective and efficient infrastructure delivery system and maintain a healthy physical, natural and social environment. It also reviews the institutional framework to facilitate implementation and monitoring of National Urban Policy (2007) and proposed urban development strategies. The implementation of NUDS is also expected to complement Nepal's effort to graduate from Least Developed Country (LDC) to Developing Country (DC).

NUDS is guided by five basic principles, namely that urban centers should be sustainable, inclusive, resilient, green and efficient. Strategies have been conceived to achieve desirable condition in each major theme infrastructure, environment, economy and finance but also indicate the social, economic and cultural vision of urban areas reflecting the highest values of society. Each strategy is backed by a number of activities recommended for each lead and supportive agencies within the different levels of the government, NGOs and the private sector.

National Land Use Policy 2012 (2069 B.S)

Land and land resources had played a very important role in economy and people's livelihoods in Nepal. Agriculture, forestry and tourism are the major sectors contributing to the nation's GDP. Haphazard urbanization is putting pressure on agricultural lands as well as forest areas. Hence, National Land Use Policy was created in order to address the issues of land and land resources so that they can be utilized in environment friendly way.

Following are the divisions of land use as per the policy:

1. Agricultural area

2. Residential area

3. Commercial area

4. Industrial area

5. Forest Area

6. Area for public use

7. Other areas as needed

National Land Use Policy encourages management and conservation of land as per the division of land use. With an aim to regulate uncontrolled urban expansion, the policy has made several provisions such as, to restrict uncontrolled land fragmentation, and to promote settlement development and planned urban development at suitable and desired places. The policy also has provisions for minimum area for green and open spaces in urban areas.

The policy empowers the government to acquire land as needed for infrastructure development. There are also policies regarding conservation and development of various historic, religious and cultural areas. Land use zoning is proposed as per geography, capacity and suitability of land. The policy advocates the development of integrated urban development of settlements in mountain and hilly regions and proposes to develop agriculture, forest, mines and tourism areas according to land suitability and fertility. The policy also makes provision for the change is land use other than designated one as and when needed for public welfare and infrastructure development.

Guthi Corporation Act 1964

This act gives the definition of a Guthi (religious trust) and identifies the role and responsibilities of Guthi Sansthan (Corporation). This act gives exclusive power to the Guthi Corporation to manage properties under its ownership. The Act classifies Guthi into three categories: Private Guthi, State Guthi and Exempted Guthi. The Act provides continuity to the trusteeship corporation established under the Trusteeship Corporation of Guthi Sansthan. The Act also makes provision to use income from movable or immovable property, belonging to the Guthi for the performance of religious rites and festivals, preserve cultural heritage and monuments and other

religious buildings, preserve ancient ornaments and articles of religious of and cultural importance. It prohibits registration of land belonging to temples or spaces for public festivals and worships.

Yet, the management of guthi land under this act has been unclear, and the Guthi Corporation has sold large amount of land under its ownership, to generate financial resources. The act has not been able to penalize individuals/institutions (tenants) who do not pay revenues. Due to the lack of proper management and record keeping, large amount of land and properties under its jurisdiction have been encroached upon and have been privatized through illegal means. This Corporation has been very much inefficient in taking care of the monuments and properties under its jurisdiction.

Environment Protection Act 1997 (2055 B.S.)

The government of Nepal published its first Environmental Protection Act on January 1997, mainly in order to maintain clean and healthy environment by minimizing, as far as possible, adverse impacts likely to be caused from environmental degradation on human beings, wildlife, plants, nature and physical objects. This Act is proponent to conduct Environmental Assessment of the prescribed plans and programsbefore implementation and Prohibits implementation of the proposal without approval. The Act empowers the government to give approval to the environmental assessment report.

The 4th, 5th and 6th provision of the act deals with submission and implementation of Proposal for approval. The 7th section includes rules for Prevention and Control of Pollution. Section 8, 9, 10, 11, and 12 includes provisions for environment inspector, Protection of National Heritage, Environment Protection Area, Establishment of a laboratory, Collection of Samples, respectively. In section 13, there is provision associated with the establishment and Operation of Environment Protection Fund. Similarly, provision regarding Power to Constitute Environment Protection Council, Concession and Facility, formation of committee, provision of compensation, Punishment, Appeal, Delegation of Power, are included in section 14, 15, 16, 17, 18, 19, 21, respectively. Conditions regarding Power to Frame Guidelines and Power to Frame Rules are elucidated in section 23 and 24. Section 3 mandates the proponents to conduct Environmental Assessment of the prescribed plans and programs before implementation.

Motor Vehicle and Transport management Act, 1993 (2050)

This act manages and regulates traffic management and development of convenient and effective transportation facilities to the public, prohibit driving of certain vehicles & in certain places for public security and welfare. The act necessitates the registration of vehicles and its withholding if the vehicles do not fulfill the required norms and standards. The act also Act constitutes a Transport management committee which regulates registration of vehicles based on set of criteria and guidelines and driving prohibition in certain areas regulated through the Department of Transportation and Transport management committee, chaired by the Chief District Officer. The Act also ensures the penalty provision of Rs. 200 - 15000 for any person using any vehicle in contravention to this Act.

Public Road Act 1974 (2031)

It prescribes rules for planned road construction with defined boundaries and road width as well as road construction with defined boundaries and road width. It prohibits any work on road without their prior approval and empowers the Department of roads. The act is specially to demolish house or structures built within road boundaries. This act prescribes rules for planned road construction with defined boundaries and road width. The Act prohibits any work on road without the prior approval from Department of Roads. This Act empowers the Department of Roads to demolish house or structures built within road boundaries. However the Act is silent over

how to address the issue of a large number of unplanned roads being developed in urban and peri-urban areas and narrow roads, 1-3 m wide developing in dense residential areas.

Land Acquisition Act, 1977

Land acquisition through expropriation is governed chiefly by the land acquisition Act, 1977. This Act empowers the government, by notifying publicly in the specified places, to acquire private land for the well-being of the general public. This act provides legal basis in the acquisition of private land: for the development of public property and to cope with any other emergency situation. The authority of land acquisition has been entrusted to the Chief District Officer (CDO) of each district and compensation rates were fixed by a committee headed by CDO. As per the act. Compensation rates for land should be as per prevailing market rates.

The main limitation of this Act is due to the inadequacy on the amount of compensation to be paid to the land owner. Section 16 states that for the compensation to the land owner, the compensation committee must take into consideration the current land price, the value of improvement and crops, and potential losses incurred by the owner due to dislocation. In many cases, however, the law requires compensation to be equal to the fair market value or just value of the land. The Act also does not contain any requirement that compensation be paid within a certain time limit, due to which landowners can be harmed by long delays in receiving compensation, and development programs may be held up by legal and administrative disputes caused by the delays.

National Transport Policy 2001

Transport Policy was formulated in 2001 keeping in mind that it was the key component for the development activities for Nepal. It aims for development of sustainable urban transport system to improve social and economic development of Country. The principal objective of the National Transport Policy is to develop a reliable, cost effective, safe facility oriented and sustainable transport system that promotes and sustains the economic, social, cultural and tourism development of the Kingdom of Nepal as a whole.

The main strategy taken was by strengthening the local governance for the development and promotion of transport system and increasing the involvement of private sector for expansion and preservation of the transport system. It has also indicated the limit and scope of work that will be done from the central level and taken responsibility of transport structure to be constructed from the central level.

This policy focus on short medium and long term master plan of construction and development of transportation infrastructure through central and local level. The necessity to connect all the district headquarter and east west mid hills highway and Cross border, regional and sub-regional transport and transit facilities led to formulation of this Policy. At the national level, the Policy emphasizes on North-South connectivity linking China and India—that may also serve as an important trade and transit corridor between China and India in the future. Apart from the present East-West Highway, the Policy proposes Mid-Hill Highway in the Hills and Hulaki Marg in the Southern Plains of Terai connecting east and west of the country. This policy also speaks about the safety and environmental aspect by introducing means of transport facility through solar power and electricity.

National Industrial Policy 2011

Industrial Policy, 2011 has been formulated with the objective of bringing positive changes in overall economic and social sectors of the country by means of sustainable and broad based industrial development. It aims in industrial productivity, local human and material resources, competitiveness and comparative advantages. It is expected that through this Policy, activities of industrial development will be increased; employment opportunities will be massively created and the level of income of people will be increased so that contribution of industrial sector in economy of the country will be at the forefront.

The policy proposed incentives for industrial investment along the least developed area, under developed area and un developed area, like Income taxes are exempted to industries that are established in these classified districts. This policy has been formulated in order to accelerate the pace of industrialization in response to the diversity in the service industry and opportunities arising out of them. In this policy, special provisions have been made for promotion of micro enterprises, cottage and small industries. Similarly, special policy provisions have been made for woman entrepreneurs, Dalit and disable workforce. Industrial policy is expected to have effect on influencing especially regional urban system as it encourages private investment to be channeled to underdeveloped regions.

According to National Industrial Policy 2011, Achham district is categorized under "Least Developed Area" and article 17.2 states, "Except in the case of an industry that produces all types of tobacco and liquors and kattha industries, the industries established in the least developed areas referred to in schedule-9 shall be entitled to ninety percent exemption in the income tax to be charged for ten years from the date of commencement of transaction."

Likewise, Baitadi district is categorized under "Undeveloped Area" as per National Industrial Policy 2011 and article 17.3 states "Except in the case of an industry that produces all types of tobacco and liquors and kattha industries, the industries established in the undeveloped areas referred to in schedule 10 shall be entitled to eighty percent exemption in the income tax to be charged for ten years from the date of commencement of transaction.

Therefore, it can be stated that through this policy, the government of Nepal encourages the socio-economic development of least and undeveloped areas of Nepal through the establishment of various industries in those areas, by giving substantial exemptions and subsidies in various government taxes to such industries established in least and undeveloped areas of Nepal.

Solid Waste Management act 2011

This act plays an important and beneficial part in management of the solid waste in a systematic and effective way. This act identifies the polluter as the main responsible for the management of the waste. In the various provisions in this SWMA 2011 the concept of 3R has been introduced like reducing the waste at its source, re-using the waste if possible and Recycling and processing of the waste and finally disposal or discharge of the waste in Sanitary Land fill site. This act speaks about maintaining a clean and healthy environment through the reduction of adverse effects of waste to public health and environment. The provision of waste management council has also been created for effective management of the waste.

This act has outlined the duties of local government to take action against haphazard waste generation, disposal or collection of waste. The waste produced from the industries and Health sector are also considered as hazardous waste if not managed properly and the provision of penalty to the polluters has been included in this Act.

The main challenges of the act are no clear provision for small towns, and weaker enforcement. Solid waste Management have been major responsibility of the municipalities but it not on their top priority and lack of efficient resources mobilization has also hinder the effectiveness of managing the waste.

Ancient Monument Preservation Act (1956)

It empowers the government to declare any area where any ancient monument is located as protected monument Zone. It prohibits any development work without a prior approval from the department of Archaeology. This Acts states that findings of any archaeological excavation belong to the government property. The act will provide a clear legal framework during preparing IDP in the proposed towns if any ancient monumental or archeological sites are located within the boundary of project area.

Motor Vehicle and Transport management Act (1993)

For a city or an urban area, managing and regulating the traffic and providing convenient and effective transportation facilities to the public is important aspect. The urbanizing towns with shortage of land may face severe problem of congestion and traffic pollution thus it act has legal provision to prohibit driving of certain vehicles & in certain places for public security and welfare. The act has a provision for a Transport Management Committee headed by Chief District Officer and helps to regulate registration of vehicles, manage routes, fix the bus fares and perform other necessary works provisioned in the act.

