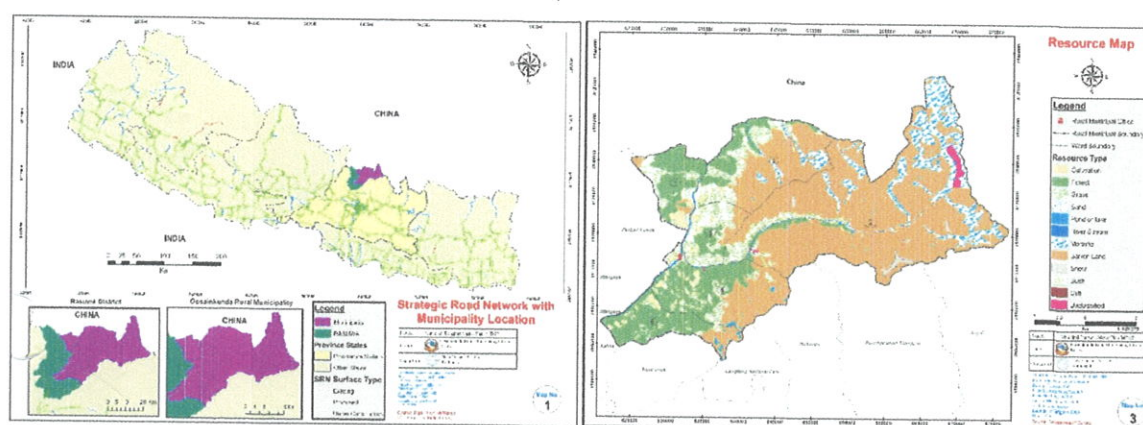




Government of Nepal  
Gosainkunda Rural Municipality

PERIODIC PLAN OF GOSAINKUNDA RURAL MUNICIPALITY

Draft Report: Volume 1



20



Submitted By:

Next Consult Pvt. Ltd.

Kathmandu



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मिति २०८१/११/१० गतेको तपाईं गाउँपालिकाको निर्णय नं १५ बमोजिम स्वीकृत गरिएको छ।

कैसाड नुपु तामाङ  
गाउँपालिका अध्यक्ष





## Executive Summary

The Periodic Plan for Gosainkunda Rural Municipality is a strategic response to the long term growth of Rural 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 Periodic Plan will deliver on the long-term vision of Rural Municipality.

“जल बिधुत पर्यटन रसुवागढी नाका पूर्वाधार र शिक्षा सुसंस्कृत र समृद्ध गोसाईकुण्ड लाङटाङ हाप्पो सदीक्षा”

Named after important religious tourist area Gosainkunda lake, Gosainkunda Rural Municipality is located in the northern part of Rasuwa district. The area of the Rural Municipality is 978.77 km<sup>2</sup>, which is larger than the other four local bodies in the District. There is a total of 7143 populations in the RM. Most important feature of the RM is the Langtang National Park. Furthermore, Gosainkunda lake is the other most important speciality of the RM. As this is famous religious place, each year thousands of Nepali and foreigners visit this area. RM includes Thuman (ward no. 1), Timure (ward no. 2), Briddhim (ward no. 3), Langtang (ward no. 4), Syafru (ward no. 5), Dhunche (ward no. 6). The office of Rural Municipality is currently operated in Ward no. 5.

Gosainkunda Rural Municipality to blessed with a diverse and vibrant community, high quality environmental assets including Langtang National park, spectacular view of Mountains, rich built and cultural heritage, agricultural production and a burgeoning tourism industry.

However, the Rural Municipality is facing a number of challenges. This includes: an emerging low density settlement in the rural wards with poor access to essential social and physical infrastructure. Analysis of physical infrastructure indicate critical problems in road access, water supply management and solid waste management which requires immediate attention.

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

The Periodic plan, presented here, also covers institutional and technical issues. The report provides comprehensive details on: 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 rural municipality, short term plans and long-term plans have been developed which will support Gosainkunda's growth.

In the preparation of the Periodic plan project, the most pressing needs of the Gosainkunda Rural 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 Rural 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 Periodic Plan provides a new framework to develop Gosainkunda, while protecting its agricultural, environmental and cultural assets. This will be in the form of new processes for the Rural Municipality, including land use zoning, and clear processes to better link land development, community needs and the provision of infrastructure.

#### The Periodic Plan:

- Identifies key road, water and sewerage infrastructure to support the growing community over the next 5 years.
- Identifies key road connections between the Rural wards 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 Gosainkunda'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 Rural Municipality over the coming 5 years to support the delivery of the Periodic plan, supported by a financial plan.

The Periodic plan introduces new land use zoning which provides for strategically-driven decision making and sustainable development of Gosainkunda.

Implementation of the actions within the Periodic plan from all part of the organization is critical to the success of Rural Municipality's future.





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## LIST OF ABBREVIATIONS

|              |   |
|--------------|---|
| RM           | Rural Municipality                                      |
| GDP          | Gross domestic product                                  |
| GON          | Government of Nepal                                     |
| MUNICIPALITY | Rural Municipality                                      |
| 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 Development Plan to guide development and investment over the coming years.

## 1.2 The Objectives of the Periodic Plan

The Objective of the Periodic Plan is to provide a blueprint for the physical, social and economic growth of Gosainkunda Rural Municipality over the next coming years.

Based on technical information, projections and sound urban planning principles for sustainable development, the Periodic 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 Rural Municipality by allocating land use zoning

to support sustainable development.

