

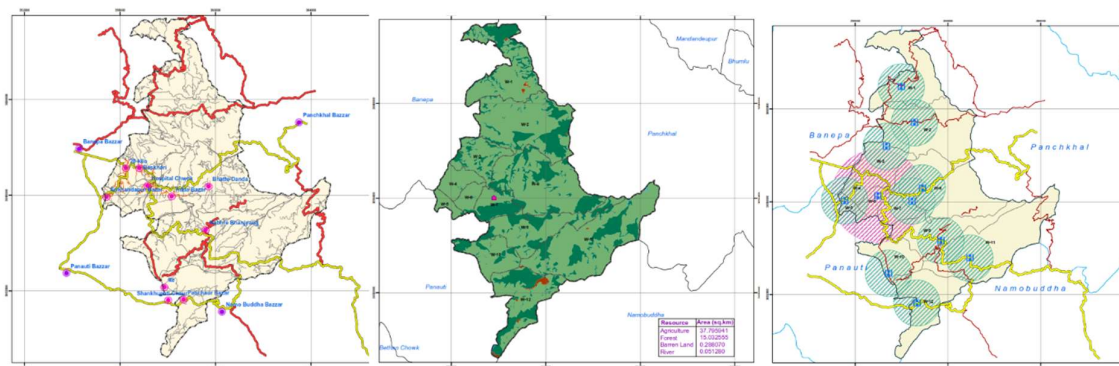


Government of Nepal

Dhulikhel Municipality

INTEGRATED URBAN DEVELOPMENT PLAN OF DHULIKHEL MUNICIPALITY

Volume 1: Background Report



2019



Submitted By:

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Executive Summary

The Integrated Urban Development Plan (IUDP) for Dhulikhel is a strategic response to the 20-year growth of Dhulikhel Municipality, which brings together infrastructure provision, environmental management, economic growth, disaster preparedness, municipal service delivery and mainstreaming gender equality and social inclusion. This “whole of Council” strategic plan will deliver on the long-term vision of Municipality:

A prosperous, well governed and model town Dhulikhel

based on culture, heritage, tourism and environmentally friendly sustainable development.

Located 30 kilometres east of Kathmandu, Dhulikhel Municipality is blessed with a diverse and vibrant community, high quality environmental assets including clean air and water, spectacular view, rich built and cultural heritage, major institutions with Kathmandu University and Dhulikhel Hospital, agricultural production and a burgeoning tourism industry.

However, the Municipality is facing a number of challenges. This includes: an emerging low density and scattered settlement pattern in the rural wards with poor access to essential social and physical infrastructure; rapid urban development at a rate that is not supported by key infrastructure; fragmented agricultural land which is becoming urbanized; and prioritization of infrastructure. Analysis of physical infrastructure indicates critical problems in water supply management and solid waste management which requires immediate attention.

Observations in the field reveal housing outside, or on the edge of, urban areas being constructed without the provision of constructed roads, drainage, water and sewerage services. This reveals a disconnect between development approvals and infrastructure planning.

It appears that, in many cases, development is not occurring in sequential and planned way and that the provision of infrastructure to support the development is being provided in a reactive way, which is expensive to the community and financially and environmentally unsustainable.

Through research and community engagement, the IUDP includes analysis, strategic policy and practical actions to improve physical infrastructure, social infrastructure, risk sensitive land use, environment management at town level with proposals for capacity building and institutional strengthening of municipal authority. The IUDP also focuses on improving the conditions of women, the poor and the excluded by undertaking a community development program and gender equality and social inclusion (GESI) activities through the Social Development Plan.

The IUDP, presented in 16 volumes, also covers institutional and technical issues. The report provides comprehensive details on: urban management, institutional development; physical development planning, social development planning, economy, environment, institutional and financial planning along with social impacts and poverty; gender and social inclusion; and the subproject resettlement plans and disaster risk reduction. Based on the immediate needs of the municipality, short term plans and long-term plans have been developed which will support Dhulikhel's growth.

In the preparation of the IUDP project, the most pressing needs of the Dhulikhel Municipality have been identified. Analysis was carried out for physical infrastructure, social infrastructure, economy and disaster management and provide priorities for short, medium and long-term needs of the Municipality.

While generally the spatial distribution of health and education facilities show good coverage, connectivity in rural wards needs to be improved through upgrading existing road networks. Likewise, disaster management is another critical issue demanding a strategic response.

Critically, the IUDP provides a new framework to manage the urbanization of Dhulikhel, while protecting its agricultural, environmental and cultural assets. This will be in the form of new processes for the Municipality, including land use zoning and by-laws, and clear processes to better link land development, community needs and the provision of infrastructure.

The IUDP:

- Sets out the planned urban expansion of Dhulikhel in three key areas to accommodate residential, tourism and commercial growth over the coming 20 years.
- Supports more intensive development around the commercial centres (chowks) that supports existing private and public investment.
- Identifies key road, water and sewerage infrastructure to support the growing community over the next 20 years.
- Identifies key road connections between the Rural wards (in particular Wards 1 and 2) to facilitate access to schools and health services.
- Establishes Land Use Zonings, based on economic, physical attributes and disaster risk management principles, which will support good decisions, guide development in strategically suitable locations and support Dhulikhel's agriculture sector.
- Identifies opportunities to support the growth in tourism and protection of heritage and environmental assets for existing and future generations.
- Identifies priority projects to be undertaken by the Municipality over the coming 5 years to support the delivery of the IUDP, supported by a financial plan.

The IUDP introduces new land use zoning and by-laws which provides for strategically-driven decision making and sustainable development of Dhulikhel into the long term.

Implementation of the actions within the IUDP from all part of the organization is critical to the success of Dhulikhel's future.

The IUDP consists of the following Volumes:

Volume 1	Background Report
Volume 2	Physical Development Plan
Volume 3	Land Use and Zoning Plan
Volume 4	Social Development Plan
Volume 5	Economic Development Plan
Volume 6	Environment Management Plan
Volume 7	Conservation, Culture and Tourism Plan
Volume 8	Municipal Transport Management Plan
Volume 9	Disaster Risk Reduction Plan
Volume 10	Consolidated Implementation Plan
Volume 11	Financial and Organisation Plan
Volume 12	By-Laws
Volume 13	Municipal profile
Volume 14	Feasibility Study – Waterfall Construction in Ward 1
Volume 15	Pre-Feasibility Study – Artificial Lake in Wards 7 and 8
Volume 16	Feasibility Study – Walking Trail in Wards 7 and 8

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LIST OF ABBREVIATIONS

GDP	Gross domestic product
GON	Government of Nepal
MUNICIPALITY	Sub-Metropolitan City
GESI	Gender equality and Social Inclusion
PPP	Public Private Partnership
CBS	Central Bureau of Statistics
MoUD	Ministry of Urban Development
NPC	National Planning Commission
DOR	Department of Road
DUDBC	Department of Urban Development & Building Construction
LSGA	Local Self Governance Act
DTMP	District Transport Master Plan
DPP	District Periodic Plan
FGD	Focus Group Discussion
TDC	Town Development committees
PRA	Participatory rural appraisal
RRA	Rapid Rural appraisal
CSOs	civil society organizations
SWOT	Strength Weakness Opportunity Threat
CBOs	Community based Organisations
LFA	Logical Framework Approach
O&M	Operation and Maintenance

NSU	Nepal Sanskrit University
LPCD	Litres per Capita per Day
ODF	Open Defecation Free
SS	Sub Station
BR	Before Restructuring
DRRP	Disaster Risk Reduction Plan
PDP	Physical Development Plan
RSLUP	Risk Sensitive Land Use Plan
SWM	Solid Waste Management
IEC	Information, Education and Communication
TLOs	Town Level Organisations
IWPS	Integrated Waste Processing Sites
TB	Telephone Booth
C&D	Construction and Demolition
DRMP	Disaster Risk Management Plan
PPP	Public Private Partnership
BOOT	Built Operate Own Transfer
UID	Urban Infrastructure Development
CBS	Central Bureau of Statistics

1 INTRODUCTION

1.1 Project Background

National Context

Nepal is largely a rural country and is urbanizing rapidly. According to the World Bank, 2016, Nepal's annual Urban Growth is 3.15%. The urbanization process is haphazard, lacks effective planning and the result is that there is the transformation of rural areas (or hinterland or fringes) into urban form without adequate infrastructure to support development. This has led to scattered unplanned settlements at the cost of agricultural land, forests, public spaces and environmentally sensitive areas. Further, the cities are failing to cope with the demand of infrastructure services and job opportunities and are increasingly reeling under the social and environmental impacts of the haphazard urbanization. Environmental degradation, congestion, urban poverty, squatter settlements, unemployment and lagging infrastructure provision have become an increasingly visible phenomenon in these large urban areas. Hence, much of the economic gains acquired from urbanization have been eroded from its negative impacts. Despite the non-agricultural sector being a major contributor to gross domestic product (GDP), urban centers in the country have yet to emerge as engines of economic growth and contribute to the reduction of urban or rural poverty alike.

The Government of Nepal has recognized this issue and has been implementing a National Urban Policy since 2007 and National Urban Development Strategy, 2016. The policy is prominent by prioritizing investment to the lagging regions of the country by fostering development of regional cities and intermediate towns. Therefore, with an objective of reducing poverty and increasing urban physical facilities, the Government has prioritized to invest in emerging Municipalities in the Country.

Through these strategies, the government has required all municipalities to develop an Integrated Urban Development Plan to guide development and investment over the next 20 years.

1.2 The Objectives of the IUDP

The Objective of the Integrated Urban Development Plan is to provide a blueprint for the physical, social and economic growth of Dhulikhel Municipality over the next 20 years.

Based on technical information, projections and sound urban planning principles for sustainable development, the Integrated Urban Development Plan will:

- Establish a Land Use Plan that supports urban development in appropriate locations, production of high-quality agricultural land and protection of environmental assets.
- Identify essential physical and social infrastructure required to support growing communities.
- Clearly set out short, medium and long-term priorities and actions required to deliver the plan.
- Understand the human resources and finance required to deliver the plan.
- Provide for a new land use and development system for the Municipality by allocating land use zoning and introducing specific by-laws to support sustainable development.

The IUDP is comprised of:

- A Land Use Plan
- Physical Development Plan
- Social Development Plan
- Cultural Heritage Plan
- Tourism Development Plan
- Economic Development Plan
- Financial Plan

The detailed Project Brief, including project scope, expected output and methodology is included in Appendix 1.

2 METHODOLOGY

The preparation of the IUDP is grounded in a combination of research, community and service feedback and policy analysis.

2.1 Phase 1: Inception Phase

2.1.1 Collection of Secondary Level Data and Literature Review:

Various relevant documents and Maps were collected from key Government and service authorities and critically reviewed. Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics (CBS) provided population data of Dhulikhel Municipality. GIS mapping, illustrating the newly structured local government areas, was acquired from the Department of Survey. With the help of this information, a map of the Study area was prepared depicting the Municipality's settlements, roads, water bodies, contours, environmentally sensitive areas, agriculture and forest related information in Municipality area. Further settlements of the bazaar and surrounding settlement within the Municipality were extracted from Google Earth satellite images and overlaid on the Map. This base map was used for all planning purposes during the study.

The Municipality level and ward level information was collected from the CBS and other published reports. Annual progress reports and relevant background data was provided by the District Education Office Kavre, District Department of Cottage and Small Industries, District Cooperative Association, and NGO Federation and were critically reviewed. Likewise, the Social Development section and Social Security Departments under the Dhulikhel Municipality provided social data in the Municipality. Other information including legislation, regulations and standards that may influence the preparation of the Land Use Plan, By-Laws, Settlement Plan and Physical Development Plan were collected from Ministry of Urban Development, National Planning Commission, Department of Road, Ministry of Land Development, Department of Urban Development and Building Construction and other libraries. The Department of Survey also provided provisional zoning maps at cadastral level which have been invaluable in assisting in determining land use and zoning.

The following documents, literature, maps and photographs were collected and reviewed.

Maps

- Newly structured map of Nepal prepared by Survey Department.
- GIS map of Dhulikhel Municipality obtained from the Municipality.
- Aerial Photographs/GIS base Digital maps of Kavre District.
- Land Use land cover maps, soil maps etc.
- Natural Disaster Mapping.
- Land Capability Map
- Land Use and Zoning Mapping prepared by the Department of Survey.

Existing literature, reports and other socio-economic data

- Local Self Governance Act (LSGA) 2055, LSGA Regulation 2056.
- Environment Protection Act, 2053 and Rule, 2054.
- Planning norms, guidelines, etc.
- Land Use Policy 2015.
- Others Planning related existing laws, policies, plans and strategies,
- Demographic, socio-economic data from CBS of Dhulikhel Municipality.

Critical Review of Past Experiences in New Town Planning

Towns that were planned and implemented within the last forty years such as the five regional development centers, Kohalpur new town, Terai towns and Tools of implementation and their success/failure stories were critically reviewed.

Other documents including the Population Census Report at VDC level of Kavre, District Transport Master Plan (DTMP) of Kavre, Aerial photographs, topography map, satellite imagery were collected and reviewed.

2.1.2 Preparation of Questionnaire and Checklists:

The consultant team found that there were some considerable gaps and limitations in the secondary data available to inform the project. This “data gap” highlighted the importance of gathering primary data and information in order to prepare meaningful and implementable plans and programs for the balanced development of Dhulikhel bazaar area and its linkage with the newly added wards in hinterland.

On the basis of secondary data collected and literature review, a series of questionnaires and checklists were prepared in consultation with the Municipality for the purpose of primary data collection. Focus Group discussions were held in each Ward with a variety of different stakeholders including local people, local leaders, women groups, Dalit Janajati and the business community. The results of the Focus Group discussions are attached as Appendix 2 in the report. The base Map prepared was used along with the checklist for both socio-economic and land use survey.

2.2 Phase 2: Investigation Phase

Steering Committee

A Steering Committee for IUDP project was formed, comprising the CAO (Co-ordinator), the Civil Engineer (Secretary) and Municipality council members.

The study team visited all the wards of the Municipality. The questionnaire survey was conducted in each ward in the presence of ward level representatives from different sectors representing women’s groups, dalit janajati, business communities, Forest User’s Committee, Drinking Water and Sanitation User’s Committee. The Steering committee facilitated the field investigation, contributing in planning and its execution. Chief Administration Officer of the Municipality acted as Coordinator of the Committee and the Civil Engineer of Municipality is the member secretary of the steering committee. The Study Team used observation, measurement, photography, formal and informal

discussion/consultation along with checklist.

2.2.1 Establishing a Vision

Prior to the commencement of the IUDP Project, the Municipality undertook a significant visioning process. The Vision was prepared in the presence of representatives from the ward level, line agencies (including District education, district irrigation and district agriculture groups), Media and Department of Urban Development and Building Construction officials. A Vision Paper was developed during this process and was provided by the Municipality. The Vision is grounded in the potential and prospects of the Municipality and its possible lead sectors. The Vision provided the foundation context for the formulation of plans and strategies in the IUDP.

2.2.2 Identification and collection of Ward and Town Level Problem and Issues

Ward-level problems and needs were ascertained through a participatory process by holding a citizen's gathering at the Municipality hall. Municipal level/ward level problems and development issues were also identified through opinion surveys of ward representatives, officials of the municipality and government agencies (DUDBC officials) in the workshop, which was conducted after the inception stage. During the interactive process participants were handed green, yellow and red papers, where problems were written in red paper, solutions to the problems in green paper and opportunities in yellow paper.

2.3 Phase 3: Planning

2.3.1 Analysis of Data:

The information collected through observation, measurement, and key informant interviews along with information from secondary sources were analyzed using following techniques:

Flow Analysis (goods and people): understanding the relationship of rural settlements with main Bazar areas/market centers

SWOT analysis: evaluating the opportunity and resources of the Municipality. This analysis presented the municipality's/Market Center wise strength, weakness, opportunity and threat of the area.

Demographic and Socio-Economic Analysis: Municipality's Market Center population, ethnicity population, religion population and economically active population, poverty profile of population was outlined and analyzed.

Land Use and Urban Economic Analysis: Analyzing Dhulikhel's Land holding configuration, farm size and sectorial analysis of Agriculture, Planning, Fishery, Livestock, Mining, Industry, trade and commerce, market linkages, physical and social infrastructures etc.

Environment Analysis:

Data regarding the hazard and environmental sensitivity was collected and hazard vulnerability assessment was carried out.

As a part of data analysis series of maps was prepared through GIS.

2.4 Phase 4: Data Processing, Analysis and Synthesis

2.4.1 Preparation of Plan

Based on the interaction with local authorities and local people, the Steering Committee, and findings of different analysis/interpretation, the IUDP and Building By-Laws of the Municipality were prepared.

Planning process:

The Planning process should be a participatory one. The role of municipality with the help of the Steering Committee is emphasized and Steering Committee was been formed to guide preparation of strategic plan and Building By laws. The Municipality is the key body to formulate policies and guidelines related to the IUDP and the preparation of the Bylaws. Municipality represented by the Steering Committee met several times to advise on various aspects of plan preparation including identifying problems and issues of the town, establishing strategy and formulating, goals, objectives and programs.

Municipal level meetings composing of officials of Municipality, ward representatives, technical officials from DUDBC and CBOs were held to determine the town level problems and needs.

The Steering Committee, with the support of planning team, formulated Municipal Sectoral plans and programs, using Logical Framework Approach (LFA). Such Plans are supported by sectorial goals, objectives, outputs, activities, progress indicators, and the means of verification of these indicators.

2.4.2 Planning and Identification of different components:

Economic Development, Population and Demography: Current trends and pattern of local economy, population growth and distribution were analyzed and forecasted for next 5,10 and 20 years.

Housing and Population: The present trend of urban expansion and housing construction was analyzed. The potential area for urban development based on land suitability and other factors are identified. Present and future (5, 10, 20 years) housing needs/market stock was analyzed and strategies for land acquisition, distribution of land and housing in future are recommended. This process included land supply and demand analysis including analysis of building trends over the last 5 years, as well as factors that may influence a low, medium and high growth scenario.

Physical Infrastructure: The Consultant conducted studies on present and future (20 years) supply and demand of physical infrastructures of the Municipality and recommended strategies for addressing the deficiencies if necessary. The recommended complete plans for urban services should be further developed worked out and shown in GIS Maps for physical infrastructures.

Social Infrastructure: A complete study (inventory, analysis, and recommendations) of the Municipality's Social Infrastructure was undertaken addressing present deficiencies and future demands of 5, 10 and 20 years. With this

information the land area and location of such infrastructures and services existing are provided in coming 5, 10 and 20 years in GIS maps.

Economic Infrastructure: Investigations were conducted on the pull and push factors that may attract people from hinterland and other parts of the country. Proposed location and areas with details of the infrastructures are mentioned.

Government/Public Land: A study of existing Government and Public Land was undertaken and areas for future development and expansion of the town were assessed including land for government and public purpose. Land Use and Zoning Maps have been produced to protect these identified lands with their location and areas based on existing act and regulations. Suggestions in this matter are recommended as part of future Masterplan for Dhulikhel.

Natural Hazards: Areas of natural hazards were assessed, with the purpose of avoiding/mitigating such hazards in the course of future development.

Cultural and Historic Resources: High level assessment of places of potential heritage significance were identified and assessed, and recommended strategies for their preservation and protection against adverse impacts from other/future land and developments.

Preparation of Building By-Laws: A detailed study on Land Use was prepared and By-Laws were drafted for the regulation of Building and other Infrastructure. By-Laws were prepared in accordance with "By-Laws 2064, of Kathmandu Valley" prepared by Kathmandu Valley Town Development Committee.

Implementation Strategy: A multi-sectoral financial plan for implementing the IUDP.

2.4.3 Preparation of Base Map

Based on above information a series of base maps of existing scenario were prepared including the following:

- GIS base map including: existing streets (with coding system), building footprints with building use, occupancy and general demographics based on the latest archive satellite image.
- Population density and growth rate
- Existing land use (housing, commercial industrial, agricultural, natural, mixed use, guthi land, public space, squatted land)
- Slope and watershed analysis
- Transportation (road with classification- national highways, feeder roads, district roads and urban roads (administrative classification), parking space, bus park, public transportation routes, frequencies and stops, airport and destinations)
- Water supply, sewerage system (sewerage network, discharge points, treatment plant if any)
- Solid waste (coverage of public and private collection system, formal and informal waste management sites, recycling points)

- Electricity (production and transportation infrastructure, grid power coverage, street lighting)
- Public services (health, education, police, rescue services, cemeteries, administrative services)
- Environment (erosion, pollution, forest, water bodies)
- Culture and tourism (temples, museums, cinemas, views, monuments, performance places, festival routes)

2.4.4 Preparation of Integrated Plan

Incorporating all the analysis, a series of plans were prepared along with the Building By-Laws to guide future urban development. The IUDP includes:

- A complete **municipal profile** is prepared with all relevant up dated primary and secondary data base and information); maps and drawing, issues and problems.
- Separate reports of maps/drawing of a Land Use Plan, Physical Development Plan (setting out the settlement growth areas) and Planning and Building by-laws, for the Municipality.
- Each Plan includes **Objectives, Actions, Responsibilities and Performance Indicators** and means of verification by LFA approach.
- Implementation Plan was then prepared which includes all of the actions required to make the activate the IUDP.
- Overall the planning document contains following maps and drawings and information with required explanation.
 - Index Map
 - Location Map
 - Existing and proposed land use and zoning Map including an overlay of contour line with approved intervals. Land use map should cover major Roads, Drains, Electricity Line, open spaces, play grounds, rivers, lake, ponds, religious centers / area, agricultural, forest, residential, commercial, institutional, urban area, administrative boundary etc.
 - Existing and proposed Road Network Map, road sections, bus bays/stop etc and Location of underfund infrastructures.
 - Existing and proposed sewerage/surface drain network plan showing surface drainage
 - Existing and proposed water supply network Map showing intake, treatment plants, transmission line, reservoirs, distribution line etc.
 - Existing and proposed electricity supply network Map with location of substation
 - Existing and proposed communication network Map.
 - Proposed Solid Waste Disposal / Landfill Site Map with an overlay of contour line of agreed intervals.
 - Environmental Sensitive Map with an overlay of contour line of agreed intervals.
 - Map showing government/guthi land, Bus Park, truck yard with an overlay of contour line of agreed intervals and other details.

2.5 Phase 5: “Game Changer” Project Selection and Pre-feasibility study of the projects

2.5.1 Project Selection

Project selection was based on the integrated master plan formulated and prepared above. The Steering Committee of the municipality along with the DUDBC Consultation prioritized three major “game changer” projects. These include:

- Walking Trail within Wards 7 and 8
- Artificial Lake within Wards 7 and 8
- Waterfall construction in Ward No. 1

2.5.2 Pre-feasibility study of Selected Projects:

After the finalization of prioritized project list, the Consultant prepared pre-feasibility study of the projects. These include:

- ❖ Engineering Survey
- ❖ Architectural and Engineering Drawings for each of the components

2.6 Testing Phase

The initial Draft was circulated to all Department heads within the Municipality for feedback and, following changes, the Consultation Draft was placed on the Municipality’s website. The web-link and invitations were sent to Ward Chairs, all municipality board members, key municipality staff, technical experts from key central government departments and universities and local business operators.

An interactive ‘World café’ workshop was held on 25 January 2019 and attended by approximately 100 people from the community, experts, staff and ward chairs and councilors. This forum provided the opportunity to receive feedback on the Draft. Refer Appendix 4 which lists the feedback received.

2.7 Project Limitations

The IUDP is a high-level strategic Plan for the Municipality and sets the framework for development over the coming 20 years. The following limitations include:

- a. Detailed Master Plans of urban Dhulikhel or the rural settlement villages were not undertaken for this project. This work should be prepared as a first priority following the completion of the IUDP.
- b. Detailed infrastructure planning was not part of this project. Detailed Masterplans for growth areas will determine the extent of infrastructure needed.
- c. Regarding the existing Land Pooling area, although the subdivision has been designed, the detailed infrastructure and costs need to be done.
- d. Further work will be required on detailed design of infrastructure and has been identified in the Implementation Plan.

3 LITERATURE REVIEW AND POLICY CONTEXT

A review of previous and current planning policies and practices was carried out to inform the development concept and ideas for the Integrated Urban Development Plan. A review of different planning practices in Nepal assisted in understanding the challenges that earlier planning processes have faced and to understand contemporary planning policy in Nepal. Similarly, the new constitution of Nepal was reviewed, to understand authority and obligations of different levels of governing bodies, including and focusing on local government.

3.1 Sustainable Development Goals

The Sustainable Development Goals (SDGs) have been developed and set by the United Nations General Assembly, of which Nepal is a member, in a collaborative effort to end poverty, protect the environment and ensure peace and wellbeing for all people. “Transforming our World: the 2030 Agenda for Sustainable Development”, there are 17 SDGs which are to be achieved by 2030. The Goals include:



Figure 1: SDGs

In order to be truly effective it is essential that the SDGs are integrated into the local context and the IUDP is a key strategic vehicle to collectively address many of the SDGs in the wholistic development of Dhulikhel Municipality, to protect environmental and cultural assets, improve equity of access to essential services, support growth in economic development and employment opportunities and create an environment that is pleasant and safe for all of its citizens to live in.

3.2 Planning Practices in Nepal

Some of the major planning practices held in Nepal, especially in Kathmandu valley are briefly described here:

3.2.1 Master Planning approach and Structure Planning

A fundamental premise of the master plan is based on the western concept of ‘zoning’ which outlines a land use pattern by dividing the city into zones, where those traditional master plans had physical planning approach translated into spatial plans. Wapwera and Egpu (2013) defines master plan as a comprehensive long-range plan intended to guide growth and development of a community or region including analysis, recommendations, and proposals about the community’s population, economy, housing and basic infrastructure as well as land use. It is considered the coronation of King Mahendra (1955) and Queen Elizabeth’s visit (1962) as introduction period of modern urban planning which was soon followed by the UN Technical assistance program in 1962 for planning initiation Kathmandu Valley. *The “Physical Development Plan for the Kathmandu Valley”* (1969), commonly referred to as “1969 Plan”, was the first comprehensive planning document in the country. Based on the “Survey-Analysis-Evaluation-Implementation” method, the master plan approach of planning took enormous time in collection and analysis of data (Joshi, 2008, p. 95). The analysis resulted in a number of alternative solutions, then the best alternative was selected and developed into master plan (Joshi, 2008). One of the major criticisms of master plan was that the plan was never realized to its full extent because of its extensive need of resources and limitations of project management.

A structure plan was introduced in 1988-1991 for municipalities in support of Department of Housing and Urban Development (DHUD) in the name of Management Support of Urban Development (MSUD) (Irwin & Joshi, 1996). Structure plans were prepared for 33 municipalities but were limited to policy statements and implementation details were not resolved (Joshi, 2008). Joshi explains the possibilities of structure plan to be successful than Master Plan on the basis of its dynamism, feasibility in updating plans as per demand and rightful allocation of budget as they were backed up by series of action plans which were detailed local area plan which provided legal basis for development control and brought planning issues before public. Another learning steps from the structure plans were indicative plans where Joshi explains in his book “Planning approaches in Nepal” that simple, feasible and understandable plan has better chance to success, where everyone gets to participate in the process and decision making.

3.2.2 Integrated Action Plan

Integrated Action Planning (IAP) was introduced at a time of decentralization of responsibilities and expected increases in funding for urban infrastructure to overcome deficits and serve rapid urbanization (MHPP, 1992) (Mattingly & Winarso, 1999). An alternative to conventional approaches of planning, it was more action oriented and realistic as it translated and implemented the goals of strategic planning within shorter time frame. (Irwin & Joshi, 1996). Joshi (2008) pushes the fact that IAP is more appropriate in the context of Nepal where urbanization is rapid, resources are constrained, institutional capacity is often inadequate and planning processes need to be simplified and less time consuming. Joshi (2008) explains the process adopted during the IAP, where professionals work closely with municipal staff for about three months. Some of the steps carried out are explained as:

- Community consultation and problem identification with series of discussions and meetings are held where problems are identified in a realistic way and people's expectations are not raised beyond affordability.
- Parallel to the community consultation, analysis of acquired information is conducted to determine and evaluate opportunities and constraints in resources and institutional capacity of municipality, legislative framework and existing project (Irwin & Joshi, 1996).
- Likewise, physical and environmental analysis of the locality is undertaken through a SWOT analysis of site by preparing thematic maps, assessment of land use, identifying trends and patterns of growth, resource distribution and others (Joshi, 2008).
- Based on the previous collected information, problems are identified and prioritized, projects are formulated with solutions to each problem. Projects formulated are examined on the basis of their social, physical, topographical and financial feasibility, and projects are prioritized for implementation.

Mattingly & Winarso (1999) claims that Integrated Action Planning was expected to promote the use of spatial planning as well as to improve investment programming. Different studies have proven the IAP concept is widely praised in Nepal but some of the steps are questionable. "Municipal residents and maybe some ward leaders and representatives have mistakenly thought IAP as a funding agency, probably because its introduction opened up access to the Town Development Fund and possibly some funds of the DHUD" (Mattingly & Winarso, 1999).

Identifying the problems and prioritizing the projects at ward level meetings with extent of participation can be considered as good democratic process but often misguided by ill political will (Joshi, 2008). Mattingly & Winarso (1999) argue that changes to the sources of local government revenue have compromised the foundation behind many investment plans and increased many times the difficulty of estimating future municipal incomes which meant that IAP was not able to be fully realized. Irwin & Joshi (1996) further add that many municipalities find it difficult to implement urban projects as there is severe lack of manpower, resources and urban awareness.

The IAP process looked at a longer time period. It has been superseded by the Period Plan method, which although vision for urban development over a 30-year period, it requires review every 5 years.

3.2.3 Periodic Plan

A Periodic plan is a long-term plan with a review period of generally 5-7 years, picturing the future image of that locality comprising different aspects of planning such as physical, social, environmental, financial, economic and institutional development. It consists of a series plans, policies and regulations, and implementation tools including programs, investments, budgeting and allocating tasks for responsible line agencies. According the guideline published by government, it can be also be referred to as 'a participatory and inclusive plan'. Periodic plans integrate different thematic plans according to social, economic, environment, physical, financial, and institutional aspects and ensure that the concerned stakeholders in the respective district authorities are consulted in the overall planning process in order to translate their legal requirements into action (Ministry of Local development, 2059). It requires a municipal data profile and a participatory planning process with a log frame format that includes a rolling budget. Compared to Integrated Action Planning (IAP), the comprehensive nature of the Periodic Plan is considered as more realistic

because of its legal status of Local Self Governance Act and regulations (2058,2059), hence these are also considered as one of the performance indicators of municipalities (gtz: udle, 2006).

Periodic planning processes have been extremely slow due to extensive data collection, lengthy public participation, the limited analytical capacity to utilise existing proxy data, the unwillingness to make decisions due to the changing political climate and conflict within the country, the lack of local representation, weak institutional capacity and other priorities that override periodic planning (gtz: udle, 2006). Data collection and public participation are often viewed as tools that provide legitimacy or fulfil bureaucratic necessities rather than as management tools that actually organise the future development of municipalities according to agreed and balanced priorities voiced by local people. Periodic Plans are often argued as overloaded with a holistic planning approach, which is far beyond realistic implementation and service capacity (gtz: udle, 2006). But Periodic Plans have certain benefits over other approaches to planning because of its integrated nature of planning, legal and financial base for planning and budget allocation, foreign agencies in enhancing the institutional capacity building of municipalities and participatory approaches.

3.2.4 Issues and Challenges

Nepal commenced modern urban planning after the 1960s with international expertise of the United Nations (UN), when the country was freed from century of feudocracy of Ranas. Many scholars like Dhakal (2004), Joshi (2008) and Irwin (1996) believe that planning in Nepal was limited to paper, without taking in consideration reality on the ground and unexpected scenarios.

So far, the first kind of master plan for Nepal, prepared by UN experts in 1969 and covering a number of aspects in planning and conservation for the next 20-30 years was not really well accepted by government in its policies (Dhakal, 2004). Dhakal contends that ‘Kathmandu Valley Physical Development Plan, 1976’, which consisted of many subplans like urban design, residential development, zoning, and the like always remained in the file and in reality greens were converting into greys.

According to the new constitution Municipalities are authorized to frame landuse, prepare housing plans, prepare management plans for drainage and drinking water, plan recreational space, and approve the construction of buildings and manage the protection of environmental and heritage assets.

A major issue is that the two major planning authorities of Nepal Town Development committees and Municipalities are merely ‘Jaw-less bodies’ (Dhakal, 2004), in that these institutions generally lack the required human resources and institutional support to fulfill their planning responsibilities.

The lack of coordination between private and public sector, national and international development agencies as well as among the sectorial line agencies in the implementation of urban projects has been a long-standing problem. Technical capacity for implementing municipal projects is also severely lacking (Irwin & Joshi, 1996) where factors such as coordination of various actors, lack of enforcement, insufficient zoning regulations and improper or lack of planning consciousness are distorting the urban features (Dhakal, 2004).

Scarce supply of urban land, high costs and slow mechanisms for enacting land acquisition is also considered a major challenge in implementing large and/or complex urban infrastructure projects. Prolonged or inefficient public

participation and political factors can hinder the implementation of urban projects. As Roy (2009) describes about the situation of urban governance in India, the 'regime is itself an informalized entity, one that is a state of deregulation, ambiguity, and exception'. Further, 'incontrovertible argument about the failure of planning in India: that informality and insurgence together undermine the possibilities of rational planning, and that therefore India cannot plan its cities,' is a similar ground reality of Nepal. Law that is unrestricted and subject to multiple elucidations and interests can be positioned as, 'law as social process is as idiosyncratic and arbitrary as that which is illegal' (Berry, 1993; Holston, 2007, Roy, 2009).

Another major challenge is the lack of coordination and failure to take advantage of the synergy between projects. There is a tendency to deal with overlapping issues such as the environment, land use and expansion zones as isolated issues and this has made planning implementation more complex and disputable. Further, the dominance of improper urban planning practices as evidenced by haphazard development has become the major reason for the shortfall of basic urban services (Dhakal, 2004).

Joshi (2008) explains that many attempts have been made to make planning more integrated, comprehensive and effective. Mechanisms to integrate different aspects of urban development are either not in place or very weak. This failure of integration between these sectors explain why planning has struggled in Nepal. Plans in Nepal have historically lacked the 'harmony within and among organizations' (Joshi, 2008). Kelly & Becker, (2000) explain that success in planning is determined by the effort of its leadership (including the governing body or planning commission or a combination of organisations working together) and has been one of the major urban development challenges in Nepal. Joshi (2008) adds that the limited institutional capacity of planners or implementing agencies to consider unexpected scenarios caused by external factors is making planning ineffective in Nepal. He highlights the implementation as ultimate goal of any plan hence it should be strategically ready to respond to situations due to changes in circumstance, both internal and external.

3.3 Legal Frameworks

Infrastructure development has remained a priority of the government from the beginning of first five-year plan. With a view to facilitate and create an enabling environment for sustainable urban development many legislations have been enacted since then. Rules, Regulations and Guidelines have been developed and put to use. Policy documents have been passed and practiced so as to streamline the direction of the development. In these connections the following Acts, Regulations, policy frameworks etc. have been brought in place:

1. National Urban Policy, 2007
2. National Urban Development Strategy, 2017
3. Planning Norms and Standard, 2013
4. National Land Use Policy, 2012
5. Local Self-Governance Act 2054 and Regulations 2055
6. Town Development Act 2045
7. Land Acquisition Act (1977)
8. Land Survey and Measurement Act

9. Environment Protection Act (2055 B.S)
10. Solid Waste Management and Resource Mobilization Act (1987 A.D)
11. Public Road Act (1974)
12. National Road Standard (2070)
13. Nepal Urban Road Standard prepared by DUDBC (2071)
14. Nepal Urban Drain Standard prepared by DUDBC
15. Town Development Fund Act 2053
16. Industrial Enterprise Act (1992)
17. Building Bye-Laws
18. Land Use Policy (2069)
19. Public Procurement Acts 2063 and Regulations 2064
20. Public Roads Act, 2031
21. Contract Act, 2023 and 2058
22. Construction Industry Acts 2055
23. BOOT Acts 2063 and Regulations 2064
24. Public Infrastructure Build, Operate and Transfer Policy 2057
25. National Transport Policy, 2001
26. National Agriculture Policy, 2004
27. Tourism Policy, 2008
28. National Industrial Policy, 2011
29. Planning Norms and Standard, 2013
30. Constitution of Nepal, 2015

For carrying out the study, above mentioned policy documents, acts and legislations are very important to consider. A few of the important planning legislations are elaborated below:

3.3.1 Constitution of Nepal and Local Government Operation Act (2074)

Decentralized system of governance is one of the fundamental policies to achieve those objectives outlined in the Constitution. The Constitution and Operation Act has provisioned broad based organizational structure, devolution of authorities, special provision to promote disadvantaged communities, planned development process and judicial authorities to local bodies, where the Act has provided enough legal basis for the development of a capable, responsive and accountable local self-governance system.