In proposed NTs, the act supposed to guide us to locate the public vehicle route and inter connectivity of transport services (regional and sub-regional). When the town attain the projected population of one lakh, it is certain that the vehicular number and public vehicular route will rise. The regulation of vehicle and vehicular permit will be based on this act.

Public Road Act (1974)

The act prescribes rules for planned road construction; regulating road width and its boundaries within which no houses can be built. That means, it helps to determine the Right of Ways of the road to be constructed, proposed or existing road. The act has a legal provision to assign the road boundary and carry out road construction work with the approval from department of roads. The public road act has categorized road into National Highway, Arterial Road, District Road and Urban Road.

Basically in preparation of IDP, assigning the RoW and DPR work of road shall be guided by this act. The compensation of the land falling under the proposed road alignment during the preparation of IDP shall be made accordingly, as per the provision made by this act.

National Road Standard (2070)

The road standard was recently prepared by Department of Roads to guide the preparation of road with designated standard of designated use. This helps to design a road based on the vehicular occupancy, frequency, vehicular speed, type etc. This will help to prepare a road DPR during preparation of IDP of the proposed towns. It gives the design criteria for different types of road. Basically it will guide an urban road category and the design component has to be used accordingly.

Nepal Urban Road Standard prepared by DUDBC (2071)

It includes the conceptual diagram of urban structure and urban road network including hierarchy, which will serve as a guideline for planning and design of urban roads as well as land development projects, the systematic classification and standardization of urban road and its elements applicable to Nepal. The standard provided shall be used to plan and design the road network in the proposed new towns but at the mean time it shall be in compliance with National Road standard.

Nepal Urban Drain Standard prepared by DUDBC

It includes the systematic classification, standardization and planning of urban drainage and its elements applicable to Nepal, Serving as guide and reference in the planning for waste water collection, treatment and disposal system including designing and estimating, providing useful guide and reference for preparing drainage and sewerage network plan.

Town Development Fund Act 2053

The town development act was formulated in 2053 B.S to meet the following objectives,

- To provide necessary economic and technical support to the body related with the development of town.

- To carry out or cause to carry out necessary functions to make the town neat and clean.

- To operate or cause to operate social service and income oriented project of various types.

- To carry out or cause to carry out functional research in order to identify the way of solution for the problems seen in respect of possible reforms to be made for the development of town.

Thus to meet the following objectives, projects identified by IDP can be implemented through the financial and technical support from TDF.

Industrial Enterprise Act (1992)

It regulates the establishment, expansion and modernization of industries through licensing and registration systems. It has a provision of economic incentives to enterprises installing equipment to mitigate industrial pollution. It does not specify pollution control measures in industries as mandatory provision. This act is supposed to help to identify the industrial area in proposed NT's. It also established a base for the industrial area determination and type of industries to be established.

Labor Act (1992)

The act came into force after the restoration of democracy as an outcome of protecting the right of the labors. It creates a healthy, safe and secure environment for workers and directs industries or any enterprise to arrange residence for workers. It also prohibits employment of non Nepali Citizens without permission from the Department of labor.

The labor act holds an importance in any urban area as the development process and urbanization course requires numbers of labors. IDP shall come up with a strong provision of protecting labors right provisioned in this act.

National Transport Policy 2001

The national transport policy is a guiding document which encourages local as well as central level government to prepare the transportation master plan and its implementation. The main objective of this policy is to ensure regional dispersion of road network and equitable distribution of road density. It also inspires the local as well as central level authority to manage organizational structure, to develop the self-reliance capacity for the arrangement of source of investment in the construction, repairing, maintenance and strengthening of the transport infrastructures and operate the same by providing required service. Its main objective is to provide equitable transport service to all citizens ensuring the access within 4 hours in Hills and 2 hours in Terai. The policy clearly states that the priority shall be given to connect all districts with national road system and north-south connectivity. The central level prioritization to N-S Connectivity has added importance in Baireni – Galchi new town. Thus, it can be assumed that the investment priority will be concentrated in the corridor passing through Baireni - Galchi.

The policy also states that the planning should be done to respond air and sound pollution in city level. The inner city transportation is another key factor that has to be considered in the proposed new-towns. The policy also directs to maintain the road safety, standards, quality, and involvement of private sectors. It has also categorized the road into central road system, local road system and urban road system. The urban road system are under the TDC and VDC.

National Urban Policy (2064)

The national Urban Policy is a guiding document to respond the uncontrolled urbanization and urban problem. The issues of urban sectors like development of infrastructures, generation of employment, management of environment and balanced urban regional growth has been pointed in National Urban policy. The policy basically has three main objectives,

- To develop infrastructure services and direct investment to achieve balanced urban form

- To improve the livelihood of urban population through the creation of clean, secure and prosperous urban environment

- To make the local bodies capable of managing urban issues effectively through delegation of power, institutional strengthening and cooperation between agencies working in urban issues.

The policy has pointed our several strategies and working policies to achieve targeted objectives. The proposed NTs is an outcome of this policy and it is expected to create balanced regional development. The IDP of NT's shall be based on the national urban policy where plans and programs shall be formulated as per the strategies mentioned in National Urban Policy.

National Industrial Policy 2011

The Industrial Policy 2011 is a rationalized modification of the 1993 version, with mandatory changes. The drafting of Industrial Enterprise Act 1993 was an impulsion of this policy, which came up with several liberal policies to encourage industrial establishment. The main objective of this policy is to strengthen the economic development through industrial development. It also tends to encourage the investment in this sector so that it could generate scaled employment. In the context of New towns, the policy encourages promotion of the industries that use local resources, raw materials, skills, labor and technology. The town can be benefitted from the establishment of small scale and cottage industries, which shall be sustainable economic base for the future. The policy also talks about providing incentives, financial and technical assistance to those industries which uses green (pollution free and less carbon emission) technologies and are environment friendly.

The agro-economic base of the current towns could be taken as the basis for the establishment of agro-production industries. The National Industrial Policy has clearly mentioned under its section 9, the promotion of micro enterprise, small scaled and cottage industries shall be done through providing infrastructures and institutional organization. The local level plan for the industrial development shall be in consonance with district industrial development policy and in this context, the new towns are liable to have some sort of mechanism for the industrial development. For this, a separate industrial area may be identified in a project area.

Land Use Policy (2069)

The policy was drafted in 2069 to regulate and direct the use of land. The broader objective of this policy is to direct the use of land according to its classification. The policy is expected to protect, manage and use the land according to its use. The Policy is also expected to manage and guide the land subdivision to encourage planned urbanization. The policy also directs to prepare land use plan and states to conserve the environment sensitive, religious, cultural, tourism and other important sites.

The preparation if IDP of proposed NT's encounters with a proposal of Land Use plan and Zoning regulations. This shall be guided by land use policy to an optimum level. The Policy shall be referred to prepare a planned township.

National Urban Development Strategy 2015

The strategy formulated by the Ministry of Urban Development was published in 2015 and has been endorsed in ministry. Although it doesn't have any legal backing and institutional implementation mechanism, it is a guiding document for the urban development of Nepal. The growing urbanization and transformation of land use in non-rural has risen an issue of management in urban. The global population at present crossed 50% and Nepal's urbanization is also in a rapid pace, which accounts nearly 50% of total country's GDP. In this backdrop, the urban areas are the engines of growth and required strategic management of services and assurance of good urban governance. The strategy has been developed to promote different theme in the urban sector like urban infrastructures, system, transportation, housing, environment, energy, water supply and sanitation, economy, solid waste management, urban governance, urban finance, urban land management and so. NUDS suggests the promotion and effectiveness of these themes through urban investments.

The time horizon set for achieving desired urban scenario is 15 years and strategies have been conceived to achieve desirable condition in each major theme – infrastructure, environment, economy and finance. The strategies have been conceived to achieve desirable condition in each major theme – infrastructure, environment, economy and finance – also indicate the social, economic and cultural vision of urban areas reflecting the highest values of society. Each strategy is backed by a number of activities recommended for each lead and supportive agencies within the different levels of the government, NGOs and the private sector The NT's shall also be guided by the strategies formulated and IDP should tend to correspond the activities and program to achieve the specific objective of NUDS.

Building Bye-Laws

The scope of work under IDP covers preparing building bye-laws proposal for the proposed towns. The review of the bye-laws shall provide the clear vision to set the criteria for building bye-laws proposal and help to prepare bye laws for the study towns. This review has covered study of Model Bye-Laws prepared by DUDBC, Bye laws of some cities like Kathmandu, Pokhara and so on.

Model Building Bye Laws (2070)

DUDBC has published a model building bye laws in 2070 to guide and regulate building construction process in those municipalities which does not have its own building bye-laws. It is not mandatory for them to implement and adopt the proposed building bye-laws but if any municipality or towns intend to adopt the model bye-laws, they can use it. The criteria set in the model building bye-laws can also be useful in preparing bye-laws for the proposed NT's. Unlike bye-laws of other cities like Kathmandu, Pokhara, Dharan etc, this has set-up building criteria in more detail with a section explaining the process of municipal approval.

Basic Building Byelaws for Settlement Development, Urban Planning and Building Construction (2072)

MoUD has published a basic building byelaw for guiding and regulating building construction and urban planning as well as reconstruction process in the country in the immediate aftermath of the recent Gorkha Earthquake. It tries to make the urban planning and building construction process more monitorable, holistic and disaster resilient. It has made provisions for the municipalities to implement risk sensitive land use planning mandatory. Likewise it has made provisions for resettlement of hazard prone areas, and reconstruction process more inclusive.

Byelaws of other cities

The bye-laws of Pokhara and Madhyapur Thimi have provision of setting building height as per the use whereas; Kathmandu uses the concept of FAR. The basic use of the bye-laws is to ensure development control and implement building code. However, it also ensures the right of the neighbor by provisioning light and ventilation standards. Bye-Laws of the Kirtipur Municipality has clearly mentioned the RoW of each road whereas in Pokhara, bye-laws states the setbacks of building in different locations.

The study of different bye-laws will help to draft better and integrated bye-laws for the proposed towns.

Planning Norms and Standards

The planning norms and standards prepared by DUDBC was released in its website in 2013 whereas published recently in 2015. It has set the planning guideline for the urban area of different population size. The norms has set the urban area with population size 40,000 to 100,000 as a city, thus the proposed NT's fall under the category of city. There are several criteria mentioned in the standards varying from the size of road, water supply and sanitary measures, electric supply, waste management, educational institutions, health institutions, stadiums, university, public library and so on. The provision of all the services and infrastructures has to be made during preparing the IDP for new towns.