The Periodic plan is comprised of:

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



## 2 METHODOLOGY

The preparation of the Periodic Plan 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 Rural 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 Rural Municipality's settlements, roads, water bodies, contours, environmentally sensitive areas, agriculture and forest related information in the area. Further settlements of the bazaar and surrounding settlement within the Rural 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 Rural 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, 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 Rural Municipality provided social data in the Rural 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 following documents, literature, maps and photographs were collected and reviewed.

#### Maps

- Newly structured map of Nepal prepared by Survey Department.
- GIS map of Gosainkunda Rural Municipality obtained from the Rural Municipality.
- Aerial Photographs/GIS base Digital maps of Rasuwa 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 Gosaikunda Rural 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 Rasuwa, District Transport Master Plan (DTMP) of Rasuwa, 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 bazaar areas and their 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 Rural 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 Periodic Plan project was formed, comprising the CAO (Co-ordinator), the Civil Engineer (Secretary) and Rural Municipality council members.

The study team visited all the wards of the Rural 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 Draft investigation, contributing in planning and its execution. Chief Administration Officer of the Rural Municipality acted as Coordinator of the Committee and the Civil Engineer of Rural Municipality is the member secretary of the steering committee. The Study Team used observation, measurement, photography, informal

and informal discussion/consultation along with checklist.

### 2.2.1 Establishing a Vision

Prior to the commencement of the Periodic Plan Project, the Rural 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 Rural Municipality. The Vision is grounded in the potential and prospects of the Rural Municipality and its possible lead sectors. The Vision provided the foundation context for the formulation of plans and strategies in the Periodic Plan.

### 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 Rural Municipality hall and ward level meetings. Municipal level/ward level problems and development issues were also identified through opinion surveys of ward representatives, officials of the municipality and government agencies in the workshop.

## 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 Rural Municipality. This analysis presented the municipality's/Market Center wise strength, weakness, opportunity and threat of the area.

**Demographic and Socio-Economic Analysis:** Rural 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 Gosainkunda'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 periodic plan of the Rural Municipality were prepared.

#### **Planning process:**

The Planning process should be a participatory one. The role of Rural municipality with the help of the Steering Committee is emphasized and Steering Committee was formed to guide preparation of strategic plan.

The Rural Municipality is the key body to formulate policies and guidelines related to the Periodic Plan. Rural Municipality represented by the Steering Committee met several times to advise on various aspects of plan preparation including identifying problems and issues of the area, establishing strategy and formulating, goals, objectives and programs.

Municipal level meetings composing of officials of Rural Municipality, ward representatives, technical officials from line agencies and CBOs were held to determine the 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.

**Physical Infrastructure:** The Consultant conducted studies on present and future (20 years) supply and demand of physical infrastructures of the Rural 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 Rural Municipality's Social Infrastructure was undertaken addressing present deficiencies and future demands of. With this information the land area and location of such infrastructures and services existing are provided in coming 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 Gosainkunda.

**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.

#### 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 Periodic Plan

Incorporating all the analysis, a series of plans were prepared to guide future urban development. The Periodic plan includes:

- A **rural 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, for the Rural 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 Periodic plan.
- 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.

## 2.7 Project Limitations

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

- a. Detailed Master Plans of urban areas 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 Periodic Pan.
- b. Detailed infrastructure planning was not part of this project. Detailed Masterplans for growth areas will determine the extent of infrastructure needed.
- c. 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 Periodic 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 Periodic Plan is a key strategic vehicle to collectively address many of the SDGs in the wholistic development of Gosainkunda Rural 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 co-ordination of various actors, lack of enforcement, insufficient zoning regulations and improper use of land 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 Schedules 1, 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 Periodic Plan 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.