The Constitution of Nepal has the federal democratic republic of Nepal into three levels: central, the province and local level. The exclusive powers of the federation, states and local level have been included in the Schedule 5, 6, and 8 respectively and the concurrent powers of the Federation, and local level have been included in the schedule 7 and 9 of the Constitution of Nepal.

Revised from Local Self Governance Act (2054), the Constitution has devolved authority and responsibility in schedule 8 of the Constitution. These powers are further elaborated in the Local Government Operation Act (2074)

and in “Unbundling/Detailing of List of Exclusive and Concurrent Powers of the Federation, the State and the Local Level Provisioned in the Schedule 5,6,7,8,9 of the Constitution of Nepal” prepared by Federalism Implementation and Administration Restructuring Coordination Committee.

Land use policies, human settlement development policies, environment adaptation, aviation policy and national taxes are examples of responsibilities mentioned in Schedule 5 as the authority of central government whereas state government is responsible for resource management assets including land, river and forest and mines. Similarly, matters such as land management, agriculture, disaster management, social security, are concurrently the responsibility of federal, state and local government.

The IUDP is focused on those responsibilities of local government directly relevant to urban development. These are listed below:

1. Local taxes (wealth tax, house rent tax, land and building registration fee, motor vehicle tax), service charge, fee, tourism fee, advertisement tax, business tax, land tax (land revenue), penalty, entertainment tax, land revenue collection
2. Local level development plans and projects: Formulation, implementation, monitoring and evaluation of necessary plan and projects for economic, social, cultural, environmental technology and infrastructure related development along with formulation and implementation of necessary urban policies/ standards, bye-laws and building codes.
3. Basic and secondary education
4. Basic health and sanitation
5. Local market management, environment protection and bio-diversity
6. Local roads, rural roads, agro-roads, irrigation
7. Water supply, small hydropower projects, alternative energy
8. Disaster management

3.3.1.1 The Land Acquisition Act, 2034 [1977]

From time to time acquisition of privately-owned land is required to facilitate urban development outcomes, in particular the provision of infrastructure. The Land Acquisition Act, 2034 [1977] empowers the Government to acquire any land, on the payment of compensation, for public purposes or for the operation of any development project by government institutions or other institutions. The Act includes:

- Preliminary actions, conditions and decision provision for acquiring land (Section 4,5,6,8,9,10)
- Provision of land acquisition in emergency condition (section 25)
- Provision of compensation of land, property and other losses (Section 7, 13, 14, 15, 16, 17,18, 19, 20, 21)
- Allocates authority to officers for different acquisition procedure (Section 5, 13, 40)
- Provision of Land ownership transfer (Section 22, 23)
- Provision of giving information and notices (Section 6, 9, 10, 18, 19)
- Ensures right to complain file (Section 11, 18)

While the Land Acquisition Act has empowered government to acquire land for development work and includes provisions for assigning authorities, compensation, time allocation and procedures, it does have some short-comings including no provisions for the time frame of compensation, guidelines for amount of compensation, or social and cultural aspects. The inclusion of these provisions would reduce disputes and facilitate more efficient urban development.

3.3.1.2 National Urban Policy, 2007 and National Urban Development Strategy 2015

The National Urban Policy (NUP), 2007 and National Urban Development Strategy was prepared incorporating the views of urban sector related institutions, intellectuals and professionals. The NUP contains three objectives:

- a) to achieve a balanced national urban structure through proper guidance to development of and investment in the infrastructural facilities
- b) to raise the living standard of the urban residents through development of clean, secure and economically vibrant urban development;
- c) to achieve effective urban management through institutional strengthening and legal empowerment of the local bodies, as well as through promotion of proper cooperation and coordination among the different institutions involved in urban development.

To achieve those objectives, the NUP includes policies and strategies for promoting industry, investing in urban infrastructure and linking highways from North to South. Other strategies to facilitate urban development include:

- a) Develop and strengthen the capacity of local government as the prime institution to implement urban development plans and programs.
- b) Establish the necessary legal and institutional mechanisms to support an integrated urban planning and monitoring system.
- c) Execute special programs for the conservation and protection of cultural heritage and sensitive natural resources.
- d) Develop plans related to land development, housing, and regularize land market.

- e) Develop a sustainable public transportation system.
- f) Prepare disaster-management plans
- g) Redefine the designation of municipalities.

The National Urban Policy has been found to be an integrated and comprehensive document addressing the major issues of urban planning and its implementation. It focuses on urban planning challenges and solutions expressed by different institutions, intellectuals and experts. It admits the existence of policy level confusion of local bodies and the central government agency due to lack of an integrated approach in urban development. The lack of a national vision in urban development and institutional or policy coordination, have made ineffective contribution for economic development as well as poverty reduction.

The NUP identifies unplanned urban development, weak rural-urban linkages, environmental deterioration due to haphazard urbanization, lack of clarity in national policy, weak municipal institutions, urban poverty as major issues related to urban sector. It further adds that weak institutional capacity and lack of coordination between local bodies and other agencies related to urban development, are the reasons behind local governments' lacking in planning and executing urban plans and programs as per the expectations. NUP adds the need of 'close cooperation and coordination between the central agencies and local bodies; and the areas which can be left solely to the local bodies.'

Despite having very exciting strategies and policies involved, the NUP lacks incorporation in the wider national policy. Present haphazard designation of municipalities without any proper consideration of population, infrastructure and revenue is one of the examples. Long term vision of any municipal area backed up by the legislations and public participation is one of the major points to be addressed in the policy. Generalization of the policy into strategies tries to address most of the urban issues such as land, housing, infrastructure, services, road, open spaces and all others but it doesn't consider restructuring the agencies, authorized body and local bodies along with legislations associated with them. National Urban Policy can be taken as good framework of addressing many challenges related to urban development where with minor additions like long term vision, regular upgrading and policy reforms could make the policy more effective, none the less it lacks implementation portion which needs lot of analysis, evaluation and recommendations as per the local problems.

Because of slow pace of NUP implementation and its internalization, especially policy activities pursuant to objectives of urban environment and management; the National Urban Development Strategy (NUDS), 2015 was formulated in the context of the fast pace of changing urban dynamics, including the emergence of new growth factors and context (international and national), changing urban and metropolitan form, and establishment of Ministry of Urban Development. The objectives of the NUDS, did not replace the NUP, but complemented the 2007 Policy and sought to expedite its implementation.

The NUDs comprises 8 thematic areas, which includes 4 themes and 4 mechanisms. The Themes include urban system, urban infrastructure, urban environment and urban economy. Mechanisms include urban investment, urban finance, urban governance and urban land management. NUDS, 2015 includes 41 desirable conditions or milestones envisaged for different themes, 65 indicators to measure the desirable conditions, 86 thematic strategies to achieve the desirable

conditions or milestones, 164 activities identified to operationalize the strategies. It was prepared considering a 15 year Planning Horizon and Planning Norms and Standards.

Planning Norms and Standards (2013)

Department of Urban Development and Building Construction prepared **Planning Norms and Standards** to use as a tool for standardizing the planning of urban development projects. The complete Planning Norms and Standards fall under three broad categories: Infrastructure norms and standards, Land Use norms and standards and Urban Form norms and standards.

The objective of Planning Norms and Standards is to assist urban designers, planners and policy makers to identify and forecast essential infrastructure needs of urban areas as well as help prepare urban plans and programs, to enrich understanding of urban form and land use and ensure balance between them and to guide the development and management of physical, social and economic infrastructure services in a planned manner.

3.3.1.3 Other

Many other acts, directives and legislations related to urban planned development have been approved by the Nepal government to authorize, guide and promote local bodies in urban development programs, but it appears the result does not seem to be very effective in most of the urban areas.

Major policies as: National Shelter Policy, Apartment Act 1997 and Build Operate Transfer Policy (2000) were proposed for promoting public private partnership whereas directives for municipality in guiding urban development plans like: Environment and Child Friendly Governance, and monitoring guidelines or policies have not brought real impact on the ground from fulfilling the bureaucratic directions.

Building by-laws prepared by a municipality is one of the important and effective forms of regulation to manage urban form over the long term. Shelter policy 1996 seems to have undertaken important policy initiatives in the housing sector of country where Local Government Operation Act has entitled local bodies for planning and promoting public participation and optimum resource mobilization. With start from Decentralization Act 1982 of which preamble suggests the goals and objectives of:

- Wider mobilization of people in resource allocation and distribution
- Formulation and implementation of medium terms and annual plans
- Involving local people in decision making and development

Many plans have tried to make urban development issues more devolved and participatory. Paudyal (1994) has identified major points such as limited institutional capacity, lack of support from central government, informal power structures, attitude amongst the local administrators, political factors and unrealistic scenario analysis on planning as reasons behind why local level development has fallen short of expectations.

Various urban planning legislation, policies and programs have been prepared by government and NGOs in order to support balanced and planned urban development in Nepal but to date this has not reflected in national decision making

nor implementation at ground level. Policies and legislation have not been supported by resources for implementation and good governance which has compromised the effectiveness of overall system.

3.4 Integrated Urban Development Plan

There are many definitions of integrated planning. One of the most relevant definitions for this project is:

“An integrated plan for sustainable urban development comprises a system of interlinked actions which seeks to bring about a lasting improvement in the economic, physical, social and environmental conditions of a city or an area within the city. The key to the process is “integration”, meaning that all policies, projects and proposals are considered in relation to one another. In this regard, the synergies between the elements of the plan should be such that the impact of the plan as a whole adds up to more than would the sum of the individual parts if implemented in isolation (Carbonaro, 2010).”

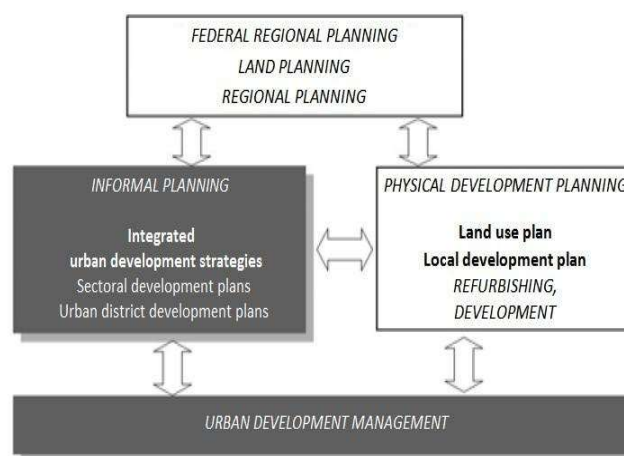


Figure 2: Integrated Urban Development Plan

4 MUNICIPALITY DESCRIPTION

4.1 A snapshot

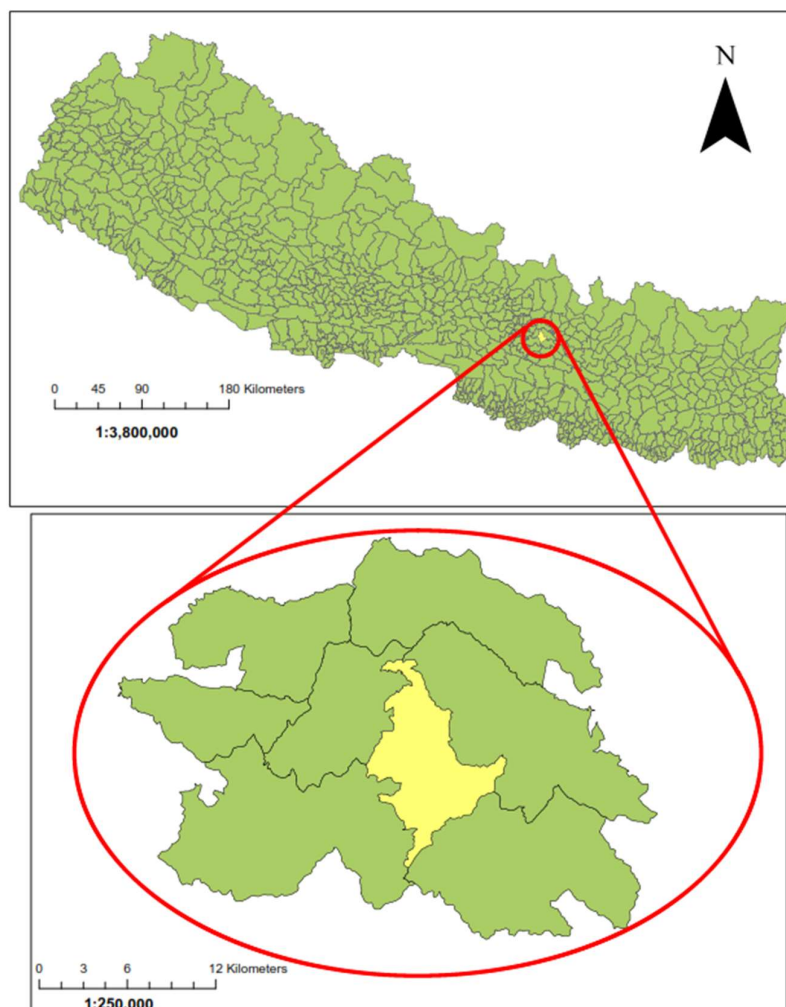


Figure 3: Dhulikhel Municipality

Dhulikhel Municipality of the Kavrepalanchok District is located in Province No. 3 of Nepal. It lies in Central Nepal; geographical coordinates are 27° 36' 992 North, 85° 33' East. Dhulikhel is located at the Eastern rim of Kathmandu Valley, south of the Himalayas and is situated 30 km southeast of Kathmandu and 74 km southwest of Kodari. Two major highways, B.P. Highway and Araniko Highway pass through Dhulikhel. Araniko Highway connects Kathmandu, Nepal's capital city with Tibet border town of Kodari. It has been an important trading centre on the commercial route linking Nepal to Tibet for centuries.

With an area of 54.62 km² (21.09 sq. mi), the Municipality lies at an altitude of 1550 m (5,085.3 ft). It is a typical Newari town with nearby Tamang villages and hosts the Dhulikhel Hospital and Kathmandu University.

Dhulikhel Municipality was established in 2043 B.S. with 9 wards and was expanded in 2074 and now comprises 12 wards. Prior to amalgamation, Dhulikhel Municipality was predominately urban with fewer wards. Post local

government restructure, additional wards were added to Dhulikhel which are more rural in character and use and with a more isolated settlement. Connections to these settlements is an issue.

The Population Census 2011 of Nepal (prior to restructure) counted 32,162 persons in 7,061 households of Dhulikhel Municipality.

Ward. No.	Included VDCs/Municipalities	Ward No.
1.	Devitar	1-3, 6-9
2.	Rabi gaun	1-5
3.	Dhulikhel	6
4.	Dhulikhel	7
5.	Dhulikhel	8,9
6.	Dhulikhel	4,5
7.	Dhulikhel	2,3
8.	Dhulikhel	1,13
9.	Dhulikhel	10-12
10.	Sharada Batase	1,2,5,6-8
11.	Patlekheta	1-9
12.	Shankhu Patichaur	1-3,5-9

Table 1: Upgraded wards of Dhulikhel Municipality (MoFDALD, Government, 2017, p. 171)

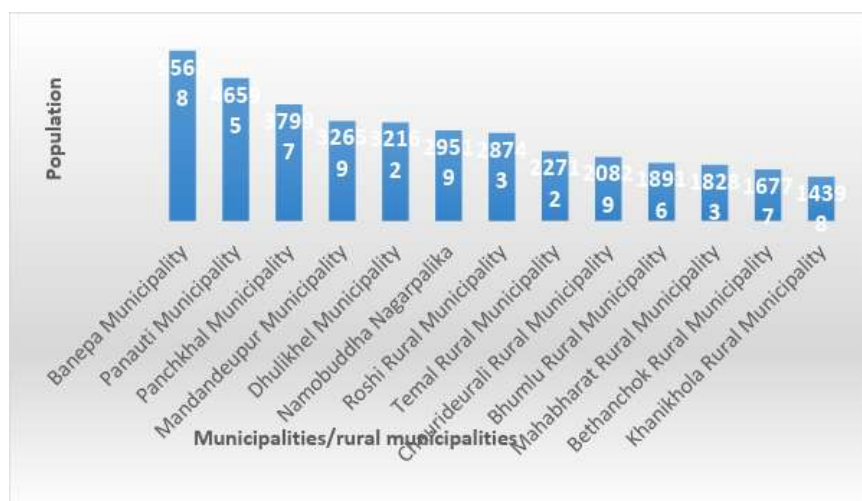


Figure 4: population comparison of local bodies in Kavre

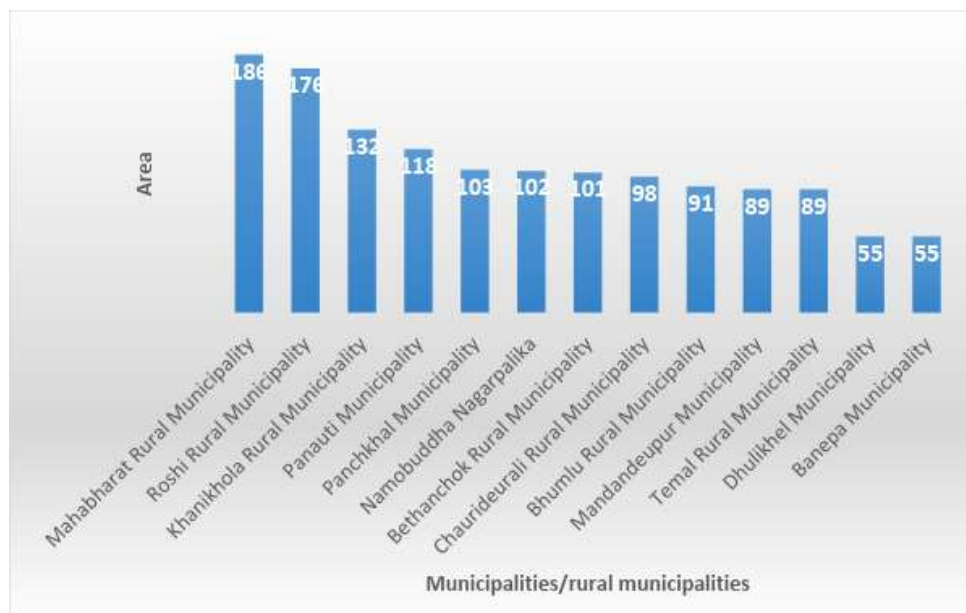


Figure 5: Area comparison of local bodies, Kavre

Dhulikhel Municipality neighbors Kavre V.D.C to east, Panauli Municipality to south, Banepa and Panchkhal Municipality to north and Banepa Municipality to west. Dhulikhel city is considered as a “tourists’ paradise”.

There are numerous temples and domestic buildings in the town depicting traditional and old Newari craftsmanship. View of the Himalayan ranges stretching from Mount Annapurna in the far west to Mount Karolung in the Far East can be seen from Dhulikhel. It is popular for its natural beauty and ancient traditions. Dhulikhel was once known by the Buddhist name of Shrikhandapur and has a few Buddhist stupas in memory of the old days. Many national and inter-national meetings, seminars, conferences are held in Dhulikhel.

Drinking water in Dhulikhel is best water supply and treatment in Nepal which was made with the help of the German NGO, German Technical Cooperation.

4.2 Climate

The climate of Dhulikhel is warm and temperate, with an average temperature of 16.7 °C. The summers are much wetter than the winters with Precipitation averaging 1711 mm (CLIMATE-DATA.ORG, 2017).

CLIMOGRAPH DHULIKHEL MUNICIPALITY

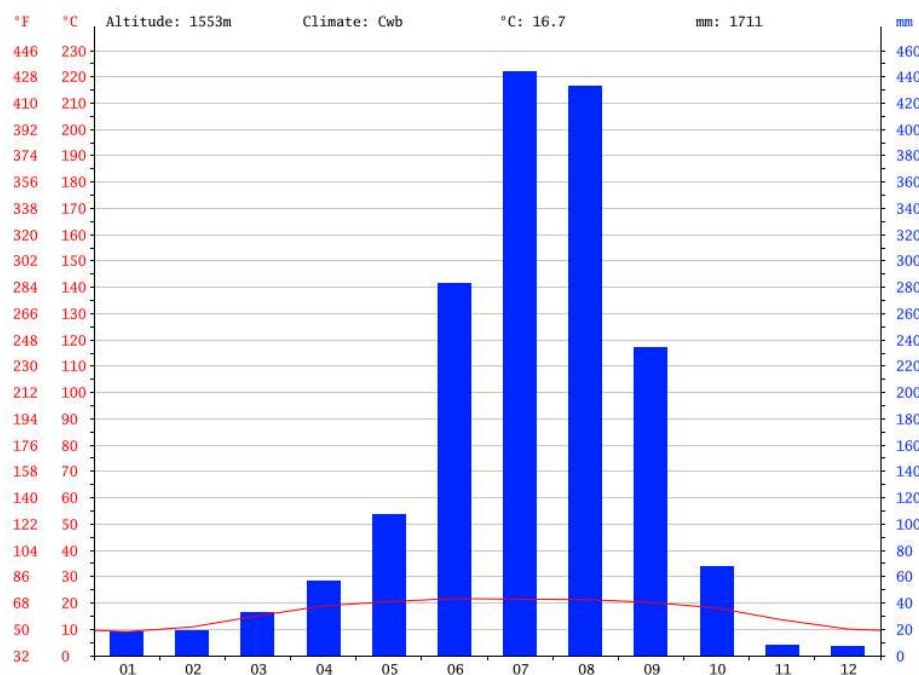


Figure 6: Average monthly precipitation data of Dhulikhel Municipality

The driest month is December, with 7 mm of rain. Most precipitation falls in July, with an average of 444 mm.

TEMPERATURE GRAPH DHULIKHEL MUNICIPALITY

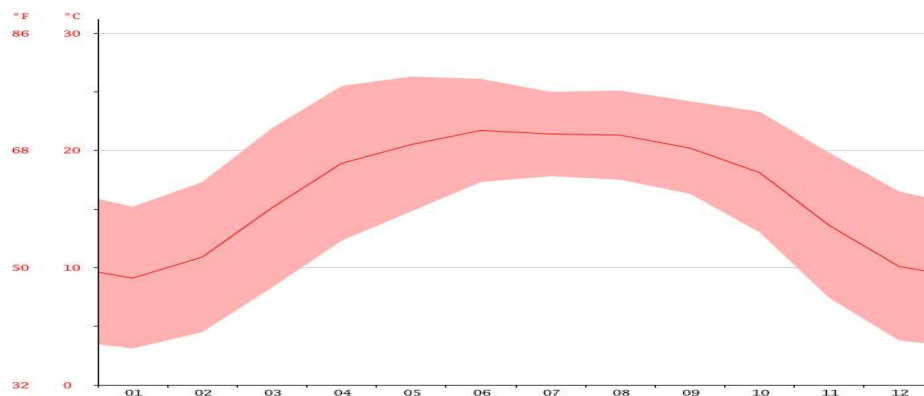


Figure 7: Monthly average temperature variation of Dhulikhel Municipality

June is the warmest month of the year with average temperature 21.7 °C. In January, the average temperature is 9.1 °C with lowest average temperature of the whole year.

	Janu ary	Febr uary	Mar ch	Ap ril	May	Jun e	Jul y	Aug ust	Septe mber	Octo ber	Nove mber	Decem ber
Avg. Temperat ure (°C)	9.1	10.9	15.1	18. 9	20.5	21.7	21. 4	21.3	20.2	18.1	13.6	10.1
Min. Temperat ure (°C)	3.1	4.5	8.3	12. 3	14.8	17.3	17. 8	17.5	16.3	13	7.4	3.8
Max. Temperat ure (°C)	5.2	17.3	21.9	25. 5	26.3	26.1	25	25.1	24.2	23.3	19.8	16.5

Table 2: Monthly minimum, maximum and average temperature

There is a difference of 437 mm of precipitation between the driest and wettest months. The average temperatures vary during the year by 12.6 °C.

4.3 Demography

According to Population Census 2011, 32,162 persons lived in 7,061 households within the Dhulikhel Municipality area. Ward 11 has highest population of 4,009 and Ward 10 comprises 1,430 People. The population distribution within the Municipality among different wards as shown below:

Ward no.	Household	Population			Area(sq.km)	Density
		Total	Male	Female		
1	460	2143	964	1179	6.132437	349.4532
2	542	2548	1193	1355	8.510152	299.4071
3	558	2401	1214	1187	2.743233	875.2446
4	820	3195	1715	1480	1.55272	2057.679
5	354	1751	856	895	0.672229	2604.766
6	439	2002	976	1026	1.007136	1987.815
7	722	3118	1487	1631	1.982098	1573.081
8	746	3553	1718	1835	8.640914	411.1833
9	682	3190	1438	1752	4.92777	647.3517
10	317	1430	654	776	2.97932	479.9753
11	806	4009	1946	2063	10.11825	396.2149
12	615	2822	1323	1499	5.352995	527.1815
Total	7061	32162	15484	16678	54.619	

Table 3: Population distribution of Dhulikhel Municipality

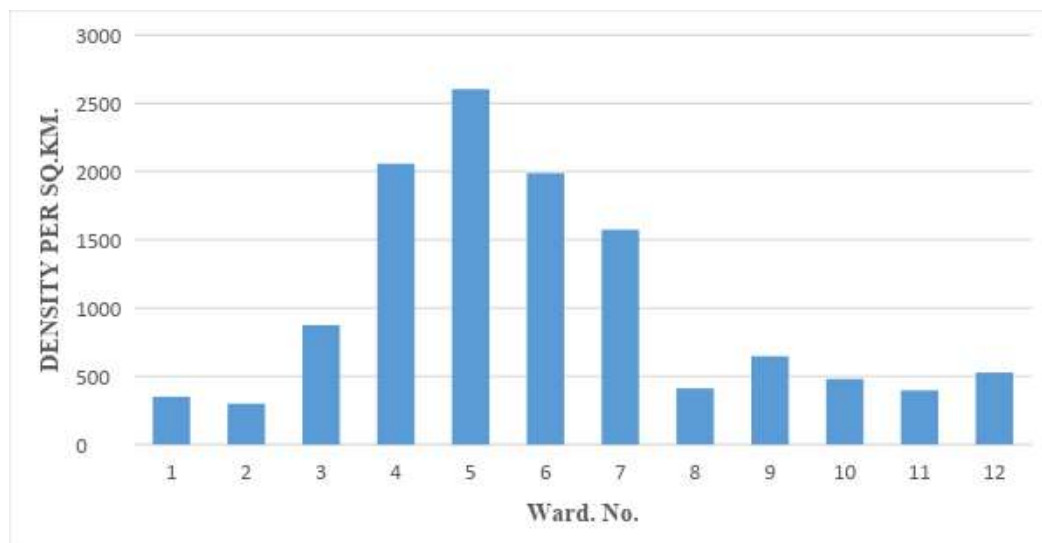


Figure 8: Population density in ward level

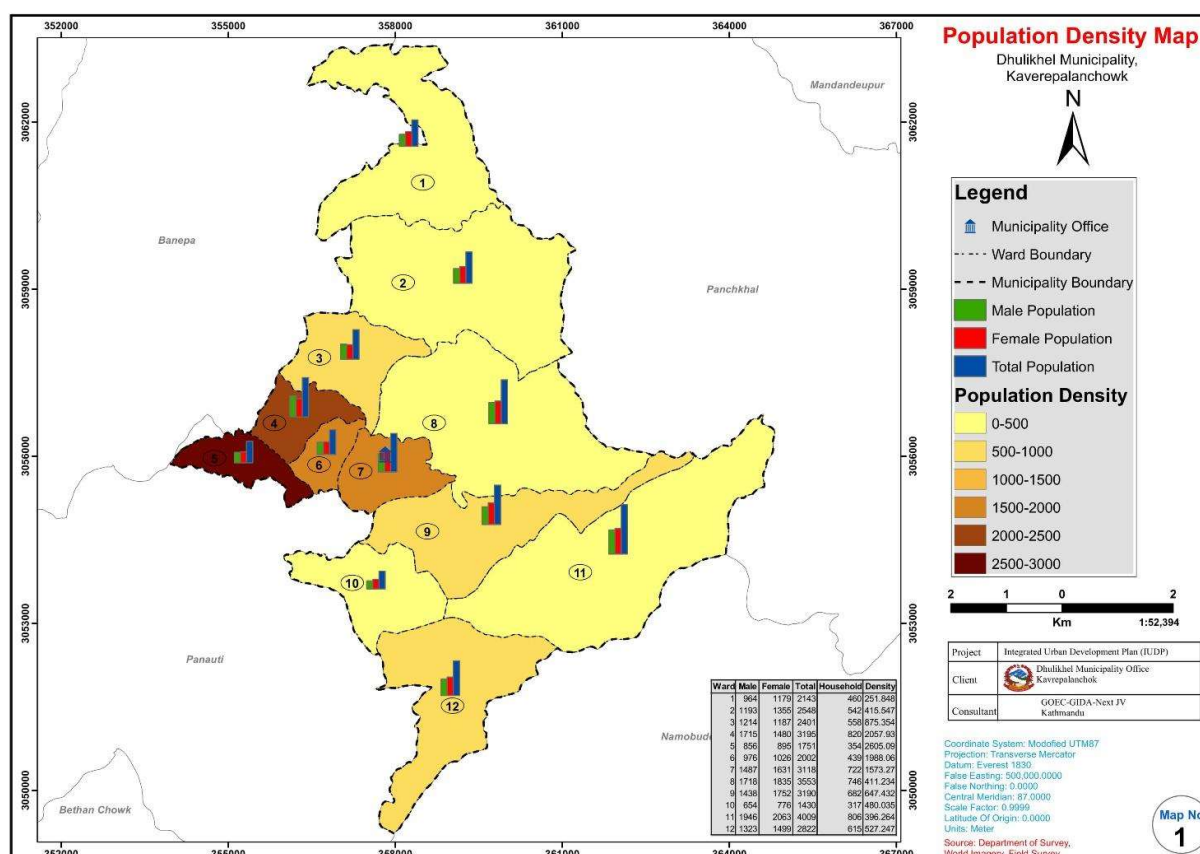


Figure 9: Population distribution map

4.4 Population Density & Growth Rate, Migration (Trend Analysis)

Dhulikhel Municipality of Kavrepalanchok district covers 54.62 sq. km area with a population (2011) of 32,162.

The population of the entire Municipality (taking into account the new wards added in 2017) was 28,826 (Census 2001) and grew to 32,162 (2011), representing an annual population growth rate of +1.16%. The population density increased from 528/ km² (2001) to 582/ km² (2011) within a decade. However, there is great variation in population growth rate of the old wards which is 4.57% compared to that of whole municipality (1.16%) with newly added wards.

	Total Pop'n (Old 9 wards)	Total Pop'n (New 12 wards)	Households (Old 9 wards)	Households (New 12 wards)	Average Household size (Old 9 Wards)	Average Household size (Old 12 Wards)
2001	9,812	28,826	1624	N/A	N/A	N/A
2011	14,283	32,162	3279	7061	4.36	N/A
Annual Growth rate	4.57%	1.16%				

Table 4: Census population figures 2001 - 2011

As per the 2011 Census, the dependent population (comprising the age group 0 to 14 and above 59) is 11,297 whereas the active population is 19,720.

Age-Group	Population
Dependent population (0-14 yrs. and above 59 years)	11,297
Active population (15 to 59 years)	19,720

Table 5: Dependency population according to age (Planning Commission Secretariat, 2014, pp. 28–35)

The bars diagram below shows the male and female population distribution according to age group:

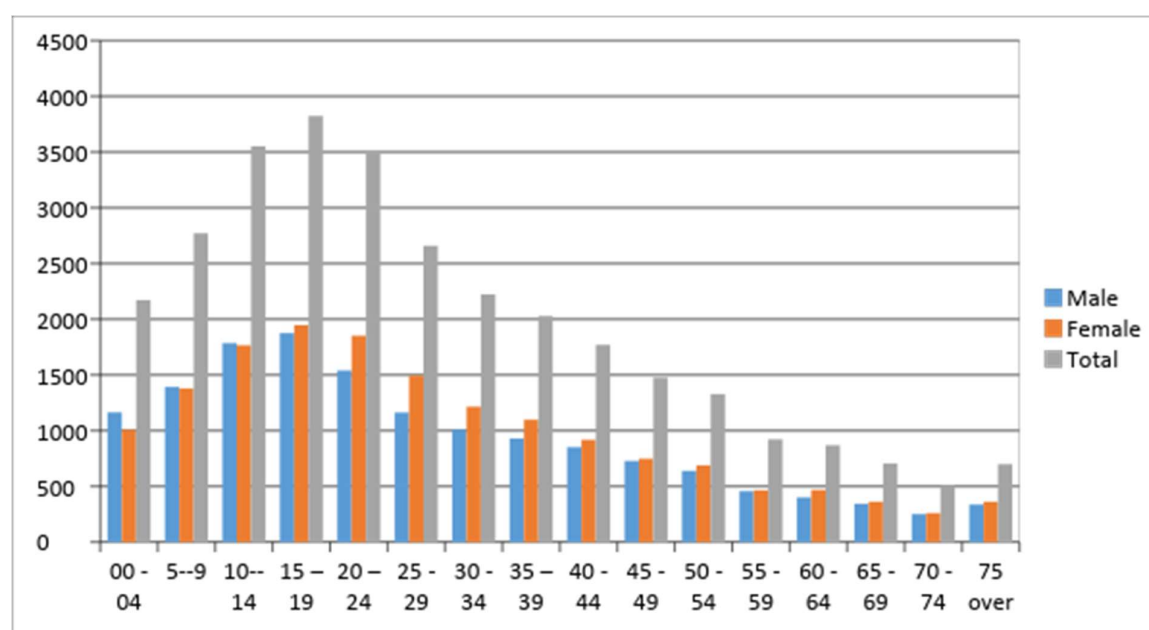


Figure 10: Population distribution according to age group

As per the 2011 Census 2011, the major ethnic/caste group of Dhulikhel Municipality is Brahman-hill whose population is 14,582 and occupies about 45.34% of total population. The second major ethnic/caste group is Newer whose population is about 11,145 and comprises approximately 34.32% of total population. Newer and Chhetri are almost equal in Dhulikhel Municipality. Chhetri has population of 11,038 with 34.32% of total population. Similarly, the other major ethnic/caste groups are Tamang, Magar, Kami, Damai/Dholi, Sanyasi/Dashnami, Rai, Sarki, Thakuri, Musalman, Gurung, Badi, Yadav. The bars diagram below represents the population distribution of Dhulikhel Municipality according to ethnicity / caste groups.

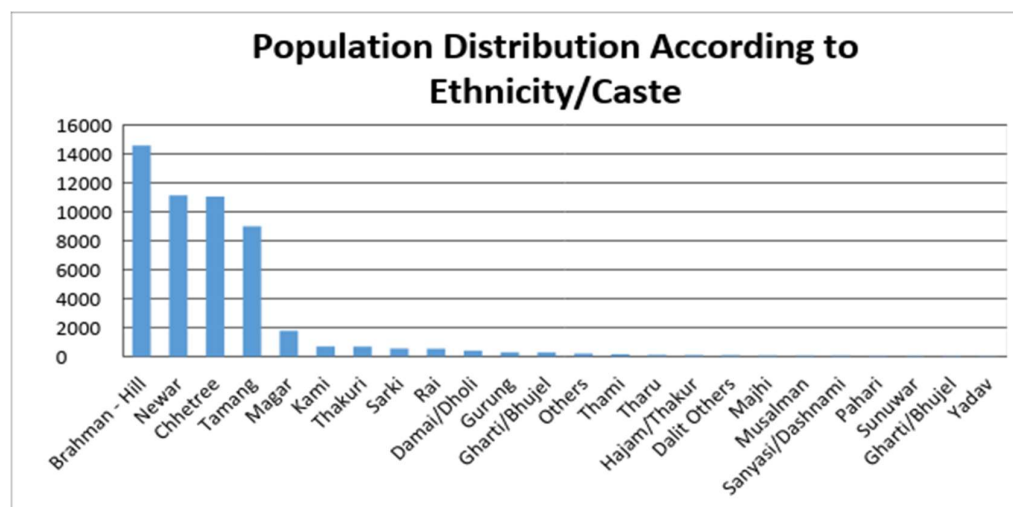


Figure 11: Population Distribution According to Caste/Ethnicity

Population Projection:

As discussed earlier, the population of Dhulikhel Municipality (including all 12 existing wards) was 28,826 (Census 2001) and grew to 32,162 in 2011, representing a population growth rate of +1.16% per year. Considering the incremental method and growth rate of population per year i.e. +1.16% per year, the projected population for 2021 and 2031 would be as follows:

Year	Population
2001	28,826
2011	32,162
2021	36118
2031	40560

Table 6: Population projection of Dhulikhel Municipality

The population growth rate of Dhulikhel Municipality (which includes both rural and urban areas) is very low compared to urban annual population growth rates in some urban centres in Nepal of up to 7 percent (World Bank, 2013). Under a 'Business As Usual' scenario, and uninterrupted by any external factors, the population of the Municipality is expected to be around 40,560 in 2031, an annual growth rate of 1.16%.