Chapter 4
STUDY AREA

4.1 Administrative and Geographic Status

Patan New Town lies in Baitadi district of Mahakali Zone of Far Western Development Region. This town comprises of Patan, Basantapur, Bhumeshwor, Sakar, Silanga and Gujar VDCs. The total area of Patan New Town is 119.63 sq. Km, with Silanga and Sakar VDCs having an area of almost 26 sq. km each. The smallest VDC in Patan New Town Basantapur has an area of about 12.64 sq. km. Patan New Town has Siddheshwar VDC and Siddhapur VDC of Baitadi District to its east, Gurukhola VDC, Basulinga VDC and Dehimandu VDC of Baitadi District to its North, Durgasthan VDC and Salena VDC of Baitadi District to its West and Kailpal VDC and Melauli VDC of Baitadi District to its South. The total population of Patan New Town in Baitadi District as per National Census 2011 is 19,911, of which the total male population is 8,996 and total female population is 10,915, such that such that the sex ratio is 815 i.e. the number of male in 1000 female. There are 3,918 household

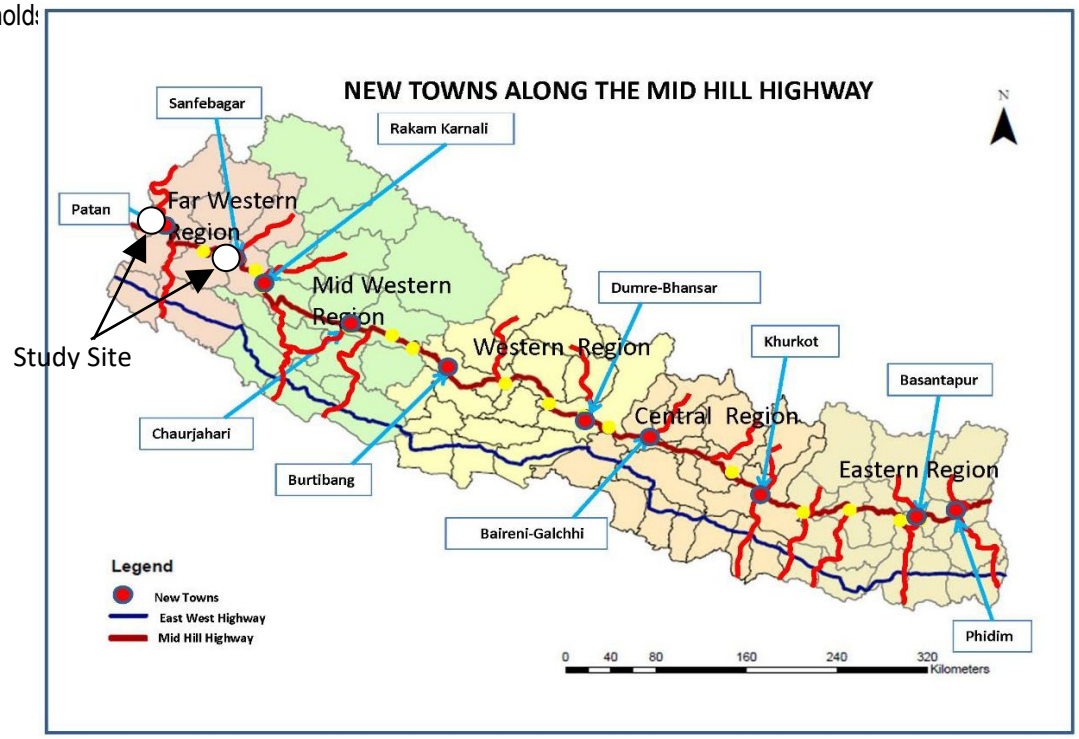

Figure 1: New Towns along the Mid-Hill Highway

The population density of Patan New Town is about 2 person per hectare. Among the six VDCs constituting the New Town, Patan VDC has the highest population density in the NT, of about 3 person per hectare and Silanga VDC has the lowest population density in the NT, of about 1 person per hectare. According to the National Census 2011, among the total population of Patan New Town, 9,932 people are in between the age of 0 to 19 years, 8.192 people are in between the age of 20 to 59 and 1787 people are in between the age of 60 and 75+ years. This data shows that almost 50 percent of the total population of Patan New Town is dependent population, and the working population constitutes 41 percent of the total household of New Town.

4.1.1 Climate

Temperature of Patan New Town during winter season varies from 15° to 18°C and 20° to 25°C during summer season. Sub tropical monsoon climate and Lower amd Upper temperate climate is found in different VDCs of Patan New Town. The average annual rainfall is 1513 mm and the rainy season is from late May to early October.

4.1.2 Water Shade and Water Bodies

Patan New Town is rich in water resources. There is one major river, Surnaya Gad which provides water and electrivity services to people of Gujar, Patan, Basantapur and Sakar VDC. Other rivers flowing through the New Town are Goshaigadh, Aaghari River, Syadigad and Bagadigad River. These rivers serve the area of Sakar and Silanga. These water sources are the primary sources of irrigation in New town. Besides, many rivulets and Arteries flow within new town. Small Streams (Kholshi) and Kuwas are the main source of drinking water of new town.

4.2 Demography

4.2.1 Population Distribution

Patan New town is located in Baitadi district. According to census 2011, the total population of municipality is 19,911 with total number of households as 3,918. The population accounts for only 7.89 % of the Baitadi district as against its share of 8.24 % of the area of the district.

From the census survey 2011, it is found that number of households in Patan municipality is 3918 with an average household size of 5.08 and population density of 166.38 persons per sq. Km. Ward wise distribution of population indicates that highest population is in ward 11 with the total of, 1989 (9.98% of the total) and lowest population is in 10 with 910 (4.57% of the total).

Table 3 Patan-Population Density with Households

Municipality	Ward	Area	Households	Total population	Male	%	Female	%	Population Density
Patan	1	11.589	261	1449	636	7.04	813	7.48	125.03
	2	14.084	328	1828	842	9.32	986	9.07	129.80
	3	8.439	292	1570	663	7.34	907	8.34	186.04
	4	18.152	182	1033	502	5.56	531	4.88	56.91
	5	8.312	268	1231	554	6.13	677	6.23	148.10
	6	7.050	297	1564	678	7.50	886	8.15	221.85
	7	9.810	306	1682	742	8.21	940	8.64	171.46
	8	9.120	338	1780	865	9.57	915	8.41	195.17
	9	10.089	333	1647	725	8.02	922	8.48	163.25
	10	2.607	179	910	389	4.31	521	4.79	349.02
	11	9.249	427	1989	926	10.25	1063	9.77	215.04
	12	9.283	364	1830	838	9.27	992	9.12	197.14
	13	1.886	343	1398	676	7.48	722	6.64	741.15
	Total	**119.670**	**3918.000**	**19911**	**9036**		**10875**		**2899.95**

Source: CBS, 2011

4.2.2 Age-sex Composition

The population distribution by age shows that the highest proportion of population falls under the age group of 15- 59 years accounting for 52.93 percent of the total population with 54.82 percent of females and 45.18 percent males in their respective sex groups. Table below presents population composition and sex ratio by wards.

The distribution of population by broad age groups viz. 0-4 years (children), 5-14 (school going) 15-59 years (economically active) and above 59 years old reveals that about 12.05 percent of the total population falls under 0-4 age group; 26.04 percent population are of school going 5-14 years age group; 52.38 percent in 15-59 age group and 8.97 percent in 60 and above age group respectively. This figure shows about 52.38 percent of the total population falls under economically active population category.

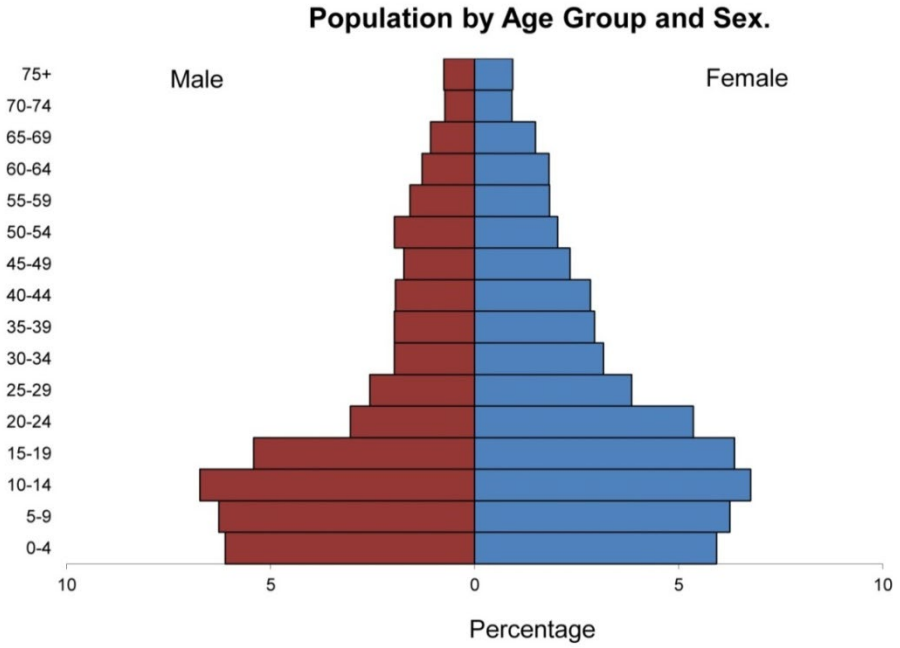

Figure 2 Patan-Age-Sex Pyramid

Table 4 : Patan- Distribution of Population by Age Groups

Age Groups	Male	Percentage	Female	Percentage	Total	Total Percentage
0-4	1218	50.77	1181	49.23	2399	12.05
5-14	2590	49.95	2595	50.05	5185	26.04
15-59	4419	41.93	6121	58.07	10540	52.94
60 and above	769	43.03	1018	56.97	1787	8.97
Total	**8996**	**45.18**	**10915**	**54.82**	**19911**	**100.00**

Source: CBS 2011

4.2.3 Population by ethnicity

The ethnicity and caste pattern of the municipality shows diversity with major ethnic groups as Chhetri (41.77 %), Brahmin-Hill (30.83 %), Damai/Dholi (6.55 %), Lohar (6.29%), and Thakuri (5.45 %) Kami (3.63 %), and Dalit others(2.60). Besides these ethnic groups other various ethnic groups comprises small proportions of the population such as, Kumal and Sarki.

Table 5 Patan- Population by Caste Composition

Caste	Total	Male	Female
Chhetri	8316	3742	4574
Brahman - Hill	6139	2831	3308
Kami	722	320	402
Damai/Dholi	1305	587	718
Thakuri	1085	472	613
Lohar	1253	531	722
Dalit Others	517	257	260
Others	69	41	28
Tharu	11	5	6
Sarki	16	7	9
Kumal	23	14	9
Terai Others	13	5	8
Total	19911	8996	10915

Source CBS 2011

4.2.4 Population by mother tongue

Almost all (98.62) percentage of the population speak Baitadeli language, a far-western dialect of Nepali language, followed by small portions of Nepali, Sureli, Magar and other languages. Table below shows the status of mother tongue in Patan municipality.

Table 6 Patan- Population by mother tongue

S.N.	Mother Tongue	Total	Percentage
1	Baitadeli	19637	98.62
2	Nepali	161	0.82
3	Surel	14	0.07
4	Magar	23	0.12
5	Others	76	0.39
	Total	**19911**	**100**

Source CBS, 2011

4.2.5 Population by Literacy

The literacy rate of the population 5 years and above is 71.37 %. The literacy is characterized by higher proportion of literate males than females. The literacy rate of females is 58.53 percent while that of males is 87.6 percent amongst their respective population groups. The proportion of illiterate female is therefore higher in comparison to males i.e. 29.07 percent females and 9.82 percent males among their respective group.

Table 7 Patan-Literacy Status

	Population aged 5 years & above	Population who			Literacy not stated	Literacy rate
		Can read and write	Can read only	Can't read and write		
Both sex	17512	12580	615	4315	2	71.37833
Male	7778	6839	228	710	1	87.6
Female	9734	5741	387	3605	1	58.535

Source CBS 2011

4.2.6 Population by Education Level

The level of education of the literate population indicates that there is not much difference between female and male proportion in school education (from primary to higher secondary) levels. However of the total, the proportion of males in higher levels from bachelor and above, only 9 females have attained Bachelor compared to 57 males.