## 4 RURAL MUNICIPALITY DESCRIPTION

### 4.1 A snapshot

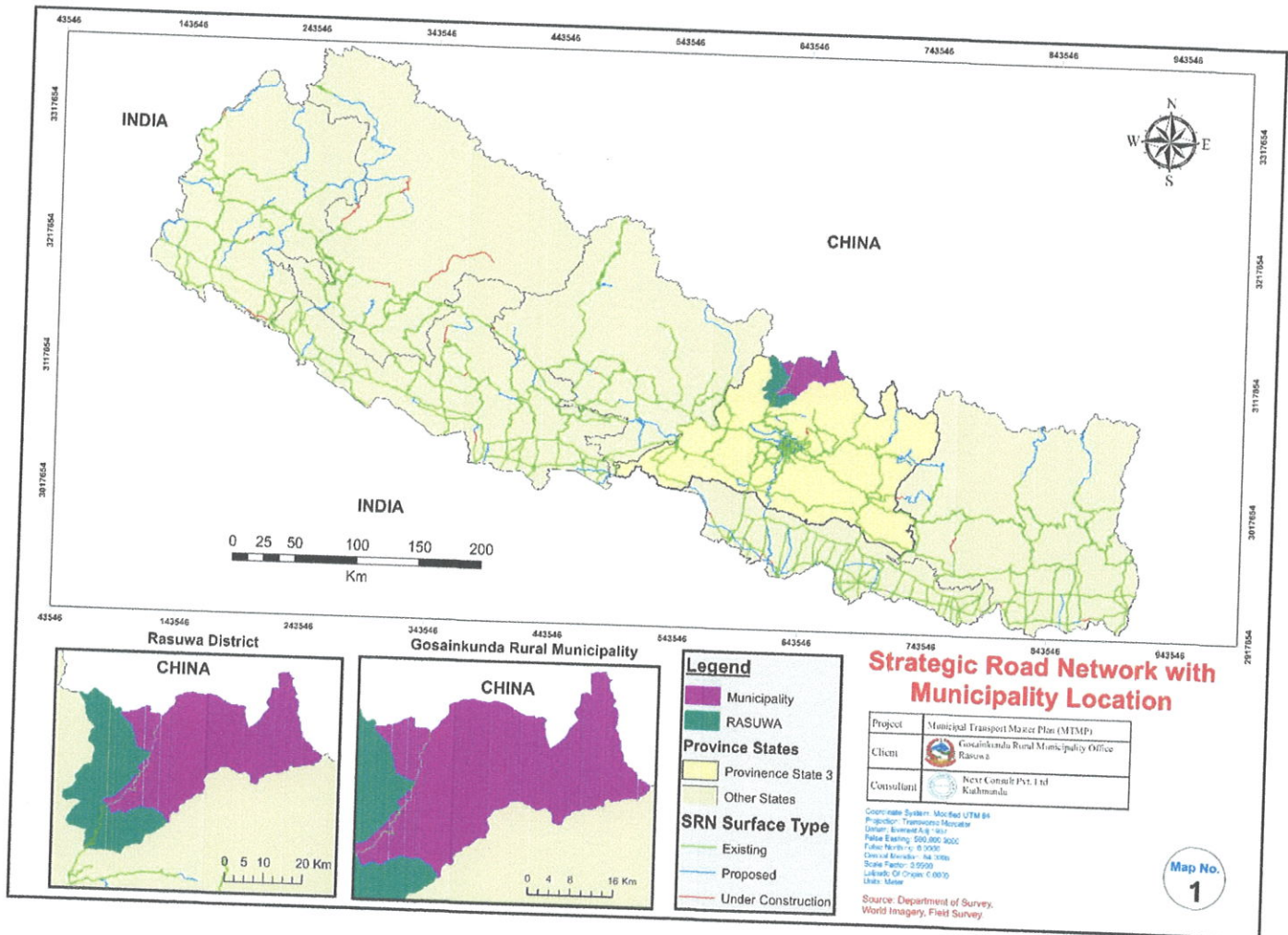


Figure 2: Gosainkunda Rural Municipality

Named after important religious tourist area Gosainkunda lake, Gosainkunda Rural Municipality is located in the northern part of Rasuwa district. The area of the Rural Municipality is 978.77 km<sup>2</sup>, which is larger than the other four local bodies in the District. There is a total of 7143 populations in the RM. Most important feature of the RM is the Langtang National Park. Furthermore, Gosainkunda lake is the other most important speciality of the RM. As this is famous religious place, each year thousands of Nepali and foreigners visit this area. RM includes Thuman (ward no. 1), Timure (ward no. 2), Briddhim (ward no. 3), Langtang (ward no. 4), Syafru (ward no. 5), Dhunche (ward no. 6). The office of Rural Municipality is currently operated in Ward no. 5. The rural municipality accessible by bus from Kathmandu (national capital) via Pasang Lhamu highway (H21), being about 120 km from Kathmandu.

Gosainkunda Rural Municipality (गोसाँकुण्ड गाउँपालिका) (was established in 2017 (2073 BS) as a Local level government of Nepal. Post local government restructure, additional wards were added to Gosainkunda 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 7143 persons in 2017 households of Gosainkunda Rural Municipality.

| क्र.सं. | नयाँ वडा | समावेश गाविस / नगरपालिका | जनसंख्या | क्षेत्रफल(वर्ग कि.मी.) |
|---------|----------|--------------------------|----------|------------------------|
| १       | १        | थुमन(१-९)                | ८६८      | ६४.५१                  |
| २       | २        | टिमुरे(१-९)              | ४२३      | १६४.०५                 |
| ३       | ३        | बृद्धिम(१-९)             | ४२२      | ५५.११                  |
| ४       | ४        | लाङ्गटाङ(१-९)            | ४१५      | ४९४.९६                 |
| ५       | ५        | स्याफ्रु(१-९)            | २२७९     | १२२.३१                 |
| ६       | ६        | धुन्चे(१-९)              | २७४४     | १७.८३                  |
|         | जम्मा    |                          | ७१४३     | ९१८.७७                 |

Table 1: Upgraded wards of Gosainkunda Rural Municipality (MoFDALD, Government, 2017)

| House Hold Survey 2076 |           |      |        |       |       |
|------------------------|-----------|------|--------|-------|-------|
| Ward                   | HouseHold | Male | Female | other | Total |
| 1                      | 205       | 426  | 402    | 2     | 830   |
| 2                      | 100       | 272  | 278    |       | 550   |
| 3                      | 180       | 392  | 372    |       | 764   |
| 4                      | 115       | 250  | 251    |       | 501   |
| 5                      | 485       | 1110 | 1108   |       | 2218  |
| 6                      | 245       | 614  | 578    |       | 1192  |
| Total                  | 1330      | 3064 | 2989   | 2     | 6055  |