Alternative growth scenarios can be difficult to predict and can be dependent on international, federal or local political or investment decisions or circumstances entirely out of control of government and the private sector, such as natural disasters. Externalities including the installation of rail from Kathmandu to Dhulikhel, thus promoting Dhulikhel as a ‘commuter city’ of Kathmandu, could be a ‘game changer’ for the Municipality. This could accelerate the economic activities of Dhulikhel when coupled with industries and tourism attracting people from hinterlands. Similarly, the potential determination of the headquarters for the Province 3 in Dhulikhel, leading to relocation government institutions is another scenario.

To provide a flexible and responsive plan, it is important to plan for a range of growth scenarios.

It is expected that in the rural parts of the municipality, the 1.16% annual rate will remain or in some cases may reduce due to migration/attraction to urban areas for employment or resettlement from areas of high risk of disaster.

On the other hand, it is expected that the growth rate of the existing urban areas will continue to increase, at least based on the past average of 4.57%. This is consistent with other scenarios throughout urban Nepal. Should significant interventions such as the introduction of new mass transport modes or new industries, which could lead to accelerated population growth, be proposed, a review of the growth rate will be required.

5 Social infrastructure

5.1 Education

Dhulikhel Municipality	population aged 5 years and above	population who				
		Can read and write	can read only	cannot read and write	literacy not stated	literacy rate
both sex	28827	21736	564	6506	21	75.40
Male	13803	11832	236	1732	3	85.72
Female	15024	9904	328	4774	18	65.92

Table 7: Population aged 5 years and above by literacy status and sex (census 2011)

According to 2011 Census, in Dhulikhel Municipality the literacy rate of the population aged 5 years and above was 75.40%. Female literacy rate (65.92%) is far lower than the male literacy rate of 85.72%.

In terms of education institutions, Dhulikhel hosts Kathmandu University (KU), a non-government, public tertiary institution. Established in 1993, it is the third oldest university in Nepal. The university provides undergraduate to postgraduate programs in the fields of engineering, science, management, arts, education, law and medical sciences. The other prominent institution includes Kathmandu University School of Medical Sciences (KUSMS) providing medical, nursing and allied health science programs. KUSMS is a collaborative program of Kathmandu University and Dhulikhel Hospital.

According to the data survey carried out for this project, a total of 52 schools have been identified within the municipality. Out of 52 schools identified, 30 are fundamental, 18 secondary levels and 4 are higher secondary level. Ward 7 hosts the highest number of schools. Dhulikhel medical college is located in ward 6 and ward 4 hosts Kathmandu University. At least two secondary level schools have been identified in each ward.

Comparatively wards 1, 10 and 4 host least number of schools. Most schools are located within wards that are near one or both of the major highways.

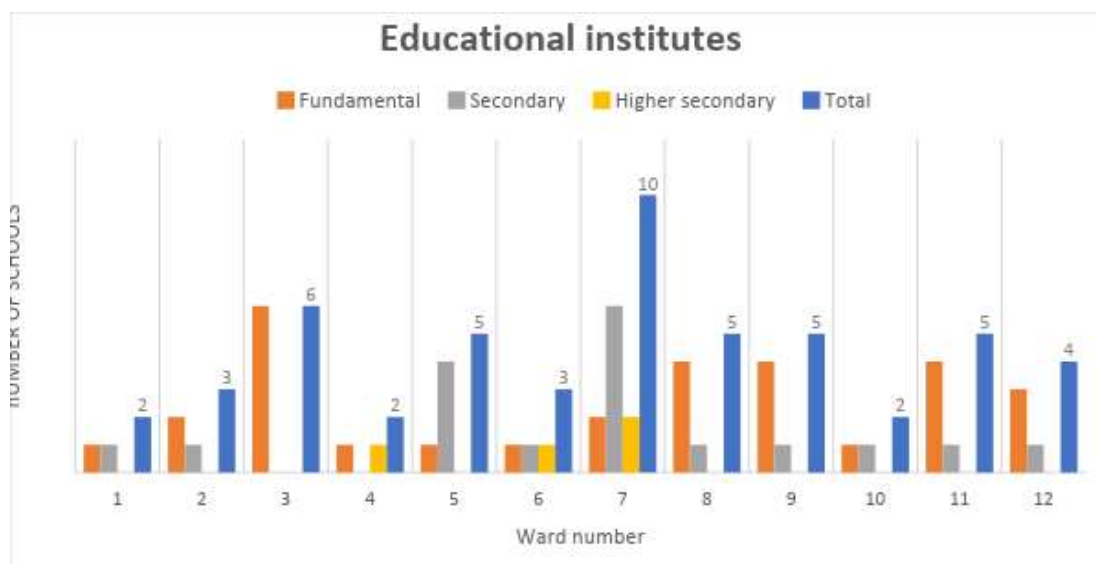


Figure 12: Bars graph showing no. of different levels school in Dhulikhel

Ward no.	Primary	Fundamental (1 to 8)	Lower secondary	Secondary	Higher secondary	Private	Total
1	-	1	-	1	-		2
2	-	2	-	1	-		3
3	2 (purba prathamik)	4	-	-	-	1	6
4	1	-	-	-	1(KU)		2
5	1		-	4	-	3	5
6	1	-	-	1	1 (Dhulikhel MC)		3
7	-	2	-	6	2		10
8	-	4	-	1	-		5
9	-	4	-	1	-	1	5
10	-	1	-	1	-		2
11	-	6	-	2	-	1	8
12	-	3	-	1	-	2	4

Table 8: List of different levels of school in Municipality (survey by IUDP team)

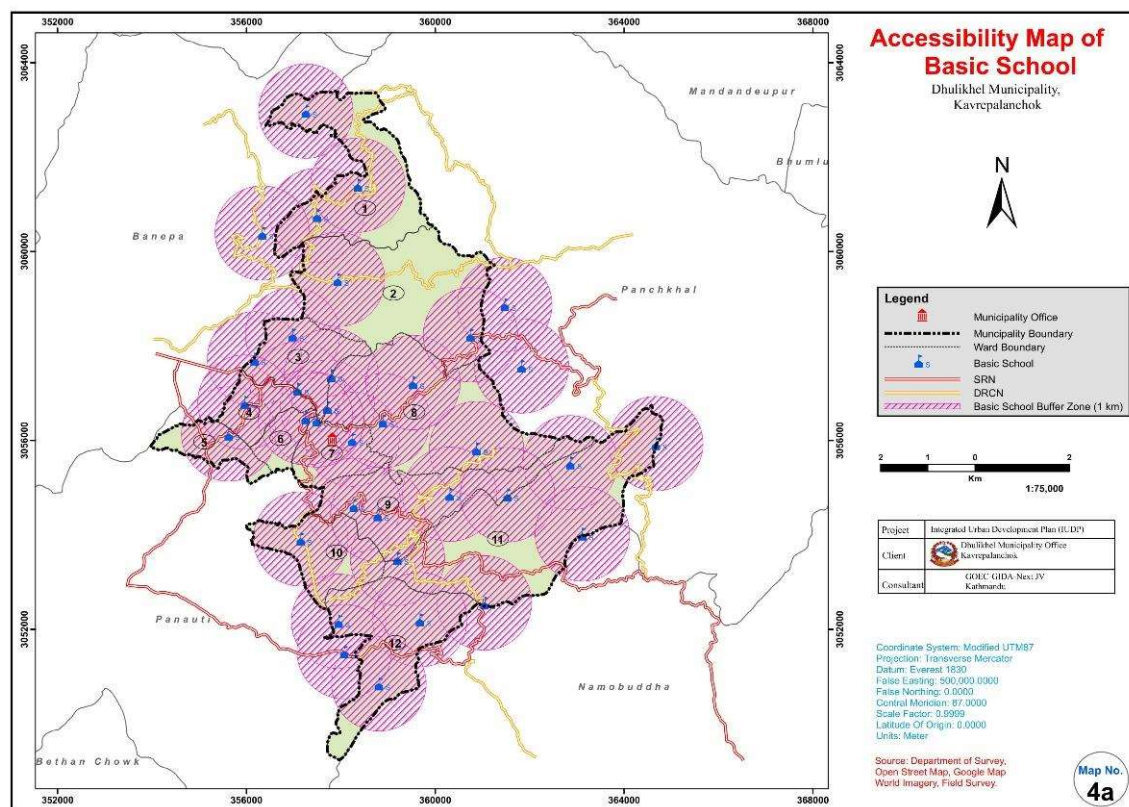


Figure 13: Basic school accessibility map

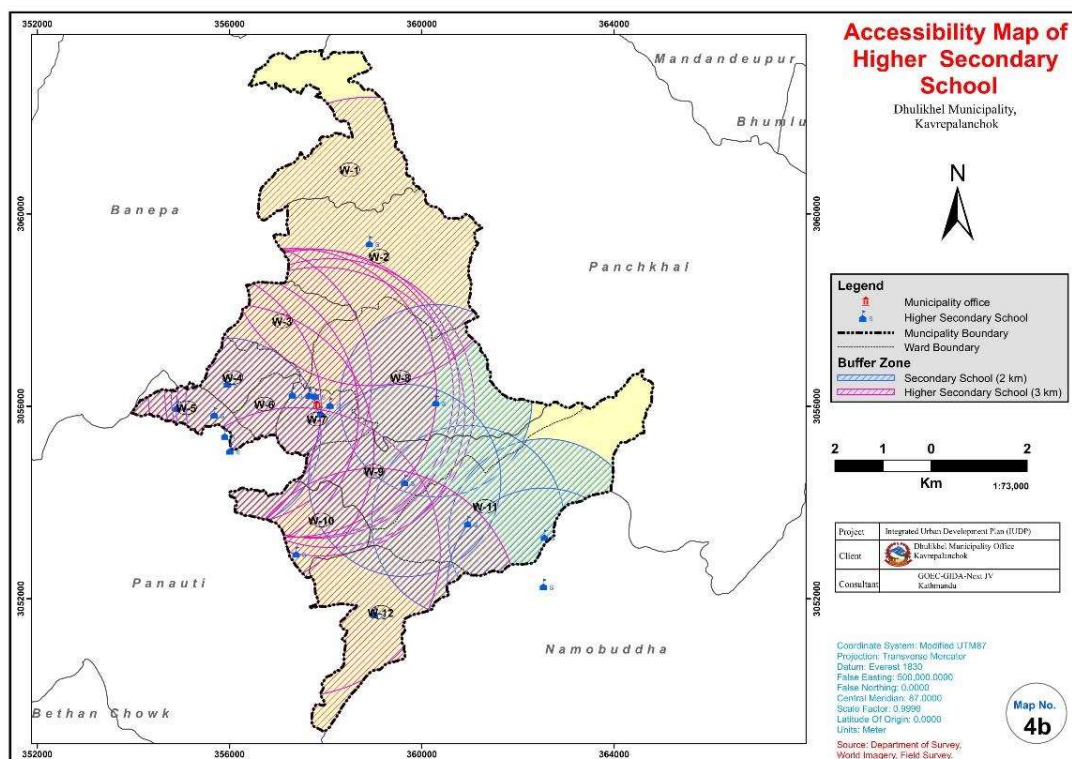


Figure 14: Accessibility map of Secondary and Higher Secondary Schools

Regarding the provision of primary schools, according to urban planning norms and standard 2013 one Primary school is desirable for per 3000 people at a distance of 0.4–0.8 km and that a minimum of 0.2 ha per site should be provided. One Higher Secondary school is required per 7500 population at a distance of 30 minutes travel time by public transport. School sites should be a minimum of 0.65 ha. Graduate/ Post graduate institutions are required at a rate of 1 per 25,000 people at a travel time distance of 45 minutes by public transport.

Although the numbers of educational institutes in the wards are enough population wise, there is a problem with physical access to a number of the schools due to poor road infrastructure, lack of connectivity and public transport facilities. It is expected that improved access and connectivity to educational institutions will lead to overall improved education outcome for the community.

5.2 Health facilities

According to Planning Norms and Standards 2013, for a city with population between 1,0000-40,000, the number of Sub-Health Centers should be 1 per 1,000 and number of Health Centers should be 1 per 50,00 populations. Sub-Health Centers mainly provide five basic services such as family planning and safe motherhood, immunisation, prevention of emerging diseases and referring patients to upper level health institutions as required. Health posts provide additional services such as emergency service, primary treatment, maternity test and counselling. However, according the new health policy 2074 all the sub-health posts will be upgraded to health posts.

Dhulikhel hospital is located in Dhulikhel Municipality. The hospital serves a population of approximately 1.9 million people from Kavrepalanchowk, Sindhu-palchowk, Dolakha, Sindhuli, Ramechhap, Bhaktapur and other surrounding districts.

Nine Health Centers are located in the Municipality, on par with the recommended number of health centers required under the Planning Norms and Standards. However most of the Health Centers lack basic services such as laboratory, ambulance and maternity care.

In addition, although numerically and population-wise the number of health institutions are enough to provide health service, there is a problem with physical access to a number of health institutions due to poor road infrastructure, lack of connectivity and public transport facilities. It is expected that improved access and connectivity to health institutions will lead to improved health outcomes.

Ward	Health Centre	Type	Service Area	Services	Remarks
1	Devitar swathya chowki	Health post		Maternity care, child care	
2	Ravi op healthpost (Majhthumka)	Health post		Primary health care, vaccination,	Lab, ambulance, maternity care required
3	Nagar sahari health centre (kotal)	Nagar Swasthya kendra	Ward 3	Primary health care	
4	No				
5	shrikhandapur Nagar swasthya Kendra	Nagar swasthya kendra	Wards 4 & 5	Primary health care, vaccination,	
6	Dhulikhel hospital, Ayurvedic ausadhalaya	Hospital			
7	No				
8	Jilla janaswasthya				
	Pakucha Nagar Swasthya Kendra	Nagar swasthya kendra			
9	Kavre health post (Kavreanjyang)	Health Post		Prathamik upachar, vaccination, Gaughar clinic	Maternity care requirement
10	Sarada batase Health post	Health post		Prathamik upachar, vaccination	Maternity care requirement
11	Patlekhet health post	Health Post	Ward 11, phulbari (namobuddha)	Opd, family planning, Vaccination, Gaughar clinic	Maternity care requirement
12	Sankhupatichaur Health Post	Health post	Ward 11 and some parts of Panauti	Prathamik upachar, vaccination	Maternity care requirement

Table 9: Health status of each wards of Dhulikhel Municipality

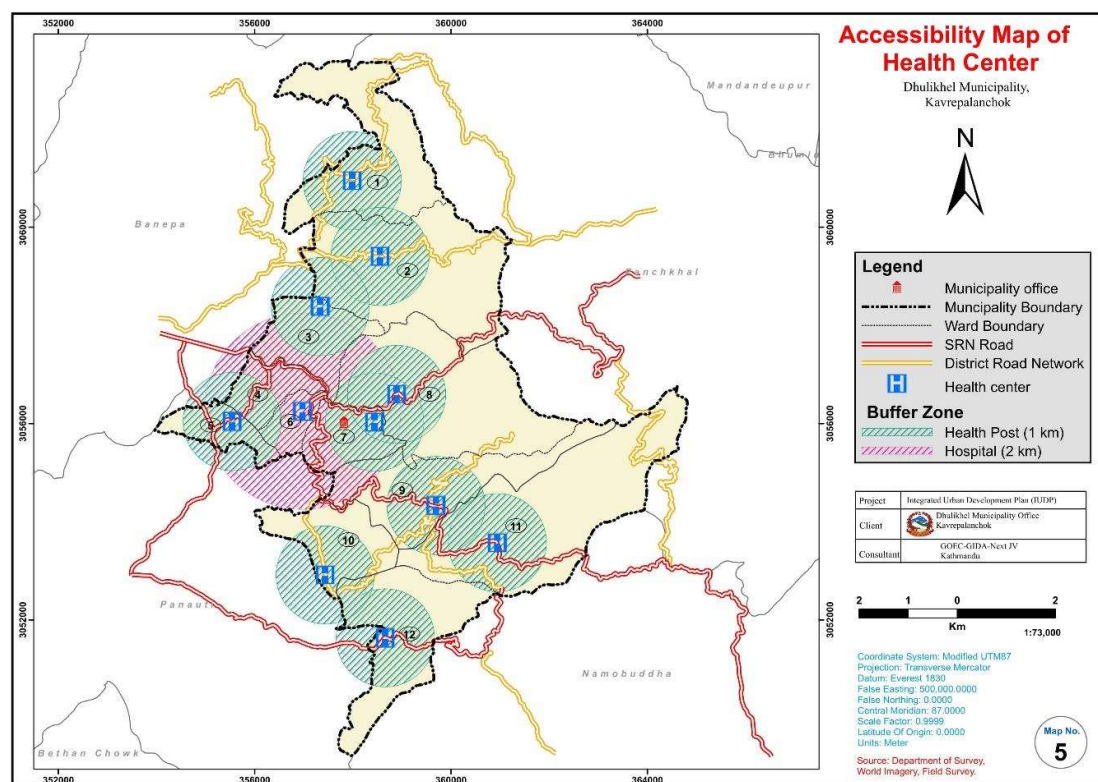


Figure 15: Health accessibility map

5.3 Public Open Space/Recreational areas/Community facilities

According to Planning Norms and Standards 2013, 5% of the total sub city area should be set aside for Neighborhood Park (with Play equipment). One park should be provided per 800 people. Likewise, there should be 1 local park per 10000 people. According to the National Urban Development Strategy 2017 public open space should be provided at a rate of 2.5% of land within existing urban areas and 5% for new urban areas.

At present there is sufficient public open space under the ownership of either ward or other public institutions. However, the public open spaces I often under-utilised and could be further developed to enhance their recreational use and benefit. In addition, there is opportunity to enhance some nature parks to attract people from within and outside the municipality.

Recreation facilities

Open spaces and playground spaces and community buildings within the wards in the municipality are listed in table below.

There is significant potential to further develop recreational facilities in Dhulikhel. Ponds, public open spaces and community buildings within the municipality are the sources of recreation in the area. Most of the wards possess temples, ponds, community forest and parks that could be further developed into key recreational assets for both the community and enhance tourist potential.

Ward no.	Playground (open spaces or play)	Community Buildings
1	Iskuldanda Khelmaidan	4 Ropanis Dudh utpadan/Sankalan Kendra (school danda)
	Simalchaur	30 Ropanis (public) Samudahik Bhawan, School Danda (Mahila Bikash)
2	Golalpati Khelmaidan, Koiralathumka	17 Ropani (Ward office)
	Tikapatakhelmaidan	30 Ropani (setidevi mabi)
3	Nayabast Danda	7 Ropani (Public)
	Bansghari Height	6 Ropani (Public)
	Kolachaur Danda	6 Ropani (Public)
4	Near to ward office	2 Ropani (Ward office)
	Bhyandol	Ward office
5	Prakash samudayik pustakalaya	2 Ropani (Samiti club)
	Bhairav pati, Bhairavsthan	Yuva samuha
	Swetbhairav bhajan pati	Bhajan Mandali
	Saamudaik pati, Chaukot	samudaiya
	Layaku darbar, Shrikhandapur	Nagarpalika
	Shivalayamuni, Shrikhandapur	2 Ropani 13 Anna (sarbajanik)
	Narayanthan mandi parisar, purano bajar	2.5 Ropani (sarbajanik)
	Area health post	1 Ropani (sarbajanik)
	Pandhero area chaukot	3 Ropani (sarbajanik)
	Mahankal jane bato	1 Ropani (sarbajanik)
6	Yuva club Narayanthan	

7	Bahuuddesya Khel Maidan (Malpot Maidan)		20 Ropani (Nagarpaliak)		
	Mahila Bahuuddesya samudayik				
8	Dhokma			Jana chetana yuvaclub	
				Laxmi Narayan Mandir	
				Balvikas	
9	Pani Tanki		3 Ropanis (Ward Office)		
	Wakal		1.5 Ropanis (Ward Office)		
	Kavrevanjyang		4 Ropanis (Ward Office)		
	Karthare Mabi		4.5 Ropanis		
10	Kalika Mavi			Mahila Sahakari	
	Baljyoti				
	KharkaPakha (farkot)		20-30 Ropani		
11	Shitalbasti Khel Maidan (Banpokhari)		10 Ropani Community forest	Danda Gaun Homestay	Community
	Kavrebhanjyang		30 Ropani Community forest	Panditthok (Mahila Bhawan)	
	Chisapani		20 Ropani Community forest	Srijancil CB	Community
	Kalche		7 Ropani Community forest	Milan Chautari CB	Community
	Pipal thumki		10 Ropani Sarvajanik	Thatithok CB	Community
12	Sankheswori Mavi		14 Ropani		
	Chisapani		4 Ropani		

Table 10: Lists of existing and possible recreational places

Refer Maps in Annex.

5.4 Security

According to Planning Norms and Standards 2013 issued by Department of Urban Development and Building Construction, the standard of security for sub with 10000-40000 population city should be such that it has 1 police post per 10,000 populations (0.1 ha per site).

As per the data collected by the IUDP team, it was perceived by the community that the security condition of some wards is critical. Wards 1, 2, 4, 5, 6, 7, 8, 10, 11 and 12 do not have any police posts while Ward 3 has a police station in New Buspark and Ward 9 has a station at Aasthai prahari chowki, Kavrevanjyang and Nepali Sena at Thulachaur. Ward 12 is served by Panauti.

The community reported that even those wards with a police post are not devoid of security challenges and that wards 2, 5, 6 and 9 require police stations. Major problems and challenges identified with existing police posts include lack of manpower, lack of accessible roads, lack of vehicles and lack of resources.

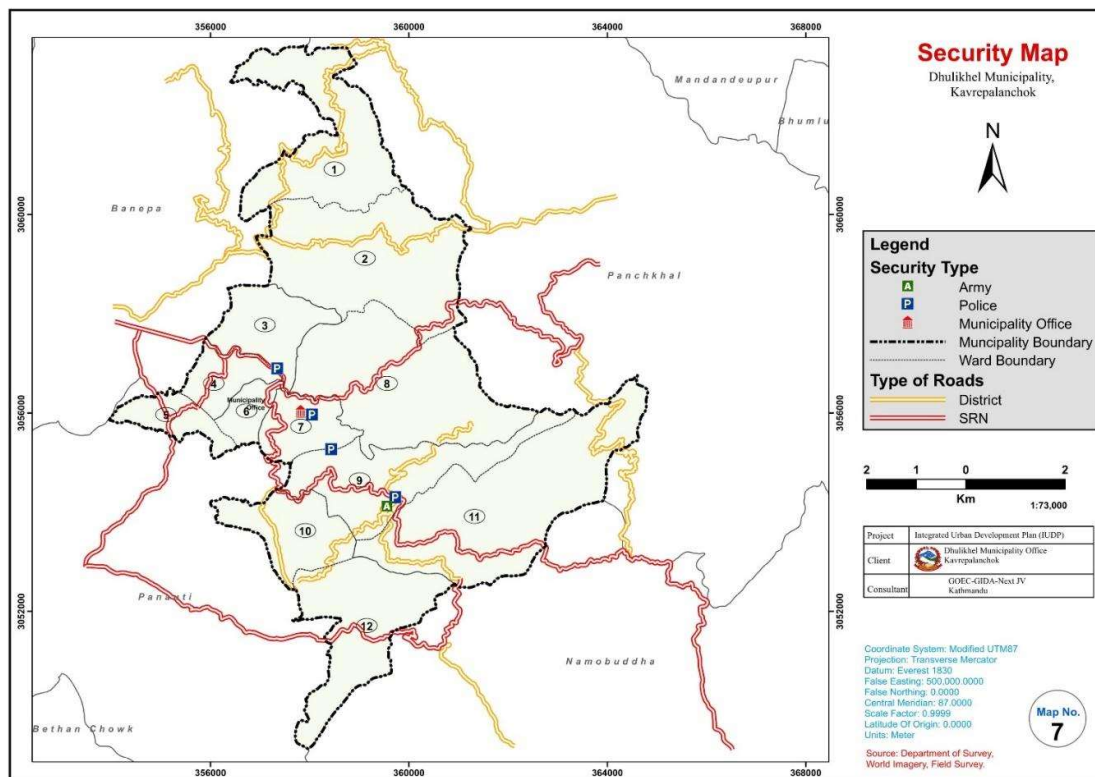


Figure 16: Location of security posts

Ward No.	Condition	Location	Police Station	Remarks
1			No	-
2	Critical		No	Police station required
3			Police bit, New Buspark	
4			No.	
5			No.	Drugs problem in some area
6			No.	Security challenge in Jagaran Chowk
7			No.	
8			No.	
9	Critical	Aasthai prahari chowki, Kavrevanjiang Nepali Sena thulochaur	Police station required	
10	Peace		Good place to be in	
11			Satisfactory	
12	No.		Looked after by Panauti	

Table 11: Security status of Dhulikhel wards

Although the numbers of Security posts in the wards are enough population wise, there is a problem with physical access to a number of the settlements due to poor road infrastructure, lack of connectivity and public transport facilities. Improved access and connectivity to security institutions will lead to improved Security status in Municipality.

5.5 Institutions

Institutions are established to support society and provide important services as well as employment opportunities. Dhulikhel is well resourced with plenty education, health, financial and recreational institutes. Many institutions are located in the bazaar area (wards 3, 4, 5, 6 and 7).

Dhulikhel Municipality has many education institutions, including a university, Kathmandu University. Altogether, there are 50 schools in the area operated by Government, Monastery and Private Institutions. Dhulikhel contains one hospital - Dhulikhel Community Hospital. There is a Primary Health Center, six Health Posts including three Urban Health Posts. There are seven banks and all categories of Financial Institutions. Banks include Nabil Bank, Banijya Bank, Agriculture Bank, Century Bank, Civil Bank, Dev Development Bank and Naya Nepal laghubittya bikas Bank. The Municipality accommodates a number of government offices and public institutions that provide services to the wider community. A list of all the institutions is included in the table below.

Wards	Educational	Health	Business	Governmental	Financial	Social
1	Fundamental – 1 Secondary - 1	Deurali swathya chowki	No industry	<ul style="list-style-type: none"> Ward office, Pasusewa Karyalaye, Postal service, Devitar 	<ul style="list-style-type: none"> Bhaucha krishi, Devitar Chutara krishi sahakari 	-
2	Fundamental - 1 Secondary - 1	Ravi op healthpost (Majhthumka)	Small industry like Poultry and cow farm	<ul style="list-style-type: none"> Ward Office Pasusewa Karyalaye 	<ul style="list-style-type: none"> Sana kisan krishi sahakari, Setidevi dudh utpadak sahakari, Deurali dudh utpadhak sahakari, Sayepatri sahakari, Janauthan tarkari uthpadak sahakari, Lagansil mahila sahakari 	Club- Ravikiran, Setidevi
3	Purva prathamik- 2 Fundamental - 4 Private - 1	Nagar sahari health centre(kutal)	<ul style="list-style-type: none"> Mills Kamalamai dairy Hatchery industryKwa Nepali P.L(rayaalr besi) Hotels and resort: Mirable Resort Hotel, Dhulikhel Lodge resort, Himalayan horizon hotel, Hotel hills heaven, Safe café and other many small hotels. 	<ul style="list-style-type: none"> Ward Office District drinking water and sanitary division Internal royalty and tax office 	<ul style="list-style-type: none"> Century bank Devi bikash bank Jana jagarit tarkari falful krishi sahakari Baas ghari samudayek bachat taha rin sahakari Sarathi bahuudhesiye Diyo bachat tha rin sahakari Nepal mahila bachat rin 	<ul style="list-style-type: none"> Samajik sastha jilla sambanaye samiti- education, health Samudayek bikash manch- sail training Karitas (basghari) Orphanage Help Nepal balgriha (panchakanya) Sab daha griha
4	Primary – 1 Higher secondary (KU)- 1	No	<ul style="list-style-type: none"> Hatchery industry (bhumi marg, basbari) Arniko hotel chap gaun 	<ul style="list-style-type: none"> Ward Office Land management Building division office Napi talim kendra 	<ul style="list-style-type: none"> Rastriye banijye bank Navil bank Krishi bikash bank Atal panchakanya bachat tatha rin sahakari 	<ul style="list-style-type: none"> Samajik jagaran manch Saichik sarokar manch Orphanage

					<ul style="list-style-type: none">●Vandol samudayek bachat tatha rin sahakari●Nari janachetana mahila bachat tatha rin sahakari		<ul style="list-style-type: none">● Sab daha griha
5	Primary- 1 Secondary- 4	Nagar swasthya kendra (shrikhandapur bajar)	<ul style="list-style-type: none">● Radha Krishna biscuit udhyog● Plastic printing● Manufacture of polythin pipe● Aqua water● Minor tea houses	<ul style="list-style-type: none">● Ward Office● Jilla jana swatha karyalaye● Internal postal office● IT park	<ul style="list-style-type: none">●Shrinkhapur bachat tatha rin sastha●Swetbhairab bachat tatha rin sastha●Bachat bahu udhyesiya sahakari sastha●Sun light bachat tatha rin sahakari sastha		<ul style="list-style-type: none">● Dhal prasodhan kendra, saichit aaviyan● Shree khanda youth club● Shree khanda yuba samuha● Prakash samudayek pustakalaye● Sab daha griha● SOS, balgram-orphan
6	Primary – 1 Secondary- 1 Higher secondar- 1	Dhulikhel hospital, Ayurvedic ausadhalaya	<ul style="list-style-type: none">● Noodles industry (panauti sima)● Minor hotels and cafe	<ul style="list-style-type: none">● Ward Office, Jilla shikchya karyalaye, Sahkari division karyalaye, Saichik talim Kendra, Ayuevedic aausadhalaye			<ul style="list-style-type: none">● Sab daha griha
7	Fundamental - 2 Secondary - 6 Higher secondary- 2	No	<ul style="list-style-type: none">● Minor hotels and cafe	<ul style="list-style-type: none">● Ward Office● Municipality office● Sarkari wokil karyalaye● Malpot karyakaye● Women development office● Sana udhyog tatha garelu office	<ul style="list-style-type: none">● District postal office● Jilla pasu karyalaye● Jilla sambanva samiti● Nepali army barrack● District police office	<ul style="list-style-type: none">●Civil bank●IME●Mahila sahakari●Lachi mahila bachat tatha rin sahakari	<ul style="list-style-type: none">● Save the children● Orphanage- 3● Sab daha griha
8	Fundamental - 4 Secondary - 1	Jilla janaswasthya’ Health post (pakucha)	<ul style="list-style-type: none">● Mills● Hatchery factory Kwa Nepal P.L● Hotel and resort: The dwarika resort, Gaya hotel, Sarathi hotrl, Himalpan house, Dhulikhel village resort, Saujan himal, Panorama, Tasidel guest house. etc	<ul style="list-style-type: none">● Ward Office● Jilla jana swatha karyalaye● District irrigation office	<ul style="list-style-type: none">●Jana mukhi bachat tatha rin sahakari sahakari●Wodala gaun sahakari sastha●Bachala devi mahila sahakari sastha●Gaukureswor mahila sahakari sasthan●Bhatte danda sahakari sasthan		<ul style="list-style-type: none">● Sab daha griha- 2● Jana chetana club, kharka● Gramin digo bikash tatha swastha sarokar Kendra● Srijansil yuva club

			<ul style="list-style-type: none"> Adventure camp 			
9	Fundamental - 1 Secondary - 4	Kavre health post(Kavrevanjang),	<ul style="list-style-type: none"> Himal agro and foods (water factory) Bakery Industry Furniture Factory 	Temporary Police station	<ul style="list-style-type: none"> Janaathan bachat/ rin sahakari, Sibeswor bachat/ rin sahakari, Narichetana bahuudhesiye sahakari, Gangasagar bachat/ rin sahakari, Chotadanda krishi sahakari, Nijananda krishi sahakari, Nitye chanddeswori krishi sahakari, Suryodaye bahudhesiye sahakari 	<ul style="list-style-type: none"> Red cross (sub-branch) Nangsal (ECD, parental education)
10	Fundamental - 1 Secondary - 1	Health post (Sarada batase)	<ul style="list-style-type: none"> Mills Sitbandar-thapatol 	<ul style="list-style-type: none"> Ward office 	<ul style="list-style-type: none"> Sardadevi mahila bahuedhesiye sahari sastha Hariyali krishi sahakari sastha 	<ul style="list-style-type: none"> Paurakhi club Sarda guthi pariwar
11	Primary – 1 Higher secondary - 1	Patlekhola health post	Small industry like Poultry and cow farm	<ul style="list-style-type: none"> Ward office Pasu sewa kendra 		
12	Fundamental - 3 Secondary - 1	Sub-health post, Sankhupatichaur	<ul style="list-style-type: none"> Hatchery industry Small tea houses 	<ul style="list-style-type: none"> Ward office Postal office 	<ul style="list-style-type: none"> Patichaur sana kisan, Nari chetana bachat tatha rin, Sankhu bachat tatha rin sahakari, Goti sankhar bahudhesiye, Dhanakali bachat tatha rin, Mahalaxmi krishi 	<ul style="list-style-type: none"> Old age home in Darim thumka Bal bikash Kendra (sankhuchap) Sab daha griha (namo Buddha hill)

Table 12: List of institutions

6 Physical infrastructure

6.1 Roads

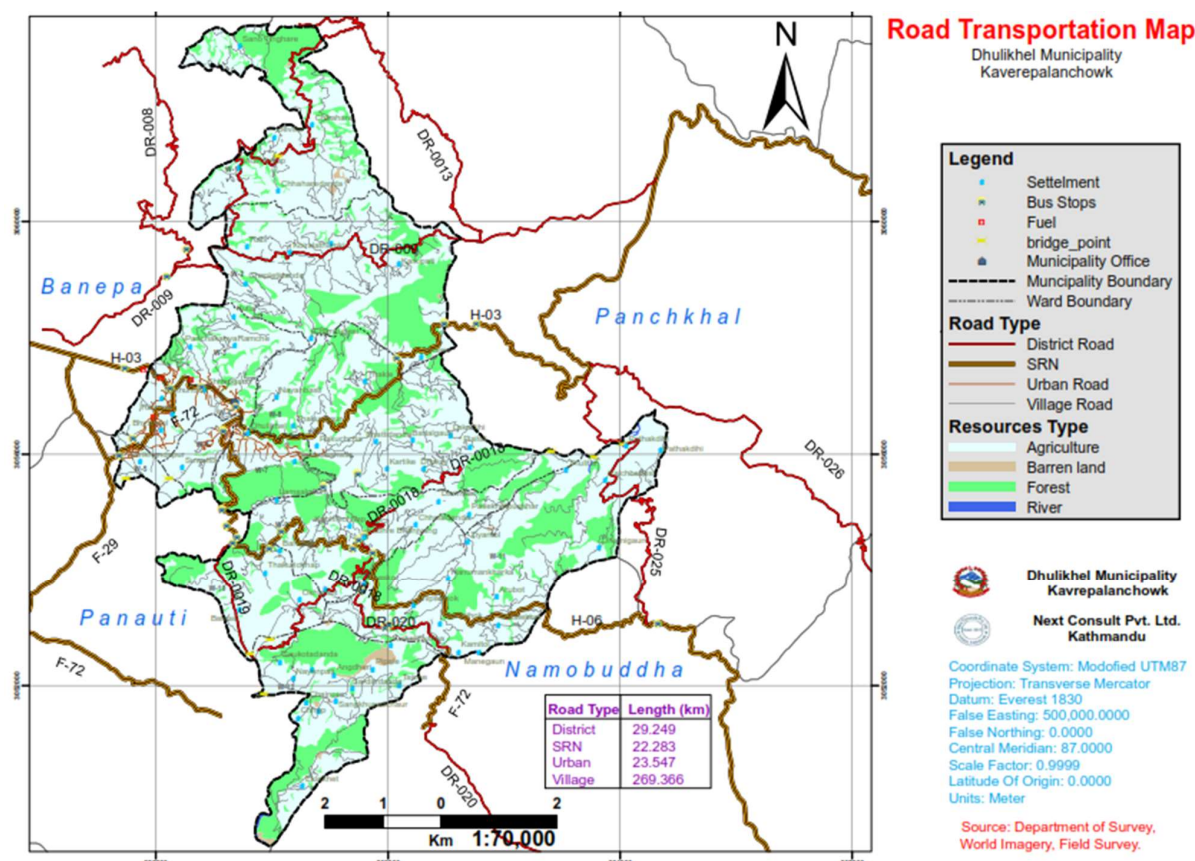


Figure 17: Road Network Dhulikhel

Two major highway B.P. Highway and Araniko Highway passes through Dhulikhel. Araniko Highway connects Kathmandu, Nepal's capital city with Tibet's border town of Kodari. The Aarniko Rajmarg provides Nepal's overland link with China. Likewise BP Highway links Kathmandu Valley with the Eastern Terai region from Kathmandu to Bardibas via Dhulikhel.