Table 8: Patan-Population by Educational Attainment

S. No.		Total	Population that have completed the education level of									Non formal education	Level not stated
			Beginner	Primary(1-4)	Lower secondary(5-8)	Secondary(9-10)	SLC and equivalent	intermediate and equivalent	Graduate and Equivalent	Post graduate and ...	Others		
1	Both Sex	128199	697	5292	2779	1627	988	560	149	56	10	645	16
2	Male	6956	351	2674	1551	984	614	361	139	53	4	219	6
3	Female	5863	346	2618	1228	643	374	199	10	3	6	426	10
4	Percentage	100	5.44	41.28	21.68	12.69	7.71	4.37	1.16	0.44	0.08	5.03	0.12

4.2.7 Occupational Structure

The census data shows that significant population (51.15 percentage) has agriculture as basic occupation. After agriculture large portion (31.13 percentage) of population has study as basic occupation. As source of income, people are dependent upon labor, services, business, foreign jobs and other occupation after agriculture.

Table 9 : Households with different economic activity

Patan Municipality	Agriculture	Business	Services	Industry	Foreign Jobs	Labor	Student	Other
AVG	51.15	1.25	3.66	0.02	1.22	5.70	31.13	5.95

4.3 Regional Context

Patan is the main gateway to the district headquarters, Baitadi. Mahakali highway connects Patan through Dadeldhura - Darchula and Gothalapani Baitadi via road ways. Airport present at Patan is not in operation now. Patan is the main market centre of Baitadi district. Patan ,being the main commerce and trade centre ,most people from other VDC's migrate here for better job opportunities and education facilities .The new way for Patan-Pancheswor (20.5km) Multipurpose project through Patan has been launched recently where only 14km of the road network lies within our study area. It can be accessed through Nepal by two days walking from Patan, Baitadi. Pancheswor and Jhulaghat, being the gateway to Nepal –India border is through Patan. Due to large area of Pilgrimage, lots of people from and outside the country visit this VDC for religious purpose. But due the difficulty in road network this is not being able to be sustended in improving its tourism potential .Also there are agricultural based industries which can further improve its commercial potential.

4.4 Physical Infrastructure

4.4.1 Road and Transportation

The total length of SRN (Strategic Road Network) road within Baitadi is 172 km where 161 km is blacktop and 11 km is Earthen .A new construction road Patan-Sakar-Kaipal is under construction where Patan-Lorkhe (3km) road has already been constructed .There are no feeder roads running through this municipality. Baitadi district is connected to other areas by Mahakali highway i.e.Anarkholi-Gokuleshwor (100km). Out of which Khodpe-Patan (20km) highway runs through Patan municipality and whole road area is black topped. A district road Patan-Pancheswor (20.5km) runs through this municipality and is all earthen.

Table 10 National Highway and district roads within Patan New Town

Code	Name of Road	Total Length(km)	Black Top (km)	Gravel(km)	Earthen(km)
H14	Mahakali highway (Khodpe-Patan)	20	20		
74DR005	Patan-Pancheswor	20.5			20.5

Source: Baitadi District DTMP, 2013

The other roads which are not kept in DRCN (District Road Core Network) but are listed as important roads used in this municipality are Bhumeshwor-Pakhadhar-Rouleshwor Road, Salena-Basantapur Road and Adtola–Samayaji–Sakar-Kailpal Road. There is also an airport at Patan New town, situated at ward no 13, but the airport has not been in operation since the Maoist insurgency, due to security reasons. In the last few years, some efforts have been made to bring the airport in operation, but the efforts have not been fruitful yet.

Table 11 Road Density per 1000 population within Patan New Town

Ward No	Total Road	Total Population	Population/1000	Road Density km/1000
1	6.244	1449	1.449	4.309
2	10.920	1828	1.828	5.974
3	17.993	1570	1.57	11.461
4	13.926	1033	1.033	13.481
5	15.194	1231	1.231	12.343
6	14.739	1564	1.564	9.424
7	23.579	1682	1.682	14.019
8	26.185	1780	1.78	14.711
9	22.706	1647	1.647	13.786
10	9.760	910	0.91	10.725
11	26.393	1989	1.989	13.270
12	25.573	1830	1.83	13.974
13	10.675	1398	1.398	7.636
Total		**19911**		**145.111**

4.4.2 Water Supply

Majority of water sources in Patan municipality are kuwa and small streams (kholsi). Still people use small kholshi for the fulfillment of their water needs . At present Surnaya Gad is the main khola in Patan bazar which provides the water supply system to the areas near the river. A number of small water supply projects have been implemented in Patan New town in the past, but most of the water supply projects providing the service are not in proper condition/functional at present. The constructed taps have been damaged and needs to be repaired. Nepal Government, ADB, VDC offices, UNICEF, Fund Board etc were the implementing agencies which were providing supply service in this municipality in the past. Maximum of the households do not have their private taps and have to walk for hours to reach the public tap to fetch water. According to the local inhabitants, availability of drinking water is the main problem they are facing in their day to day life .The following table shows the source of drinking water in the municipality.

Table 12 Water Supply in Patan New town

VDC	Ward No.	Pipeline Water	Undergound water (well,kuwa)	Surface Water(River,lake,ponds)	Ground water source
Sakar	1	148	107	4	1
	2	262	26	10	3
Silanga	3	211	21	70	0
	4	29	58	91	5
Gujar	5	215	40	8	0
	6	227	44	8	0
Bhumeshwor	7	243	29	2	0
	8	175	67	11	0
Patan	11	218	39	99	32
	12	310	45	0	0
	13	183	23	1	16

Source: Household Survey, 2067

Recently Department of Water Supply and Sanitation Division Office, Baitadi has conducted a feasibility study of Patan municipality covering 4 wards (6,7,11 and 13). According to the study, intermittent supply of about 1.5 hrs per day from the main system is only provided to the core city areas while other areas are served by their local systems . The proposed Water Treatment Plant has the capacity of 2500m3/day consisting of Collection Chamber ,Sedimentation Tank ,Horizontal Flow Roughing Filter ,Slow Sand Filter and Chlorination .

Table 13 Patan- Proposed Water Supply System Appurtences

Scheme no.	Intake	Public Tap	Private Tap
1	Dalli Khola Spring Intake	20	
2	Valdona Khola Stream Intake	20	125
3	Garje Khola Stream Intake		200
4	Selak khola Stream Intake		90
5	Kanadiya Muhan Stream Intake	4	20
6	Chaumala Khola Stream Intake	70	
7	Patan Lift DWSO		

4.4.3 Sanitation / Sewerage System

Patan municipality allows self drainage system and there are no flooding issues. The existing road side drains and culverts drain out all the water to the natural gullies and streams. But due to lack of maintenance on regular basis of the road side drains, the road condition becomes very critical during the rainy season and the slab covers are seen to be broken in many places.

Patan municipality is the only service provider for waste collection within the municipality. It has adopted a routine for the collection of waste by wards. In the main bazaar area i.e. ward num 11 and 13 wastes is collected daily in the morning while in other areas of ward 6, 7 and 8 it is collected on weekly basis.

All the households in this municipality have constructed septic tanks to manage the domestic waste. The municipality has one septage suction vehicle which collects septage from private houses and disposes in the dumping site which ultimately flows to Santoli Khola at Patan, ward number 11. There is no provision of waste water treatment facility as there is no water treatment plant . The households near the river tributaries dump out their waste in the rivers i.e polluting the natural resources .The Socio-economic survey,2010 shows that majority of 35.78% of houses have pit latrine and 64.22% have ventilated pit latrine. There is one public toilet in Patan Municiality which is located at bus station but the condition of the toilet is not satisfactory. Presently, a bus park is being constructed near the airport, with provision of a number of public toilets, catering to the people of bazaar area.

The census survey indicates that 41.45 percent of household are without toile facility who use open space for toilet. In remaining households 49.23 percent have flushed toilets and 8.93 percent have ordinary toilet.

Table 14 Households by type of toilet in Patan New town

Households by type of Toilet.					
Patan Municipality	**Total**	**Households without toilet facility**	**Households with toilet facility of**		**Toilet facility not stated**
			Flush toilet	**Ordinary toilet**	
Total	3918	1624	1929	350	15

Percentage	100.00	41.45	49.23	8.93	0.38

With expansion of settlement, quantity of waste increases which may pollute the River and it may directly affect the environment of the New Town. Therefore, keeping in view of the targeted population for New town, the need for a land fill site and a waste water treatment plant is urgently felt. A detailed feasibility study at Swargeni Peepal, only few kms from the municipality has been done and the site has been selected for the development of the land fill site for Patan New town.

4.4.4 Electricity Supply System

Surnaya Gad Hydroelectricity Project (240W) is providing Electricity Service for Patan New town. However, all the households and all the wards of the new town do not have electricity access. Bazzar area like Patan has gained the maximum benefit especially wards no. 12 and 13. Most of the wards of other VDC's like Basantapur, Gujar,Sakar are still deprived of the electricity. Only 2 phase line are available for household but no 3 phase line system due to the absence of small scale industry. 82.3% family use electricity produced by Government whereas 15.94% still use keroscene for electricity. Previously Surnaya Gad hydropower had two turbines on its service but now one of the turbines is out of its operation. Due to which there is large drop in voltage and unannounced load shedding in regular basis is prevalent mostly during the morning and evening peak hours. Also the worn out condition of the electric poles and transformers are the major problem here which needs immediate maintenance and upgrading.

Api Hydropower (18.5MW) from Darchula is also under construction which brings the positive result in providing electricity service to Patan. Also The Department of Electricity Development, Ministry of Energy has provided the survey license for 40MW Upper Chameliya Hydropower Project from Darchula which has not been started yet.

4.4.5 Information and Communication

Almost all household use mobile phones, telephones, watch televisions, listen radios as their source of knowledge and entertainment. Few Local radio stations like Saugaat FM, Ninglashaini FM are providing peoples with day to day information. Local newspaper is not published from Patan but it is brought from the headquarter which takes about two days to reach Patan.

According to Nepal Telecom office, Baitadi, at , 67 MSAN lines are distributed in Patan New Town. There is mobile network service of NCELL, GSM mobile of Nepal Telecom and CDMA within all area of new town but network signal of NTC is very low in the Patan New town area. Though Hulak Sewa is not considered important in the era of internet but two postal offices at Patan and Khodpe have become one of the sources of communication.

Table 15 Use of Communication system in Patan New Town

Technology	Number of family
Radio	616
Television	361
Telephone including mobile	292
Computer	12
Email,internet	7

Source: Household Survey, 2067

4.5 Social Infrastructure

4.5.1 Education

In average 71.37 % of the population in Patan municipality can read and write. This percentage varies between sexes: Male 87.61 and Female 58.53. Enrolment is highest in the primary level. Enrolment decreases significantly in

the higher secondary level and even lesser for higher education. Only around 1% of the total population have completed a bachelor's or higher degrees. Out of this more than 93% are men and many of these men tend to go to go to larger cities for better education. Such gender disparity in education is mainly caused by the gender discriminatory practices and beliefsthat are deeply rooted in the cultural fabric of the Region.

The teacher student ratio in the district level at the primary and secondary level is 45.14 and 39.19 respectively. This is above the national average for the same year: primary level 41.1 and Secondary level 30.1, thus showing a clear lack in the numbers of primary and secondary level teachers. The Focus Group Discussions conducted in Gujar and Patan VDCs also repeatedly emphasized on the lack of school teachers and its adverse impact on the quality of education.