Table 2: Population 2076





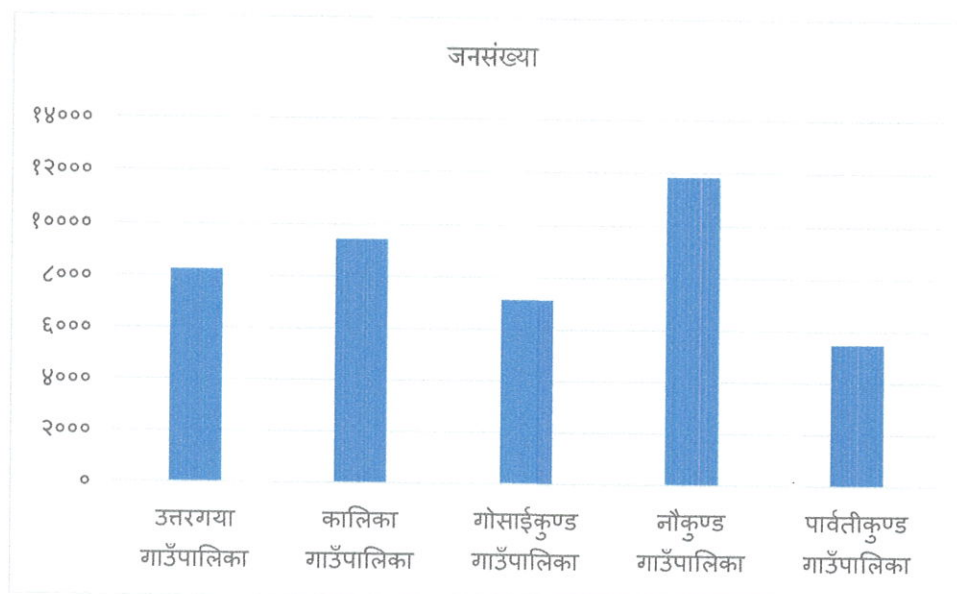


Figure 3: population comparison of local bodies in Rasuwa

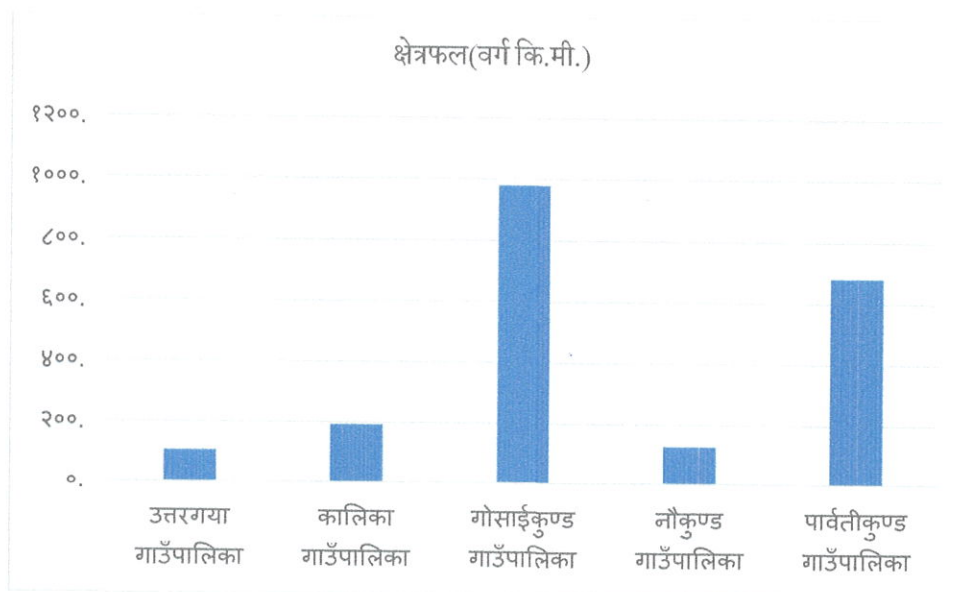


Figure 4: Area comparison of local bodies, Rasuwa

Gosainkunda Rural Municipality neighbors Sindhupalchok district to east, Uttargaya, kalika and Naukunda Rural Municipality to south, China to north and Parbati Kunda, Uttargaya Rural Municipality to west. Gosinkunda Rural Municipality is considered as a “tourists’ paradise”.



There are numerous Gumbas, Historical caves and domestic buildings in the rural municipality depicting traditional Tibetan and Tamang culture. Here we can find numerous mountain ranges above 5000m height like Ganesh Himal, Langtang Himal, Langtang lirung, Yala Peak

## 4.2 Climate

The climate of Gosainkunda is warm and temperate, with an average temperature of 6.6 °C. The summers are much wetter than the winters with Precipitation averaging 689 mm (CLIMATE-DATA.ORG, 2017).