Furthermore, six district roads (the core road network) pass through the major settlements of the municipality. These roads provide a strategic road network, connecting village settlements and economic centers with district headquarters and neighbouring municipalities. District roads passing through the municipality include:

S.N	Name of Roads	Connection of Road
1	Banepa - Raviopi- Panchkhal (24DR009)	This passes through ward no 9 of Dhulikhel Municipality. This road connects various settlements of ward number one and two with Banepa Bazar (Banepa Municipality) and Anaikot bazar (Panchkhal Municipality)
2	Ravi Opi (Dundamukh)-Devitar-Anekot (Ghumaunichour)-Nayagaun (24DR012)	This road connects settlements in ward no. one and two with district road 24DROO9 and DR013 which further connects the settlements with Banepa and Anaikot respectively
3	Kavrebhanjyang - Faskot - Inte-Sankhu Fendi -Shyampati Kuru Gaun – Bhalu Kharka – Baseri (24DR018)	This road connects settlements in ward no. 9 and 10(Batase, Patalikhet, Kavre Nityachandeshwori) with Batase Sankhu-Namobuddha Road(F72) (Panauti)
4	BP Highway - Sharda Batase - Inte (24DR019)	This road connects Ward 10 with BP Highway and Batase Sankhu- Namobuddha Road (F72) (Panauti)
5	Kavrebhangyang-Dapcha-Pipaltar-Sikhar Ambote- Sanjhakot-Tara Khase Lekh Gokule (24DR020)	This road connects settlement in ward 11 with BP Highway via dr0018 in the north, likewise this road connects Dhulikhel municipality with Namobuddha Municipality to the south.
6	Tinpile - Kalchhe- Bela (BP Highway) (24DR025)	This road connects settlements in ward 11 (kalchhebesi) and Panchkhal Municipality with BP Highway to the south and Araniko Highway to the north

Table 13: List of district roads

Despite the connectivity of the above roads, data collected through this project has identified that there are key connections that need to be improved to better link the rural wards to services.

In addition, the Municipal Transport Management Plan (MTMP) identified that a number of roads need to be upgraded (either by construction material and/or widened) commensurate with their strategic function and the projected number of vehicles and properties they serve. The MTMP found that most of the roads in the wards are earthen, some are graveled and only a few are sealed (black topped) and some within the old town are paved stone. Parts of the roads that intersect the Araniko and BP Highway are black topped while most of the other roads in wards are earthen. According to the ward level survey conducted, the majority of roads passing through wards 5, 6 and 7 are either blacktopped or graveled. All the roads listed above require either new construction or upgrading in terms of surface and width.

A list of the roads that require construction or upgrading as mentioned by each wards are as follows:

Ward	S. N	Name of the Road	Surface type	Upgrading Necessity	Existing Width (m)	Required Width (m)	Pop'n/ Settlement Served	Priority order
1	1	Dudakomukh-Zero Km-Devitar	New construction	yes	5	12	200/7	
	2	Rabi-Deurali-Chamor	Earthen	yes	5	10	900/4	
	3	Milanchowk-Bhadaure Danda-Anaikot	Earthen	yes	5	10	1000/5	
	4	ThinKhola-Watadanda-Kasivhanjyang	Earthen	yes	4	8	600/5	
	5	School Danda-Shimle Chaur-Chihan Danda	Earthen	yes	4	8	500/5	
2	1	Chahare khola ko pakha bata duieeKhola	New construction	-	-	10		1
	2	Chisapani-Dhunganatole-Jamare-Sikharkatti-Karkipati-Bajrapare-Sabtrichaur	New construction	yes	3	7	1000/8	2
	3	Chapleti hudai Dhulikhel Municipality ward no. 1	Earthen	yes	3	9	500/6	3
	4	Chapleti-Chamor	Earthen	yes	5	9	1500/6	4
	5	Sishnekhola-Thimi Gaun	Earthen	yes	5	9	1000/5	5
3	1	Dhulikhel-Rabi-Devitar	Earthen	yes	4	11	600/4	1
	2	Panchakanya-Acharyagaun-Kutal-Rabigaun	Earthen	yes	3	9	500/3	2
	3	Dhulikhel-Rabi-Nagarkot	Gravel	yes	3	9	300/2	3
	4	Panchakanya-Napabasti-Panchkhal	Earthen	yes	3	9	500/3	4
	5	Napagaun Bato	Earthen	yes	3	9	500/1	5
4	1	28 kilo- KU- Shrikhandapur	Earthen	yes	11	11	400/4	5
	2	Aghori Baba Marga	Earthen	yes	11	11	200	1
	3	Dhulikhel DMI hudai Chukunepati Jane Bato	Half Earthen	yes	11	11	300/5	4
	4	Bansgahri Hudai chukune pati jane bato	Earthen/track(New cons.)	yes	11	11	400/4	2
	5	Purkutitole-Muktimarga-Chaukot	Earthen	yes	11	11	300/2	3
5	1	Gandhivchowk-Kuschowk	Gravel	yes	18	18	3000	1
	2	Punyamata-Thapaliyachowk	Gravel	yes	11	12	1000	2

	3	BPRajmarg-Prakash Pustakalya-BP Rajmarg	Gravel	yes	11	12	1000	3
	4	Punyamata Khola Corridor	New onstruction	-	-	30	-	4
	5	Hulak-Biscuit Karkhana	Gravel	yes	11	15	500	5
6	1	(Buspark-Gitamarga)-takhusi-Jarandadachowk	Black top	yes	12	12	100/4	1
	2	Lakhanamai Mandir-Suwaltol-Muktimarga	Black top	yes	12	12	1200/5	2
	3	Pipaltole Bot-BP Rajmarg-Rajkulo-Suwaltoleko Pul-Takhusi-Jarandada chowk	New construction	-	-	15	Total ward	3
	4	Buspark-Gitamarga-Jaran Danda	Black-top	yes	<6	6	1000	4
7	1	Saraswati Bazar-Adda Bazar(Pipal bot samma)	Black-top	yes	4.5	6	700/2	
	2	Saraswati Bazar-HurkhaMarga Hudai- BP Rajmarga	Earthen	yes	11	11	200/3	
	3	Saraswati Bazar Hudai Dhurkha Marga- Thado Oralo-BP Rajmarga	Earthen	yes	4.5	6	200/4	
	4	Saraswati Bazar- Gutuchha Marga Hudai-BP Rajmarga	Earthen	yes	4.5	6	50/3	
	5	Mukhya Sadak Marga Bata-Nagarpalika Hudai Suparitar-Sanjivani School	Earthen	yes	4.5	6	300/4	
8	1	Pipalbot-Bhattedanda-KavreBhanjyang	Earthen	yes	3.5	11	100/7	2
	2	Khawa-Sikharkateri-Kalchhe	Earthen	yes	3.5	11	1200/6	1
	3	Khawa-Saraswati Mavi-Kavrebhanjyang	Earthen	yes	3.5	11	1000/6	4
	4	Pakucha – Dovan	Earthen	yes	3.5	11	600	3
	5	Thakle- CHpludevi	Earthen	yes	3.5	11	200	5
9	1	KavreBhanjyang Darimbot Hudai Majuwakhola	Earthen	yes	5	12	1000/4	1
	2	Devisthan-KavreGaun Hudai Kavrebhanjyang	Earthen	yes	4	12	3000/4	4
	3	Ghatkhola-Ranachhap-Thulochaur	Earthen	yes	4	12	400/3	3
	4	Ramchechaur koiralatole Phapaltole hudai DanfeKhola	Earthen	yes	4	12	600/5	2
	5	Pani Tyanki-Humagai Tole Hudai Hulakpari	Earthen	yes	4	12	250/4	5
10	1	Bp highway Sarada Batase Eete Sadak	Earthen	yes	8	12	2500/7	1
	2	Krishna Mandir Bata Faskot	Earthen	yes	8	10	700/3	5

	3	Tinchhuchhe Pokharai Bata Bhairavghat saama	Earthen	yes	8	10	500/3	2
	4	Pipalbot Batta Dhunge Ban	Earthen	yes	8	10	400/4	3
	5	PingDanda bata eete jodne baato	Earthen	yes	8	10	1500/3	4
11	1	Gumba-Araniko Road	Earthen	yes	7	9	3000/15	1
	2	Sunwartole-Tinpipple	Earthen	yes	7	9	4000/16	2
	3	Jukepokhari-Dovane	Earthen	yes	6	7	800/11	3
	4	Kavrebhanjyang-Thatithok-Phulbari	Earthen	yes	6	7	2000/7	4
	5	Maskale-Thulitar -Pipalthumki	Earthen	yes	6	7	1500/12	5
12	1	Lamichhane Gaun-Sallepani Pakha-Kuikel thumka	New construction	-	-	15	800	1
	2	Eete-Patichour-Piple sadak	Earthen	yes	6	15	1200	2
	3	Thumka Sadak Namobuddha Lodge Danda	Earthen	yes	6	15	150	3
	4	Sankheswori-Tallo Eklekhet Sadak	Earthen	yes	6	15	400	4
	5	Eklekhet-Dhankali-Fending	Earthen	yes	6	15	400	5

Table 14: Important roads of Dhulikhel

6.2 Water supply

The sources of water supply identified are derived by natural rivers, well and hand pump. According to National Population and Housing Census 2011 (Village Development Committee/Municipality), the main source of drinking water in Dhulikhel Municipality is tap/piped water with 81.93 % of total households depending on this source. 5.3% of total households depend on covered spout water and another 4.51% depend on uncovered well/kuwa for water. 3.74% of total household depends on covered well/kuwa for water. The remaining household are dependent upon tube wells, rivers and other sources for water.

Deep boring is not found across the municipality. A few bores existing for private use; mainly for hotels.

The supply of water is a problem in almost all wards except ward 7 as the Dhulikhel Khanepani tatha Sarsafai Samiti is located within this ward.

Deep boring is proposed in ward 5 and two water supply projects are found in the municipality: Deurali (sisnekhola) khanepani tatha sarsafai aayojana in ward 2 which supplies a population of 1008 (195 households).

Proposed water supply projects include Dhulikhel Kanepani Upobhokta Samiti which will supply 150 taps in ward 5 from Khar khola source in Shree Khandapur, Purano basti and Piple Khanepani Upobhokta which will supply 200 taps in ward 12 from water source and boring.

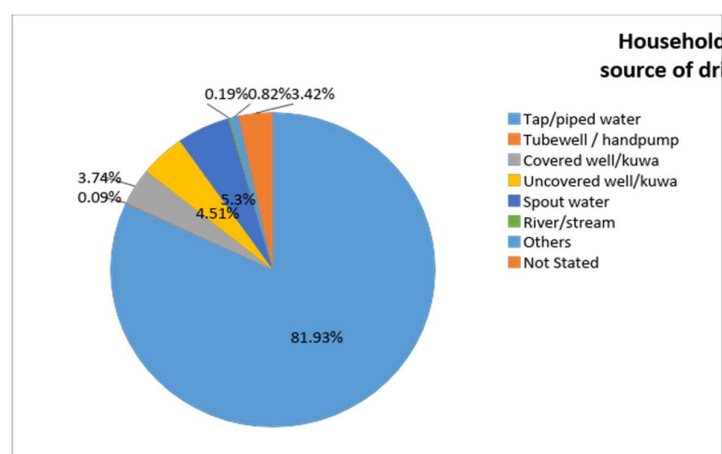


Figure 18: Pie chart of different sources of water available in Dhulikhel Municipality

Background to improvements to Drinking Water in Dhulikhel

According to the report prepared for the New Tap project, which is funded by the Japan Water Research Center, the Dhulikhel drinking water supply project and water treatment plant is located at Dhulikhel Municipality, Karve in Nepal. The project site is 20 km east of Kathmandu City. The project was established under the Government Agency of Nepal with financial and technical assistance from the Government of Germany (GTZ). Dhulikhel did not have enough sources of drinking water due to its geographical location. The people in Dhulikhel requested the Government of Nepal to manage the drinking water problem in the area. The Government of Nepal with the assistance of German Co-operation Agency started the Dhulikhel Drinking Water Supply Project. The local Municipal Office provided support during the planning, construction, and O&M phases of the project as well. The project started in 1989 as a component of Dhulikhel Development Project, and was completed in 1994. The water supply scheme fulfills about 80% of the water demand of the town through 605 private and 22 public taps. Scarce water quality was a main cause of poor health among the water users. The project was designed for full treatment of water with sedimentation, sand filter and chlorination facilities incorporated to the system. The system is now fully managed by a User's Committee of ten members including the Mayor. While the system used to supply water 24 hours a day, water is now supplied only eight hours a day due to combination of factors including a decrease in water discharge at source, increase in population, extension of water supply to other areas which were not included in the original design phase and a high demand of water by institutions, hotels and restaurants.

Constructed Year	1987
Type of Source	Stream (Kharekhola)
Design Population	14,387
Population covered by project	23,650
Source capacity (yield)	2785 m3/d in dry season
Designed flow	1274 m3/d
Present production	1382 m3/d
Project type	Gravity Flow
No. of taps	2200 household and 27 public taps
Transmission Length	13.5 km
Transmission Line	Bhumi Dada VDC, Malpi, Panauti, Taukhel and Subba Gaunvillages and Dhulikhel Municipality.
Distribution area	Ward number 2, 3, 4, 5 (whole) and 1, 6, 7 (partial), Extension going on in wards number 8 and 9.
Distribution Length	15 km (Initial designed length) 42 km (Extension)
Water demand	Base Year (1987)-500m3/d Design Year (2017)-2300m3/d

Table 15: General Information of Dhulikhel Water Treatment Plant

Ward	Present Condition	Remarks	Boring	Probable Sources
1	Many sources available but no proper management	Water Problems exist	Not available	Yeselu jhyang, Aaitabare kholsa, Fhoksebhira khola (saat khola)
2	Scarcity of water	People drinking river water	Not available	River and boring
3	Managed from local level from local sources	Water Problems exist	Boring is found in private hotels only	-----
4	Well is main source of drinking water	Scarcity of water in Naya basti	Not available	Deep boring
5	50% people have supply facility	Deep boring is proposed	Not available	Chaleswor forest water source, kuwa of Chaukot, wells and padhera
6	Supply problems in high altitude areas	Water management problems	Not available	Khar khola
7	Water supply facility is better than other	Dhulikhel khanepani tatha sarsafai samiti office lies in the ward	Not available	2 Deep boring are possible

8	Sources available but no proper management	Extreme water problems exist	Private boring available	Sita ghari, Chan dhunga
9	40% people have supply facility	Extreme water problems exist	Not available	Darimbot (deep boring)
10	Drinking water from minor sources	Water problems exist	Not available	Deep boring
11	80% people deprived of supply facility	People must bring water carrying from far sources	Not available	Water source in Fhulbari, Thatithok, require lifting
12	40% people have supply facility	Extreme water Problems exist	Not available	Deep boring and minor sources

Table 16: Sources of Drinking Water

According to Planning Norms and Standards 2013, the water supply system in the Municipality (with storage and treatment facilities) should be delivered via courtyard connection/ rain water harvesting where the quantity of water used is 60-80 litres per capita per day. There must be treatment plant with water testing facilities and the reservoir must have the capacity of 24-hour storage. The treatment plant should be a minimum of 1 ha per site with 25% storage capacity of the total treatment capacity. 90% of the households should have a tap within a 50m radius.

In the case of Dhulikhel Municipality, almost all wards have water supply service problem and the water supply projects are not sufficient in number. Even though the main source of water supply is pipe water, there is significant problem in management of it. Only wards 5 and 12 have proposed water supply projects. During our data collection stage it was found that new probable sources of water that could be further used to strengthen the existing water supply projects or develop the new drinking water supply schemes.

6.3 Irrigation

Dhulikhel has abundant agricultural areas which account for approximately 72% of the total land within the municipality. The economy of Dhulikhel is based on agriculture and therefore irrigation of agricultural land is very important. Many irrigation projects are in operation and a number of irrigation projects are proposed in different areas of the municipality.

S.N	Project Name	Source	Service Area	Remarks
Ward 9				
1	Ganga Ram- thulutar kulo	Thulokhola	400 ropani	(3km) Seasonal/traditional
2	Thulo khet- adhachale kulo	Thulokhola	150 ropani	(1.5 km) Seasonal/traditional
3	Pokhare aakher kulo	Thulokhola	10 hectares	(2 km)
4	Okherkalne-aangetat kulo	Thulokhola	8 hectares	(2km) Seasonal/traditional
5	Kandale-patini-thulitar kulo	Thulokhola	700 ropani	(3km) Seasonal/traditional
6	Navajyoti P.L-jhyamrsi	Dhobikhola, Ghatkhola	150 ropani	(1km)
7	Ghatkhola-bakalfaat	Ghatkhola	100 ropani	(1km)
8	Thulokhola-lamsalatar-aamote	Thulokhola	500 ropani	(2km)
Ward 10				
9	Sudi khola-bhairavghat- ganesg mandir	Sudi kola		
10	Maruwa khola-karkitol-ganesh mandir	Maruwa khola		
Ward 12				
11	Sankhu sichai	Sankheswori khola	1000 ropani	(3km), 1 inch pipe used
Ward 5				
12	Serafaat kulo	Ghatte khola	200 ropani	(1.5km) Critical, seasonal
13	Dhuku dhal (rajukulo)			

Table 17: Irrigation Projects of Dhulikhel

6.4 Drainage and sanitation

According to the National Population & Housing Census 2011 (Village Development Committee/Municipality), out of 6,813 households of Dhulikhel, only 5,516 households (i.e. 81% households) have a toilet facility while remaining 1,297 households (i.e. 19% households) do not have a toilet facility. Among the 80% households which have toilet facility, 4,261 households have a flush toilet, 1,023 households have an ordinary toilet and the remaining 232 household's toilet type is not stated.

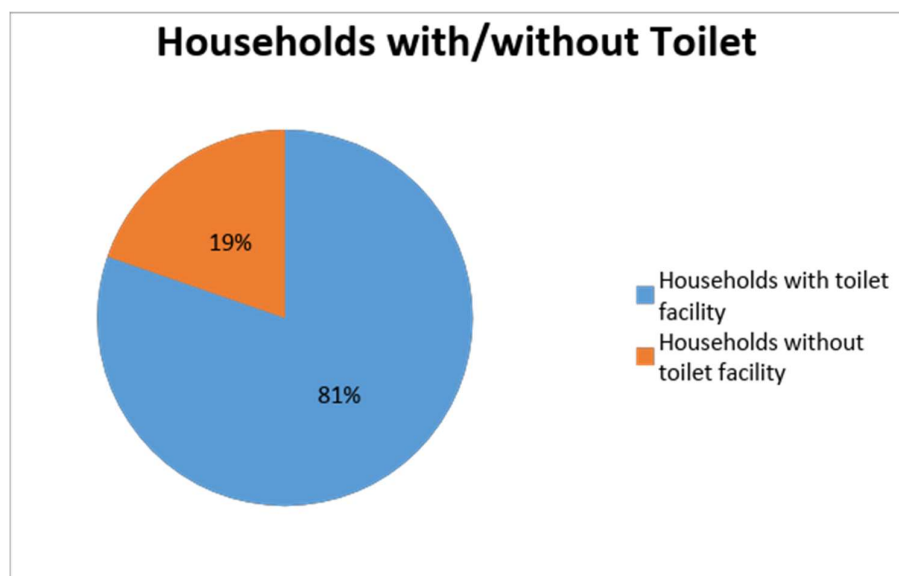


Figure 19: Pie chart showing households with/ without toilet

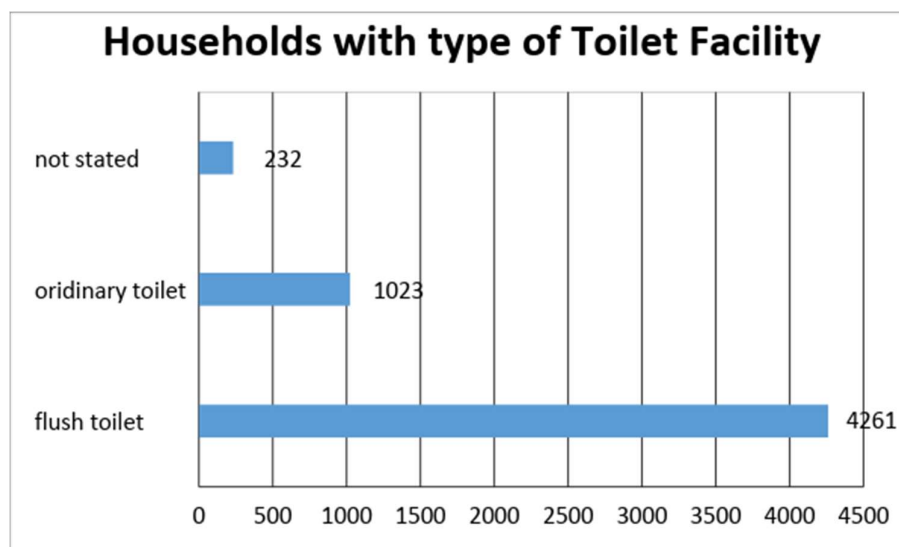


Figure 20: Bar graph showing types of toilet facility

According to Planning Norms and Standards 2013, the Municipality should have 30% of household covered by public sewer system (pit latrine, septic tank, etc) and there should be provision of sewage pumping station and treatment plant.

According to Planning Norms and Standards 2013, 30% of households in the Municipality should be serviced by a public sewer system, pit latrine, septic tank, etc and there should be provision of sewage pumping station and treatment plant.

According to the survey carried out by IUDP team, a pipe sewerage system is not available in many wards of Dhulikhel Municipality. Most households are serviced by a septic tank while some others have ring tank as well. 100% of households in ward 7 and 95% of households in ward 5 are serviced with a pipe sewerage system, however some highly urbanized wards were not adequately serviced with pipe sewerage infrastructure and instead rely on septic tanks without adequate land capability. Few wards of Dhulikhel Municipality have been declared as Open Defecation Free (ODF) zone (including wards 1, 2, 10, 12 and 8).

Ward 4 (Dhulikhel buspark), ward 7 (S. P office) and ward 8 (Gakuleswor community forest) have public toilets whilst the remaining wards do not have public toilets.

In summary it was found that sewerage systems require improved management in every ward. In denser areas, without a proper pipe sewerage system, contamination is likely which can affect drinking water and create serious public health issues.

6.5 Waste Management

According to Planning Norms and Standards 2013, 25% of solid waste should be collected and properly disposed. There should be Communal Collection i.e. one collection point/ container/ roadside pickup point that serves a radius of 200m. At collection point, waste is estimated to be 0.4 kg/person/day. A small sanitary landfill site should be provided that accommodates greater than 1tonne and less than 25 tonnes per day.

As per the data collected by IUDP team, there is no proper waste management at any wards of Dhulikhel Municipality. Service is mainly concentrated to bazaar areas. The waste of the entire municipality is currently deposited in Thakuri gaun in ward 8. According to the surveys undertaken for the IUDP project, waste management in wards 1, 2, 9, 10, 11 and 12 is perceived as poor as people of that area have paid for the service but the Municipality could not manage vehicle for collecting the waste.

However, there are many potential landfill sites in different wards of Dhulikhel Municipality.

Ward	Waste Management	Type of Waste Collection	Landfill Site	Probable Dumping Site
1			No	No
2			Yes	Kota bhir
3	Yes	Municipality collection (bazaar area)		Naya gaun (border of 3 &8)
4	Yes	Municipality collection (bazaar area)	No	Bhyandol (suwal tol)
5	Yes	Municipality collection (bazaar area)	Yes (boarder of Banepa Municipality)	No
6	Yes	Municipality collection (bazaar area)	No	No
7	Yes	Municipality	No	No
8	Yes	Municipality collection (bazaar area)	Thakuri gaun	Bhandar khal forest
9			No	No
10			No	No
11			No	Ratmare
12	Yes	Municipality collection (bazaar area)	No	No

Table 18: Waste management system in Dhulikhel

6.6 Electricity and communication

Communication

According to Planning Norms & Standards 2013, 100% of households should have access to landline/mobile and should have 100% coverage. Mobile service (2G & 3G) has reached all wards and is working well. However, landline services are not widely found. The major telecommunication service providers in Dhulikhel Municipality include Nepal Telecom (NTC), Ncell and World link and the network range and connection is generally good across the municipality. A new tower is required in ward 12.

Ward	Landline	Mobile	Internet	Service Provider	Remarks
1	No	2G, 3G	Yes (World link)	Nepal Telecom / Ncell	
2	No	2G	Yes (World link)	Nepal Telecom / Ncell	Poor internet
3		3G, 4G		Nepal Telecom / Ncell	Good network range
4		3G, 4G		Nepal Telecom / Ncell	Good network range
5		3G, 4G	Yes	Nepal Telecom / Ncell	
6		3G, 4G		Nepal Telecom / Ncell	Good network range
7		3G, 4G		Nepal Telecom / Ncell	Good network range
8		3G, 4G		Nepal Telecom / Ncell	Good network range
9	No	2G, 3G, CDMA/ GSM	Yes (World link)	Nepal Telecom / Ncell	
10	No	2G, 3G, CDMA/ GSM	Yes (World link)	Ncell, Nepal Telecom/Smartcell	
11		2G, 3G	Yes (World link)	Nepal Telecom / Ncell	Good network range
12	No	2G, 3G, CDMA/ GSM	Yes	Nepal Telecom / Ncell	Tower required in Pati chaur hill

Table 19: Communication types and their condition in Dhulikhel

Electricity

According to Planning Norms & Standards 2013, access to power for any Municipality should be 100% coverage over the city. As an alternative energy (panels, battery capacity 100AH), Solar Home System (40-100 Watt) are standard in the Municipality. An Electric substation of 33/11 KV for 0.07 ha per site, transmission tower in a site of 80-100 sq. m and distribution tower in 20-25 sq. m is standard in the Municipality. Almost 100% of households in all wards have access to electricity except for Ward 9 (95%). However, while almost all wards have electricity facility, the service management is very poor. Although transformers are available in all wards, the voltage is deficient. In addition, unstable and poor-quality electricity poles are found in many wards.

Ward	Households having electricity access	Transformer	Sub-station	Remarks
1	100%	5	Banepa	
2	100%	-	Banepa	Poor wooden poles
3	100%	2	Dhulikhel	Poor management, insufficient voltage, unstable electric pole, 2 private hotel transformers
4	100%	2	Dhulikhel	Poor management, insufficient voltage
5	100%	1	28 kilo Dhulikhel	Poor management, unstable electric pole
6	100%		Banepa	
7	100%	2	28 kilo Dhulikhel	Poor management, insufficient voltage
8	100%	Kharka, Bhettedanda, Pakucha	Pachkhal	Poor management, insufficient voltage
9	95%	7	Nalafida	Poor wooden poles
10	100%	1, 50 KVA	Khopasi	
11	40 households are deprived of electricity facility	7	Dhulikhel	
12	100%	4	Khanpasi, Panauti	

Table 20: Electricity Coverage in Dhulikhel

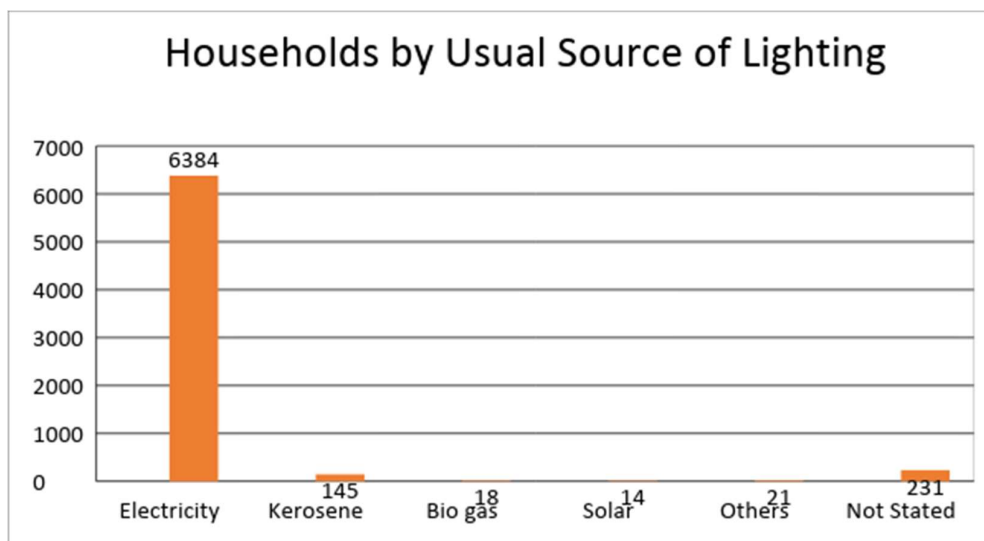


Figure 21: Electricity access and its condition in wards

7 Economy

Market Centres

According to Planning Norms and Standard 2013, urban areas have been classified into 5 classes based upon population, listed on the table below:

Types	Population
Metro City	3,00,000
Sub-Metro City	1,00,000-3,00,000
City	40,000-1,00,000
Sub-city	10,000-40,000
Market Center	50 shops within radius of 100m

Table 21: Settlement Hierarchy according to 2013 Planning Norms and Standards

According to the above Standards Dhulikhel Municipality falls on the category of Sub-city having population between 10,000 and 40,000.

Settlement and Retail Hierarchy in Dhulikhel Municipality

According to the Standards there are two market centers inside the Municipality. One is Dhulikhel Bazar which can be further divided into a series of small market centers including (Bansghari, Buspark, Hospital chowk, Saraswati Bazar, Adda Bazar) and the other is Srikhandapur Bazar in ward 5. Further two other market centres outside the Municipality serve the population: Banepa and Panauti.

Based on the level of activity (ward office, schools, health posts and retail), ‘convenience’ or village activity centres for each ward are proposed. These activity centres, when linked with major market centres will ease the flow and access of goods and services inside the Municipality. This this will strengthen the urban rural connectivity of the Municipality. Market centers/activity centers, along with their service roads are listed in the map and table below:

Ward no. (Market/Activity centres)	Linked Market Centres	Major Link Roads
1 (Midinichhap)	Banepa Bazar	DR012
2. (Dudamukh)	Banepa Bazar	DR009
5. Shreekhandapur Bazar	Banepa/Panauti	F73
3/4/6/7 (DhulikhelBazar)		
8 (Bhattedanda)	Banepa Bazar	Saraswoti Bazar-Adda Bazar
9 (Kavrebhanjyang)	Banepa Bazar	BP Highway
10 (Batase)	Dhulikhel Bazar/Panauti	BP HW - Sarada Batase – Ite
11 (Kharka)	Dhulikhel	H06
12 (Shankhupatichau)	Panauti	F72

Table 22: Market centres and linkage

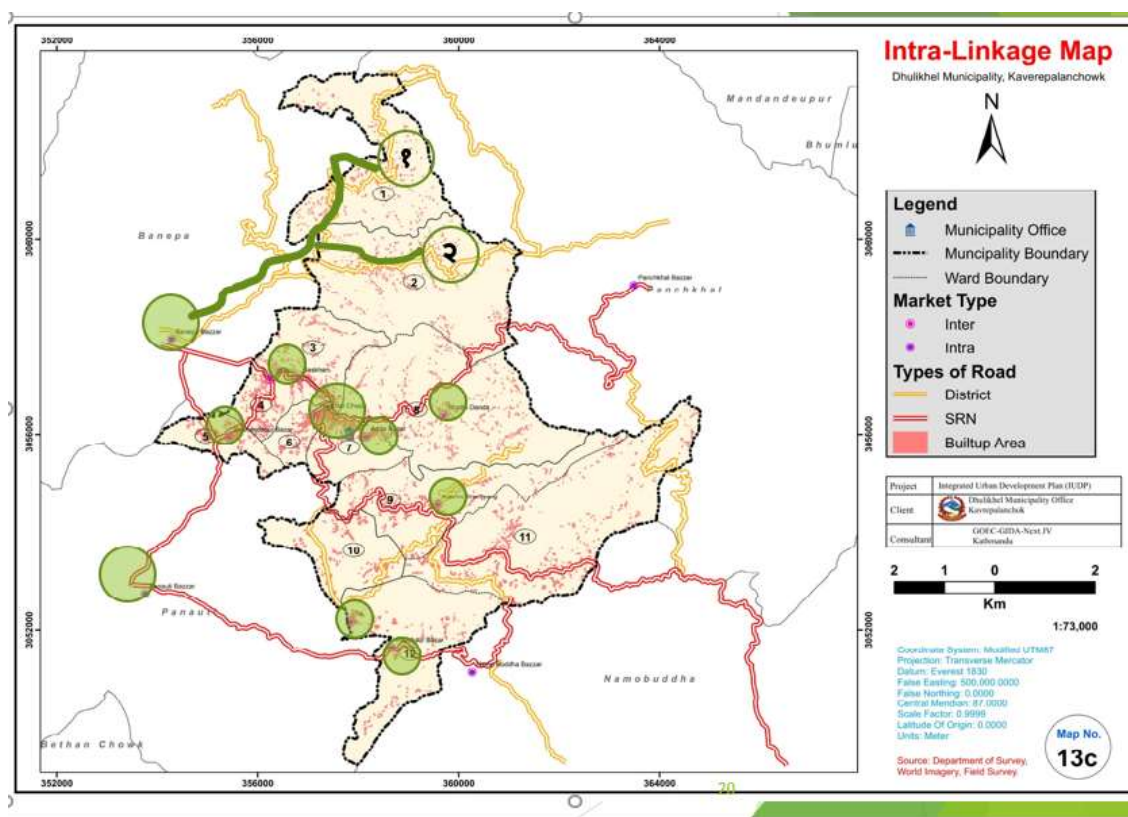


Figure 22: Market centers and linkage

Dhulikhel Bazaar is the major market center in the municipality. Like most of the cities of Nepal it is developed in and around the Araniko Highway as well as in and around the intersection of the Araniko and BP Highways. Dhulikhel Bazaar, Banepa Bazaar and Panchkhal Bazaar in adjoining municipalities are the major trading centers for the people in the Municipality. It is necessary to improve access to those local market centers from the settlements and, at the same time, improve access between these market centres to encourage the economic activities.

Financial institutions, cooperatives and banks are located in the Dhulikhel Municipality bazaar area and in those wards, which lie along the Araniko Highway. Similarly, NGOs, INGOs and social institutions are concentrated in Dhulikhel Municipality Bazaar area. The Bazaar areas support small-scale food and clothing retail, eateries and semi-industrial uses including welders, carpenters and mechanics as well as accommodation.

Tourism

Tourism is the major economic activity of Dhulikhel and there are number of hotels and resorts spread along Araniko Highway, as well as throughout the residential areas of Dhulikhel. Most hotels are located within Wards 4 and 8.

For further discussion regarding Tourism refer to the Conservation, Culture and Tourism Development Plan.

Agriculture

Animal husbandry, poultry farming and agriculture are major economic activities in most of the wards in Dhulikhel Municipality. Almost all the wards except those within the Bazaar areas are known for vegetables and milk production. Areas with different types of agricultural production are circled and presented in the map below.