There is one campus, 22 primary schools, 12 lower secondary schools, 3 secondary schools and 5 higher seconday schools in the municipality; details of their types and location is given below:

Table 16 List of schools in Patan New Town

VDC/ Municipality	Name	Location	Number of students enrolled
Basantapur VDC	BhumirajPra V	Tikapur, Basantapur-2	
	Laxmi Ni Ni Ma V	Suntoli, Basantapur-1	
	Shiva Shakti Ni Ni Ma V	Bagaun, Basantapur-7	
	Tripureshwor Ma V	Dwakulada, Basantapur-5	
	Udayadev Ni Mi V	Dhanchuli, Basantapur-9	759
Bhumeshwor	BhagawatiPra V	Dhakali, Bhumeswor-4	
	BhumeshworUchha Ma V	Thand, Bhumeswor-2	
	KailpalPra V	Basti, Bhumeswor-4	
	MasaniJanajatiPra V	Jeude, Bhumeswor-1	
	NagarjunSeipalPra V	Kholsi, Bhumeswor-3	
	NawaDurga Ni Ni Ma V	KudiKudi, Bhumeswor-8	
	SahasralingPra V	Basti, Bhumeswor-6	
	Siddha KedarPra V	Chillepani, Bhumeswor-9	
	TrinetraEbs	Thand, Bhumeswor-4	
	UdayaPra V	Bagadi, Bhumeswor-1	1062
Gujar VDC	BalKalyan Ni Ni Ma V	Boharigaun, Gujar-6	
	GaudaliPra V	Gaudali, Gujar-2	
	Ma V Gujar	Gujar, Gujar-9	
	SarawatiKedarPra V	Kaltadi, Gujar-8	
	SigashPra V	Bunada, Gujar-7	
	SigashUchhaUchha Ma V	Gaurisankarpokhari, Gujar-4	
	SukabenaPra V	Sukabend, Gujar-8	1165
Patan Municipality	BhagawatiPra V	Sukeli, Patan-2	
	BhumirajPra V	Suntoli, Patan-3	
	Dada Bagh Ni Ni Ma V	Hirapur, Patan-5	
	KalsainiPra V	Lorkha, Patan-4	
	Krishna UchhaUchha Ma V	Patan, Patan-9	1291
	Ni Ni Ma V Pantauda	Pantauda, Patan-6	

VDC/ Municipality	Name	Location	Number of students enrolled
	Patan Valley Ebs	Patan, Patan-9	
	SahasralingPra V	Patan, Patan-1	
Sakar VDC	Bhumiraj Ni Ni Ma V	Bataulasau, Sakar-7	
	BhuvaneshworPra V	Laudauli, Sakar-1	
	DurgabetalPra V	Khanidada, Sakar-8	
	GyanJyotiPra V	Ganespur, Sakar-6	
	Janata Ni Ni Ma V	Pokhari, Sakar-9	
	Kailash Ni Ni Ma V	Dansili, Sakar-1	
	Kalika Ni Ni Ma V	Paletasakar, Sakar-5	
	Sarswoti Ni Ni Ma V	Guthaddi, Sakar-8	
	SiddheshworUchha Ma V	Malchaura, Sakar-3	1291
Silanga VDC	BaragharPra V	Saja, Silanga-	
	Bhrikuti Ni Ni Ma V	Tadakudqa, Silanga-6	
	BhumirajPra V	Totipokhari, Silanga-8	
	DandabagEbs	Maloda Bazar, Silanga-2	
	SiddhanathPra V	Kafalchuda, Silanga-9	
	SiddhanathUchhaUchha Ma V	Silanga, Silanga-2	709
Total students enrolled			**6277**

Source: Flash Report, District Education Office Baitadi, 2071 B.S

More than 80% of the household have a primary school within 30 minutes' walk. In practice, however, to reach a school is tough especially for school children in remote communities because of the difficult terrain, lack of transport and frequent adverse weather conditions. Also, based on the Focus Group Discussions with the communities in Gujar and Patan VDC many schools lack basic infrastructure such as proper school building, playground, drinking water, labs, a basic library, proper toilets, boundary wall and proper classrooms. Few groups have raised the need for female-friendly toilets in the school premises in order to encourage attendance among girls. A Chhaupadi practice in the area is among the main reasons behind low school attendance among girls. The Focus Group discussions also highlighted that there is a lack of child friendly school space including libraries and sports equipment. These have directly (and adversely) impacted on the quality of education in primary and secondary schools therefore forcing many families to send their children to better schools located in the District's capital, or Dhangadi, India, and even as far as Kathmandu.

4.5.2 Health Institution

At Present, there is one Primary Health Center (Patan) and five health posts (Basantapur, Bhumeshwor, Gujar, Patan, Sakar and Silanga) and several GaunGhar Clinics across the Municipality. The Municipality also has one eye medical center located in Patan VDC. This clinic is affiliated to the Geta Eye Hospital in Dhangadi.

Field data, the numerical data collected from the District and VDC level and the discussions from the FGDs in Gujar and Patan, both identify some key problems in the existing health infrastructure that directly impinge on the quality of health services delivery in the area. These health centers and clinics lack medical facilities such as equipment and labs, medicines and skilled manpower. None of the health posts have appointment of Doctors. There is only one doctor in the whole municipality who is stationed in the Primary Health Center in Patan. The condition of Birthing Center in the Health Posts is reported to be poor. Importantly, physical access is difficult. 65 percent of households theoretically have a health post within 1 hour walk, and thirty-five percent are within 3 hour

and more from the nearest health post or sub-health post. In practice it is worse because of the difficult terrain and lack of transport, and gets more difficult and unsafe during adverse weather conditions such as in the monsoon season.

Table 17 Top ten diseases in Patan New Town

S. No	Diseases	Percentage (%)
1.	Lower respiratory tract infections	14%
2.	Skin diseases	9%
3.	Diarrheal Disease	7%
4.	Fall/ injury	5.06%
5.	Gastritis	4.82%
6.	Tonsillitis	4.0%
7.	Upper Respiratory Tract Infection	3.27%
8.	Ear Infection	2.83
9.	Urinary Tract Infection	2.66
10.	Typhoid	2.58

Source: The Primary Health Center Patan Ilaka, 2014

Most people first contact a spiritual healer (DhamiJhakri) to treat their illness, before seeking help from western style, health providers. Of these, a few (16 percent) never used modern health services during sickness. For quality medical services, the people in Patan municipality have to travel a 6 hours to two days to reach the nearest hospitals. Patients with serious illness go to Dadeldhura District Hospital and Baitadi District Hospital, hospitals in Dhangadi and Mahendranagar, and even as far as Pitthauragad in India, and Kathmandu.

People's awareness to highly transmittable diseases is still lacking. For example, the household census revealed that out of total households (respondents); almost 10 percent households are still unaware of HIV/AIDS and its ways of transmission. Several health programs from the Government and other agencies are underway; the major ones are: Immunization program, Nutrition program, Community-Based Integrated Management of Childhood Illness Program (CB-IMCI), Safe Motherhood Program and Family Planning Program. According to data by the Primary Health Center of Patan Illaka (2014) these programs have achieved promising results, but the figures equally show that they are still largely inadequate to achieve the set goal.

4.5.3 Open Space

According to WHO standard, there should be a provision of 1.5 to 3 hectares of open spaces per thousand population. Open space refers to the areas of land without human built structures which are left open for the use of public, such as parks, courtyards, swimming pools etc. In Patan New Town, there is no any public open space or playgrounds. School grounds and Airport areas are used as open space by local children. There is the possibility of development of Regional Stadium at Daha of Gujar VDC. Also the unused airport area can be maintained and used as playground or parks or pubic spot for recreation purpose.

4.5.4 Community Buildings (Library, community halls etc.)

Community buildings are the public buildings where members of a community tend to gather for group activities, social support, public information, and other purposes. In context of the Patan New Town there are no community facilities within the municipality. The communities at present gather either at the school grounds, or at open fields/barren lands or around the religious places for social gatherings and discussions. There is no any community hall and library within the town.

4.5.5 Fire Stations

Patan is a municipality with very dense forest which is very frequently prone to fire catching. There are no fire stations/brigade at Patan but it has a fire engine to help in fire extinguishing. Recently, at ward no 12 when turpentine factory caught fire, the municipal fire engine played a very vital role in extinguishing it and reducing the damage to property and human life.

4.5.6 Religious Institutions

Patan can be considered to a place of many temples of local and regional importance. There are many religious and cultural places located in Patan New town. Udaydev Temple, Samayaji Mandir, Banarsidham, Bhumiraj Mandir, Shahashralinga Mandir, Kaipal Mandir and Sigash are the famous religious place here. The famous cultural places include Swargani Peepal, Patal Bhumeshwor temple and caves and Daha area. Most of the temples in Patan New town are in need of regular maintenance and continuation of daily worship system, which has mostly been discontinued due to the lack of financial sources of the temple. Also historical places include Sangauda Kot, Gothain Kot,S iwadwala Kot which are the palaces of the earlier kings. There are a number of such important Kot areas in different parts of the new town, most of which are in the state of ruins, and needs preservation and restoration

Every temple have its own religious significance and are a source for tourist attraction. Such religious places may be developed as the major attraction for internal tourists from neighboring VDC's and promote internal tourism. But it is unable to promote tourism because of lack of publicity,lack of awareness and lack of conservation and management. Government has not allocated proper fund for its maintainence, conservation and promotion due to which development related to tourism is lagging.

4.5.7 Recreational Buildings (Cinema Hall, Museum, Art Gallery)

There are no recreational buildings and facilities in Patan New Town.

4.5.8 Social welfare (Old age home / Orphanage/Centre for Differently able Person)

There are no social welfare centers such as elderly homes, orphanage or centers for disabled persons within Patan New town. Likewise, there are no provisions for elderly or disable-friendly physical infrastructure in the schools or public institutions in Patan New Town.

4.5.9 Security

There is only one Ilaka Prahari Kaaryalaya at ward number 13 which is under the command of Police Inspector which provides security services to the Patan New Town. The total governmental post separated at this Kaaryalaya is 39 but now there are 45 manpowers working for providing services. Previously when Airport services were in operation,security services was also provided there but when its operation was halted the post for security was also removed. As compared to other VDC's Patan New Town is considered more safe and secure place. Except the general conflicts and minor discussions, there are no other major criminal activities in Patan New Town. Most of the conflicts are solved within the community level. Khodpe-20km away and Satbanjh-18km away from Patan are the two Ilaka Prahari Karyalaya providing security service.

4.5.10 Travel Time

Table 18 Travel Time to Service Areas within Patan New Town

S.N.	Particulars	Description	Travel Time		Place of Services
			Min	Max	
1	Main Market		10 min	180min	Ward no. 13

S.N.	Particulars	Description	Travel Time		Place of Services
			Min	Max	
2	health centers	Hospital	10 min	180 min	Ward no. 13
		Health post	10 min	60 min	Sakar, Silanga, Bhumeswor, Basantapur, Gujar
		Primary Health Care Center	10 min	60 min	
3	School				
		Primary	10 min	60 min	
		Secondary	10 min	120 min	
		Higher Secondary	10 min	120 min	
4	College		10 min	180 min	
5	Road Heads		10 min	120 min	

Source: Sample Survey 2015

4.5.11 Disability Status

Among the population, 536 are disabled population accounting for about 2.69 % of the total population. Among these, 246 are physically disabled, 93 are deaf 20 are mentally retarded, 59 are blind and 36 are having multiple disability. 75 are having various blindness/low visions.