### CLIMOGRAPH GOSAINKUNDA RURAL MUNICIPALITY

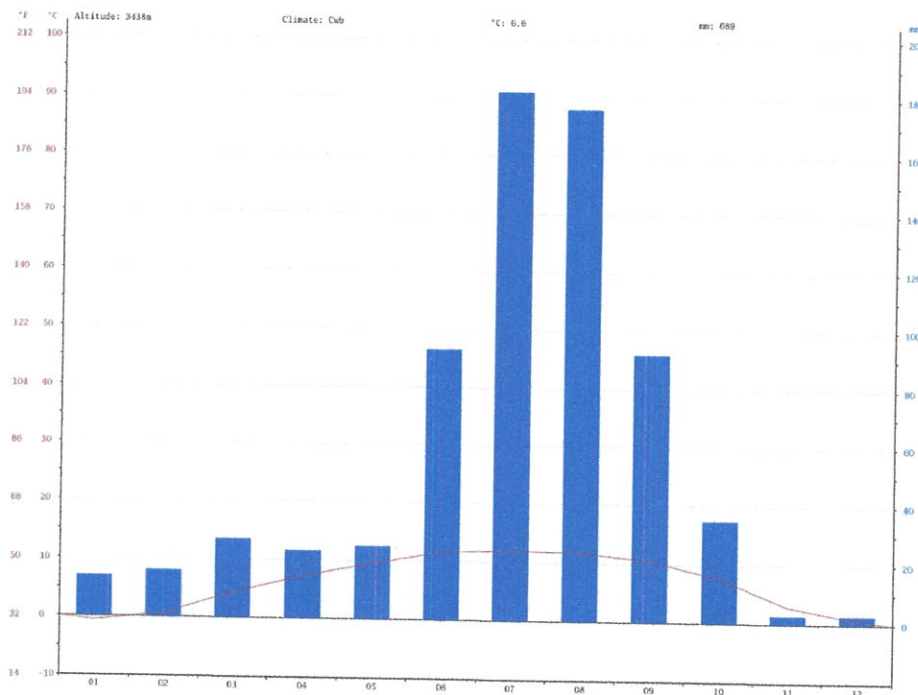


Figure 5: Average monthly precipitation data of Gosainkunda RM





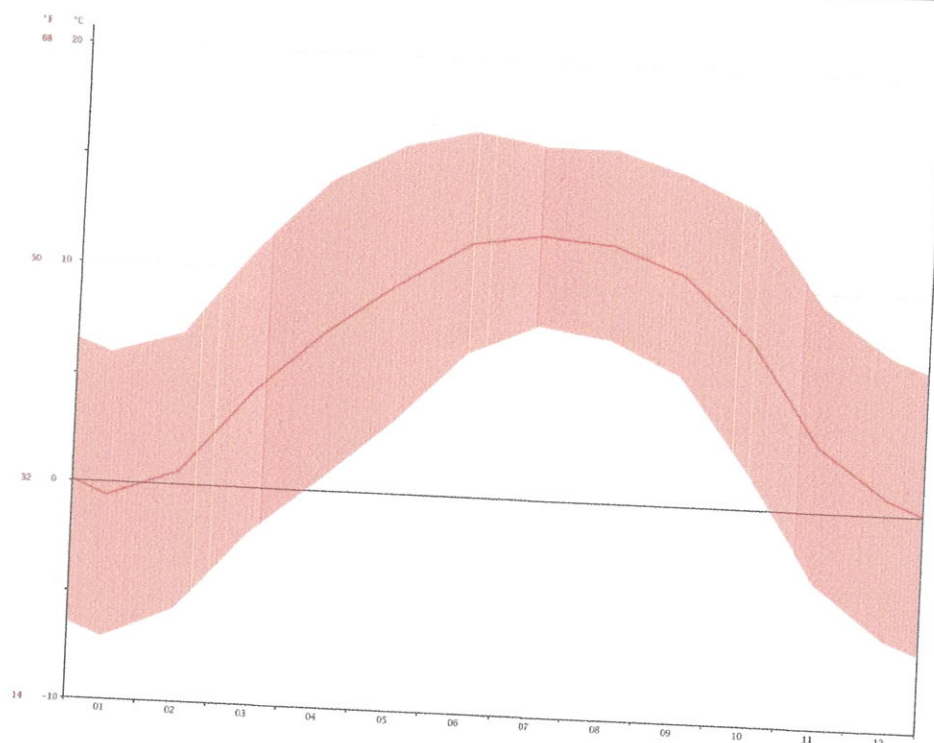


Figure 6: Monthly average temperature variation of Gosainkunda RM

July is the warmest month of the year. The temperature in July averages 12.1 °C. The lowest average temperatures in the year occur in January, when it is around -0.6 °C.

|                              | Janu<br>ary | Febr<br>uary | Mar<br>ch | Ap<br>ril | May  | June | Jul<br>y | Aug<br>ust | Septe<br>mber | Octo<br>ber | Nove<br>mber | Decem<br>ber |
|------------------------------|-------------|--------------|-----------|-----------|------|------|----------|------------|---------------|-------------|--------------|--------------|
| Avg.<br>Temperat<br>ure (°C) | -0.6        | 0.6          | 4.4       | 7.3       | 9.6  | 11.6 | 12.1     | 11.8       | 10.6          | 7.7         | 3            | 0.7          |
| Min.<br>Temperat<br>ure (°C) | -7.1        | -5.7         | -2.1      | 0.5       | 3.3  | 6.6  | 8        | 7.5        | 6             | 1.7         | -3.3         | -5.8         |
| Max.<br>Temperat<br>ure (°C) | 6           | 7            | 11        | 14.2      | 15.9 | 16.7 | 16.2     | 16.2       | 15.2          | 13.7        | 9.4          | 7.2          |

Table 3: Monthly minimum, maximum and average temperature

There is a difference of 179 mm of precipitation between the driest and wettest months. The variation in temperatures throughout the year is 12.7 °C.

### 4.3 Demography

According to Population Census 2011, 7143 persons lived in 2017 households within the Gosainkunda Rural Municipality area. Ward 6 has highest population of 2744 and Ward 3 comprises 422 People. The population distribution within the Rural Municipality among different wards as shown below:

| Ward no. | Household | Population |      |        | Area(sq.km ) | Density  |
|----------|-----------|------------|------|--------|--------------|----------|
|          |           | Total      | Male | Female |              |          |
| 1        | 205       | 830        | 426  | 402    | 64.51        | 12.86622 |
| 2        | 100       | 550        | 272  | 278    | 164.05       | 3.352636 |
| 3        | 180       | 764        | 392  | 372    | 55.11        | 13.86318 |
| 4        | 115       | 501        | 250  | 251    | 494.96       | 1.012203 |
| 5        | 485       | 2218       | 1110 | 1108   | 122.31       | 18.13425 |
| 6        | 245       | 1192       | 614  | 578    | 17.83        | 66.85362 |