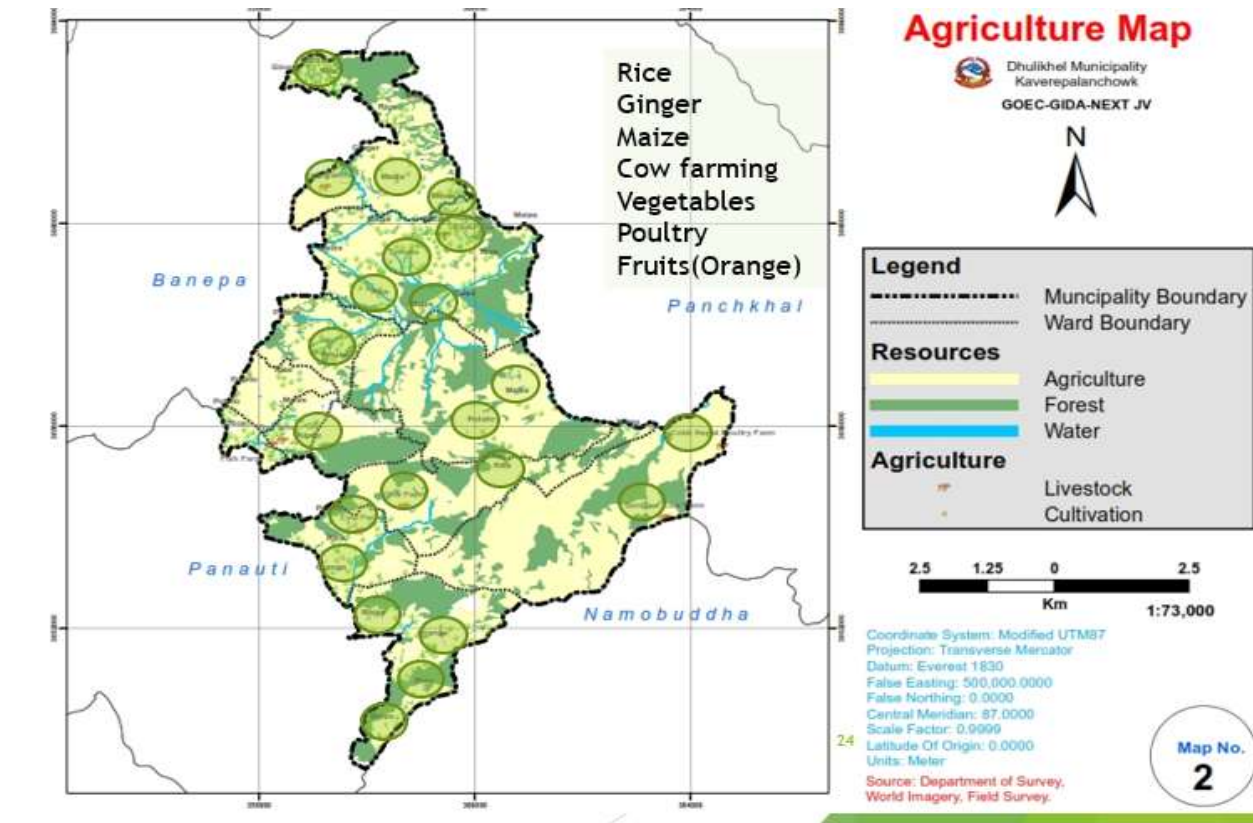


Figure 23: Location of Agriculture production by type

In terms of industries, Dhulikhel Municipality has one Radhakrishna Biscuit Industry in ward 5, Noodles Factory in ward 6 and milk collection centre in ward 9. Likewise, other small-scale industries present in the municipality are poultry farm, dairy farm, animal husbandry, plastic printing, polythene pipe production, pani prasodhan Kendra (aqua Water), Furniture Udhyog and hatchery, cheese making etc.

As Dhulikhel is known for its agricultural production, the rural wards of Dhulikhel provide opportunity to link those agricultural activities with industries. Milk Production in ward 1, 2, 3, 9, 11 and 12 provide opportunities for dairy based industries. Linking those industries with market centres can increase the economic prosperity of the local people. Likewise, rural wards can be encouraged for agro-based tourism. Further by linking the plethora of tourism attractions present in hinterlands of the Municipality by building proper infrastructure, Dhulikhel has opportunity to maximize the tourism potential.

It is also essential that new commercial development be encouraged to be located in the Market Centre and Convenience activity centre locations within the Municipality to support existing public and private investment and take advantage of existing infrastructure.

Economic centers and sources of Dhulikhel include the following:

Ward	Market centers (mukhhe bazar)	Agriculture		Remarks	Industry	
1.	No bazaar in ward, Banepa Bazaar	Vegetables (Tomato)- Middinichap, Deurali, Milanchok Rice and Maize-in all wards Ginger in all wards Milk production- Middinichap, Deurali	Cow farmin g- middin chap Goat farmin g: Devita r	Vegetables and milk production Export: Local level and Banepa	NO	
2.	No Bazaar in Ward Banepa Bazaar Panchkhal Dhulikhel	Potato- All Places Except Dudamukh Milk-Deurali Vegetables Rice and Maize		Vegetables and milk production Export: Banepa, Banepa DDC	Animal husbandry and poultry	
3.	Bansghari, Buspark	Potato Milk-Acharyagaun Vegetables-Kutal, Talo kutal, Acharyagaun Rice and Maize		Vegetable and milk production Export: Local Bazar Banepa, Dhulikhel, Kamalmai Dairy, Acharyaga un	Kamalabhai dairy-Acharyagaun Hotels: Himalayan Horizon (bansghari) Mirawal Hotel (Mirawal) Dhulikhel Lodge Resort (Nayagaun) Safe Café (Mirawal chowk) Hotel Hills Heaven (Dhulikhel Buspark)	
4.	KU chok 28 ilo chok	Rice and Maize			Poultry farm-BhumiMarga Poultry farm- Bansghari Araniko Hotel (Chhapa Gaun)	
5.	1. Gandhib Chowk Bazar 2. Shrikhandapur Bazar (Purano Basti)	Rice, Mize and Potato- Kubu, Takhusi Bangurpalan- Suwal tole Fish palan- Suwal tole		Export Potato- Kathmandu Flower- Kathmandu	Plastic printing Polythene pipe production Pani prasodhan Kendra (Aqua Water)	Radhakrishna Industry Biscuit
6.	Hospital Chowk Buspark				Noodles Factory	
7.	Saraswati Bazaar Adda Bazaar					

8.	Bhattedanda	Rice, Potato, Maize, Vegetables- Badal Gaun, Dhakre GaiPalan Buffalo Palan Kukhura Palan Bakhrapalan		Club Nepal pvtltd. (Ryalebesi) (Challa production) Hotels: Dwarika Hotel Gaya Sarathi Himalayan Hause Dhulikhel Village Resort Saujan Himalaya	
9.	Kavrevanjiang (Local Bazar) Dhulikhel Banepa	Rice, Maize - Darimbot, Thulitar, Sudikhola Potato, peas, vegetables- in all wards Gaipalan-Pnaityanki, Thakurichap Organic farming 90%	Export: Banepa, Dhulikhel	Poultry farm- Panitanki, Darimbot, LamsalGaun Furniture Udhyog: Kavrebhanjy ang	Milk collection centre Himal Agro and food- Kavrebhanjyang
10.	Dhulikhel Banepa	Rice, Potato, Orange Orange: Sarada Batase	Export: Dhulikhel		
11.	Panchkhal Dhulikhel	Vegetables and milk all parts of ward Fruits in Kalchhe	Nepals Biggest cowfarm- Santipur	Pultryfarm, cowfarming, Furniture	Possibility of dairy farm and crusher industry
12.	Local Markets Patichaur, eete	Orange, Potato, Maize, Rice Milk: throughout ward Cow farming		Hatchery -Nayapati	

Table 23: Economic centers and sources of Dhulikhel

8 Resources

Cultivable land and forest are the major resources of Dhulikhel Municipality. In the municipality 71.88% of total land is agricultural land and 27.53% is forest area. Community forests are the major resources in wards 1, 2, 3, 11, 8 and 12. Likewise, wards 4, 5, 6 and 10 also possess at least one community forest. There is also a large government forest area in ward 7 where an eco-tourism/Dreamland project (Natural Zoo) is envisioned. Apart from forest resources, a number of rivers run through the Municipality. The rivers are the source of water for irrigation as well as drinking water.

The land cover and resources of Dhulikhel Municipality are mapped below:

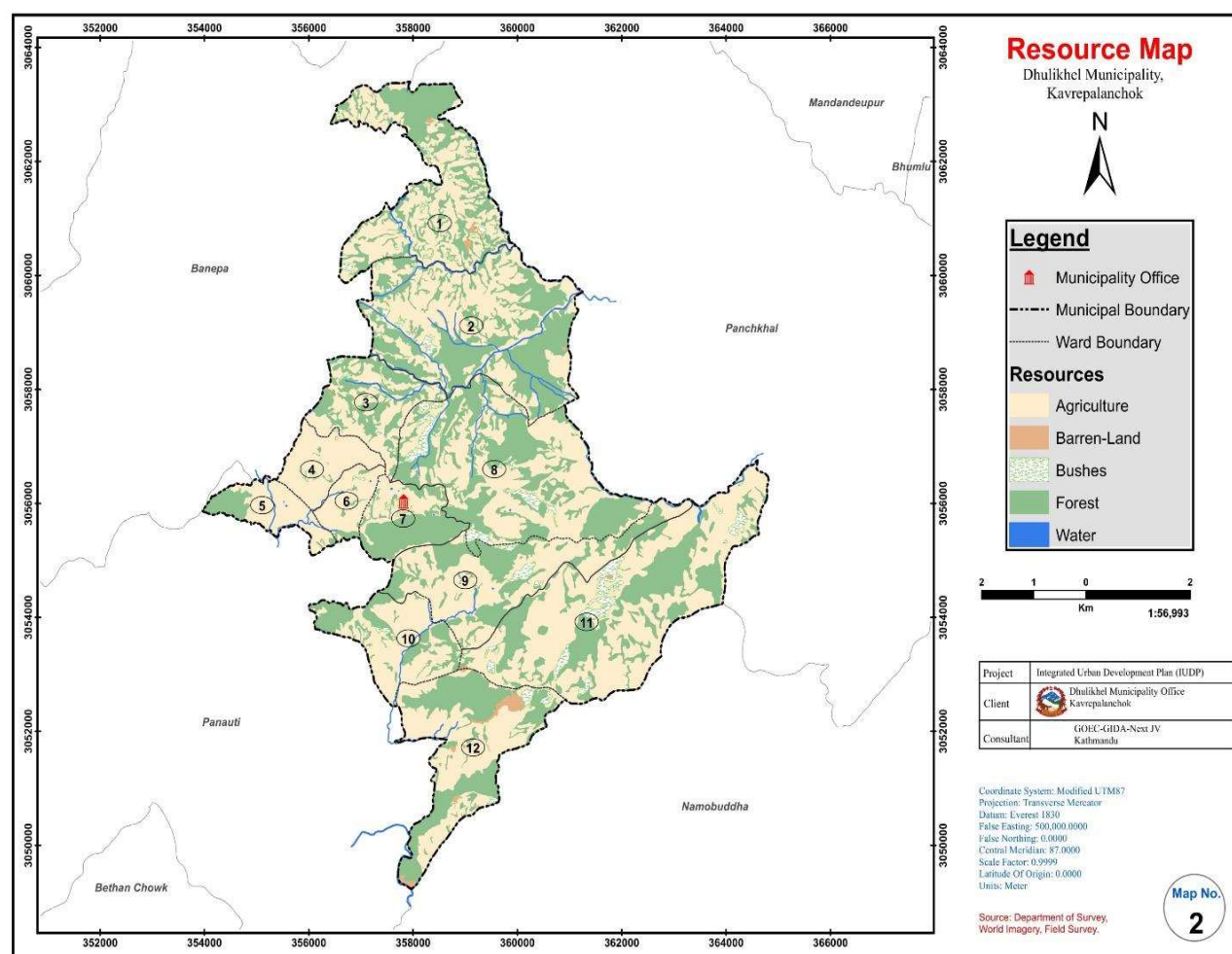


Figure 24: Resource map of Dhulikhel

9 Disaster/Natural Hazards

Areas within Dhulikhel Municipality are affected by land erosion, river cutting and landslides. Air pollution is present due to brick industry in ward 1, while wards 1, 6, 10, 11 and 12 are subject to land erosion and wards 1 and 10 experience problems with river cutting.

According to Planning Norms and Standards (2013), a Disaster Management Center on a site of 1ha, along with suitable open area (2ha) for soft parking and temporary shelter is required. While multiple open spaces are available across Dhulikhel Municipality, the Municipality does not contain a Disaster Management Centre.

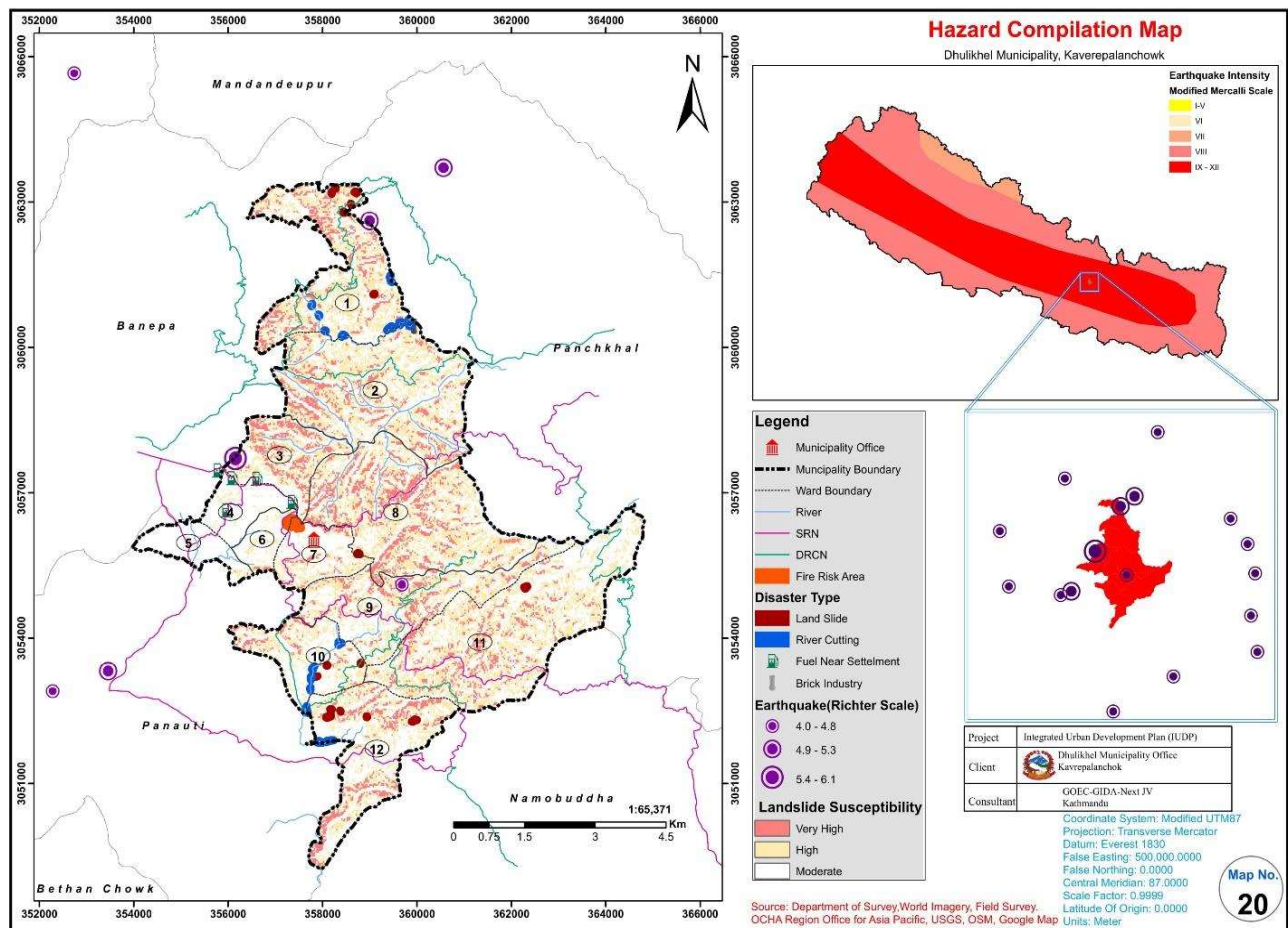


Figure 25: Natural Disaster Map

10 Existing land use

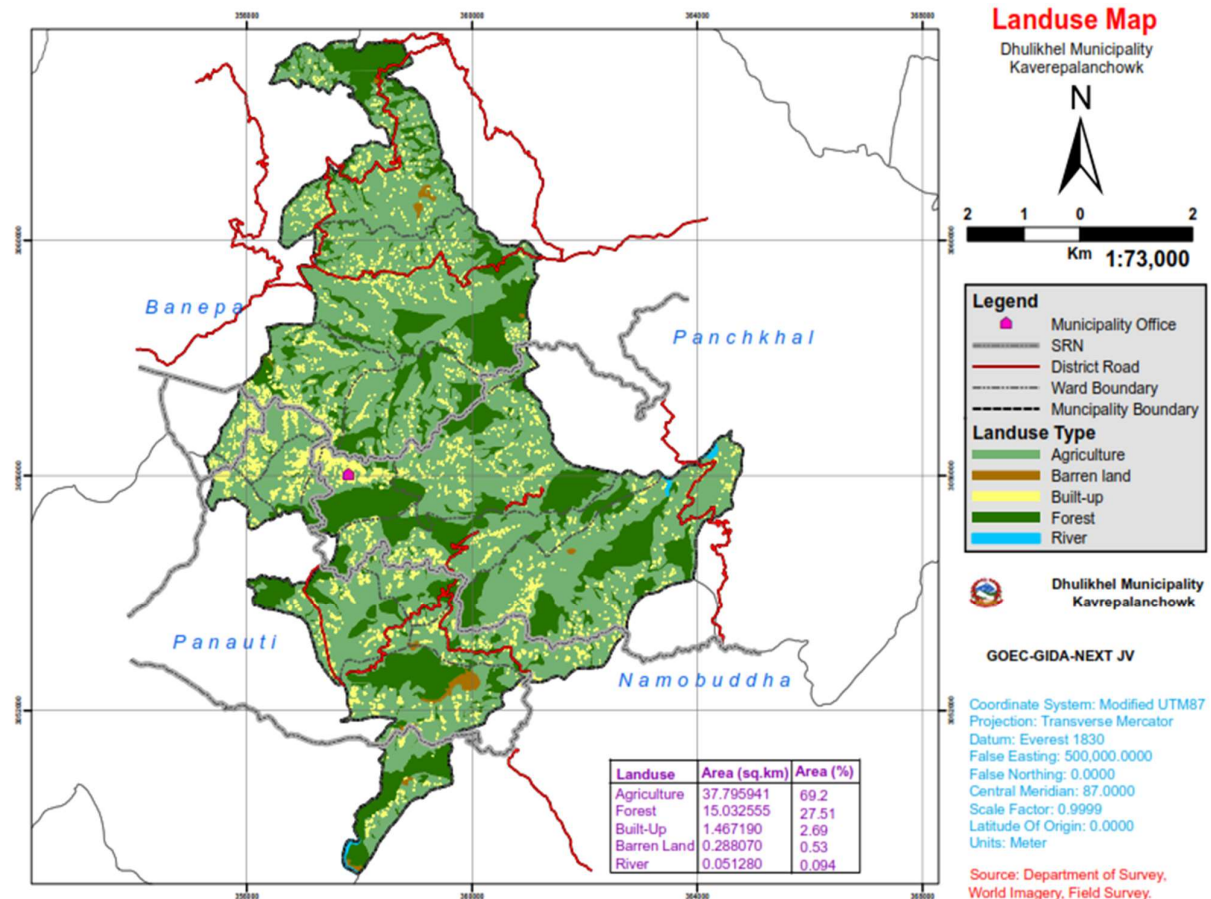


Figure 26: Land cover map

Land use patterns affect transportation planning and likewise the location of transport infrastructure also influences land use.

The municipality is covered by significant area of agricultural land and forest. Most of the area on the northern section is covered by forest whereas high agriculturally productive land is located in southern part. Settlements are generally located at the junction point of two SRN roads. Some land cannot be used for any purpose because of the steep terrain and are defined as Barren land in the map.

According to Land Use Policy 2072, the future basis of land use classification needs to be informed by existing land use as well as future strategic uses.

11 Urban Design and Heritage

11.1 Heritage

Dhulikhel is blessed with many tangible built heritage assets including:

- Conservation Area in Ward 5. This area is characterised by:
 - Three to four storey residences in the Newari style comprising terracotta brick (both plain and decorative varieties), mud plaster, terracotta gabled roofs, open windows and intricately carved wooden doors and window (lintel, sill and jamb), window shutters, lattice windows, variety of window styles, door columns on the ground floor.
 - Pagoda style temples, stone carved statues, shrines, hitis are found around the temples and within the streets and large central courtyards (chowk)
- Other temples outside the old town

It is observed that there are a number of challenges for the Municipality and Community when it comes to heritage:

- Some heritage buildings are **dilapidated**
- Managing heritage buildings is **beyond the financial and technical capacity** of some building owners
- While some local people value the heritage assets, **many people do not appreciate or are not aware** these buildings are special heritage places
- There are **unequal opportunities** for financial benefit from Dhulikhel's heritage assets (benefit to local hotel operators and retailers versus building owners who bear the cost)
- Sense of **ownership rights**
- The need to **maintain living standards**. People see concrete as a preferred and more modern building. The heritage system needs to facilitate a "living culture" which means that we need to consider elements of change to heritage buildings to maintain and improve living standards.

State of buildings

Many of the buildings in the Conservation Area No. 5 are at least 200 years old and subject to deterioration due to the passage of time. In addition, as a result of the 2015 earthquake, damage was caused to a number of buildings.

A detailed analysis of the structure of each building was prepared by the Technical University of Berlin and Kathmandu University.

Building condition creates 4 problems:

- 1) Structural damage and safety risk
- 2) Cost of repair and therefore negative owner perception of the heritage buildings as a ‘burden’
- 3) Pressure to demolish which reduces the integrity of the Conservation Area.
- 4) Replacement style and reluctance of landowners to use traditional materials and styles due to cost



Understanding of Dhulikhel’s built heritage assets

From research it appears there is very little mention on the Internet about Dhulikhel’s Heritage, while there is a lot of promotion of the World Heritage sites of Patan, Kathmandu and Bhuktapur World. However, the heritage streetscapes, buildings and intangible cultural heritage of Dhulikhel is significant at a local level and reflects the unique history of the place.

It appears there may not be a broad community awareness of the importance of the built heritage of Dhulikhel, especially among building owners.

How the Municipality currently supports Heritage and owners

Dhulikhel Municipality currently supports heritage places in four key ways:

- **Discounts property tax** by 50% for heritage properties in the Conservation Area No. 5.
- In partnership with community and organisations, **funds and manages** the conservation, restoration and maintenance of **public structures** including the temples, stupas, sculptures, shrines, and hitis
- Installs **sympathetic infrastructure** that supports the character of the Conservation Area, including road paving
- Ensures works to heritage buildings are sympathetic to the building and the area by **assessing and issuing permits**, based on Department of Archaeology guidelines.

Despite the above actions, additional strategies can be deployed to encourage a higher level of awareness and active participation in the conservation and enhancement of other public and privately-owned heritage assets.

Furthermore, current by-laws do not clearly articulate the heritage significance of Dhulikhel's heritage assets (ie. What is important and why it is important). More background information to decision makers and building owners in the form of Statements of Significance will assist in more informed proposals and decision making.

11.5 Urban design in the public realm

There are areas of the public realm in Dhulikhel with a very high standard of urban design, including the stone paving road surfaces, foot paths, recently constructed public square in the centre of Dhulikhel Bazar.



There are however, some parts of the municipality, particularly between shops and the highways that significantly undermine the image of Dhulikhel. These areas are characterised by unsurfaced and unstable ground with an assortment of construction waste, industrial waste including tyres and litter. Many of these areas occupy a 25 metre road reservation which is expected to be developed, in partnership with the Japanese Government, as part of a six-lane highway.



The practice of high-quality urban design is a critical issue for Dhulikhel as it seeks to build upon its reputation as a tourism destination. Furthermore, by practicing high quality urban design in the public realm this will improve upon the functionality of public spaces and also encourage a better standard of design of private spaces. It is critical that, for example, in the design of the Highway, the public areas beyond the highway, are designed,

constructed and landscaped to a high quality, rather than appearing as ‘forgotten spaces.’ This includes the treatment of service roads, footpaths, public open spaces, and the like.

Issues such as materials selection, universal accessibility and functionality should be built into the design of public spaces. Dhulikhel needs an Urban Design Framework to inform design standards.

11.6 Signage

Advertising and business signage is another issue. Dhulikhel contains a number of promotion signs and there is continual pressure to add more. While these signs can be appropriate, sometimes they distract from the visual amenity of the town and are appear as “visual clutter”. In addition, there is a plethora of billboard signs being erected in the rural areas which detract from the scenery that Dhulikhel is famous for.

Presently permits for signage are issued by the Department of Roads (to ensure the signs to not become a traffic hazard) and building permits are issued (to ensure structural stability). However, there are currently no by-laws or policy that the Municipality can deploy to regulate and assist decision making to ensure that signage respects the character of Dhulikhel.

12 Culture and tourism

Major ethnic groups in the municipality are Brahman, Newer, Chhetri and Tamang. Every ward in the Municipality is enriched with number of temples and every ward celebrates jatras throughout the year. Therefore, the Municipality has immense potential for Religious and Cultural tourism.

Dhulikhel Municipality’s major tourist features includes religious sites and scenic landscapes. Most of the wards are enriched with ancient temples with immense religious importance, view towers, hills for sighting the Mountains.

Potential tourist attractions in the municipality according to Ward Level are:

Ward no.	Potential tourist places	
1	Devitar thali	Religious Tourism
2	Alchhe Chaur	Picnic Spot
	Koirala Thumka	View Tower (Himal Awalokan)
	Koirala Thumka	Homestay
3.	Homestay Banune	Kutal
	Kutal (Ban jhakri Mandir)	Thulo Dhunga
5.	Chaleswor Ban	Himal Abalokan, Puratato, Viewtower proposed
	Purano Bazar	Religious, Cultural, Puratato
	Waste Water treatment plant	Anusandhatmak

	Chaukot View chetra	Himal Abalokan
6	Safio Jungle	Botanical Research centre
	Homestay	
7	Purana Sanskritik Sampada haru	
	Himalharu ko Soundarya dekhine	
8	Kalidevasthan-Religious	
	Gokuleswor Mandir-Religious	
	Gokuleswor CF-Anusandhanmak, abalokan	
	Bhatte Danda- View tower	
	Devasthan Danda- Selfie Khichne Danda	
	Homestay, Tamang Culture	
9	Devasthan, DeuraliDanda	Picnic spot, Drisyaablokan
	Kavre Danda (Karthari School Area)	Picnic spot, Drisyaablokan
	Devasthan	View tower
	Homestay	
10	Ping danda	View tower (Buddha ko Murti)
	Sarda Devasthan (Mela Lagne)	View Tower, Mandir
	Deurali Danda	Picnic Spot
11	Kavrebhanjyang-Faskot-Namobudhha	View tower, temple, Himal dekhine
	Chisapani, Kavrebhanjyang	Picnic spot
	Organic Krisi Farm	Chisapani/Pandit thok
	Krishi farm Research centre	Patlekheth
12	Devasthan Mandir	Anusandhanamatmak
	Homestay possibility	Sankhuma
	Bunji Jump	Eklekhet
	Baluddhyan	Eklekhet,Devisthandanda, Chisapani
	View tower	Devasthan Danda

Table 24: Tourist attractions in Dhulikhel

Major religious/historic tourist's attractions of the municipality are:

Ward	Major Religious places		Culture and customs		Potential tourist places	
1	Kalidevi Mandir	Devitar Thali (Mallakalin Mandir)	Kartik Purnima, Mansir Purnima	Devasthan Mandir	Devitar thali	Religious Tourism
	Gumba	Dandakhet, Devitar	Lohsar			
	Gumba	Karkale				
2	Setidevi Mandir	Koiralathumka	Yomari Purnima, Dhanya Purnima	Setidevi Mandir	Alchhe Chaur	Picnic Spot
	Champa Devi Mandir	Thingaun			Koirala Thumka	View Tower (Himal Awalokan)
	Raktakali Mandir	Chapleti			Koirala Thumka	Homestay
	Satra Rudreswor Mandir	Fendi ko pati				
	Krishna Mandir	Sakhichaur				
3	Bajra yogini Mandir	Bansghari	Mangsr Purne Jatra	Kutal	Homestay Banune	Kutal
	Bindabasini Mandir	Sankhu besi			Kutal (Ban jhakri Mandir)	Thulo Dhunga
	Kamalamai Mandir	Acharyagaun				
	Gumba	Nayagaun				
	Shrimanal Devi,	Kutal				
4.	Setidevi Mandir	Bakhundo	Bhimsenthanma Jatra			
	Bhimsen than	Bhyandol				
5	More than 10 temples including 3 Stupas		More than six Jatras		Chaleswor Ban	Himal Abalokan, Puratato, Viewtower proposed
					PuranoBazar	Religious, Cultural, Puratato
					Waste Water treatment plant	Anusandhatmak
					Chaukot View chetra	Himal Abalokan
6	More than 7 temples		5 Jatras		Safio Jungle	Botanical Research centre

					Homestay	
7	Six Temples		5 Jatras		Purana Sanskritik Sampada haru	
					Himalharu ko Soundarya dekhine	
8	9 Temples		Devasthan –Bada Dasahinma		Kalidevasthan-Religious	
					Gokuleswor Mandir-Religious	
					Gokuleswor CF-Anusandhanmak, abalokan	
					Bhatte Danda- View tower	
					Devasthan Danda- Selfie Khichne Danda	
					Homestay	
					Tamang Culture	
9	Kotake Devi Mandir	Kotakedevi (Rajyadwara Smrachhit)	Nawaratra Mela	Badhasal Devi	Devasthan, Deurali Danda	Picnic spot, Drisyaablokan
	Nitya Chandeswori Mandir	Kavre Bhanjyang	Kalika Devi Than Jatra	Ward 8 and 9	Kavre Danda (Karthari School Area)	Picnic spot, Drisyaablokan
	Devi mandir	Faskot	Krishna janma Asthami Mela	Kavrebhanjyang	Devasthan	View tower
	Badhsala Devi Mandir	Bhimchula	Simeswor Mela		Homestay	
	Simeswor Mandir	Ranachhap				
10	Radhakrishna Mandir	Batase Sarda	Krishnanma asthami Jatra		Ping danda	View tower (Buddha ko Murti)
	Bhairavghat Mandir	Thakuri Chhap, Batase	Gai Jatra			
	Omshanti bhawan	Pipalbot	Bala Chaturdasi	Bhairavghat Thakuri Tole	Sarda Devasthan (Mela Lagne)	View Tower, Mandir
	Mahankal ganesh Mandir	Batase	Ganthe Mangal Jatra	Newartole, Batase		
	Sarda Devasthan Mandir	Devasthan Danda			Deurali Danda	Picnic Spot

11	More than 13 temples identified		More than 7 festival and jatras		Kavrebhanjyang-Faskot-Namobudhha	View tower, temple, Hiaml dekhine
					Chisapani, Kavrebhanjyang	Picnic spot
					Organic Krisi Farm	Chisapani/Pandit thok
					Krishi farm Research centre	Patlekhet
12	Devasthan Mandir	Sapkota Gaun	Krishna Janm aasthami Mela(7 din)	Ptichaur, eete	Devasthan Mandir	Anusandhanamatmak
	Sankheswori Mandir	Sankhufedi			Homestay possibility	Sankhuma
	Kalidevi Mandir	Patichaur			Bunji Jump	Eklekhet
	Dhankali	Eklekhet			Baluddhyan	Eklekhet, Devisthanda, Chisapani
	Kotakidevi	Kotadevi			View tower	Devasthan Danda

Table 25: Major religious, culture and customs in Dhulikhel

13 Site Analysis

13.1 Trend/Spatial Analysis

Aerial photographs between 2010 and 2018 reveal the urban expansion of built-up areas.



Figure 27: Aerial view of built up areas 2010

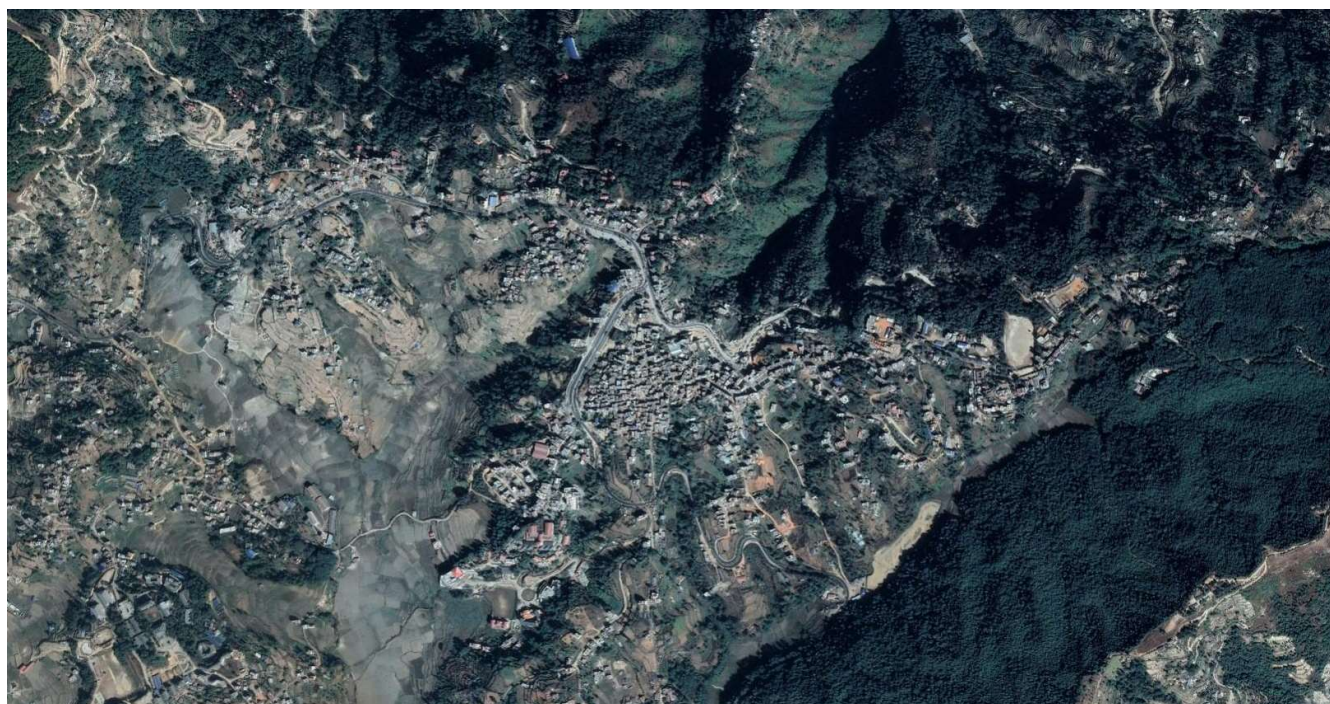


Figure 28: Aerial view of built up areas 2018

As revealed in the aerial maps, urban growth in the Municipality is sporadic and does not show any specific growth pattern or direction. Usually, the major market places are developed at the junction of highways. In the case of Dhulikhel Municipality, the major built up areas are concentrated at either junction of Araniko Highway and BP Highway or along Araniko Highway and BP Highway.

Market places in Dhulikhel Municipality have developed along the Highway, feeder roads and district roads and village roads. Dhulikhel bazar is the major market centre in the municipality. Bansghari, Buspark (ward 3), KU Chok, 28 Kilo (ward 4), Gandhibchok Bazar, Shrikhandapur Bazar (ward 5), Hospital chok and Buspark (ward 6), Saraswati Bazar and Adda Bazar (ward 7), Bhattedanda (ward 8), Kavrebhanjyang (ward 9), patichaur, Eete (ward 12) are the market centres at local level. Wards 1, 2, 10 and 11 lack local market centres.

Wards 1, 2, 8, 9, 10, 11 are comparatively sparsely populated and have lesser built-ups with most of the areas being used as agricultural land. Most of the population is concentrated within wards 4, 5, 6 and 7 with higher built up areas. In wards 4 and 5 densities are concentrated along Araniko Highway and Kathmandu University Road. Likewise, dense settlements along Araniko highway in wards 3 and 4 and in wards 6 and 7 along both Araniko Highway and BP Highway. Wards 4, 5, 6 and 7 are most dense with population density ranging more than 1500 per square Km and ward 3 little less with 875 Sq.km per person. Wards 9 and 12 are a little above 500 persons per Sq. Km while all other wards are below 500 people per square kilometer.

Other wards in the municipality are rural in character. Sporadic housing development on fragmented land parcels on agricultural land can be observed in these wards. The major settlements in these wards are connected to district roads via Village Roads. Increasingly fragmented land parcels is the major issue arising in the rural settlements of the municipality. Ribbon settlements is also another major issue.