Table 19 Population having disability in Patan New town

Population having disability Type							
Physical	Blindness/Low vision	Deaf/hard to hearing	Deaf–blind	Speech problem	Mental disable	Intellectual disability	Multiple disability
246	75	93	15	43	20	8	36

Source: CBS, 2011

4.6 Economic services and Infrastructure

4.6.1 Major Crops

Major crops which are cultivated around the Baitadi district are mostly available in Patan Municipality. Like elsewhere in Nepal, two types of land *khet* and and *bari*, are used for cultivation and according to the land types two types of cultivation systems are practiced. In low land khet, where irrigation is easier than upland bari, people cultivate three times per year and harvest different crops like paddy, wheat, maize, potato, wheat, vegetable, lentils etc. and upland bari people cultivate maize, millet, barley, wheat, groundnut, soybean, vegetables, etc. Following table shows the details of cultivation system based on two types of land

Table 20 Details of Cultivation System Based on Khet and Bari

Cultivation system based on Lowland/Khet	Cultivation System Based On upland/bari
Paddy-Fallow-Paddy	Maize/Millet-Wheat/barley
Paddy-Wheat-Fallow	Potato-Wheat-Fallow
Paddy-Wheat-Maize	Maize-Wheat/mustard-Fallow
Paddy-wheat-Paddy	Lentils/Soybean/Groundnut-Wheat
Paddy-Wheat-Vegetable	Maize/Soybean-wheat/mustard/sereal

Paddy-Vegetable-Maize	Maize-Fallow-Potato
Paddy-Potato-Fallow	Potato/radish-wheat/barley
Paddy-Potato-Maize	Maize-barley/lentils/legumes
Paddy-lentils-paddy	Wheat-ground nut
Paddy-Sugarcane	

Source: District Profile, Baitadi

Table 21 Agriculture production

	Food Grain	Veg.	Dalhan & Telhan	Sugarcane	Cash crop
QTY. (KG)	17821158	1261457	1574896	35510	1720
Area (Ro.)	62511	7803	24424	31	37

Source: District Profile, Baitadi

4.6.2 Livestock Holding

Patan municipality covers a very large area of cultivable land so it has very high scope in agriculture. However people follow traditional way of agriculture and equipments, due to which people here are not having good products and their living standard has not been improved.

Main crops cultivated in Patan New Town are rice, wheat, maize and millet. Among these crops, maximum cultivated crop in Patan, Sakar, and Basantapur is rice and in Silanga and Gujar, maize is the maximum cultivated crop. Each an every VDC of this municipality has the capacity of producing some or the other types of crops. In addition to agriculture, people of Patan also do livestock farming to uplift their living standard. Cow, Buffalo, Goat, Duck, Hen, Yak, Horse etc are the animals they keep on for livestock farming.

Table 22 Livestock farming of Patan New Town

VDC	Ward No.	HH with livestock farming	HH without livestock farming
Silanga	3	299	3
	4	181	2
Gujar	5	257	6
	6	269	10
Bhumeshwor	7	272	2
	8	246	7
Patan	11	379	8
	12	347	8
	13	220	3

Source: Household Survey : 2067

4.6.3 Industry

At present, there is no large scale industry in Patan New Town. At the Municipal level meetings and FGD discussions, locals informed that there was a Soap factory in operation in Patan New town till few years ago. But due to the lack of marketing, finance and regular supply of raw materials, the soap factory closed down. There are a few small and medium scale industries in Patan New town in operation at present. such as 2 resin processing and turpentine manufacturing industry within the Patan municipality which provides job opportunity for many peoples. As Patan New Town is rich in Herbal Sources like Amala, Chiraito, Allo, Ritha, Bhimal etc, its different products can be manufactured and sold which helps in increasing the economical standard. Also, the new town area has the potential of Carpet Factory, Amala Oil factory, Chuiri factory etc. There is a slate mine at Gujar which is not able to be industrialized. Also there are some cottage industries which is not yet organized.

4.6.4 Trade & Services

Patan is the trade and business center for the neighbouring VDCs. It is very famous in its Herbal Importance. Herbs like Amala, Ritha, Cinnamon, Tejpat, Orchid, Chiraito, Jatamasi, Kurilo, Allo, Bojho, Lokta etc are present which can be sold to nearby places to improve their financial standard. Also these herbs can be used in manufacturing medicines which has very high market value. There is no any large scale industry in Patan but the presence of a small and medium based industry- turpentine industry has commercially helped the people of the municipality.

4.6.5 Banking & Finance

At present there are two banks operating in Patan new town: Global IME Bank, and Agriculture Development Bank. Global IME Bank started its operation since 2072/2/13 with financial support of Sakshyam Access to Finance (UKAID) and it provides loan in the sectors like Small Entrepreneur Loan, Education Loan, Hire Purchase etc. There are seven members in duty here where one-Counter In charge, one-Buisness Counseller, one-CSD, one-Tailor, one-Office Assistant and two are Security Guards. Agriculture Development Bank started its service since 2038 with the net capital of 1 crore and it looks after 20 VDC. Ten members are engaged in operation at this bank where one-Manager, two-Accountant, four-Security Guards and three are the Assistants. It provides loan for the field of agriculture, business, industries etc.

Also, there is Sunaulo Bachat Tatha Rin Sahakari Sanstha at Patan, in operation since 2069/3/6. It works in the field of improving agriculture and business. It is a small organization with only three members providing service. Shree Uddheb Mahila Bachat Tatha Rin Sahakari Sanstha established at 2057/10/17 is working in the field of agriculture and livestock farming with only 2 manpowers for providing the service. It provides loan to discourage foreign employment.

4.6.6 Tourism

Patan is the area with the potential of increasing internal as well as external tourism. It is famous in religious aspects as it has temples like Patal Bhumeshwor, Udayadev Temple etc and is also the transit point for Tripurasundari Temple. There is a Patal Bhumeshwor Cave which seems to be very adventurous and entertaining. There are many other smaller caves around Patal Bhumeshwor. Also, Mountain Biking, Paragliding at the nearby adjacent hills can also be the source of tourism development. Cultural practices such as Hudkey Nach, Gaura Parba, Kumal Nach, Deuda etc. can also be promoted which may help in tourism. There is a potential of constructing a View tower at Daha, Gujar and development of the area into a picnic spot which has the capacity of tourism attraction.

But due to lack of Governmental funds and publicity, Tourism in Patan is laggiing behind. The existing temples also need to be maintained and preserved. Government should allocate funds for the fulfillment of the potentials that it carries so that it would help in overall development.

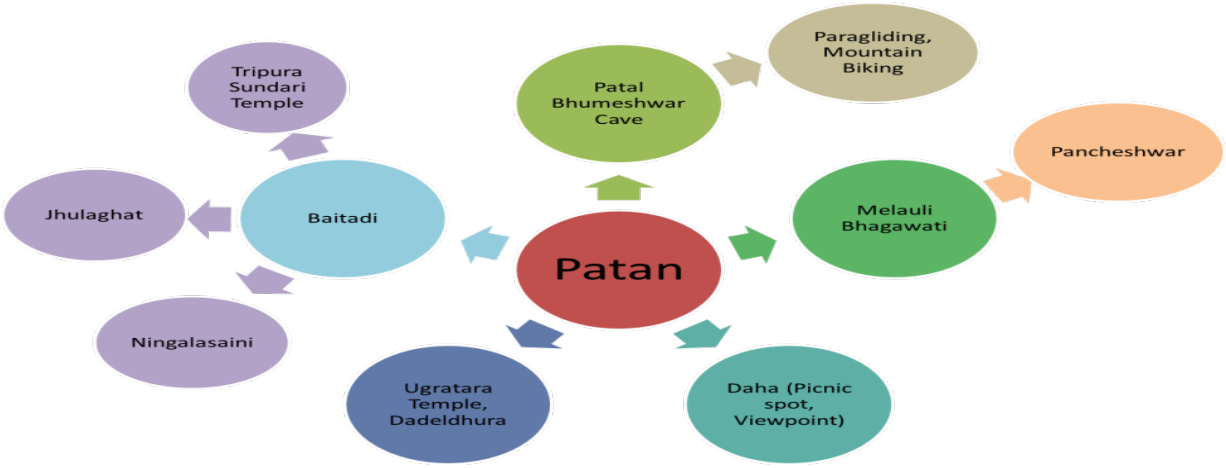

Figure 3 Tourism Linkage to and from Patan New Town

4.7 Environmental and Ecological Status

4.7.1 Forest

Almost 69 percent (8202.01 Ha) of the total land in Patan New town is covered by forest. There is availability of different types of forest in the new town, depending on the altitude of the forest, such as: Coniferous forest, Hardwood forest and mixed coniferous and hardwood forest. Different types of herbs such as Amala(Emblica officinalis), ritha(Sapindus mukorosse), chiuri(Aesandra butyracea), Simmal(Bombax ceiba), allo, orchid(Phalaenopsis amabilis) and rhododendron(Rhododendron indicum), fungi(Hypholoma capnoides), timur(Zanthoxylum alatum), bojho(Acorus calamus), Chiraito(Swertia chirayita), kurilo(Asparagus racemosus), jatamasi(Nardostachys grandiflora) and lokta(Nardostachys grandiflora), and timberwood trees such as Sal(Shorea robusta), Khair(Acacia catechu), Sisau(Delbergia sissoo), Jamun(Syzygium cumini), Saj(Terminalia tomentosa), GobreSalla(Pinus wallichiana), and Deodar(Cedrus deodara) is found in these forests. These forests are habitat of different species of rabbit, deer, porcupine, fox, monkey, leopard, black eagle, white vulture etc. Large areas of forest land (3807.756 Ha, 46.42 of total forest land) have been handed over to the local communities and are now registered as community forests . A total of 4478 household in Patan New Town benefit from these forests. There is however no data on how well these communities forests are being managed. Forest products (such as timber, turpentine, herbal medicines, firewood and fodder) could be an important resource to the user communities both for community development and as relief at times of crisis. Based on the field observations and informal talks with locals, deforestation is not unusual despite of the improved forest management practices in the Region.

Table 23 Community Forests in Patan New Town

S.N	Name of Community Forest	VDC Location	Area (Ha)	Served Household	Served Population	Managed By
1	Bhawarkhola	Bhumeswor WN 8,9	73.71	80	416	Melauli Range Post
2	Bhumiraj Mahila Ban	Sakar WN 2	105.17	48	303	
3	Bhumiraj Samaiji	Basantapur WN 2,3	164.23	435	2620	
4	Garjal	Basantapur WN 1	42.2	137	976	
5	Golakot	Basantapur WN 4	63.5	61	399	
6	Jadikot	Sakar WN 1	357.49	103	669	