Table 4: Population distribution of Gosainkunda Rural Municipality 2076

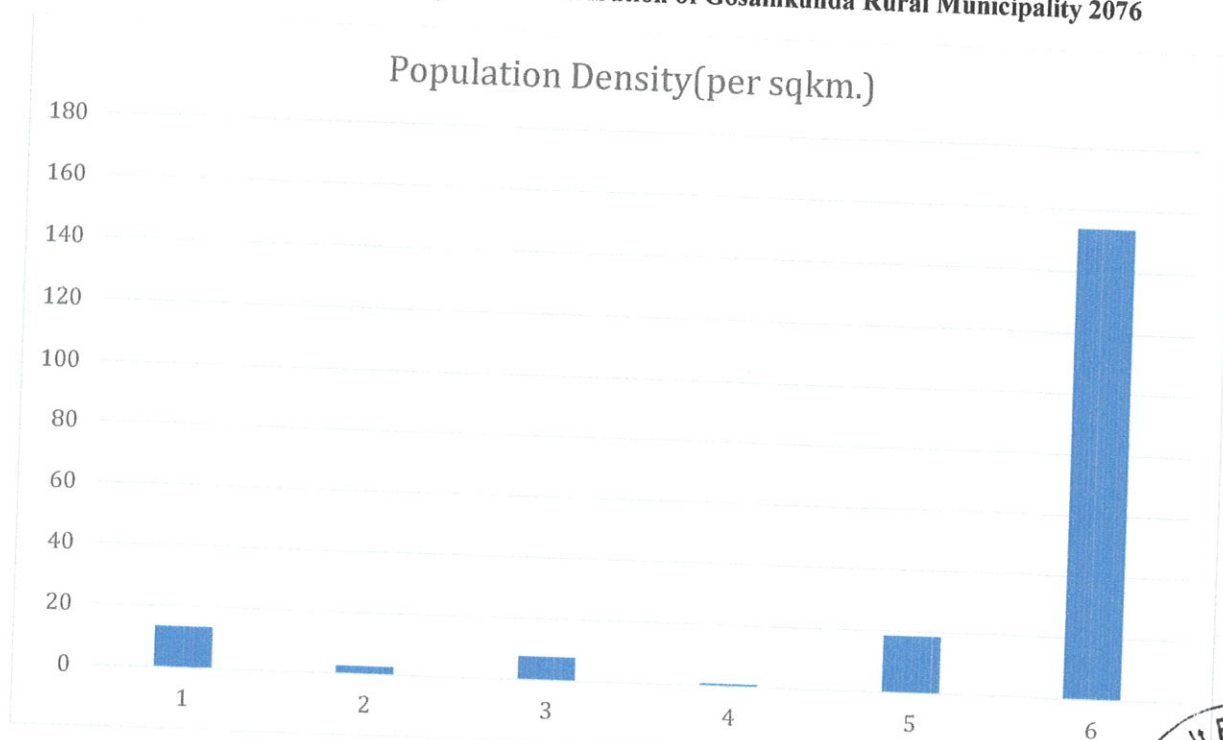


Figure 7: Population density in ward level



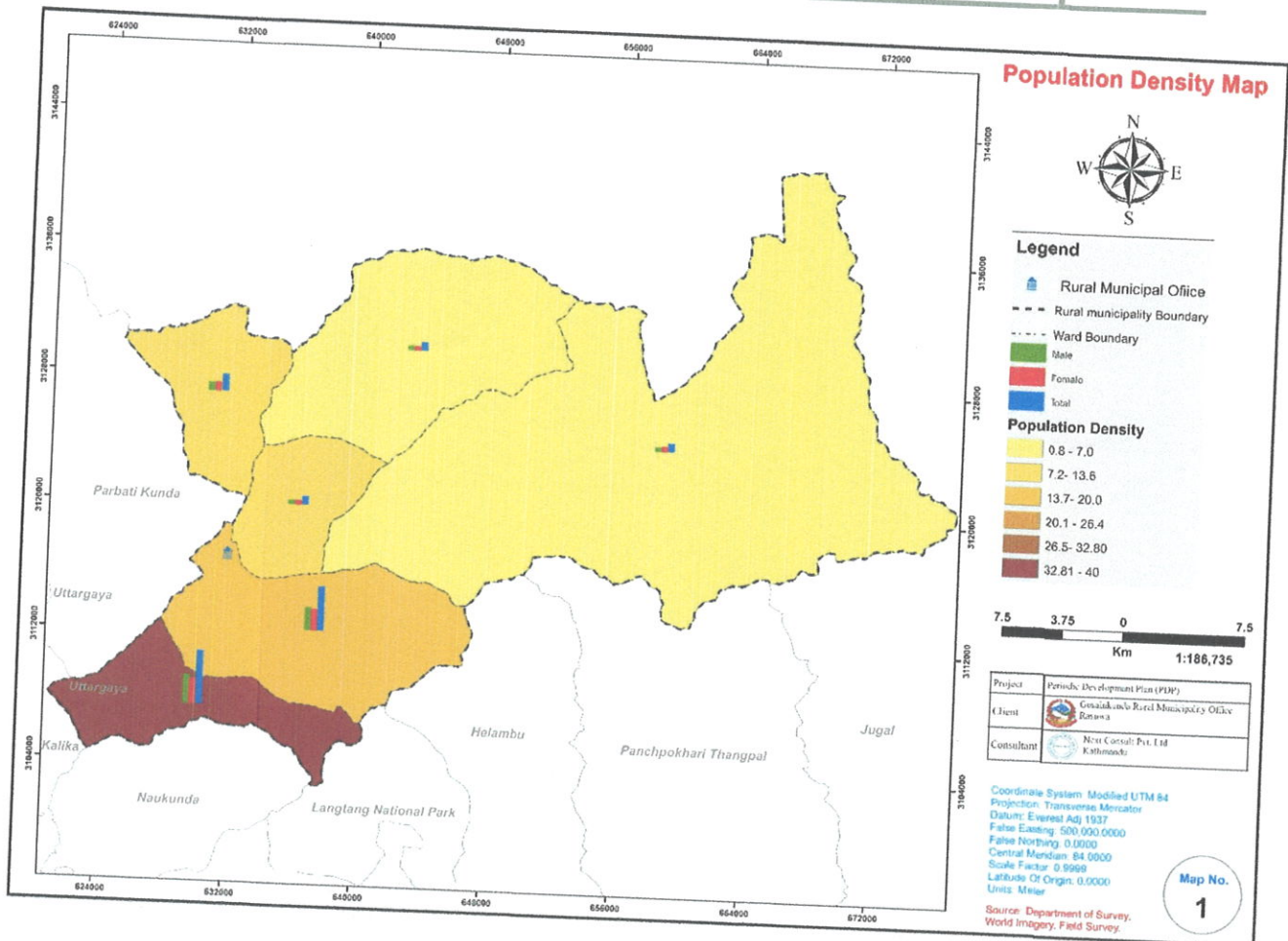


Figure 8: Population distribution map



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

Gosainkunda Rural Municipality of Rasuwa district covers 978.77 sq. km area with a population (2011) of 7143.

The population of the entire Rural Municipality (taking into account the new wards added in 2017) was 6,470 (Census 2001) and grew to 7,143 (2011), representing an annual population growth rate of +1.04%. The population density increased from 6.6/ km<sup>2</sup> (2001) to 7.3/ km<sup>2</sup> (2011) within a decade.

|                    | Total Pop'n | Households |
|--------------------|-------------|------------|
| 2001               | 6470        | 1461       |
| 2011               | 7143        | 2017       |
| Annual Growth rate | 1.04%       |            |

Table 5: Census population figures 2001 - 2011

As per the 2011 Census, the dependent population (comprising the age group 0 to 14 and above 59) is 2789 whereas the active population is 4,354.