Observations in the field reveal housing outside, or on the edge of, urban areas being constructed without the provision of constructed roads, drainage, water and sewerage services. This reveals a disconnect between development approvals and infrastructure planning.

It appears that, in many cases, development is not occurring in sequential and planned way and that the provision of infrastructure to support the development is being provided in a reactive way, which is expensive to the community and financially and environmentally unsustainable.

The figure shows the settlement is mainly concentrated along the national highway and District roads and feeder roads passing through the wards. Apart from the market centers, the area is predominantly rural with agricultural land which provides great opportunity for planned development and the preservation of agricultural land. However, given the recent haphazard pattern of development, interventions need to be put in place to ensure planned, sequential and sustainable urbanization.

Housing construction

Houses with mud bonded brick/stone pillar constitute most proportion of the total house hold (76%). Likewise, Mud bonded brick/stone wall constitute most proportion of the total house hold (73%). However, in the new market centers the houses are predominantly cement bonded bricks/stones and RCC with pillars.

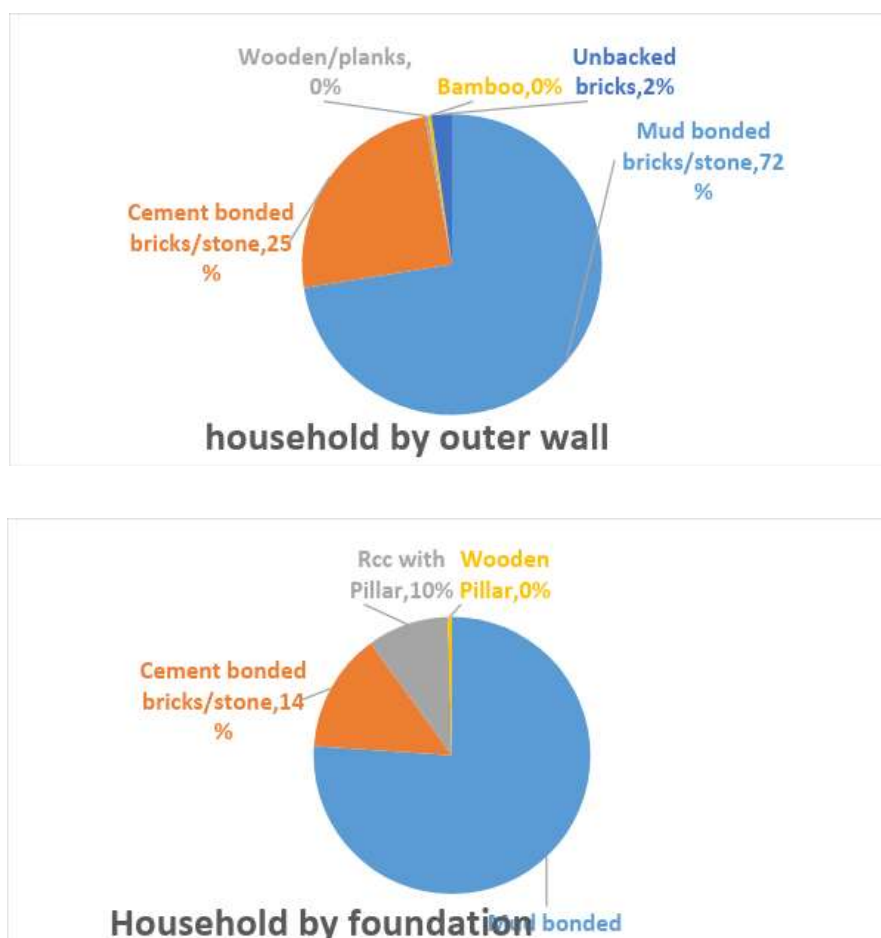


Figure 29: Pie charts showing materials used for constructing household foundation and outer wall

Connectivity

Dhulikhel has been, for centuries, an important trading center on the commercial route linking Nepal to Tibet.

Araniko Highway connects Kathmandu, Nepal's capital city through Dhulikhel with Tibet's border town of Kodari. Likewise BP highway links Kathmandu Valley with the Eastern Terai region from Kathmandu to Bardibas via Dhulikhel

Dhulikhel Municipality has developed as one of the popular hubs for trading and commerce in the whole Kavrepalanchok district. Dhulikhel is also one of the top tourist destinations of Nepal. It is known for the fine panoramic view of snowed mountains and green inviting hills, some of which are still virgin and some turned into

beautifully carved agricultural terraces. Dhulikhel Bazar is the major market center for many adjacent municipalities and even for district as a whole.

Intra-Linkage

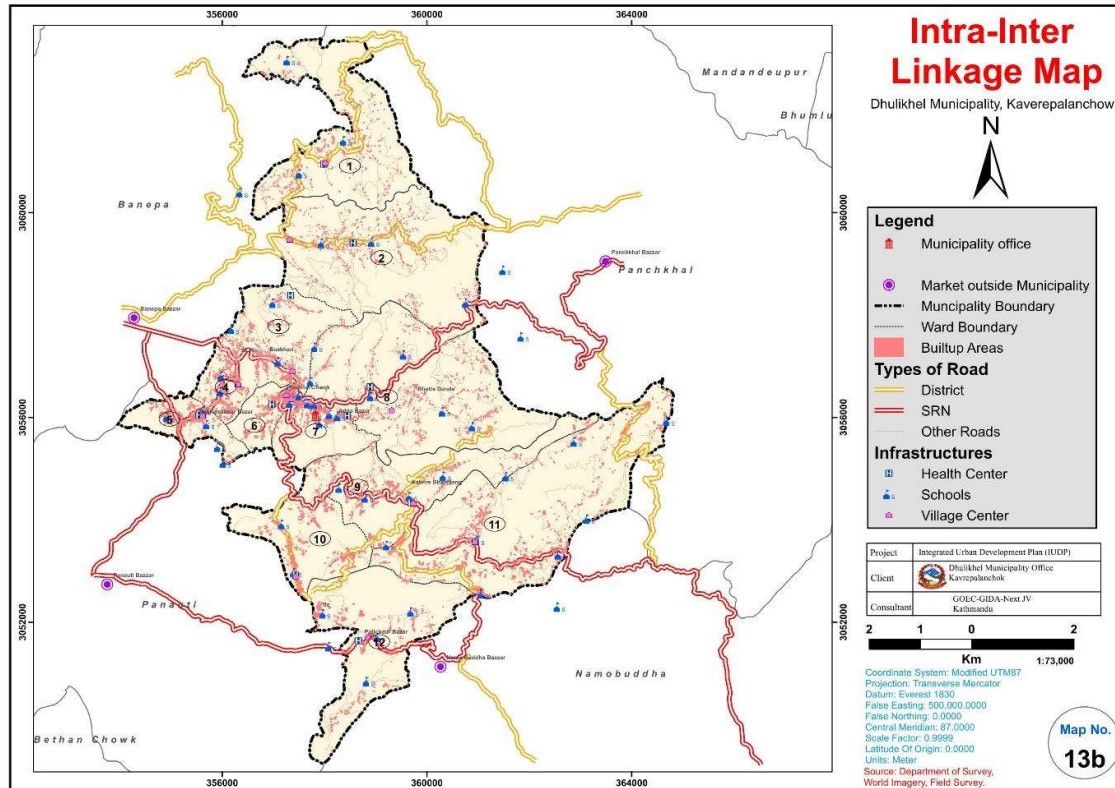


Figure 30: Intra-linkage of Dhulikhel Municipality

Most of the market centers in Dhulikhel Municipality are located along Araniko Highway, the feeder road and at the junction points between the highway and other side roads. This has made it easier for the goods and services to transfer to the market centers from hinterlands. Wards 3, 4, 5, 6 and 7 together have most of the market places. Moreover, the clustering of development in these wards has produced the densest market places including Dhulikhel Bazar, KU Chowk, 28 Kilo, Hospital Chowk, Buspark and so on. This cluster is connected with National Highway, feeder road, and other link roads. Sunkhupatichaur and eete at the southern part is connected to the Panauti Bazar by the feeder road as well as other link roads as shown in the figure below. Bhattedanda Bazar is connected with the market cluster through BP highway.

Meanwhile, agriculture products in wards 1 and 2 are moved through roadways DRO09 and DR012. The dense network of roadways in all the wards has made transporting goods and agro-products easier from agricultural farms within the municipality.

The figure above shows the connectivity of the market centers and main road networks.

Inter-linkage

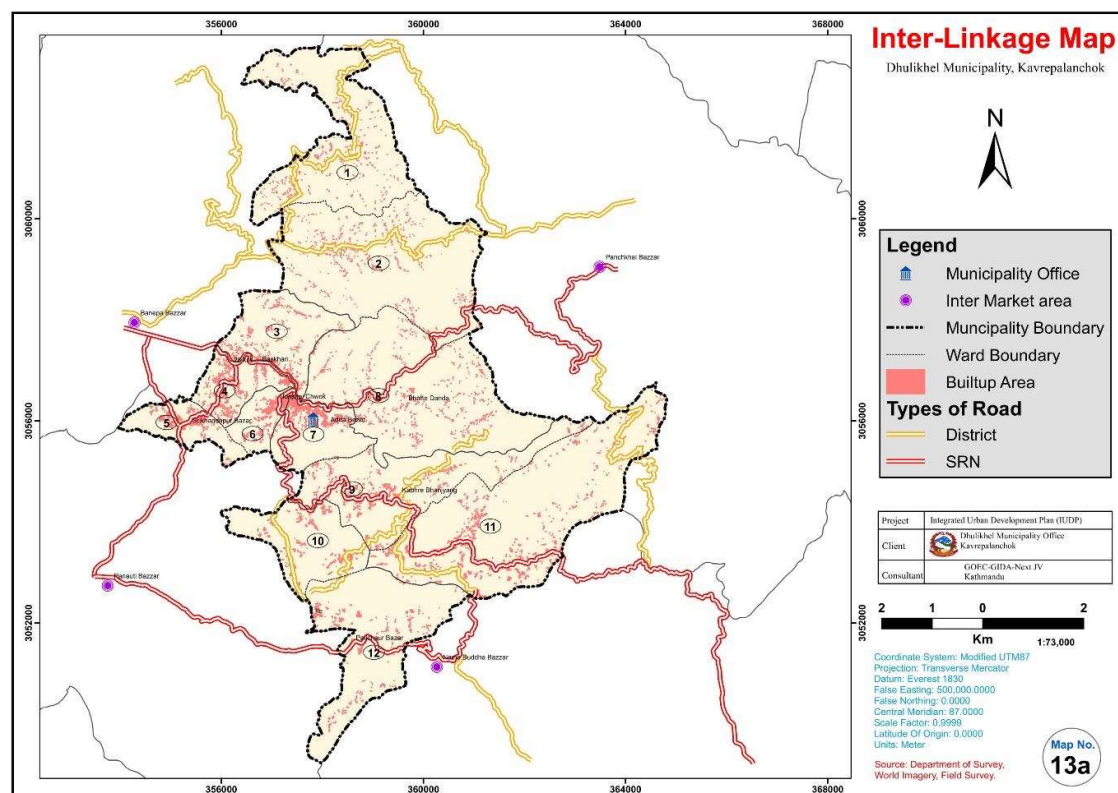


Figure 31: Inter-linkage of Dhulikhel Municipality

Dhulikhel Municipality is connected with other parts of Nepal through the National Highway (Araniko Highway and BP Highway). The National highway connects Dhulikhel Municipality not only to the Kodari boarding town of China and Kathmandu city but also to southern Terai plains of Nepal.

Similarly, district road (24DR009) Banepa - Raviopi- Panchkhal connects Dhulikhel Municipality with market centres in Panchkhal and Banepa Municipality. Ravi Opi (Dundamukh)-Devitar-Anekot (Ghumaunichour)-Nayagaun (24DR012) Road connects ward 1 of Dhulikhel Municipality with market centres in Panchkhal and Banepa Municipality. Ravi Opi (Dundamukh)-Devitar-Anekot (Ghumaunichour)-Nayagaun (24DR012) road connects settlements in wards 9 and 10 with Batase Sankhu-Namobuddha Road (F72). Likewise, other district roads connect different settlements with Araniko and BP Highways as shown in the figure above.

14 Institutional Capacity

14.1 Organizational structure and human resources

The Constitution of Nepal, 2015 recently introduced Local Government Operation Act, 2017 which provides the legal framework for local government and defines responsibilities. The jurisdiction provided by the Constitution and Local Government Operation Act is described below:

As per the Constitution of Nepal, Nepal administration is divided into three levels: Central, Provincial and Local level. Power is vested to each level. After federalization, the Local Government Operation Act, 2017 was formulated to incorporate the new system of Nepalese Government. The Local Government Operation Act, 2017 provides the legal framework for local government to operate. The Act describes the duties, function and responsibilities of local government. Specific powers provided to the local government has already been discussed in the literature.

For urban and social development there are clear responsibilities for local government. At the same time there are some matters where a partnership between all levels (and the private sector) is required.

Critically, given the revised responsibilities of local government, the structure and resources of the organisation must be aligned in order to meet its legal obligations.

The IUDP identifies a number of projects and implementation steps that will facilitate sustainable urbanization for Dhulikhel Municipality, as well as three key signature projects for pre-feasibility assessment that lie within the jurisdiction of local government. However, the IUDP includes both projects that local government can deliver on its own and also projects that require partnership between local government, provincial government, central government and the private sector.

In order for effective and truly successful implementation of a well-planned and sustainable Dhulikhel, it is essential that the responsibilities of Municipality are supported by sufficient human resources. Without the skilled people, implementation will not occur.

The existing Human Resources for Dhulikhel Municipality is illustrated in the Organogram as shown in Chart 7 below. Ten departments work under CEO however sub-departments under the department are unclassified.

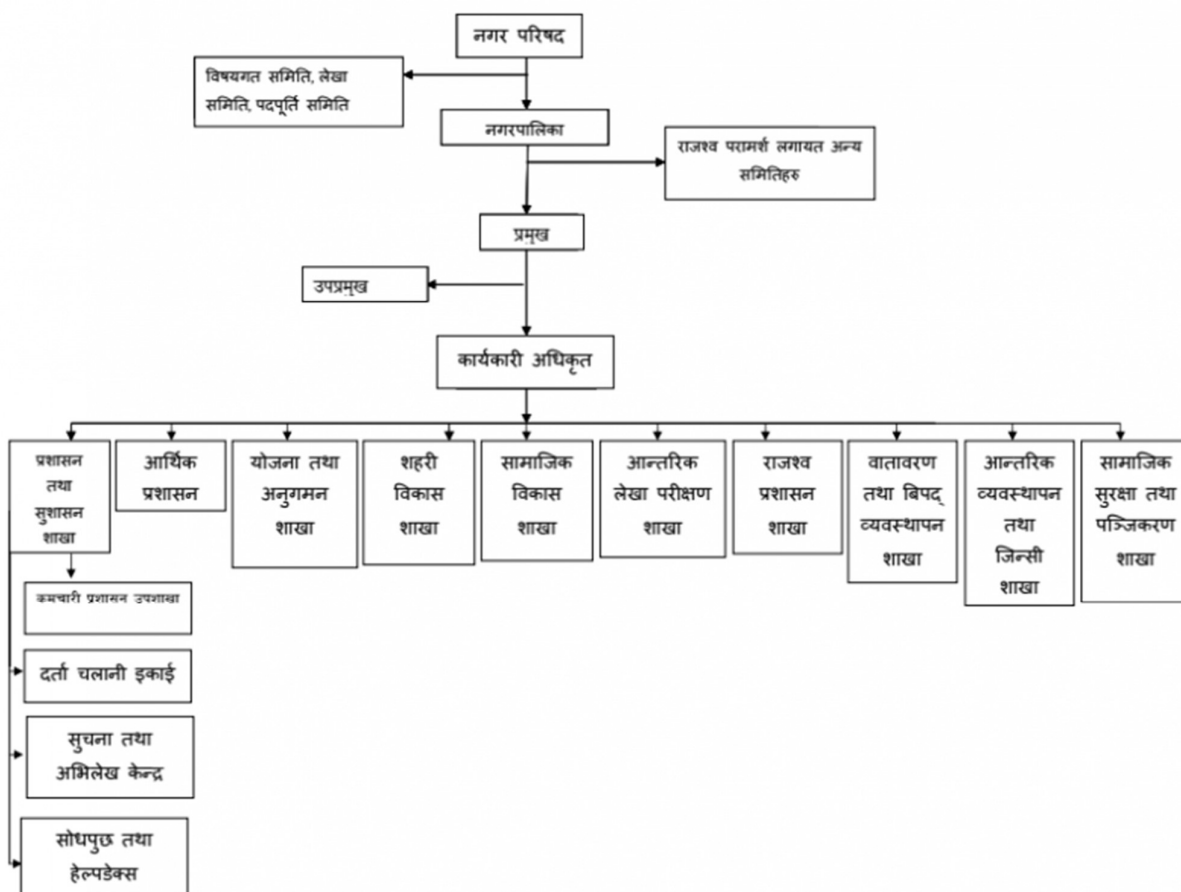


Figure 32: Organogram of Dhulikhel Municipality

Currently, there are 35 employees in municipal office (excluding the ward chairs and ward members). 10 departments work under CEO. Meanwhile, at present, 35 staff (except CEO) are working at department level. As the sub departments are not clearly defined deficiency of working staffs within various departments of Municipalities cannot be determined.

Each sub-department is supposed to carry out a specific set of municipal functions and as such, need to be resourced with staff. As such each department should have at least one officer level staff and each sub-department should have at least one to three supervisors and three assistants.

Resourcing for Urban Development

As per the Organogram provided by the Municipal council, the Department for Urban Infrastructure Development and Department for Forest, Environment, Waste and Disaster Risk Management are yet to recruit any staff to work under the departments. The Organogram has a Department for Urban Infrastructure Development (UID) and Department for Planning, Monitoring and Statistic. Given the introduction of new planning by-laws and further strategic planning work needed to implement effective urban development, a statutory planner (or regulatory urban planner) is required for day to day permits, as well as a strategic urban planner.

Currently one senior engineer, one sub engineer and student engineer work within the Department of Urban Infrastructure Development and are responsible for assessing and issuing building permits. In addition, one Land Surveyor is employed to assess subdivisions.

One urban planner has recently been recruited in the role as a designer with heritage skills.

The Municipality currently employs four civil engineers who plan and oversee development work in relation to water supply, reticulated sewerage, irrigation, roads, bridges, drainage and other civil works. This includes design, data collection surveying, preparation of estimates and guidance to User Committees, who then undertake the works.

Given the urban development challenges facing the Municipality, there is a need to ensure the municipality has the capacity to carry out long term strategic planning (as outlined in the IUDP) in a co-ordinated and consistent manner. In addition, once land zoning and planning by-laws are in place, the municipality will be required to assess, and decide on, planning permit applications for the use and development of land. Within the Planning sub-department under Department for Planning, Monitoring and Statistics on planning sections there should be at least regulatory planner, one architect/urban designer and one strategic urban planner.

Additional gaps include capacity to enforce existing and new codes and regulations, technical expertise in urban design of public works and heritage assessment. In addition, alternative ways of resource mobilization will become inevitable for the financing of urban infrastructure and therefore the municipality will need to have an economist.

The IUDP identifies the need for the development of sectors that are important to Dhulikhel. This includes Tourism Development.

Critically, a dedicated GIS officer is needed to develop GIS capability which is accessed across the entire organization (this includes creating mapping systems that pulls together land ownership, tax status, physical land characteristics, history of permits and approvals, heritage status, zoning status, registrations, present infrastructure and infrastructure planning and assets management. This information, presented in a land-based format, in an invaluable tool to assist better decisions and planning across the organization.

While the municipality has enough physical resources in terms of land and building, effective implementation of the Municipalities responsibilities cannot be implemented with the existing institutional capacity of the municipality.

15. Financial capacity

As per the budget of 2074/75, Dhulikhel municipality is expected to get grant of Rs 30 crore 12 lakh from the central government only. This grant alone is almost double from the whole expected budget of 2073/74. The grant has never been this high previously. For municipality to spend this grant, municipality needs strong institutional framework. The government is also looking forward to adjust the central governmental employees to the provincial and local level. This can also be taken as positive step for increasing the capacity of the local level. The total income and expenditure of municipality of past three years show some specific trends of financial condition of Municipality.

Income Title	072/073 Expected	072/073 Actual	073/074 Expected	Arthik Barsa 073/074 Amended Expected	074/075 Expected
Internal Source	11155122	21777254	13022900	20747500	25613500
External Source	159330672	114719989	126368600	202987226	143644000
Total	178284128	136497243	139391500	223734726	169257500

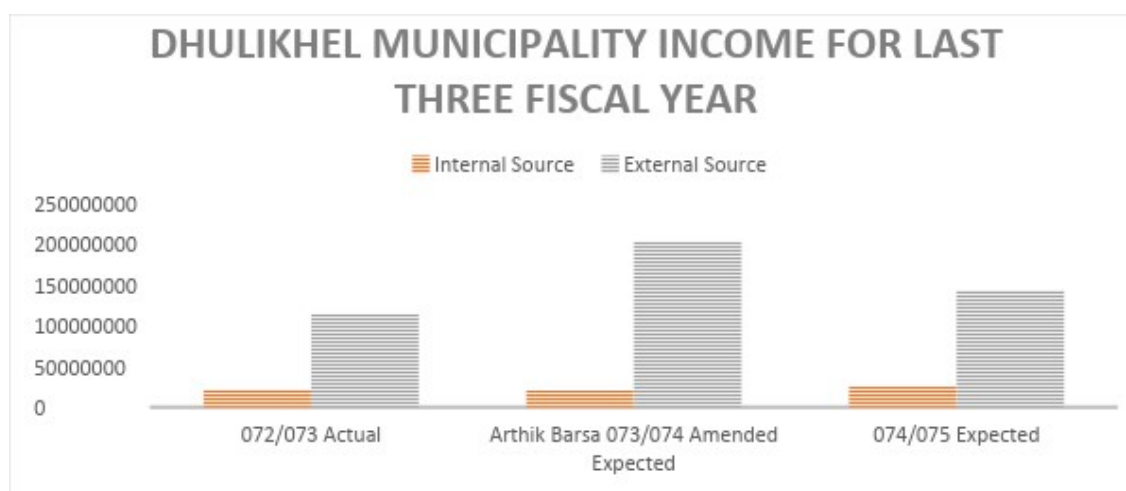


Figure 33: Dhulikhel municipality income for last three fiscal years

The above Table and the graph illustrates the external source of income is the major source of income in the municipality for last three years. Likewise, within the external source of income Government related grant is the major source of income while other sources are negligible. During the year 72/73 internal sources of income was less by 13.77% than the expected internal revenue.

Likewise, for the year 73/74, 86.6% of the internal source of the Revenue is expected to be collected, likewise 72.54% of the external source is expected to be collected. Towards expenditure 85% of current expenditure and only 65% of capital expenditure is expected.

Expenditure Title	072/073 Expected	072/073 Actual	073/074 Expected	073/074 Amended(actual)	074/075 Expected
Current Expenditure	48109370	47077623.47	45696500	53990539	58302000
Capital Expenditure	130174758.4	78665037.85	101116000	92088474	112594000
Total	178284128.4	125742661.32	146812500	146079013	171244500

Table 26: Expenditure for last three fiscal year

In the year 2074/75, the total expected budget is around Nrs 169257500. Of the expected expenditure, maximum proportion of expenditure is in development work (65.14%). That includes expenditure in Urban Area Infrastructure Development. The table shows the expected expenditure in different sectors of development.

S.N.	Development area	Separated amount	Remarks (from the total capital expenditure)
1	Drinking Water	67 lakh 40 thousand	6%
2	Waste management	31 lakh 20 thousand	3%
3	Environment Protection	1 crore	9%
4	Road	3 crore	27%
5	Social development	1 crore 4 lakh	10%
6	Road lights management	31 lakh 20 thousand	3%
7	Equipment purchase	30 lakh	3%
8	Tourism development	56 lakh	5%
9	Building construction	90 lakh 20 thousand	8%
10	Visesh Kosh	30 lakh	3%
11	Others	2 crore 62 lakh 6 thousand 2 hundred	23%

Table 27: Expenditure in different sectors of development

Income is generally healthy. However capital expenditure of 65% reveals that there is a serious problem with delivery of infrastructure on the ground. The challenge for the Council is to prioritise its development and to have the human resource capacity to deliver projects that are committed to that financial year.

16. SWOT Analysis

SWOT Analysis is a useful technique for understanding strengths and weaknesses of town and for identifying opportunities open to town development and the threats that it may face in future.

16.1 Physical

Strengths

- Two major highway B.P. Highways and Araniko Highway passes through Dhulikhel. Araniko Highway connects Kathmandu, Nepal's capital city with Tibet border town of Kodari.
- District roads: DR009, DR012, DR018, DR020, DR025, DR019 and feeder road: F72, F73 are accessible via either the BP highway and Araniko Highway.
- Dhulikhel Bazar, one of the major market centres in the Municipality providing different services to the people of the Municipality.
- Probable water resources: yeselu jhyang, aaitabare kholsa, fhoksebhira khola and khar khola.
- 100% households have electricity facility except ward 9 with 5% household deficit.
- Ward no. 7 has 100% and ward 5 has 95% pipe drainage facility.
- Fair/ satisfactory communication network across the municipality.

Weakness

- No land use plan
- Poor road conditions within the settlements and many require upgrading.
- Waste management system is introduced in many wards of municipality but the management is very poor.
- Most of the wards lack piping drainage.
- Poor management, low voltage and unstable electric poles are the problems in electricity facility in almost all wards.
- Irrigation infrastructure not well developed. Very few irrigation projects are implemented and proposed.
- Most of the wards have unofficial dumping sites.
- Proper management of probable and available water resources.
- Disconnect between approved development and provision of timely infrastructure

Threat

- River cutting and landslide problem
- High land price for public space development
- Sporadic residential development on high quality agricultural land
- Unplanned and unsequenced residential and commercial development.
- Land suitable for urban development in close proximity to main bazaar is also the highest quality agricultural land.

Opportunities

- Land supply available in ward no. 4,5,6 and 7 for residential or commercial development with basic infrastructure without compromising high quality agricultural land

16.2 Socio-economic

Strength

- Newly formed local government
- Dhulikhel Bazaar is a major trading center in municipality and although not located within the Municipality, Banepa Bazaar also provides access to important goods and services.
- Abundant availability of agricultural land and forest areas throughout the municipality.
- Important institutes: Kathmandu University (ward 4), Dhulikhel Medical College (ward 6), Dhulikhel hospital (ward 6), Ayurvedic Ausadhalaya (ward 6), Radha Krishna Biscuit udhyog (ward 5), Dhulikhel drinking water supply project and treatment plant (ward 8), Club Nepal P. Ltd (hatchery factory, border 3 and 8 ward), Himal agro and foods (ward 9), etc.
- Devi khola with sources of building materials (stones)
- Many hotels and resorts in ward 3 and 8.

Weakness

- Informal settlements around highway and bazaar areas.
- All most all wards lack police station except ward 3 and security condition is critical.

Opportunities

- Possible recreation and tourism attractions along the forest areas and religious spots.

Threat

- Unplanned urbanization at the cost of agricultural land, forest land and river flood plains.

16.3 Culture and Environment

Strength

- Possible recreation and tourism attractions along the forest areas and religious spots.
- Many small lakes and river across the Municipality
- Presence of forests and showing lots of possibility for recreational developments.
- Abundant number of religious temples and places are found in the Municipality
- High quality built heritage within Dhulikhel township and temples in the surrounding landscape
- Rich culture
- Significant landscapes
- There are many financial institutions

Weakness

- Insufficient and inappropriate distribution of health institutions (health post and sub health post) in the municipality.
- Lack of protection for heritage places

Threats

- Use of pesticides in Agriculture.

Opportunities

- Possibility of promotion of recreational place along forest areas and river side.

APPENDICES

Appendix 1

Project Brief

The main objective of the Project is to prepare Integrated Development Plan and Building Bye-Laws of Dhulikhel Municipality. However; the other 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-Sectorial Investment Plan (MSIP) etc. on the basis of Sectorial Goal, Objectives, Output and Programs.
- To prepare building bye-laws to regulate development in the Municipalities integrating Land Use and road network plan and long-term vision of the Municipalities.
- To prepare detail engineering design of Prioritized 3 sub projects in each municipality amounting not less than 50 crores.

Scope of Study

The scope of consulting services for preparation of Integrated Development Plan including planning & Building Bye-Laws (as mentioned in expected output) shall include but not necessarily limited to the following:

- The consultant should spell out the Vision of the town. The Vision should articulate the desires of the Town and its citizens, and will provide the guiding principles. Prepare overall Integrated Development plan of entire area including existing and future (5, 10 and 20 years) land use plan in base maps.
- Conduct additional study on local economy and its activities based on the study completed by DUDBC that may also change in demographics and migration trend for 5, 10 and 20 years' period.
- Identify potential area for urban development based on land suitability and other factors. Analyze present and future (5, 10, 20 years) housing needs/market, stock, conditions and recommend strategies for land acquisition, distribution of land and housing in future.
- Conduct studies on present and future (5, 10 and 20 years) demand in infrastructures (such as transportation, communication, electricity, water supply and sewerage system/treatment plant, solid waste management, landfill site etc.) and their supply. Analysis of demand should be in different scenarios with facts and figures. Recommend major and minor roads, highways, arterial roads, traffic circulation, truck yard, bus bays and bus parks. The network plan of infrastructures, both existing and proposed should be shown in base maps
- The consultant should carry out full study of existing social infrastructure such as health/education/sports/communication/security centers and other community facilities by addressing present deficiencies and future (5, 10 and 20 years) demands. The location and area of land required for all these

infrastructures should be identified in base maps.

- Identify and assess critical, sensitive and other natural resources including parks, green belts, recreational area, along with strategies for their protection, preservation and stewardship against the adverse impact of future development and land use changes. Show locations and calculate future requirements of such resources.
- Verify Government, Guthi and Public Land for future development and expansion of the urban areas including land required for government and public purposes. Produce appropriate plan and policy to protect such land from private/public encroachment and others.
- Prepare the Proposed Land Use Plan for 15 years in the existing base maps (plans) based on vision policy of the municipality.
- The Planning and building bye-laws should include the following areas a) minimum plot area b) minimum width of roads c) maximum ground coverage d) maximum floor area ratio (FAR) e) maximum building height f) maximum no. of floors g) right of way of roads h) set back in four sides of the building i) minimum parking area j) Lift k) minimum distance to be left in both sides of the building i) minimum parking area j) lift k) minimum distance to be left in both sides of stream/river.
- The building and planning bye-laws of the municipality should be prepared in accordance with the “Basti Bikas, Sahari Yojana tatha Bhawan Nirman Sambandhi Adharbut Nirman Mapadanda, 2072”
- Prepare pre-feasibility study of at least 3 prioritized projects in each municipality, each projects cost should not be less than 50 Crore.

Output Expected

The completed Integrated Development Plan, program and Building bye-laws/ project report shall include but not necessarily limited to the followings:

Municipality profile:

An up to-date profile should be prepared, comprising of base line information of the existing physical, social, economic, environment, financial and organizational state of the Municipality. Apart from the key statistics, such base line information should also include textual descriptions, maps, charts, diagram, and key problems prevailing in the settlements and the municipality/ VDC, Base line information of at least two time points-having minimum interval of (past) five years should be included.

Analysis:

The section should contain at least of the followings:

- **Trend analysis:** The analysis should reveal among other things growth trend of-population, migration, land use, infrastructure provisions, import-export of goods, agricultural outputs, jobs, and other economic opportunities.
- **SWOT analysis:** This should reveal potentiality of the Municipalities based on its strength and

opportunities. The analysis should also reveal the weaker side of the town which tends to pose threat to the future development of the Municipalities.

- **Spatial analysis:** The analysis should clearly reveal demand and supply situation of vacant land, besides including land develop-ability analysis. The analysis, therefore, should clearly show the location where the future growth can be channelized
- **Financial analysis:** The analysis should reveal income potential and financing sources including expenditure pattern of the Municipality for the fifteen-year plan period.

Municipality vision:

To make the vision operational, necessary development principles to guide the sectorial activities also need to be outlined. Vision and principles should be formulated with broadly participated Municipality/Municipal Body committee meeting.

Sectorial goals, objectives, output, programs:

These should be formulated mainly using Logical Framework Approach (LFA), and should be supplemented by performance indicators and means of verification of such indicator as far as practicable.

When adequate data are not found and formulating indicators becomes not feasible and if the central technical advisory committee and the technical working committee in the field are also satisfied of such deficiency of data, the team leader on the advice of such committees may introduce necessary modifications in the LFA technique. Sectors, which are required to be included, should include at least physical, environmental management, social, economic development, disaster management, Climate Change, financial mobilization, and organization development. Such Sectorial plans and programs may be formulated by forming Sub-Steering Committees. Sectorial plans and programs have to be prepared giving due attention to national concerns such as poverty reduction and social inclusion.

Long-term physical development plan (PDP):

Such physical plan (can be termed as physical master plan) should essentially reveal the future desired urban form of the Municipality, keeping in view of planning horizon of 15 years and also classify the Town land revealing broadly urban areas, urban expansion areas, natural resource areas and also calamity prone area. Such physical plan should be separately supplemented by the relevant data and thematic maps of existing land use, environmentally sensitive areas, and infrastructure services such as road network", water supply and drainage system, sewerage network, telecommunication network and electricity distribution network. Also, hierarchy of the open space should also be justified within municipality's areas. Plan should also be supplemented by social and economic data and thematic maps revealing the social and economic infrastructures of the municipalities. New concepts such as low carbon city, food green city, garden city etc. could also be recommended if required.

Social Development Plan:

Social development plan significantly contributes to bring qualitative improvement in the lives of the common people. Attention should be given focus on social development program when social development program is getting priority in the present context. Plan should be formulated on the basis of the analysis of social condition of municipal area.

Such plan should essentially cover the following aspect:

- Education
- Public health
- Security (physical as well as social)
- Main streaming GESI: Inclusion of women, in-advantage groups, child, elder, physically challenged etc.
- Cultural and Sports
- Parks & open spaces
- Other urban social service centers (information, library, and space for social gathering)
- Others as per Municipality requirements

Cultural & Tourism Development Plan:

Cultural development plan significantly contributes to bring to bring qualitative improvement in the conservation of local cultural heritage, art and architecture. Similarly, more attention should be given to the preservation of tangible and intangible cultures. Cultural planning should be integrated with other planning. Such plan should essentially cover the following aspect:

- Identification and preservation of important Cultural heritage sites within the municipalities area and hinterland.
- Plan for conservation of both material and non-material cultures and linked them to tourism development plan.
- Plan for conservation of both material and non-material cultures and linked them to tourism development plan.
- Culture center (local craft, paint, architecture, museum, culture exchange, exhibition).

Economic Development Plan:

Such plan should essentially include:

An Economic development plan which directly contributes in economic activities of the town and support in the development of the municipalities is also main component of the study. It will be better if the proposed new town have some economy-based identity. It may base on the proposed town potentiality or we can add new features for its identity Sport city or IT City or Tourism City or Commercial city etc. The proposed integrated development plan needs to support to have the municipalities with identity based on its potentiality. This should be the vision for the new town.

Such plan should essentially cover the following aspects:

- Economic development plan: Area of comparative analysis
- Industry development (as per comparative advantage of the municipalities/ hinterland).
- Trade promotion, Tourism development.
- Employment generation, poverty reduction.
- Agricultural development (commercialization of agro-forestry products cold storage, vegetable market).
- Rural urban linkage- strategic location of different market center/ product collection centers.
- Micro/small industry and entrepreneurship/ business promotion.

- Possible EZs based on local economic growth potentials (driving forces).
- Others as per municipalities requirements.

Financial Development plan:

Such plan should essentially include:

The work is to formulate, identification and mobilization of resources required during the period of IDP implementation. The following things/ subjects needs to be considered while formulation the financial plan.

- Financial analysis and assessment of possible financial resources for the implementation of IDP in each municipality.
- Analysis and projection of town income and expenditure, Revenue improvement action plan.
- Allocation of Development budget (for coming five year), cost sharing among sectorial agencies, and expenditure management action plan.
- Promotional strategy of private sector and civil society (PPP).
- Financial and economic analysis of proposed priority sub-projects.
- Others as per municipalities requirements.