S.N	Name of Community Forest	VDC Location	Area (Ha)	Served Household	Served Population	Managed By
7	Sajhsaina	Sakar WN 3	133.66	54	392	
8	ToliSamudayik Ban	Basantapur WN 6	20	45	305	
9	Latakatari	Sakar WN 4,5	199.5	129	951	
10	Lamauti	Sakar WN 8	182.9	185	1453	
11	Sadafal	Sakar WN 7	101.52	82	611	
12	Kalsaini	Sakar WN 6	36.23	60	426	
13	Nawadurga	Sakar WN 9	93.22	77	543	
14	Udayadev	Basantapur WN 6	74.69	93	550	
15	Nairiteswor Jhamke	Sakar WN 8	32.136	418	3109	
16	Thulikhali	Bhumeswor WN 3,4,5	75.53	109	654	Satbanjh Range Post
17	Bamani	Bhumeswor WN 6	43.56	66	410	
18	Baraghar	Silanga WN 8	122.5	46	268	
19	Betal	Silanga WN 2	82.64	70	453	
20	Bhumiraj Brahmarupi	Silanga WN 7	101.59	36	201	
21	Bhuttechirauna	Bhumeswor WN 1	30	29	149	
22	Dahabayala	Gujar WN 1	127.77	69	414	
23	Dandakuti Mainakot	Patan WN 7	111.3	96	576	
24	Dipchan	Patan WN 1	58.5	179	1074	
25	Hashraj	Patan WN 4	168.41	90	651	
26	Janabikash	Silanga WN 1	32.1	43	336	
27	Jhalamali	Gujar WN 5	14.13	43	251	
28	Kafalasaini	Bhumeswor WN 6	6	41	271	
29	Kafanwali	Gujar WN 9	41.94	67	375	
30	Karkar	Patan WN 2	157.25	124	774	
31	Lamadada Jhimaureyajara	Gujar WN 3	24.5	30	196	
32	Maharudra	Silanga WN 5	31.31	73	560	
33	Nagarjun	Patan WN 3	10.23	32	555	
34	Nyali	Bhumeswor 7,8	65	125	705	
35	Ringasalkatte	Gujar WN 7	125.88	69	415	
36	Sahashralinga	Patan WN 1	3.7	36	126	
37	Salyadi	Silanga WN 9	118	35	225	
38	Sigash	Gujar WN 3	20.06	48	280	
39	Shivabhumi	Silanga WN 4	90.81	50	300	
40	Siddhakedar	Bhumeswor WN 9	14.19	65	361	
41	Simjhadhalfod	Patan WN 8,9	37.3	178	1025	
42	Bhumiraj	Silanga	156.59	135	915	
43	Sukabaina	Gujar WN 8	29.75	184	918	

S.N	Name of Community Forest	VDC Location	Area (Ha)	Served Household	Served Population	Managed By
44	Timlagair	Patan WN 3	12.19	50	315	
45	Tundipatal	Patan WN 6	90.2	78	444	
46	Manakeswor	Patan WN 7	49.15	52	306	
47	Pragatisheel	Gujar WN 6	75.52	123	910	
	Total		3807.756	4478	29136	

Source: District Profile Baitadi, 2070

4.7.2 Climate Change

Rapid rise in temperature, erratic rainfalls and increase in frequency of extreme events such as floods and drought like situation are some of the effects Patan as elsewhere in Nepal the problem of climate change which people are faing during the last few years. People have to prepare themselves to try and mitigate these effects if possible and if not adapt to them to reduce their impacts on their lives and livelihoods. Patan is largely a mountainous region and current indications are that the mountain regions are more vulnerable due to increased warming trends as well as extreme changes in altitude over small distances. These alarming trends not only make major sectors of economy such as agriculture, tourism and energy more vulnerable but also endanger the health, safety and wellbeing of local people. Biodiversity - the other important resources is also being affected as invasive species will spread fast and useful medicinal, food and nutrition related plants may disappear. Climate change is becoming already dangerous to people's survival and we have to do everything possible to prevent it being catastrophic to local people. The globally accepted strategy to contain disastrous climate change impacts is Adaptation and Mitigation. For a least developed country such as Nepal, adaptation should be the priority.

4.7.3 Air Pollution

At present, there is no major source of air pollution in Patan New Town. The only source of air pollution in the Town includes the haphazard collection of solid waste during road sweeping, the vehicle generated dust, and smoke generated from the open burning of solid wastes by households. Especially, the residents close to Bus Park and major road junctions along the highway are more susceptible such kind of air pollution. If these are not properly managed on time such pollution would worsen with more number of people in the future and could be major problem to the New Town's urban environment.

4.7.4 Water Pollution

There is no visible sign of water pollution in the New Town. Most households have properly managed sewage and solid waste. The municipality also has a proper solid waste management system in place. The only form of water pollution at present is those caused by people washing and bathing in the river, and few others who tend to dispose solid waste. However, problems may arise in the future. The solid waste management is now concentrated in the main market area, but with the increasing number of population this system should be extended to a larger area in the near future.

4.7.5 Noise Pollution

Roadway noise emanating from motor vehicles are one of the predominant sources of noise pollution in Patan New Town, this again is concentrated only in the settlements near the main roads.

4.7.6 Integrated Waste Management System

4.7.6.1 Waste water management

There is no sewerage system in the Municipality. Reportedly most houses have constructed septic tanks to manage domestic sewage. However, some people tend to discharge sewage to roadside drain especially in rainy season. The Municipality has one septage suction vehicle. It collects septage from private houses and disposes in the dumping site that ultimately flows to the Santoli Khola located at Patan-11. There is no Wastewater Treatment Plant in the Municipality.

4.7.6.2 Solid waste management

The major sources of solid waste generation in the Patan Municipality are households, hotels, vegetable and fruits market, meat stores/ fresh house, groceries, clothing/fancy stores/tailors, household alcohol fermentation, poultry/pig farming etc. According to the field data from the Patan Municipality the average per capita household waste generation rate in Patan Municipality is 0.201 kg/person/day. The municipal waste from household level comprised of organic waste 57%, plastic waste 9%, paper waste 15%, non-degradable 15% and others 4% including bone, electronic waste, battery, wood etc. Household waste is usually collected individually in a bucket or cartoon box or plastic/rice bags and stored in front of the houses or road side curb. Patan municipality is the only services provider for waste collection within the municipality, which has adopted a routine for collection of waste by wards. In the main bazaar area i.e. wards 11 &13, waste is collected daily in the morning, while in other areas of wards 6,7 & 8 it is collected weekly. However, other VDCs within the Municipality do not have such services in place.

Patan Municipality has a crude dumping site, which is located at Santoli Khola, ward no 11 and is 4 km from the Patan Bazar. The Municipality owns the land with a total area of about 1.53 Ha. An Initial Environmental Examination (IEE) of the site has been done, which identified significant environmental impacts. The collected waste is disposed in the dumping site which is left uncovered. The municipality does not allow scavenging in the dumping site and there is no private scrap dealer in direct contact with the municipality.

The field survey indicates that a small proportion of households have their solid waste collected by the Municipality. Majority of the households use composting to manage solid waste, which they later use as manure in kitchen garden and farms. A significant proportion of households practice composting combined with various other activities like, burying and burning solid waste in their surroundings. However, few tend to throw in public place, river, and stream.

4.7 Disaster Status

Fragile geophysical environment, steep slopes, deep valleys and numerous streams, combined with frequently harsh weather conditions, makes the area subject to a variety of natural physical hazards, in particular landslides, floods and fire. Landslips and floods are a frequent occurrence in the monsoon season, associated with intense, prolonged rainfall. Similarly, fire hazard is quite common in the dry season. This vulnerability inherent in the physical environment is compounded by the social and economic conditions of the population. As observed during the field work, these hills are subject to continuous erosion from unsustainable land practices including over-cultivation in steep slopes and that without proper drainage, over-grazing and deforestation, themselves the result of the struggle of the local people to meet their basic needs. Similarly, many rural populations out of necessitylive in houses with thatched roofs and walls made of mud masonry, wood and bamboo, which are quite susceptible to fire hazard. It is the resultant interaction of these physical and social-economic circumstances that result in a high level of risk and susceptibility to disaster. Thus, despite no major disaster in the last decade, around 31 percent of households in the PatanNew Town reported having

experienced disasters, mostly landslides, floods and fire over this period (Village Profiles, 2010). Recently there was a large fire incident in the Patan Municipality and impacted several villages. The total loss is estimated at approximately 4,800,000 NPR.

4.8 Land Use

The existing land use of Patan New town shows that only 28 percent of the total land area is being used for cultivation. Majority of the area within the new town is covered by forest and bushes, which constitutes to about 47 percent of the total area. Builtup area is limited to market centers and its surroundings. In the New town, dense settlement is limited to former Patan VDC only, along the Highway and in the flat lands. Land use pattern affects the planning process to large extent. Future development of the area is largely dependent on the present land use pattern Existing legislation rules forbids the extensive use of forest area for settlement development. Hence, cultivable land is the only alternative for settlement development. In the New Town, cultivable lands are being comprehensively used for settlement development.

Table 24 Land Use Composition of Patan New town

Land Cover	Area Covered(Ha)	Percentage Area Covered(%)
Built Up	129.495	1.082
Cultivation	3387.962	28.311
Forest	5602.209	46.814
Grass	2599.801	21.725
River	247.467	2.068
Total	**11966.934**	**100.000**

Source: GIS Based Base map, 2016

4.9 Urbanization Trend

There is very slow pace in urban development only along the highway of Patan New Town. Patan is only developed as a market centre for surrounding settlements Gujar, Silanga and Sakar and the remote areas of Basantapur and Bhumeshwar. Siddeshwar and from neighbor VDC migrate to Bazar area for Business purpose. Because of all service center and infrastructure being centrally located in Patan, urbanization trend in Bazar area is rapid but is in unbalanced condition as urbanization is concentrated mainly in Bazar areas. As a result Patan bazar areas are failing to cope the demand of infrastructure services and job opportunities

Chapter 5 ANALYSIS

5.1 Trend Analysis

5.1.1 Migration Pattern

Major reasons for migration of the households are better economic opportunity, better Education, Better employment opportunity, better Job/Avocation/Business opportunities. Some proportions of the households are migrated due to security. Though the migration trend has been going on in the new town for the last decade or so, but due to the lack of statistical data at the municipality office to quantify the exact number of people who have migrated to other places in Baitadi, to Terai Plains, or to other parts of the country including Kathmandu, the migration trend has not been able to be identified yet.

Table 25 Number of Passports Issued by the District Administrative Office Gothalapani

S.N.	Migration	Time Series
3	16	Magh 2071 to Baisakha
4	51	Baisakha 2072 to 2072/9/17
	Mirage Regd.	
5	71	BS 2071/8/28 to2071/12/30
6	170	BS 2072/1/1 to 2072/9/17

5.1.2 Population Projection

As per population census data of 2001 and 2011, the population growth rate in Patan New town is following a positive growth trend. It shows that Patan has a good potential to be developed as a balanced city in terms of social and econmic aspects. The current growth trend shows that the surrounding settlements, especially Bhumeswor and Basantapur have a steady population growth rate, followed by Patan. In average, the population growth rate of all the settlements is seen to be 3.15 percent.

Table 26 Population Projection in Patan New Town

Settlement	Population (CBS & VDC)			Growth Rate (%)	Present Year Population (2015)	Population Projection		
	2001	2011	2015			2020	2025	2030
Basantapur	1,738	2,557	2,984.00	3.94%	3482	4,223	5122	6,213
Bhumeswor	2,370	3,462	4,029.00	3.86%	4688	5,666	6848	8,277
Gujar	2,039	2,795	3,171.00	3.20%	3597	4,211	4930	5,772
Patan	4,247	5,217	5,664.00	2.08%	6150	6,816	7554	8,372
Sakar	2,450	3,277	3,681.00	2.95%	4135	4,782	5531	6,397
Silanga	1,961	2,603	2,915.00	2.87%	3265	3,762	4334	4,993

Settlement	Population (CBS & VDC)			Growth Rate (%)	Present Year Population (2015)	Population Projection		
	2001	2011	2015			2020	2025	2030
Total	14805	19,911	22,444.0	3.15%	25,317	29,460	34319	40,024

5.2 Gap Analysis

5.2.1 Social Infrastructure: Educational Institutions

Education and Human Resources:

- Literacy rate of Municipality going toward 100%.
- Minimum Requirement of infrastructure had been going too developed.
- Investment and Coordination among public, private and I/ NGO's other institution had well in Patan Municipality.
- Education and Targeted Group of people are always in prioritizing first.
- Concept of CFLG implemented in Education Sector will enhance to promote education for all.
- Transfer school to community make more responsible and accountable to ward education sector.