| Age-Group   | Population |
|---|------------|
| Dependent population (0-14 yrs. and above 59 years) | 2,789      |
| Active population (15 to 59 years)                  | 4,354      |

Table 6: 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:

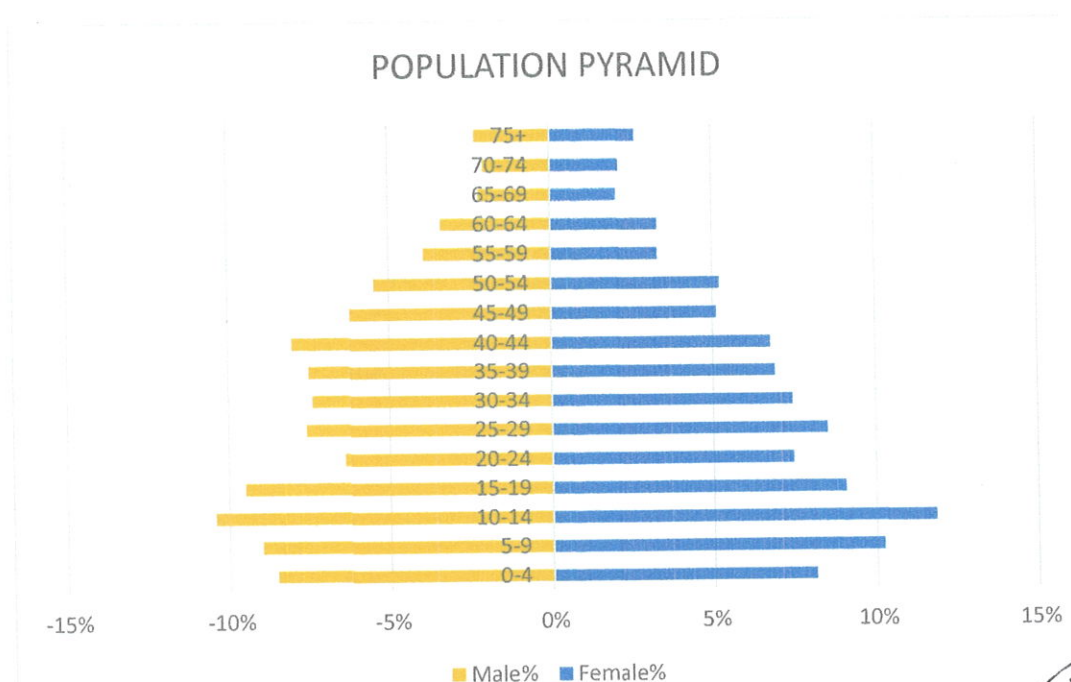


Figure 9: Population distribution according to age group(Population Pyramid)





As per the 2011 Census, the major ethnic/caste group of Gosainkunda Rural Municipality is Tamang whose population is 5602 and occupies about 78.4% of total population. The second major ethnic/caste group is Brahmin-Hill whose population is about 312 and comprises approximately 4.4% of total population. Brahmin-Hill and Ghale are almost equal in Gosainkunda Rural Municipality. Ghale has population of 283 with 4.0% of total population. Similarly, the other major ethnic/caste groups are Newar, Magar, Kami, Damai/Dholi, Sherpa. The bars diagram below represents the population distribution of Gosainkunda Rural Municipality according to ethnicity / caste groups.