Building By-Laws:

The complete planning and building bye-laws should be formulated with the overlay of cadastral map of the municipality's area. This shall be based on the municipality's vision and land-used objectives. This may cover following;

- General definition
- Zoning classification and bye-laws/ regulations
- Implementation mechanism & procedures etc
- Expected behavioral change from municipalities citizens

Multi-sectorial investment plan (MSIP):

Such plan should reveal short and long-term programs/projects, tentative estimate, and probable financing sources prioritized in sequential manner for the planning period of each five years. Such programs/projects should be to cater to both the short-term and long-term needs of the municipalities and the wards, and should be consistent with the long-term development plan, sectorial goals and objectives, and the vision. Furthermore, MSIP should clearly reveal programs/projects for each fiscal year for the first five years. Such MSIP should be pragmatic and be consistent with the financial resource plan. The Municipal level plan/projects (Mega project) and the projects that can be implemented exclusively by municipalities also should be clearly mentioned in MSIP. It is suggested that the plan/projects that have to implement by different line agency in MSIP, included after thoroughly consultation with the concern offices.

Preparation of base map:

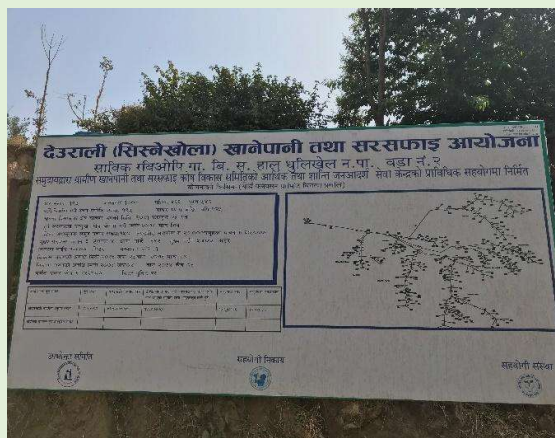
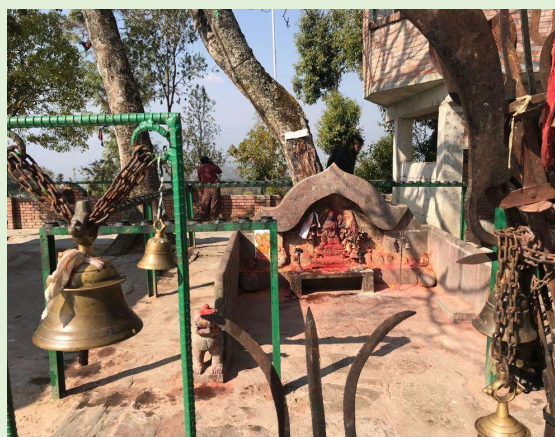
The base map should include the followings

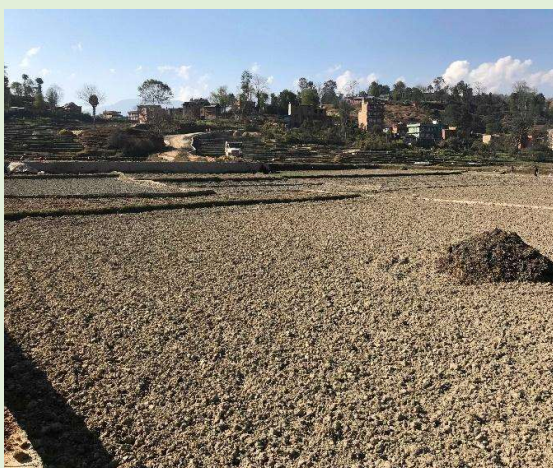
- GIS base map including: existing streets (with coding system), building footprints with building use, occupancy and general demographics based on the latest archive satellite image.

- Population density and growth rate
- Existing land use (housing, commercial industrial, agricultural, natural, mixed use, Guthi land, public space, squatted land)
- Slope and watershed analysis
- Transportation (road with classification- national highways, feeder roads, district roads and urban roads (administrative classification), parking space, bus park, public transportation routes, frequencies and stops, airport and destinations)
- Water supply, sewerage system (sewerage network, discharge points, treatment plant if any)
- Solid waste (coverage of public and private collection system, formal and informal waste management sites, recycling points)
- Electricity (production and transportation infrastructure, grid power coverage, street lighting)
- Public services (health, education, police, rescue services, cemeteries, administrative services)
- Environment (erosion, pollution, forest, water bodies)
- Culture and tourism (temples, museums, cinemas, views, monuments, performance places, festival routes)

Appendix 2

Consultation and Field Visits







Raw Survey Data

● गार्जनीक लीपाय (T) X

क्र.सं.	नाम, स्थान	वसति	स्वाभाव

१. फाहोमैला व्यवस्थापन

- फाहोर संकलन प्रकार X
- डीपड साइड X
- न्यायधिकृत साइड X
- समभाव डीपड साइड
- समभाव न्यायधिकृत साइड

१० बस्ती विकास तथा सहकार्य

- प्रमुख मजदार X *छात्रा नाम*

क्र.सं.	नाम	उपयोक्तार
(१)	<i>नमो नाम</i>	

● घर आधुना कले बनसका अनुसूत X

● मुकुमासी बस्ती (स्थान र बडा सुवात) *छात्रा नाम नमो नाम नमो नाम नमो नाम नमो नाम*

● किरी हलगा पेटिड (अर्थोपाधिक) मरका क्षेत्र *छात्रा नाम नमो नाम नमो नाम नमो नाम*

क्र.सं.	स्थान	क्षेत्रफल	प्रदेशी संस्था	विकास

● व्यवस्थित आवास क्षेत्र (जगा एकरूप, व्यवस्थित आवास, अपार्टमेंट)

क्र.सं.	स्थान	क्षेत्रफल	प्रदेशी संस्था	स्वाभाव

● तीव्र जगा बेघीयवन प्रदर्शको क्षेत्र *मिनी हाउस*

● तीव्र स्वमा बस्ती बुद्धि प्रदर्शको क्षेत्र *मोडल*

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वामित्व	विद्यमान उपयोक्त
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२६. प्रमुख धार्मिक स्थलहरु

Write: worldlink की (समस्या वहाँ)

क्र.सं.	अवधि	स्थान	वर्ग

पाइप ढल प्रणाली भएको घरधुरी ठपलस्कीत ६५	सेप्टिक टैंक मात्र भएको घरधुरी ४०%	सेप्टिक टैंक तथा पाइप ढल प्रणाली भएको घरधुरी ४५%
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• धुमना रिता मूठ केरको (मिथुन) १० • बरि ODF कलको बाधमा, सौभाग्य मन्त्रको धारणी करिमा • नार्वनिक मोपावर ११			
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क्र.सं.	नाम, स्थान	प्रधानता	स्थिति

१. जलसिक्ता व्यवस्थापन

• कलसि मन्त्रन प्रकर १२

• डोमिड माइ/मिथुनिक सिद्ध १३

• सम्भाव्य डोमिड माइ/ सम्भाव्य मिथुनिक माइ १४

(१२ र १३ - सिक्ता)

१०. वस्ती विकास तथा शहरीकरण

• प्रमुख बजारहरु १५

क्र.सं.	नाम	उपयोगकार
१	लागु हाम्रो	सिक्ता सिक्ता सिक्ता सिक्ता
२	लागु हाम्रो	

• घर बाहामा बस्ने जनसंख्या अनुपात १६

• मुकुम्बाडी वस्ती स्थान र बडा धुमनाः १७

• निजी सरमा धरिडः अनौपचारिक भाषण क्षेत्र १८

क्रम	स्थान	प्रधानता	स्थिति

[illegible]

१२. प्रमुख कृषि उत्पादन (विपणित गरिएको)

क्र.सं.	बस्तु	उत्पादन	विपणित गरिएको स्थान
१	गहुँ	राई	राईकोट बजार
२	जामुन	गुलाबी/राईकोट/गुलाबी/राईकोट	गुलाबी/राईकोट
३	तरकारी	गुलाबी/राईकोट/गुलाबी/राईकोट	गुलाबी/राईकोट
४	दुध	गुलाबी/राईकोट/गुलाबी/राईकोट	गुलाबी/राईकोट

१३. प्रमुख आप्रानित वस्तुहरू

क्र.सं.	बस्तु	volume	आप्रानत गरिएको स्थान

१४. प्राणीहरू खेतीको अवस्था

१५. प्रमुख जलवायुिक पशुपालन

१६. कृषि पकेट क्षेत्रहरू

१७. शिक्षण संस्था

१८. स्वास्थ्य (२ स्वास्थ्य - १ निजी)

- विद्यालय (प्राथमिक, निम्न माध्यमिक, माध्यमिक, उच्च मा. वि.)
- कलेज
- विश्वविद्यालय

क्र. सं.	विद्यार्थक स्थान	प्रकार	अवस्था	कुल शिक्षक संख्या	विद्यार्थी संख्या
१.	प्रमाणिकता भाषाप्रज्ञान (अवस्था)	अवस्था	अवस्था		
२.	प्रमाणिकता भाषाप्रज्ञान (कुल)	"	"	७८५	
३.	प्रमाणिकता भाषाप्रज्ञान (अवस्था)	"	"		
४.	प्रमाणिकता भाषाप्रज्ञान (अवस्था)	"	"		
५.	कुल शिक्षक केन्द्र शिक्षण	अवस्था	अवस्था		
६.	कुल शिक्षक केन्द्र शिक्षण	"	"		
७.					
८.					
९.					
१०.					
११.					
१२.					

१८. स्वास्थ संस्था

• अग्रतम स्वास्थ चौकी (स्वास्थ संस्था)

क्र. सं.	नाम/स्थान	सेवा	कार्य क्षेत्र	स्वास्थ्य	तह (वेद संस्था)
१.	नागर शही स्तरावस्था (कुल)	प्रमाणिकता प्रमाण	गा-२	स्वास्थ्य	स्वास्थ्य

[illegible]

- वायु प्रदूषण को घटाना उपयोगी है ☒
- प-सौर प्रकाश को ~~कोइरनेज~~ कोइरनेज ☒
- नदी बहाने का कार्य पानी ☒
- बिजली को ☒
- बसों में 20 ☒
- प्लास्टिक मुक्त ☒
- बिबर व्यवस्था योजना ☒
- बिबर उद्धार का मार्ग ☒

२२. सरकारी कार्यालय

- नया कार्यालय
- आन्तरिक रखरखाव का कार्यालय
- निम्न स्तर के अधिकारी तथा स्टाफ का नियंत्रण

२३. नो वेचना कार्यक्रम सफल

- बैंक
रेगुलरी नॉ. (वर्षांक)
रेगुलरी नॉ. (मासिक कैश चेंज)
- बैंक
④ सामाजिक संस्था निम्न स्तर के अधिकारी (पर्यवेक्षी)
→ शिक्षा, स्वास्थ्य
⑤ सामुदायिक विकास मंच
→ विपन्न वर्ग के लोगों के
- अग्रिम
④ करीब (कागजी): शिक्षा, स्वास्थ्य योजना का

२४. सामाजिक संस्था

२४. प्रमुख धार्मिक स्थलहरु

क्र.सं.	नाम	स्वात	कुन कुन ठाउँबाट	कति जना
①	बज्रजोगी श्री मंती	आनन्दाग्री	कसी ठाउँ छैन	
②	सिद्धगढी श्री मंती	सुन्दरुवारी		

३१. संचार :
सेवा प्रदायक संस्था NCELL, NTL,
वर्तमान अवस्था ठीक छैन
रेडियो/टेलिभिजन इमेल/इन्टरनेट/TV/टेलिफोन/पत्रिका/हल्लाक
→ नमो १०८ FM
→

३२. सुरक्षा अवस्था:
प्रती चोरी: घुस्ती छिट (म्याग्नेट)
द्रविक जग्गुने स्थान: बाइपास, बागा जोगमा

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३३. होटेल व्यवसाय
१. हिमालयन होटल (वर्धमान)
२. गिरान्ता होटल (मिर्जापुर)
३. दुर्गेश्वर होटल (मिर्जापुर)
४. होटल हिमाल (वर्धमान)
५. होटल गिरान्ता (मिर्जापुर)
प्रत्यक्ष गिरान्ता होटलहरू

३४. सहकारी संस्थाहरू

क्र.सं.	नाम/स्थान	कार्य	गैर सदस्य	कैफियत
१	जगतपुरी तस्करी (वर्धमान)	वृत्ति	१६००	
२	वर्धमान तस्करी (वर्धमान)	वृत्ति/मजुरी	६००	
३	शारणी तस्करी (वर्धमान)	वृत्ति/मजुरी	६००	
४	दुर्गेश्वर तस्करी (वर्धमान)	वृत्ति/मजुरी	३२०	
५	नैपात तस्करी (वर्धमान)	वृत्ति/मजुरी	४००	
६				

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३५. आदिवासी जनजाती/उपशिक्षित वर्ग:
→ तमाङ वस्ती (म्याग्नेट, कुतान)
→ नेव वस्ती (वर्धमान, मिर्जापुर)
→ दलित (मिर्जापुर चौराहा) → १२, १३ घर

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फर्म धनेको हस्ताक्षर

नाम : जिनेक

मिति : २०७४/१०/१०

बडा अध्यक्ष को हस्ताक्षर

नाम : जिनेक

मिति : २०७४/१०/१०

[illegible]

[illegible][illegible]

३३. होटल व्यवसाय
(१) प्रदर्शनको रेकर्ड - २०१७/१८

३४. सहकारी संस्थाहरु

क्र.सं.	नाम/स्थान	काम	शेयर राशिया	वैकल्पिक
१	प्रदेश विकासकारी सहकारी संस्था (सुदूरपश्चिम)	सहकारी संस्था	१६६०	
२	प्रदेश विकासकारी सहकारी संस्था (सुदूरपश्चिम)	सहकारी संस्था	२००	
३	प्रदेश विकासकारी सहकारी संस्था (सुदूरपश्चिम)	सहकारी संस्था	६००	

३३. आदिवासी जनजाती/उपक्षित वर्ग:

- (१) जेठो नदी
(२) जेठो नदी (जेठो नदी)

३३. महिला सशक्तिकरण/बालविकास/जुष्ट नागरिक/एकलमहिला/युवा युवती:

भुविस्लेषण/नगरपालिका विकास योजना (LUP) तयारका लागि

वाइड एरिया भू-सामुहिक योजना तयारका लागि तयारका लागि तयारका लागि

वेबसाइट: ३३.३३.३३.३३

३३.३३.३३.३३

१. पदम वनस्पति: ३३.३३.३३.३३, ३३.३३.३३.३३, ३३.३३.३३.३३

२. पदम वनस्पति: ३३.३३.३३.३३, ३३.३३.३३.३३, ३३.३३.३३.३३

३. पदम वनस्पति: ३३.३३.३३.३३, ३३.३३.३३.३३, ३३.३३.३३.३३

४. पदम वनस्पति (सहकारी, सामुदायिक, कृषि/व्यापार)

क्र.सं.	नाम	सहकारी/सामुदायिक	सहकारी/सामुदायिक	सहकारी/सामुदायिक
१	प्रदेश विकासकारी सहकारी संस्था	सहकारी संस्था	सहकारी संस्था	सहकारी संस्था

क्र.सं.	नाम	सहकारी/सामुदायिक	सहकारी/सामुदायिक	सहकारी/सामुदायिक
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३३.३३.३३.३३ (३३.३३.३३.३३)

३३.३३.३३.३३ (३३.३३.३३.३३)

३३.३३.३३.३३ (३३.३३.३३.३३)

३३.३३.३३.३३ (३३.३३.३३.३३)

क्र.सं.	अवस्था	सहकारी/सामुदायिक	सहकारी/सामुदायिक	सहकारी/सामुदायिक
१	प्रदेश विकासकारी सहकारी संस्था	सहकारी संस्था	सहकारी संस्था	सहकारी संस्था

क्र.सं.	अवस्था	सहकारी/सामुदायिक	सहकारी/सामुदायिक	सहकारी/सामुदायिक
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३३.३३.३३.३३ (३३.३३.३३.३३)

३३.३३.३३.३३ (३३.३३.३३.३३)

३३.३३.३३.३३ (३३.३३.३३.३३)

३३.३३.३३.३३ (३३.३३.३३.३३)

३३.३३.३३.३३ (३३.३३.३३.३३)

क्र.सं.	नाम/स्थान	सहकारी/सामुदायिक	सहकारी/सामुदायिक
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- ३३.३३.३३.३३ (३३.३३.३३.३३)
- ३३.३३.३३.३३ (३३.३३.३३.३३)
- ३३.३३.३३.३३ (३३.३३.३३.३३)

- लैंगिक सुख से होषणा अपनी अवस्था X

- अग्रेसर एस. ओ. एस. कक्षा 21

- सब दाहा गृह
- जलेश्वर घाट
- सुतल्ला घाट

[illegible]

पं.सं.	सम्भावित पर्यटन स्थल	
क्र.सं.	नाम, स्थान	
१.	हार्द्वर पन	पर्यटनको प्रकार*
२.	सुराजी बजार	हिमालयको, पानात्त, सुलापरम्परा
३.	Wastewater treatment plant	हालको, हाइड्रोजन, सुरातालीक
४.	नौकोर बस रोड	सुरातालीक
		हिमालयको

33 मुद्राब बालाहः

- हालको आर्थिक संकट गर्नुपर्ने
- वरिष्ठ अधिकारीको कारकम व्यवस्थापन गर्नुपर्ने
- स्वास्थ्य सेवा अर्थ र वनको अभाव
- लागू कानून (कड/कार्यलयको स्तर उल्लंघन र भ्रष्टाचार गर्नुपर्ने

6

गौरीगंगा नदीको विकास

१. फाहोरमैला व्यवस्थापन

- फाहोर सक्कन प्रकार \rightarrow गोबरको
- डुमिङ माइट ✓
- न्याङ्गडाल माइट ✓
- सम्भाव्य डुमिङ माइट हँ
- सम्भाव्य न्याङ्गडाल माइट "

१०. बस्ती विकास तथा गहरीकरण

- प्रमुख बजारहरू \odot दहलीगढ रोड, बरपाङ

क.सं.	नाम	उपभोक्ताहरू

- घर भाडामा बस्ने जनसंख्या अनुपात
- सुकुम्बासी बस्ती (स्थान र वडा खुलाउने) १० परीवा गल्ली
- निजी स्तरमा प्लेटिङ (अनीपचारिक) भएको क्षेत्र

क.सं.	स्थान	क्षेत्रफल	घडेनी संख्या	कौफवत
१)	<u>दहलीगढ रोड</u>	<u>२०० मीटर</u>		<u>भरतभरत</u>
२)	<u>बजार रोड</u>	<u>३०० मीटर</u>		
३)	<u>कोपेडा</u>	<u>३०० मीटर</u>		

- व्यवस्थित आवास क्षेत्र : जग्गा एकिकरण, व्यक्तिगत आवास, अपार्टमेन्ट)

क.सं.	स्थान	क्षेत्रफल	घडेनी संख्या	स्वामित्व

- तीब्र जग्गा बेचबिखन भइरहेको क्षेत्र दहलीगढ रोड, बुकानटोला
- तीब्र रुपमा बस्ती बढि भइरहेको क्षेत्र " "

• गहरी विस्तारका लागि उपयुक्त क्षेत्र इन्जिनियरले

११. उद्योग

- मान्य तथा गम्भीर उद्योग
- हल्ला उद्योग

१२. कृषि

१३. प्रमुख कृषि उत्पादन (निर्वात गरिने)

क्र.सं.	बस्तु	उत्पादन	निर्वात गरिने स्थान
१	गहुँ	कुनै राख्नुहुँदैन	
२	धान	"	
३	मकै	"	

१४. प्रमुख आयातित वस्तुहरू

क्र.सं.	बस्तु	volume	आयात गरिने स्थान

१५. प्राथमिक क्षेत्रको अवस्था

१६. प्रमुख व्यवसायिक पशुपालन

१७. कृषि पकेट क्षेत्रहरू

१८. शिक्षा संस्था

- विद्यालय (प्राथमिक, निम्न माध्यमिक, माध्यमिक, उच्च मा.वि.)
- कलेज
- विश्वविद्यालय

१९. स्वास्थ्य संस्था

- अस्पताल

क्र.सं.	नाम	स्थान	कार्य क्षेत्र	स्वास्थ्य	तह (बेड संख्या)
१	सुनसरी अस्पताल			कु	
२	भारतीय अस्पताल	भारतीय क्षेत्र	भारतीय	एक	एक

- स्वास्थ्य चौकी
- जन स्वास्थ्य प्रवृत्ति सेवा/वात सेवा

२०. खेलकुद

- खुला चौर तथा खेलमैदान

२१. सार्वजनिक सुल्ला क्षेत्रहरू: सामुदायिक भवन/ पुरातत्व

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वास्थ्य	विद्यमान उपयोग
१	सुनसरी अस्पताल		अस्पताल	अस्पताल

२२. वातावरणीय संवेदनशील क्षेत्र

- हान पार्ने अवस्थामा रहेको इलाका
- वायु प्रदूषण गर्ने क्षात्रका उपग्रहहरू
- प्रमुख प्रवाहित क्षेत्र
- नदी कटान तथा बाढी पहिरो घुस्ने क्षेत्र
- विपदाक्षेत्र
- बस्ती भित्र तथा बाहिरबाट ४० मिटरको परीमिटर पर्ने क्षेत्र पम्म
- प्लास्टिक मुल्य क्षेत्र घोषणा भएको अवस्था
- विपदा व्यवस्थापन योजना एवं कोषको स्थिति
- विपदा उद्धारका लागि सुरक्षित स्थलहरू र त्यस्तै पुरातत्व तथ्याङ्क तथ्याङ्क

२३. सरकारी कार्यालयहरू

२४. सो क्षेत्रमा कार्यरत संघसंस्थाहरू

- बैंक
- गैरसरकारी
- अस्पताल

२५. सामाजिक संस्था

- अनुदान
- वृद्धाश्रम
- सुधार गृह

२६. प्रमुख धार्मिक स्थलहरू

२७. जलस्रोत (सुनसरी क्षेत्रमा रहेको जलस्रोत)

क्र.सं.	नाम	स्थान	कुन कुन उपग्रह	कति जना
१	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
२	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
३	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
४	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
५	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी

२८. प्रमुख जलस्रोत

क्र.सं.	नाम	स्थान	वर्ष	वर्ष
१	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
२	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
३	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
४	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
५	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी

२९. सम्भावित पर्यावरणीय स्थलहरू

क्र.सं.	नाम, स्थान	पर्यावरणीय प्रकार
१	सुनसरी प्रवाह	सुनसरी प्रवाह
२	सुनसरी प्रवाह	सुनसरी प्रवाह
३	सुनसरी प्रवाह	सुनसरी प्रवाह

* धार्मिक, सांस्कृतिक, हाइड्रिक, सांस्कृतिक, पारम्परिक, अनुसन्धान

२९. खानी तथा कच्चा पदार्थ

क्र.सं.	खानी	स्थान	स्वास्थ्य	विद्यमान अवस्था

३०. सुनसरी प्रवाह

३१. सुनसरी प्रवाह

३२. सुनसरी प्रवाह

३३. सुनसरी प्रवाह

३४. सुनसरी प्रवाह

३५. सुनसरी प्रवाह

२७. जलस्रोत (सुनसरी क्षेत्रमा रहेको जलस्रोत)

क्र.सं.	नाम	स्थान	कुन कुन उपग्रह	कति जना
१	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
२	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
३	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
४	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
५	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी

२८. प्रमुख जलस्रोत

क्र.सं.	नाम	स्थान	वर्ष	वर्ष
१	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
२	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
३	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
४	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी
५	सुनसरी प्रवाह	सुनसरी	सुनसरी	सुनसरी

२९. सम्भावित पर्यावरणीय स्थलहरू

क्र.सं.	नाम, स्थान	पर्यावरणीय प्रकार
१	सुनसरी प्रवाह	सुनसरी प्रवाह
२	सुनसरी प्रवाह	सुनसरी प्रवाह
३	सुनसरी प्रवाह	सुनसरी प्रवाह

* धार्मिक, सांस्कृतिक, हाइड्रिक, सांस्कृतिक, पारम्परिक, अनुसन्धान

२९. खानी तथा कच्चा पदार्थ

क्र.सं.	खानी	स्थान	स्वास्थ्य	विद्यमान अवस्था

३०. सुनसरी प्रवाह

३१. सुनसरी प्रवाह

३२. सुनसरी प्रवाह

३३. सुनसरी प्रवाह

३४. सुनसरी प्रवाह

३५. सुनसरी प्रवाह

एकिकृत इशारी विकास योजना नवसंकाय मॉडल
वाढावा शासुक्त संसाधन कपासता वसाधक सङ्कलन तथा वसाधककपासता शिरीय वसाधक

मेवा बाणो क्वाण्डा **वसाधक (6) नुसुक्त** ताण्ड 20/08/19/09

1 प्रमूख वसाधक **सुखेता, सुखेता, सुखेता, सुखेता, सुखेता**

2 प्रमूख वसाधक **सुखेता, सुखेता, सुखेता, सुखेता, सुखेता**

3 वसाधक **सुखेता, सुखेता, सुखेता, सुखेता, सुखेता**

4 वसाधक **सुखेता, सुखेता, सुखेता, सुखेता, सुखेता**

क्र.सं.	नाम	साधनानुसार वसाधक	वसाधक	वसाधक
1	सुखेता (सुखेता)	सुखेता	सुखेता	सुखेता
2	सुखेता	सुखेता	सुखेता	सुखेता
3	सुखेता	सुखेता	सुखेता	सुखेता
4	सुखेता	सुखेता	सुखेता	सुखेता

5. वसाधक तथा वसाधक

- प्रमूख वसाधक, वसाधक तथा वसाधक को वसाधक ☐ वसाधक, ☐ वसाधक, ☐ वसाधक
- साधनानुसार वसाधक वसाधक वसाधक को वसाधक

क्र.सं.	वसाधक	वसाधक	वसाधक
1	वसाधक	वसाधक	वसाधक
2	वसाधक	वसाधक	वसाधक
3	वसाधक	वसाधक	वसाधक
4	वसाधक	वसाधक	वसाधक

6. वसाधक वसाधक

- प्रमूख वसाधक वसाधक **S**
- वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक
- वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक
- वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक वसाधक

7. वसाधक

- वसाधक वसाधक वसाधक वसाधक **+** वसाधक
- वसाधक वसाधक वसाधक वसाधक **+** वसाधक

8. वसाधक वसाधक वसाधक वसाधक **(वसाधक वसाधक वसाधक)**

वसाधक वसाधक वसाधक वसाधक	वसाधक वसाधक वसाधक वसाधक	वसाधक वसाधक वसाधक वसाधक
वसाधक वसाधक वसाधक वसाधक	वसाधक वसाधक वसाधक वसाधक	वसाधक वसाधक वसाधक वसाधक
वसाधक वसाधक वसाधक वसाधक	वसाधक वसाधक वसाधक वसाधक	वसाधक वसाधक वसाधक वसाधक

9. वसाधक वसाधक वसाधक वसाधक **(वसाधक वसाधक वसाधक)**

- वसाधक वसाधक वसाधक वसाधक **वसाधक**
- वसाधक वसाधक वसाधक वसाधक **वसाधक**

• सर्वजनिक शौचालय (T) ✓

क्र.सं.	स्थान	क्षमता	वसतीक्षम
①	SP केवळीच भोगाती		महाराष्ट्र सरकार

१. फाहोरीयत व्यवस्थापन

- फाहोरी संकलन प्रकार ~~होम (पारिवारिक)~~
- डोम्पिड साइट
- व्यापकित साइट
- समान्य डोम्पिड साइट ✗
- समान्य व्यापकित साइट ✗

१०. वस्ती विकास तथा शहरीकरण

- प्रमुख प्रकार ☐

क्र.सं.	नाम	उपभोक्ताक्षर
①	सरकारी जगा	
②	अज्ञ जगा	

- घर बांधामा वस्ती जनसंख्या अनुपात
- मुद्रमस्ती वस्ती (स्थान) व वडा खुलावेत $लः:खःनामाई$ $परीक्षा (इंग्लिश) - ७ परीक्षा$
- निजी स्तरमा पॉर्टेड (अनौपचारिक) भएका क्षेत्र

क्र.सं.	स्थान	क्षेत्रफल	घरेली संख्या	नैफिगत
①	कुठरी जैत्र	१२००००		अज्ञात

- व्यवस्थित आवास क्षेत्र (जगा एकिकरण, व्यवस्थित आवास, अपार्टमेंट)

क्र.सं.	स्थान	क्षेत्रफल	घरेली संख्या	व्यवस्थित

- तीव्र जगा वेवचिन्न भरतेको क्षेत्र ~~कुठरी जगा, इमारी जगा, गेहू जगा~~
- तीव्र रुपमा वस्ती वृद्धि भरतेको क्षेत्र

[illegible]

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वाधिन	विद्यमान उपकरण
①	मंडाईरिया जंगल (मंडाईरिया के आसपास)	५०० वर्ग मी	मंडाईरिया	—
②				

२१. सांख्यिकीय सुचना सहेतक सामुदायिक धन पुनर्गठन ☐ PL ☒

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वाधिन	विद्यमान उपकरण
①	मंडाईरिया जंगल (मंडाईरिया के आसपास)	५०० वर्ग मी	मंडाईरिया	—

२२. बातावरणीय संवेदनशील क्षेत्र

- ✗ हात धातु अवस्थामा रहेका ईटाभट्टा ☐ BF
- ✗ वायु प्रदूषण गर्ने धातुका उपकरणहरू
- ✗ मुख्य प्रवाही क्षेत्र ☒ साविकको क्षेत्रमा रहेको पछिमा रहेको
- ✗ नदी अटल तथा बाढी पतिरी प्रसन्न क्षेत्र
- ✗ विमानक्षेत्र क्षेत्र
- ✗ बस्ती निचो तथा बस्तीबाट ५० मिटरको परिधिमा पर्ने पेटोले पम्प
- ✗ प्लास्टिक मुद्रा क्षेत्र घोषणा भएको अवस्थामा
- ✗ विपद व्यवस्थापन योजना एव सोपको लिखित ☒ नक्सा क्षेत्र (मार्गको २१)
- ✗ विपद उद्धारका लागि सुरक्षित स्थलहरू र न्यूनतम पुर्चोवार तथा रीति लिखित

२३. सो क्षेत्रका कार्यालयहरू ☒ जिल्लाको प्रमुख कार्यालय

२४. सो क्षेत्रका कार्यालयहरू

- बैंक
- गैरबैंक
- अर्थसल

२५. सामाजिक संस्था

- अनाथाशाला
- बुढाथुम ☒ नै
- सुधार गृह ☒ कारागार १/१

२६. प्रमुख धार्मिक स्थलहरू

- ① महाप्रसादको कार्यालय
- ② गुरुकुल क्षेत्र
- ③ महाप्रसाद कार्यालय
- ④ जंगली क्षेत्रमा स्थित
- ⑤ SP कार्यालय
- ⑥ जिल्ला प्रहरी कार्यालय
- ⑦ जिल्ला विकास कार्यालय
- ⑧ हाट
- ⑨ जिल्ला युवा कार्यालय
- ⑩ जिल्ला पत्र कार्यालय
- ⑪ जिल्ला समाज तज्जीरी

[illegible][illegible]

● सार्वजनिक शौचालय (T) ✗

क्र.सं.	नाम, स्थान	क्षमता	स्वाभिल

१. फातिमैसा व्यवस्थान

- कोहरी संकलन प्रकाश ✗ *चैन गरिएको तर गरिएको*
- डोइमि साइट ✗
- ल्याण्डफिल साइट ✗
- सम्भाव्य डोइमि साइट ✗
- सम्भाव्य ल्याण्डफिल साइट ✗ *हाउ गरिएको*

१०. बस्ती विकास तथा आर्थिकरण

- प्रमुख बजारहरू ○

क्र.सं.	नाम	उपभोक्ताहरू
१	<i>सुनारकोट</i>	←
२	<i>रामपुर</i>	←
३	<i>कोशी बजार (संस्कृत बजार)</i>	<i>सुनारकोट</i>

- घर बाह्रमा बस्ने जनसंख्या अनुपात ✗
- सुकुम्वासी बस्ती (स्थान र बडा खुलाउने) *कोशी बजार*
- निजी स्तरमा प्लेटिड (अर्थोचारिक) भाएका क्षेत्र

क्र.सं.	स्थान	क्षेत्रफल	घडैरी संख्या	कैफियत

● व्यवस्थित आवास क्षेत्र (जग्गा एकिकरण, व्यवस्थित आवास, अपार्टमेन्ट)

क्र.सं.	स्थान	क्षेत्रफल	घडैरी संख्या	स्वाभिल

- तीब्र जग्गा बेचबिखन भइरहेको क्षेत्र *देवीचान डाडा, बिपी स्मृति डाडा*
- तीब्र रुपमा बस्ती बढि भइरहेको क्षेत्र

[illegible]

[illegible][illegible]

• खुला विद्यालय क्षेत्रको विवरण ✓
• यदि ODF नभएको बाइपास, सौचालय नभएको घरको विवरण
• सार्वजनिक सौचालय (T) - अधिकांश घरहरूमा नै स्वयंसेवक सौचालय

क्र.सं.	नाम, स्थान	स्थिति	स्वामित्व

१. फाउन्डेसन व्यवस्थापन
• फाउन्डेसन प्रकार नगरपालिकाको तर्फबाट
• डिभिडेन्ड/वाण्डेन्ड माइट कुनै छैन (स्वयंसेवक सौचालयको लागि)
• सम्भाव्य डिभिडेन्ड/वाण्डेन्ड माइट अधिकांश घरहरूमा नै

१०. बस्ती विकास तथा सहरीकरण
• प्रमुख बजारहरू ☐

क्र.सं.	नाम	उपभोक्ताहरू
१	नयाँ बाटो	स्थानीय

• घर बाडामा बस्ने जनसंख्या अनुपात ☒

• मुकुम्भासी बस्ती (स्थान र वडा बुझाउने) ☒

• निजी स्तरमा प्लेटिड (अनौपचारिक) भएका क्षेत्र

क्र.सं.	स्थान	क्षेत्रफल	प्रदूषण संख्या	कैफियत

5

• व्यवस्थित आवास क्षेत्र : जग्गा एकीकरण, व्यवस्थित आवास, अपार्टमेन्ट

क्र.सं.	स्थान	क्षेत्रफल	प्रदूषण संख्या	स्वामित्व

• तीव्र जग्गा बेचबिखन गरिएको क्षेत्र अधिकांश
• तीव्र रूपमा बस्ती बढ्ने गरिएको क्षेत्र विष्णु कोशी, बजारगाउँ
• सडकी विस्तारका लागि उपयुक्त क्षेत्र अधिकांश, रस्ते, बजारगाउँ, पुराना

११. उद्योग
• साना तथा मझौला उद्योग ☐
→ अधिकांश
→ अधिकांश

• ठूला उद्योग ☒
① कमलेश्वर प्राची (सिस्तेमेटिक रसायन)
→ अधिकांश
② अधिकांश

6

१२. प्रमुख कृषि उत्पादन (निर्वात गरिएको)

क्र.सं.	बस्तु	उत्पादन	निर्वात गरिएको स्थान
१	आम	अधिकांश घरहरूमा	
२	सोरा	"	
३	मैडा	"	
४	मकैना	"	

१३. प्रमुख आयातित बस्तुहरू

क्र.सं.	बस्तु	volume	आयात गरिएको स्थान

१४. प्राथमिक खेतीको अवस्था अधिकांश

१५. प्रमुख व्यावसायिक पेशावापन
① अधिकांश
② अधिकांश
③ अधिकांश
④ अधिकांश

१६. कृषि पकेट क्षेत्रहरू

१७. शिक्षण संस्था अधिकांश

• विद्यालय (प्राथमिक, निम्न माध्यमिक, माध्यमिक, उच्च मा. वि.)
• कलेज ☒
• विश्वविद्यालय ☒

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१८. स्वास्थ्य संस्था

• अस्पताल स्वास्थ्य चौकी

क्र.सं.	नाम/स्थान	सेवा	कार्य क्षेत्र	स्वामित्व	तह (बेड संख्या)
१	निम्न अस्पताल				
२	स्वास्थ्य चौकी (पुर्ण)				

8

१९. खेतबन्ध

• खुल्ला और तथा खेतबन्ध P

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वामित्व	विद्यमान उपयोग
1				

२०. सार्वजनिक खुल्ला क्षेत्रहरू/ सामुदायिक भवन/ पुस्तकालय PL

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वामित्व	विद्यमान उपयोग
1	हरी कक्षा	१०००	-	-
2	सामुदायिक भवन	१०००	-	-
	- अन्तर्गतमा पुस्तकालय			
	- सार्वजनिक भवन			
	- सार्वजनिक भवन			

२१. बातावरणीय संवेदनशील क्षेत्र

• हाल चालु अवस्थामा रहेका इन्टरमिडियेट BF

• बाग, पार्क, ग्रीन स्पेसको उचित विकास

• भू-क्षेत्र प्रभावित क्षेत्र :