Health, Population and Nutrition:

- Development and increasing services for Health institution sectors is positive thought or awareness and always prioritized sector of Nation.
- Increasing awareness of local people toward health.
- Awareness developed toward Delivery case will done in health Institutions or centers.
- Potential of herbal plants in and around Patan Municipality.
- Existing policies and programmes also promote by Government.

Water supply and sanitation:

- Formation and coordination among line agencies and stakeholders in water supply and sanitation should be developed in Patan Municipality.
- Increase in Public Participation Method for developing physical and social Infrastructure.
- ODF declaration is priority in Patan Municipality.
- Technical Intuitions will be developed for Technical solutions.
- National Standards and master plan had already implemented for Water Supply and Sanitation sector.

Social Security

- Different social institutions are involved in women, children and social security sectors development.
- Already developed social network for women, children, youth and women's health.
- Interest of youth toward conserve traditional diverse culture and religion of socity.
- Developed political and social empowerment of local.
- Public Participation toward social security.

Physical

- Easily availability of resources for development of public infrastructures.
- More than 65 km of different categories of road network had already existed.

- Implementation of Land development for planned city and neighborhoods.
- Implementation of Land use Policy and housing, Building bye laws and standards etc.
- PPP concepts for development of Public Infrastructures in urban area.
- Government's policies for information searing and distribution for development and welfare
- Land for IT parks development with economic up grading
- Easily accessibility and interest of mobile and other information technology.
- Huge of land for development herbal plantation and Agro forest based industries.
- Development of Community Forest for conservation of forest, climate change.

5.3 SWOT Analysis

5.3.1 Strength

Patan new town is strategically located along Mid Hill Highway, which connects Baitadi district with Dadaldhura District. The new town is connected with the district headquarter Baitadi via Patan road (34 km). Patan New town is also the gateway to Darchula and Baitadi district, which makes it a major market and urban service center in the south western hills of the country. It has 64 km of motorable road within the new town and it is connected with the Indian road network. It has gentle sloping areas that can be developed for urban development purpose within short term and mid-term periods. Within the New town, there is availability of 51% of land for development.

There is a potential of commercial vegetable farming and commercial production of cash crops such as soybean. According to the district agriculture office, there is also the potential of commercial production of citrus and sub-tropical fruits in the new town.

About 46.8 percent of the new town is covered by forest. Therefore, the new town is rich in forest based natural resources. Besides, due to the current trend of a large section of its population going for foreign employment, its local economy is more or less sustained by remittance. Therefore, besides other socio-economic factors, remittance, forest and water resource, healthy environment and strategic location are some of the major strengths of Patan new town.

5.3.2 Opportunity

- Surnayagad, Syadigad, Agadaidgad are big water resource around Patan New town.
- Airport (Tourism and economic activates boost)
- Linkage to North Part of nation (China) and Western part (India) of NP from Patan.
- Mid Hill Highway will be connecting Mid Hill Other New Town
- National Prioritize Project is implemented in District and Municipality.
- CTEVT being constructed for technical and professional.
- Interest of Private Sector in Urban Areas.
- Opportunity for agricultural processing and forest based industry and its development.
- Commercial vegetable farming and Livestock's.
- Construction of Panchashwore hydropower
    - Possibility of forward and backward linkage
    - Market of hydroelectricity in National and International sectors.
    - Electricity related industry
    - Agricultural support (irrigation)
    - Tourism promotion (Dam Site visit)
    - Increase in income activities for local people

5.3.3 Weakness

- Lack of institutional setup
- Low investment, financial and resources capability of institutions
- lack of Connectivity of motorable road to every surrounding vdc
- Lack of water supply for drinking purpose and irrigation
- Connectivity with regional headquarter dhangadi
- Lack of proper connecting road with in ward.
- Land Acquisition for the development of public infrastructures.

5.3.4 Threat

- Landslide
- Soil erosion
- HIV aids
- Negative population growth
- High slope area (Lack of urban expansion area)
- Lack if integrated urban infrastructures such as water supply and sanitation to cope with demand of population of new town
- Natural Disaster

5.4 Spatial Analysis

5.4.1 Land suitability Analysis

In the New town, about 31 percent of the total area of the new town lies in the slope category of more than 30 degrees, and about 2 percent of the total area lies in the slope category of less than or equal to 2 degree slope. Both slopes greater than 30 degrees and less than or equal to 2 degree slope are considered unsuitable for urban development, as the areas with more than 30 degree slope are under the risk of hazards such as landslide, and the areas with slopes less than or equal to 2 degrees is under the risk of flood and inundation.

Table 27 Slope and its area for Patan New Town

Slope(Deg)	Area (Ha)	Percentage Composition
<2 deg	244.5625	1.89
2-5 deg	947.4375	7.33
5-10 deg	4053.1875	31.36
10-15 deg	2754	21.31
15-30 deg	805.25	6.23
>30 deg	4120.25	31.88
Total	**12924.6875**	**100.00**

Source: GIS Based Basemap, 2016

Less than 2 degree slope and more than 30 degree slope areas are considered development restricted areas. Likewise the areas covered by forest and river are also considered development restricted areas. Developable area is calculated after subtracting forest and river areas, and the buffer areas of 100 m and 50 m from the edges of forest and river banks. The analysis of the study area in terms of availability of developable and development restriction area shows that the new town has about 51 percent of the total land that is developable. The rest 49 percent of the land are covered by natural features such as forest, river, barren land, cliff etc, and areas with more than 30 degree slope or areas with less than or equal to 2 degree slope.

Table 28 Developable and Restricted areas for Patan New Town

Ward No	Category	Area	Total	Area (%)
1	Developable	314.331	1154.359	27.230
	Restricted	840.027		72.770
2	Developable	263.751	1430.765	18.434
	Restricted	1167.014		81.566
3	Developable	246.009	850.416	28.928
	Restricted	604.406		71.072
4	Developable	324.899	1812.539	17.925
	Restricted	1487.640		82.075
5	Developable	302.361	831.154	36.378
	Restricted	528.793		63.622
6	Developable	257.417	702.441	36.646
	Restricted	445.024		63.354
7	Developable	435.953	978.807	44.539
	Restricted	542.854		55.461
8	Developable	337.108	911.527	36.983
	Restricted	574.419		63.017
9	Developable	189.277	865.990	21.857
	Restricted	676.713		78.143
10	Developable	160.438	257.547	62.295
	Restricted	97.109		37.705
11	Developable	353.517	948.342	37.277
	Restricted	594.825		62.723
12	Developable	411.801	940.917	43.766
	Restricted	529.116		56.234
13	Developable	135.761	202.053	67.191
	Restricted	66.292		32.809

5.5 Institutional Anaysis

5.5.1 Institutional Strength Assessment of New Towns

During the field study at both Sanfebagar and Patan New towns, the consultant institutional expert did an assessment of the institutional strength of mainly 3 institutions that are the primary stakeholders for the planning, implementing and management of the new town projects, i.e. The New Town Office, The Town Development Committee Office and the Municipality Office of Patan New Town. The organizational structure of the New town offices shows that there is an adequate deputation of manpower and responsibilities. However, in reality, there are no officers working under the deputed responsibilities. The New town offices in both Sanfebagar and Patan are currently being run by sub-engineer, computer operator and office assistant.

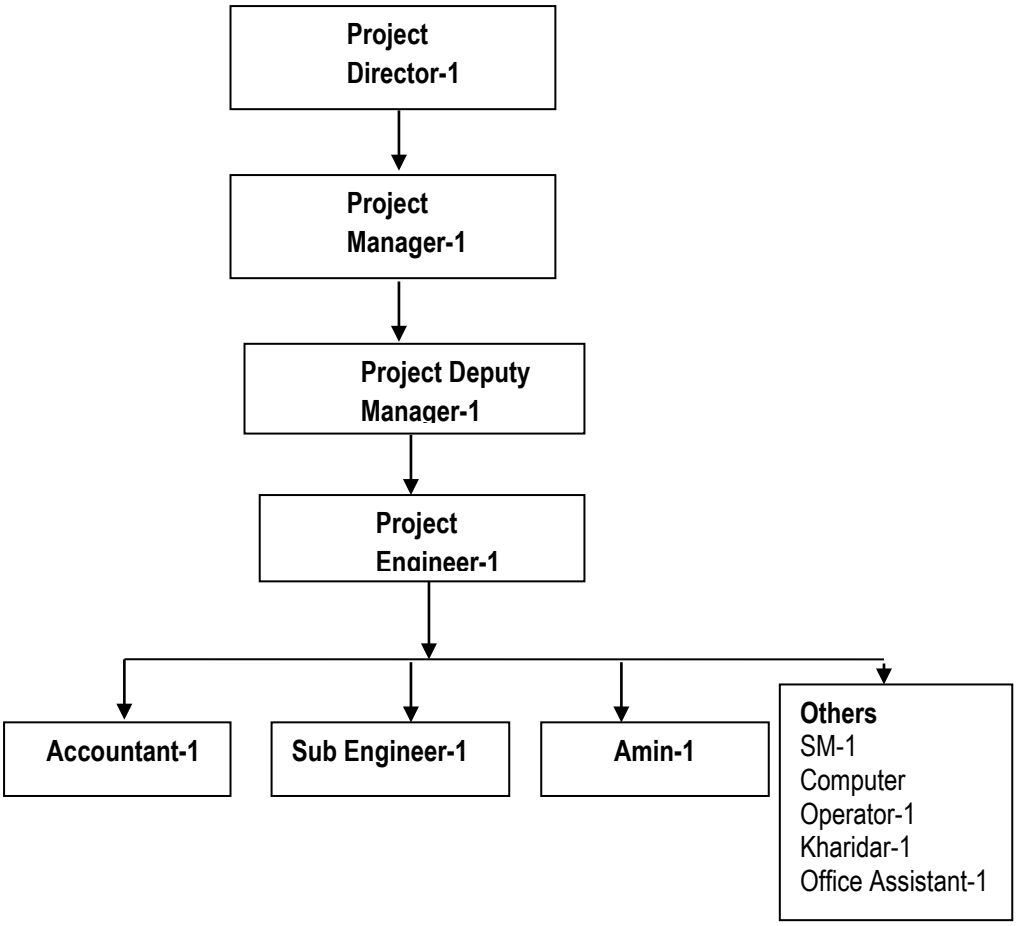

Figure 4: Existing Organization Structure of New Town Offices in Sanfebagar and Patan New Town

5.5.2 Organization Structure of Town Development Committees in New towns

The organization structure of Town Development Committees shows the strength and representation from district level line agencies. Town Development Committee is the primary stakeholder for the integrated development plan study of New town. It has been envisaged to be the implementing and management agency of the physical and social infrastructure projects identified by the integrated development plan study. However, in reality the Town Development Committee in Patan New towns have not been able to function properly and are present for the sake of establishment only. The Town Development Committee in Patan New town is grossly understaffed, underfinanced and so much so that don't have a proper office space.

Table 29: Organization Structure of Town Development Committee of Patan

SN	Type of Representative/ Member	Number	Remarks
1	Chairperson	1	Nominated by Government
2	Members	5	Nominated by Government
3	CDO or Representative from CDO office	1	
Representative of Political Parties : 6			
Representatives from 5 Line Agency Present in the district			
10	Executive Officer or Representative of Municipality	1	Patan Municipality

SN	Type of Representative/ Member	Number	Remarks
11	Chief or Representative of District Land Revenue Office	1	
12	LDO or Representative of District Development Committee	1	
13	District Survey Department Office	1	
14	District Forest Office	1	
15	Member Secretary	1	Chief of New Town Office(DE of DUDBC Baitadi Division Office)