• बढी कटान तथा बाढी पहिरो प्रभावित क्षेत्र

• विद्यमान क्षेत्र

• बढ्ती बिजुली तथा बढ्तीबाट ४० मिटरको परीक्षण गर्ने पेट्रोल पम्प

• प्लास्टिक मुल्य श्रेय घोषणा भएको अवस्था

• विषय व्यवस्थापन योजना एवं कोषको स्थिति

• विषय उद्धारका लागि सुरक्षित स्थलहरू र न्यूनतम पूर्वाधार तयारी स्थिति

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२२. सरकारी कार्यालयहरू

1. सरकारी कार्यालय
2. सरकारी कार्यालय
3. सरकारी कार्यालय

२३. नो क्षेत्रमा कार्यरत सधनस्थानहरू

• बैंक

• बैंक — 1

• अग्रिम

२४. सामाजिक संस्था

1. अन्तर्गतमा पुस्तकालय - रकम
2. सामाजिक सेवाहरू तथा स्वास्थ्य सेवाहरू
3. अन्तर्गतमा पुस्तकालय

• अनायास

• बुद्धिमान

• सुधार गृह

• सब दाहा गृह

1. पेट्रोल पम्प - रकम
2. विद्यमान स्थल (स्वामित्व क्षेत्र)

२५. प्रमुख धार्मिक स्थलहरू

क्र.सं.	नाम	स्थान	कुन कुन	कति
1	गौरीगंगा मन्दिर	गौरीगंगा	गौरीगंगा	गौरीगंगा
2	चक्रवर्ती मन्दिर	चक्रवर्ती	चक्रवर्ती	चक्रवर्ती

12

[illegible][illegible]

१९. सार्वजनिक शौचालय (T) ☒

क्र.सं.	नाम, स्थान	क्षमता	स्वामित्व

९. फाटोरोमैला व्यवस्थापन

- फाटोरो संकलन प्रकार ☒
- डिम्पल साइट ☒
- ल्याण्डफिल साइट ☒
- सम्भाव्य डिम्पल साइट ☒
- सम्भाव्य ल्याण्डफिल साइट ☒

१०. बस्ती विकास तथा शहरीकरण

- प्रमुख बजारहरू ☐ जहाँमा नभएको

क्र.सं.	नाम	उपभोक्ताहरू

• घर भाडामा बस्ने जनसंख्या अनुपात ☒

• सुकुम्बासी बस्ती (स्थान र वडा बुझाउने) पिपलमेट (यतिवत्ती)

• निजी स्तरमा प्लटिङ (अनौपचारिक) भएको क्षेत्र

क्र.सं.	स्थान	क्षेत्रफल	घडेरी संख्या	कैफियत

• व्यवस्थित आवास क्षेत्र (जग्गा एकिकरण, व्यक्तिगत आवास, अपार्टमेन्ट)

क्र.सं.	स्थान	क्षेत्रफल	घडेरी संख्या	स्वामित्व

- तीव्र जग्गा बेचबिखन भइरहेको क्षेत्र
- तीव्र रुपमा बस्ती बृद्धि भइरहेको क्षेत्र

एकिकृत शहरी विकास योजना तर्जुमाका लागि
वाडा सामुहिक सेवाका क्रममा तथ्यांक संकलन तथा नक्सांकनका निमित्त चेकलिस्ट

योता भएको स्थान: वाडा, काठमाडौं, एपारो ताल (१०) तारीख: ०६/०८/०८

१. प्रमुख बस्तीहरू ☒ एपारो ताल ☒

२. प्रमुख नदीहरू ☒ स्याङ्गोखोला, स्याङ्गोखोला

३. ☐

४. वनजंगल: ☒ सरकारी, सामुदायिक, कृषियोग्य।

क्र.सं.	नाम	साधनित समूह	वन फैलावर	वन्य जन्तु
१)	१. एपारो ताल	३.५५ हाउस		
२)	२. स्याङ्गोखोला			

५. सडक तथा यातायात

- प्रमुख सडक, चौडाई तथा सतहको किसिम: ☐ काँचो पत्र, ☐ घामेल, ☐ कच्ची
- सार्वजनिक यातायात चल्ने सडक तथा साउनको किसिम

क्र.सं.	रुट	साधन	ट्रिप संख्या

• प्रमुख बस विजोनीहरू ☒ S

६. खानेपानी ☒ मध्यम (स्थानीय सुदुधुवा ताल)

- विविध खानेपानी स्रोत अनुसार घरघुरी अनुपात
- सौराई गरिएका घरघुरी प्रतिशत ☒ १००
- खानेपानीका सम्भावित स्रोतहरू: ☒ जिल्लास्तरीय, ☒ गाविसस्तरीय (पिपलमेट, नदी)

७. विद्युत ☒ (अपेक्षाकृत)

- विद्युत सेवा पुगेका घरघुरी प्रतिशत ☒ १००
- विद्युत प्रसारण लाइन तथा ट्रांसफार्मर: ☒ स्टेशन, सब स्टेशन (खोपारी सबस्टेशन)

८. इल विकास तथा सरसफाई ☒ १ मात्र (२००८)

पाइप इन प्रणाली भएको घरघुरी	सेप्टिक टैंक मात्र भएको घरघुरी	सेप्टिक टैंक तथा पाइप इन प्रणाली भएको घरघुरी
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> २ वटा, प्रयोग	

- खुल्ला दिशा मुक्त क्षेत्रको स्थिति ☒
- यदि ODF नभएको बन्दामा, शौचालय नभएको घरघुरी प्रतिशत ☒

• शहरी विस्तारका लागि उपयुक्त क्षेत्र: ☒ एपारो ताल

११. उद्योग

- साना तथा मझौला उद्योग ☒ (सिंहगढा, धापा रोड, एपारो ताल)
- ठूला उद्योग ☒

१२. कृषि ☒ आगु, सुदुधुवा, धान

१३. प्रमुख कृषि उत्पादन: ☒ निर्यात गरिने

क्र.सं.	बस्तु	उत्पादन	निर्यात गरिने स्थान
	धान	सुदुधुवा, ताल, काठमाडौं	काठमाडौं
	सुदुधुवा	एपारो ताल	
	धान		

१४. प्रमुख आयातित बस्तुहरू

क्र.सं.	बस्तु	volume	आयात गरिने स्थान

१५. प्राथमिक खेतीको अवस्था ☒ १००%

१६. प्रमुख व्यवसायिक पशुपालन ☒

१७. कृषि पकेट क्षेत्रहरू ☒ आगु, सुदुधुवा, धान (माझिका वाडामा)

१८. शिक्षण संस्था

- विद्यालय (प्राथमिक, निम्न माध्यमिक, माध्यमिक, उच्च मा.वि.): ☒ काठमाडौं मा.वि. सराव वन्ने
- कलेज ☒
- विरविविधालय ☒ काठमाडौं, देन

१९. स्वास्थ्य संस्था

- अस्पताल ☒

क्र.सं.	नाम	स्थान	कार्य क्षेत्र	स्वामित्व	तह (बेड संख्या)

• स्वास्थ्य चौकी ☒

• जन स्वास्थ्य (प्रसूति सेवा, बाल सेवा आदि): ☒ प्राथमिक उपचार

२०. खेलकूद

- खुल्ला चौर तथा खेलमैदान ☒ P

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वामित्व	विद्यमान उपयोग
१	काठमाडौं नगरपालिका			
२	काठमाडौं नगरपालिका			
३	काठमाडौं नगरपालिका	२०-२० रोपनी	सरकारी	—
४				

२१. सार्वजनिक सुस्ता क्षेत्रहरू, सामुदायिक भवन, पुराकालीन भवन

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वामित्व	विद्यमान उपयोग
१	काठमाडौं नगरपालिका			

२२. वातावरणीय संवेदनशील क्षेत्र

- हाल वातावरणीय संवेदनशील क्षेत्रको इन्टरनेट ☒ BF
- बायु प्रदूषण गर्ने क्षमताको उपयोग ☒ X
- भूजल प्रभावित क्षेत्र ☒ X
- नदी कटाव तथा बाढी पानीको क्षति ☒ X
- विद्युत क्षेत्र ☒ X
- बस्ती भित्र तथा बस्तीबाट ५० मिटरको परिसरमा पर्ने पेट्रोल पम्प ☒ X
- प्लाष्टिक मुल क्षेत्र घोषणा भएको अवस्था ☒ X
- विपद व्यवस्थापन योजना एवं कोषको स्थिति ☒ X
- विपद उद्धारका लागि सुरक्षित स्थलहरू र व्युत्पन्न पूर्वाधार तयारी स्थिति ☒ X

२३. सरकारी कार्यालयहरू ☒ सरकारी कार्यालय, स्वास्थ्य चौकी

२४. सो क्षेत्रमा कार्यरत संघसंस्थाहरू

- बैंक ☒ X
- गैरसरकारी ☒ X
- अग्रेसर ☒ X
- सामाजिक संस्था ☒ X
- अनायास ☒ X
- वृद्धाश्रम ☒ X
- सुधार गृह ☒ X

२५. प्रमुख धार्मिक स्थलहरू

क्र.सं.	नाम	स्थान	मुख्य धर्म	अति बसा
१	काठमाडौं नगरपालिका			
२	काठमाडौं नगरपालिका			
३	काठमाडौं नगरपालिका			

क्र.सं.	नाम	स्थान	धर्म
१	काठमाडौं नगरपालिका		
२	काठमाडौं नगरपालिका		
३	काठमाडौं नगरपालिका		

क्र.सं.	नाम, स्थान	पदवीको प्रकार
१	काठमाडौं नगरपालिका	काठमाडौं नगरपालिका
२	काठमाडौं नगरपालिका	काठमाडौं नगरपालिका
३	काठमाडौं नगरपालिका	काठमाडौं नगरपालिका

* धार्मिक, साहित्यिक, साहित्यिक, पारम्परिक, अनुसन्धान

२६. छाती तथा कच्छा पदार्थ

क्र.सं.	नाम	स्थान	स्वामित्व	विद्यमान अवस्था

सुरक्षा अवस्था: सशस्त्र, सशस्त्र

सुरक्षा अवस्था: woodlink, andline

2G, 3G

CDMA, Nameste, Ncell, Smalesim

दुर्गम: अनिवार्य दुर्गम

RED CROSS दुर्गम

स्थानीय व्यवस्था

शहरमा रहेको सडक, सडक, सडक

एकिकृत शहरी विकास योजना तयारीका लागि
वातावरणीय क्षेत्रको विकास तथा नक्साकान्ता निर्माण

मेला भएको स्थान: काठमाडौं नगरपालिका

मिति: २०७४/०३/०४

क्र.सं.	नाम	स्थान	क्षेत्रफल	स्वामित्व	विद्यमान उपयोग
१	काठमाडौं नगरपालिका				
२	काठमाडौं नगरपालिका				
३	काठमाडौं नगरपालिका				

- प्रमुख सडक, चौडाइ तथा सतहको किसिम ☐ कालो पत्र, ☐ ग्राभेल, ☐ कच्ची
- सार्वजनिक यातायात चल्ने स्थल तथा साधनको किसिम

क्र.सं.	सडक	साधन	दिप संख्या

• प्रमुख वन विसीनीहरू ☒ S

६. बायोपानी

- विद्यमान बायोपानीको स्रोत अनुसार घरघुरी अनुपात ☒ १०/१ नदी नदी नदी नदी नदी
- बायोपानीको घरघुरी प्रतिशत ☒ X
- बायोपानीको सम्भावित स्रोतहरू ☒ X

७. विद्युत

- विद्युत सेवा पुगेको घरघुरी प्रतिशत ☒ X
- विद्युत प्रसारण लाइन तथा ट्रांसफार्मर ☒ X
- इल निकास तथा सरसफाइ ☒ X

पाइप इन प्रणाली भएको घरघुरी	सेन्टिक टैंक मात्र भएको घरघुरी	सेन्टिक टैंक तथा पाइप इन प्रणाली भएको घरघुरी

- बुन्दा दिशा मुक्त क्षेत्रको स्थिति ☒ X
- यदि ODF नभएको बायोपानी, शौचालय नभएको घरघुरी प्रतिशत

• सांस्कृतिक शीघ्रता ☒ X

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वामित्व

९. फाहोरमैला व्यवस्थापन

- फाहोर संरक्षण प्रकार ☒ X
- बायोपानी साइट ☒ X
- व्यावहारिक साइट ☒ X
- सम्भाव्य बायोपानी साइट ☒ X
- सम्भाव्य व्यावहारिक साइट ☒ X

१०. बस्ती विकास तथा शहरीकरण

• प्रमुख बजारहरू ☒ X

क्र.सं.	नाम	उपभोक्ताहरू
१	काठमाडौं नगरपालिका	
२	काठमाडौं नगरपालिका	

- घर भाडामा बस्ने जनसंख्या अनुपात ☒ X
- मुकुम्बाती बस्ती (स्थान र बडा खुलाउने) ☒ X
- निजी स्तरमा प्लटिड (अनौपचारिक) भएका क्षेत्र

क्र.सं.	स्थान	क्षेत्रफल	घरेरी संख्या	क्षेत्रफल

• व्यवस्थित आवास क्षेत्र (जग्गा एकिकरण, व्यक्तिगत आवास, अपार्टमेन्ट)

क्र.सं.	स्थान	क्षेत्रफल	घरेरी संख्या	स्वामित्व

- तीव्र जग्गा बेचबिखन भइरहेको क्षेत्र ☒ X
- तीव्र रूपमा बस्ती बढिरहेको क्षेत्र ☒ X

[illegible][illegible]

[illegible][illegible]

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वास्थ्य	विद्यमान उपयोग
१९.	कालवर्गीय संवेदनशील क्षेत्र			
X	हाल भानु अचम्मामा रहेको ईटामुडा	BF		
X	भानु पदुपण गर्ने बाताका उपयोगहरू			
	मुहाना प्रवेशीय क्षेत्र <u>अक्रोसरेन, (होली पहरा)</u>			
X	नदी कटान तथा बाढी पहिरो ग्रस्त क्षेत्र			
X	विमसार क्षेत्र			
X	कस्ती भित्र तथा २० मिटर क्षेत्रभित्र पर्ने एरोन पत्र			
X	धनाक्षीक मुल क्षेत्र:			

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वास्थ्य	विद्यमान उपयोग	
२०.	सामाजिक बुद्धि क्षेत्र: सामुदायिक भवन, पुस्तकालय	PL			
	क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वास्थ्य	विद्यमान उपयोग
	१	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	२	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	३	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	४	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	५	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	६	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	७	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	८	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	९	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन
	१०	अक्रोसरेन नदी	१६००	अक्रोसरेन	अक्रोसरेन

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वास्थ्य	विद्यमान उपयोग
२४.	सामाजिक सभा	५००	५००	५००
X	अनायास			
	वृद्धाश्रम करीम भुम्कामा गर्ने गेहेडा			
X	सुधार गृह			
	सब दाहा गृह:			
	१) गेहेडा दाहा			
	२) गेहेडा दाहा			

क्र.सं.	नाम, स्थान	क्षेत्रफल	स्वास्थ्य	विद्यमान उपयोग
२५.	सामाजिक सभा	५००	५००	५००
	अनायास			
	वृद्धाश्रम करीम भुम्कामा गर्ने गेहेडा			
X	सुधार गृह			
	सब दाहा गृह:			
	१) गेहेडा दाहा			
	२) गेहेडा दाहा			

[illegible]

३३. सङ्गाद्य सत्त्वाहः

- मशीन मीलों
- बुद्ध भगवान केन्द्र
- रिज वॉलिंग आवाज
- हाथुली के अलावा आवाज
- महिला बालबालिका /
- पहाड़ के आवाज, हनुमान

Appendix 4

Feedback on Consultation Draft – IUDP World Café Workshop – 25 January 2019

Social Development (सामाजिक विकास)

• खुला स्थान (Open space)	जिम्मेवार पक्ष(Responsible side)
<p>1. सार्वजनिक सम्पतिलाई समुदायको प्रयोग हुने गरि उपयोग (बाल उद्यान, मनोरञ्जन पार्क, सालिक निर्माण) Use of public wealth in community welfare (Children park, Amusement park, landmark Pillar construction)</p>	<p>नगरपालिकाले सार्वजनिक भूमि पहिचानका लागि नगर प्रहरीको प्रयोग गर्ने । (Municipality can mobilize Municipal police for the recognition of the public land.</p>
• स्वास्थ्य Health	
<p>2. गुणस्तरीय सेवाको सुनिश्चितता । Ensure the quality services 3. प्रत्येक वडामा स्वास्थ्य केन्द्र स्थापना । Establish health center in each ward. 4. स्वास्थ्य विमा कार्यक्रम । Health insurance program 5. आयुर्वेद सेवा विस्तार र कार्यक्रम विस्तार र तल्लिम । Ayurvedic (Traditional medical) services expansion and training program conduction in the sector.</p>	<p>• न.पा. स्वास्थ्य शाखा Municipality Health department • स्वास्थ्य मन्त्रालय/ नपा Health ministry /Municipality • स्वास्थ्य विभाग/ नपा Health Department/Municipality • आयुर्वेद विभाग Ayurvedic Department</p>
• शिक्षा Education	
<p>1. प्रत्येक विद्यार्थीहरूले गुणस्तरीय शिक्षा प्राप्त गर्नेछन् । Each student should acquire quality education 2. गुणस्तरीय शिक्षा सँगै प्राप्त सुविधाहरूमा धु.न.पा. का विद्यार्थीहरूले उच्च छवि तथा अवसर प्राप्त गर्दछन् । High reputation and appropriate opportunity to the student of the municipality with the quality education. 3. निरन्तर शिक्षा,सिप विकास सहितको पहुँचसँग सम्बन्धितमा -आवश्यकता अनुसार विद्यालय र भवन निर्माण गुणस्तरसँग सम्बन्धित - पाठ्यक्रमको समय सापेक्ष सुधार - स्थानीय पाठ्यक्रम निर्माण - पाठ्यक्रमले तोकेको सि.उ. हाँसिलमा सुनिश्चितता Continuous education, access to skill development training, preparation of local level syllabus, construction of school as per demand, change in syllabus as per demand, ensure learning achievement as per syllabus.</p>	<p>• शिक्षा शाखा,माध्यमिक तहका विद्यार्थी परिचालन । Education department, Secondary level student mobilisation • जिल्ला आयोजना,कार्यान्वयन इकाई, शिक्षा शाखा,वडा समिति,योजना प्रमाणित पूर्वाधार शाखा। district level project implementation unit of education department, ward community, planning proved infrastructure department. • धु.न.पा. वडा समिति Dhulikhel municipality ward community</p>
<p>4. बालमैत्री स्थानीय शासन नगर घोषणा Announcement of children friendly governance</p>	<p>• धु.न.पा./ वडा समिति Dhulikhel municipality, ward community</p>
<p>5. अनुगमन र निरन्तर मूल्याङ्कन Monitoring and continuous evaluation</p>	<p>• वडा/ न.पा./ शिक्षा Ward, municipality, education</p>
<p>6. विद्यार्थी मूल्याङ्कन र अभिवृद्धि विकास । Children evaluation and development</p>	<p>• वडा/ न.पा./ शिक्षा Ward, municipality, education</p>

7. लक्षित/ अन्य वर्गका लागि आय-आर्जन/ सशक्तिकरण कार्यक्रम economic gain to the targeted group/ empowerment program	<ul style="list-style-type: none"> वडा/ न.पा./ शिक्षा Ward, municipality, education
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पर्यटन संस्कृती तथा सम्पदा संरक्षण **tourism ,culture and heritage conservation**

- धुलिखेल नगरपालिकाद्वारा पनौती न पाले जस्तै फेन्द्र सहयोगमा संरक्षण गरे जस्तै जर्मन इत्यादी राष्ट्रको स्थायी आर्थिक सहयोग. प्राचीन ढर तथा स्मारकहरूका संरक्षण संबर्धन निम्ति ल्याउन अत्यन्त जरुरी छ । निशुल्क नक्सापास तथा मौलिक शैली मै घर importance building in Dhulikhel, Provision of different facilities for the construction of traditional houses . free building construction permit, special help for the supply of building construction material, free taxation for 10 years.
- वडा नं ६ श्रीखण्डपुर बतासे इट्टे शंखु इत्यादी प्राचीन बस्तीहरूका स्मारकहरु पहिचान गरी संरक्षण तथा संबर्धन गर्ने । सो निम्ती ७/ the traditional settlement , heritage through the detail research along with the department of archeology at ward no 6 and 7 khadpu, batase and sankhu
- पर्यटनका प्रकारका पकेट क्षेत्र घोषणा गरी सो किसीमकै पर्यटनलाई जोड दिने जस्तै साँस्कृती एतिहासिक पर्यटनको पकेट क्षेत्रको रुपमा वडा नं ५ ७ ६मा स्वास्थ्य पर्यटन मा शैक्षिक पर्यटन ४ कृषि तथा ग्रामीण पर्यटन तथा साहसिक पर्यटन ११.८.३.२.१ का भू भाग ७.६. मा खेल पर्यटन ९ मा हाइकिङ् साइक्लिङ् इत्यादी निर्माण गर्ने । १२.१०. Recognition of pocket of land as tourism areas . 5,6,7 as historical cultural tourism pocket area, 1,2,3,8,11 as agricultural rural tourism area, 4 as educational tourism area, 6 as health tourism area, 7 as play tourism area, 9,10,11 as hiking cycling tourism area
- ट्रेकिङ् कर बनाउनु पर्ने । taxation for trekking
- संस्कृति झल्कने कार्यक्रमको व्यवस्था program that reflects culture should be organized
- होमस्टेको नया तथा फरक अबधारणाको विकास गर्ने development of different perspective regarding the homestay
- अर्गानिक तरकारीको व्यवस्थापन गर्ने management of organic vegetables
- मठ मन्दिरको पूर्ण निर्माण reconstruction of temples

विपद ब्यवस्थापन **Disaster risk management**

१.बृक्षारोपण. Forestation

२ .जनचेतना मूलक कार्यक्रम सञ्चालन गर्नु पर्ने । Public awareness program should be conducted

३ बस्ती ब्यवस्थापन तथा सडक निर्माण कार्यमा जमिन खण्डीकरणमा ध्यान दिनु पर्ने । . Consideration of land plotting while constructing road and settlement development

४ .प्रत्येक बनमा अग्नी रेखाङ्कन गरी आगोलागी बाट बच्न सकिन्छ । allocation of fire line so that no one can use fire producing material inside the boundary

५ अवास निर्माण गर्दा भुकम्प पहिरे लगायतका जोखिमबाट सुरक्षा अपनाउनु पर्ने । . Earthquake resilient building should be constructed

६ एकिकृत बस्ती ब्यवस्थापन । . Integrated settlement management

७ विपद ब्यवस्थापनका लागि साइरनको ब्यवस्थापन गर्नु पर्ने । . Alarm system should be developed to mitigate vulnerability of risk during disaster.

८ आपतकालिन एम्बुलेन्सका प्रयोग । Provision of Emergency ambulance

९ बिपदको बेलामा सार्वजनिक जमिनको प्रयोग गरेर खुल्ला चौर बसोबासको ब्यवस्था मिलाउने । Provision of open space for escape during disaster

१० विपदको बेलामा तत्काल राहत ब्यवस्थापन गर्न धु नपाले अर्थक ब्यवस्थापन गर्नु पर्ने । Emergency supplies storage for time of disaster

११ बस्ती बुस्तीमा विपदका सवारी साधनहरु ब्यवस्थापन हुनु पर्ने । Emergency vehicle management in each settlement for ,during time of disaster .

फोहोर मैला ब्यवस्थापन Management of Sewerage disposal

१. जनचेतना कार्यक्रम १ देखि १२ का वडा घर दैलो कार्यक्रम विद्यालय सुंथा । Awareness program at household level and at school from ward no 1 to 12
२. ब्यवस्थित डम्पिङ्ग साइड बनाउने । Well managed dumping site should be constructed
३. राजमार्ग दाँया बाँया कर्मचारी ब्यवस्था । Management of Personnel at both sides of the highway in order to manage the roads
४. टोल टोलमा डस्टबिनको ब्यवस्था । Management of Dustbin in each tole of municipality
५. ठेकेदारले गरेका कार्यहरुको अनुगमन । Supervision of the work of contractor at dumping sites
६. धुलिखेल नगरपालिकालाई जथाभावी फोहोर फ्याक्न कार्यमा निषेध गर्नुपर्ने । Throwing of garbage anywhere else should be avoided
७. धुलिखेल भित्रने सवारी साधनलाई जानकारी गराउने । Information flow to the vehicles that goes through Dhulikhel municipality regarding the rule of not throwing garbage elsewhere
८. कुहिने र नकुहिने फोहोर छुट्टा छुट्टै ब्यवस्था गर्नु पर्ने । management of degradable and non-degradable garbage
९. जरिवाना एंव पुरस्कारको ब्यवस्था हुनु पर्ने । provision of reward and compensation in case of garbage disposal
१०. घरबाट निस्कने ढलको उचित ब्यवस्थापनको लागि नगरपालिकाले विशेष कार्ययोजना अघि सार्नु पर्ने । well management of the drainage from household
११. फोहोरके ब्यवस्थापन गरी त्यसलाई पुन प्रयोग मा ल्याउन सक्ने काम गर्न पर्ने । reuse of the garbage produced
१२. सडकमा छोडीएका बस्तुहरुको लागि उचित ब्यवस्थापनको कार्य अघि सार्नु पर्ने । animals left at road should be managed

कृषि Agriculture

१. खाद्यन्न आत्मनिर्भर । food independency
२. तरकारी फलफूलमा आत्मनिर्भर । independency in vegetables and fruits
३. खाद्यन्न भण्डारण । storage of food
४. तरकारी तथा फलफूल भण्डानरण । storage of vegetables and fruits
५. कृषि सडक । agriculture road
६. बाँझ जग्गालाई उत्पादनमा प्रयोग । barren land should be used for production
७. सिंचाइ ब्यवस्थापन तगा निर्माण । irrigation management and construction
८. कृषि कार्यमा यान्त्रीकरणको प्रयोग । use of modern equipment in agriculture
९. उर्बभूमिमा आवासियकरणमा बन्देज । restriction of settlement in agriculture potential lands
१०. उत्पादित पसलहरुको बजारीकरण । marketing provision for the home production
११. अर्गानिक खेती प्रणालीमा जोड । encouragement for organic method of agriculture

१२. कृषि क्षेत्रमा अनुदान व्यवस्थापन । fund management for agriculture
१३. कृषिमा समयसपेक्ष तालिम गोष्ठी सेमिनारको व्यवस्था । seasonal agriculture training and workshop and seminar
१४. कृषक पेन्शन कार्यक्रम । farmer provident program
१५. समय सापेक्ष विउ मल वितरण । provision of seeds and fertilizer
१६. कौशी खेतीमा जोड दिने । terrace farming should be encouraged
१७. कम्पोष्ट मलमा बनाउनमा जोड दिने । encourage to make compost manure
१८. बेमौसमी तरकारी खेति र फलफूललाई जेड दिने । off seasonal vegetables and fruits production should be emphasized
१९. उत्पादन भएका तरकारी खाद्यन्न तथा फलफूलहरूको बजार व्यवस्था हुनुपर्ने । marketing provision for the home production (food, fruits)
२०. कृषि क्षेत्रमा बाली विमाके कार्यक्रम सुचारु हुनुपर्ने । herbs insurance provision
२१. हाल जग्गा प्लटिङको कारणले गर्दा कृषि योग्य जमिनमा कृषि उत्पादनमा भइरहेको अवरोध लाई हटाउनु पर्ने । restriction of land plotting for residential use in agriculture areas
२२. कृषि क्षेत्रमा बढिरहेको मध्यस्थकर्ताको अन्त्य हुनु पर्ने । agent (who takes commission to sale production) should be avoided in agriculture field.

Transport And Roads (यातायात तथा सडक)

1. वडा नं. १ देखि १२ सम्म भएका बाटोहरूलाई मापदण्ड अनुसार विस्तार गर्नुपर्ने । Enable expansion of roads as per the byelaws at ward all the wards of municipality
2. मापदण्ड अनुसार बाटोको लगत कट्टा गर्नुपर्ने । As per byelaws the roads should be expanded and handover to the government
3. सबै बाटोहरूलाई कालोपत्रे गर्नुपर्ने । blacktopping of the roads.
4. सकेसम्म प्रदूषणरहित गाडि चलाउनुपर्ने । Use of pollution free roads.
5. आवश्यकता अनुसारको बाटोको स्तरानुवर्ति गर्नुपर्ने । As per requirement the standard quality of the roads should be promoted or developed.
6. सडक स्तरानुवर्ति गर्दा अनिवार्य दायाँबायाँ ड्रेनको व्यवस्था गर्नुपर्ने । Compulsory drain at both sides of the road should be managed while increasing the quality standard of roads.
7. कृषि सडक पहिचान गरि विस्तार गर्नुपर्ने । Expansion of the agriculture road.
8. सम्पूर्ण सडकहरूको मापदण्ड एकिन गरि वडामा पठाउनुपर्ने । Clear demarcation of the road width as per byelaws and informed or send to the respective wards.
9. राजकुलोलाई सडक मानेर बस्ती विस्तार गर्नु कतिको उपयुक्त छ एकिन गरि निर्णय दिनुपर्ने । Proper setback for the traditional water supply system (rajculo) and settlement expansion appropriation regarding rajculo as road.
10. सडक आसपास सार्वजनिक शौचालय बनाउनुपर्ने । public toilet around roads and busparks
11. पर्यटकिय गन्तव्यहरू केवलकार मार्फत जोड्ने जस्तै — धुलिखेल, नमोबुद्ध, पलाञ्चोक, तिमाल आदि । tourist destination places such as dhulikhel, namobudhha, palanchok and timla should be connected by cable car
12. धुलिखेल- काभ्रे भञ्ज्याङ- बतासे- शंखु- क्षेत्र सिधै जोड्ने (टनेल) सुरङमार्ग बनाउने । Tunnel or underground station road should be constructed to connect dhulikhel, kavre vanjyang ,batase , sankhu
13. हरित नगरलाई व्यवहारिकतामा ल्याउन विधुतीय सवारी साधन उपयोगमा ल्याउने । encouragement of electric vehicular access to encourage green community

14. पर्यटकीय गन्तव्यहरूलाई जोड्ने नियमित पर्यटकीय बस चलाउने जस्तै धुलिखेल-पोखरा, धुलिखेल-नमोबुद्ध, धुलिखेल-पलाञ्चोक, धुलिखेल-हलेसी, धुलिखेल-जनकपुर, धुलिखेल-दोलखा, कालिन्चोक, धुलिखेल-पनौती। Tourist destination buses should be provided to connect to places like Pokhara, namobuddha, palanchok, halesi, Janakpur, dolkha, kalinchok, panauti
15. ग्रेभिटी रोप-वे (Zip Flying) लाई सामान तथा यात्रु आउजाउ साधन बनाउन सकिन्छ। zip flying can be used as public transporting
16. वातावरणमैत्री भई सडक निर्माण गर्न जरुरी छ। ग्राभिटी रोप-वेले वातावरण नबिगारी Connectivity Street गर्छ। Environment friendly road should be constructed. Use of gravity rope way for connectivity.

Urban Settlement

1. खेतीयोग्य जमिनमा घर बनाउन नपाउने। Restriction to construct houses in agriculture potential lands.
2. उचित बस्तीको व्यवस्था गर्ने। appropriate settlement management
3. उब्जनी राम्रो नहुने जमिन जस्तै पाखो ठाउँमा उचित व्यवस्थापन मिलाउने। unproductive land should be recommended for appropriate use.
4. खेतीयोग्य भुमिमा आधुनिक कृषि प्रणालीलाई प्रोत्सान गर्ने। modern agriculture process should be encouraged in agriculture potential lands.
5. आवश्यकता अनुसार विभिन्न ठाउँमा कृषि सडकको निर्माण गर्ने। construction of agriculture road as per requirement in different places
6. ढलको व्यवस्था हुनुपर्ने तथा खानेपानीको व्यवस्था हुनुपर्ने। provision of drinking water supply and drainage system
7. सडकको व्यवस्था हुनुपर्ने। provision of roads
8. अव्यवस्थित शहरी बजारलाई व्यवस्थित गर्न व्यवस्थित सडक, व्यवस्थित बस्ती, व्यवस्थित ढल, स्वच्छ हावापानी तथा ध्वनी मुक्त बस्तीको निर्माण गर्ने। unmanaged urban market should be managed properly with roads, managed settlements, managed drain, pollution free air water and noise free settlements.
9. प्रत्यक नगरबासीलाई सुरक्षाको आत्माबोध गराउनका लागि आवश्यकता अनुसार सुरक्षा बिटको व्यवस्थापन गर्ने। in order to ensure security to the public establishment of police bit at different places
10. नगरबासीको स्वास्थ्यलाई मध्यनजर गरेर बृद्ध बृद्धाको लागि घरदैलो स्वास्थ्य सेवा कार्यक्रमको सुरुवात गर्ने। delivery of health services at home considering the old aged people should be encouraged.
11. सडक दुर्घटना कम गर्नको लागि प्रत्यक सवारी चालकलाई सडक नियम तथा ट्राफिक नियमको जानकारी दिने। in order to reduce the road accidents, the drivers should be given knowledge of road rules and traffic rules
12. खेतीयोग्य जमिनमा बाटोको विकास गरी ढुवानीलाई सरल बनाउनुपर्ने। Provision of agriculture road
13. नगरपालिकाको स्वीकृतिमा बस्ती विकास भएको ठाउँमा मात्र घर बनाउन पाउने। provision to allow construction of houses in land area permitted to construct houses by municipality.
14. बस्ती विकास र खेतीयोग्य जमिनको प्राथमिकता मूल्याङ्कन गरी सोहि अनुसार अगाडि बढ्ने। evaluation and prioritization of the settlement development and agriculture potential land
15. गाँउमा छरिएर रहेका बस्ती विकासलाई कुनै एक ठाउँमा केन्द्रिकृत गराउने जसले गर्दा अनावश्यक जमिनमा उच्चतम आवासीय प्रविधिको प्रयोग गरिनुपर्ने। integrated rural settlement should be developed in rural areas recognizing the safe land with provision of required facilities
16. सानो जमिनमा उच्चतम आवासीय प्रविधिको प्रयोग गरिनुपर्ने। small residential land areas should be encouraged for maximum use as residential areas.

Economic Development (आर्थिक विकास)

1. कृषि प्रवर्धन/ सिपमुलक तालिम/ उद्यशीलता विकास ।
1. Agricultural Promotion / Skill development Training / Industrial Promotion Development.
2. संकलन केन्द्र स्थापना बजारिकरण/ बिचौलिया न्यूनीकरण।
2. Collection Center Establishment Marketing / Reduction in agent (commission) in marketing (like dealing directly between farmers and the public)
3. व्यवसाय व्यवस्थापन तालिम ।
3. Business management training.
4. पर्यटन विकास (होम स्टे) विस्तार, खेल मैदान ।
4. Tourism Development (Home stay) expansion, playing grounds
5. पशुपालनमा प्रोत्सान ।
5. Encouragement in animal husbandry.
6. आधुनिक कृषि औजारहरुको व्यवस्थापन ।
6. Management of modern farming equipment.
7. बजार प्रबोधिकरण हुनुपर्ने ।
7. Marketing should be encouraged or promoted.
8. उद्योग, कलकारखानाहरुको भरपुर रुपमा स्थापना गर्नुपर्ने ।
Industries, cottage industries, should be established sufficiently
9. क्षेत्र अनुसारको तालिम दिई उक्त तालिमको बजारिकरण गर्नुको साथै निरन्तरता दिनुपर्ने ।
Providing Training as per the potentiality of the region and marketing of the trainees and their skills and continuation of the such activities.
10. हातले बनाउने सामानहरुलाई प्रोत्सान दिने ।
Encouragement and promotion of handicraft and materials that uses hands.
11. आर्थिक विकास गर्नको लागि विशेष महिलाहरुको घरैमा बसेर गर्न सकिने सिपहरुको विकास गर्ने।
For economic development training to women for works that can be performed within houses should be involved.

Other

Safety

Fire services needs to be provided - No fire services are in Dhulikhel

Street dogs are a safety problem

Naming/addressing system

No proper addressing system

No GIS mapping, needs to be networked

New unofficial roads are being made and no names for the roads – need a process for naming a road.

Road naming should be under Land Surveyor

Parking - Need collective designated parking residents

Solid waste management

Include in Org Plan – Community clubs and how they can contribute

Short term and long-term solutions