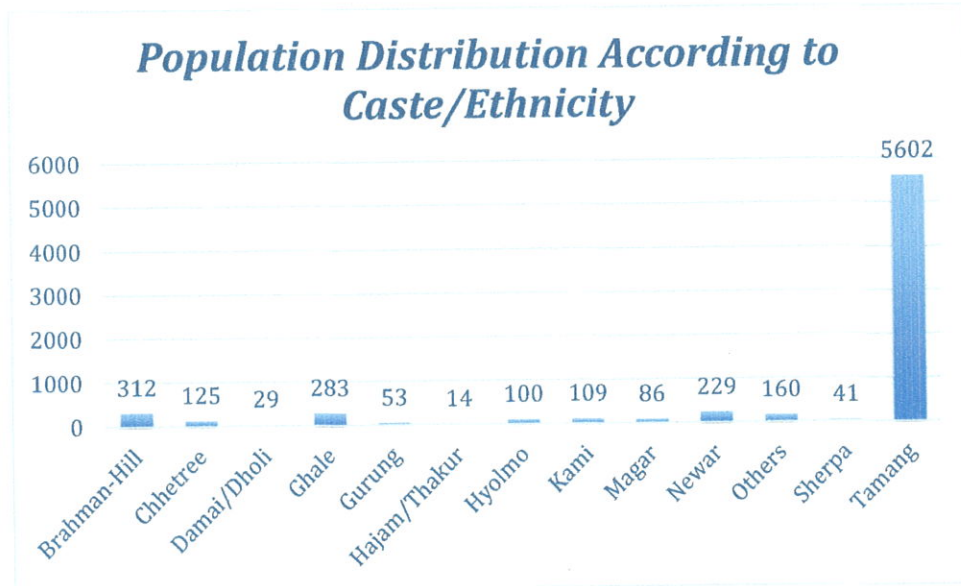


Figure 10: Population Distribution According to Caste/Ethnicity

### Population Projection:

As discussed earlier, the population of Gosainkunda Rural Municipality was 6,470 (Census 2001) and grew to 7,1423 in 2011, representing a population growth rate of +1.04% per year. Considering the incremental method and growth rate of population per year i.e. +1.04% per year, the projected population for 2021 and 2031 would be as follows:

| Year     | Population |
|----------|------------|
| 2001     | 6,470      |
| 2011     | 7,1423     |
| 2019(0)  | 7,763      |
| 2024(5)  | 8,177      |
| 2029(10) | 8,615      |
| 2039(20) | 9,557      |

Table 7: Population projection of Gosainkunda Rural Municipality



The population growth rate of Gosainkunda Rural 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 Rural Municipality is expected to be around 9,557 in 2039, an annual growth rate of 1.04%.

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 opening of Rasuagadhi Naka, thus promoting Rasuagadhi as a 'business hub' of Gosainkunda rural Municipality, could be a 'game changer' for the rural Municipality. This could accelerate the economic activities of RM when coupled with industries and tourism attracting people from hinterlands. 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 rural municipality, the 1.04% 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. This is consistent with other scenarios throughout urban Nepal. Should significant interventions such as the introduction of new industries, full phase opening of the Naka and booming of tourism 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

| Gosainkunda Rural 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 |
| Male                           | 3382                              | 2255               | 93            | 1033                  | 1                   | 67%           |
| Female                         | 3166                              | 1498               | 75            | 1589                  | 4                   | 47%           |
| Both Sex                       | 6548                              | 3753               | 168           | 2622                  | 5                   | 57%           |

**Table 8: Population aged 5 years and above by literacy status and sex (census 2011)**

According to 2011 Census, in Gosainkunda Rural Municipality the literacy rate of the population aged 5 years and above was 57%. Female literacy rate (47%) is far lower than the male literacy rate of 67%.

In terms of education institutions, Gosainkunda hosts only one campus, Rasuwa Campus in Dhunchhe, One Higher Secondary institution in Syafru with +2, CTEVT, Sub-Overseer, Nursing facilities.

According to the data survey carried out for this project, a total of 20 schools have been identified within the municipality. Out of 20 schools identified, 16 are fundamental, 3 secondary levels and 1 is Campus. Ward 6 hosts the highest number of schools. Only ward 5 and 6 have Secondary level schools.

Comparatively wards 2 and 4 host least number of schools. Most schools are located within wards that are near two or within Pasang Lahmu highways.

| Ward no. | Fundamental (1 to 8)   |   | Secondary |  | University |
|----------|--|---|-----------|--|------------|
| 1        | <ul style="list-style-type: none"> <li>• arunodaya prabhi (Dalfendi)</li> <li>• Nepal Rastriya Aadharbhut</li> <li>• Mahendong prabhi</li> </ul> | 3 |           |  |            |
| 2        | <ul style="list-style-type: none"> <li>• Nepal Rastriya Aadharbhut school (Timure)</li> </ul>  | 1 |           |  |            |
| 3        | <ul style="list-style-type: none"> <li>• Ling Ling Prabhi</li> <li>• Nera pravi (Khang Jim)</li> </ul>   | 2 |           |  |            |
| 4        | <ul style="list-style-type: none"> <li>• Langtang Pravi</li> </ul>   | 1 |           |  |            |



|   |  |   |  |   |  |
|---|--|---|--|---|--|
| 5 | <ul style="list-style-type: none"> <li>Thulo Syafru Aaharvut</li> <li>Thulo Bharkhu Aadharvut</li> <li>Gosainkunda School Pravi</li> </ul>   | 3 | <ul style="list-style-type: none"> <li>Common Syamewang Higher Secondary (+2, CTEVT, Sub-Overseer, Nursing)</li> </ul> | 1 |  |
| 6 | <ul style="list-style-type: none"> <li>Saraswati Aadharbhut Bidhyalaya(Thade)</li> <li>Gaunkharka Pravi(Bokejhanda)</li> <li>Bhimle Pravi(Bhimle)</li> <li>Gyanjoti Pravi(Nagung)</li> <li>Samata School Pravi(Dhunchhe)</li> <li>Evergreen Boarding School(Dhunchhe)</li> </ul> | 6 | <ul style="list-style-type: none"> <li>Rasuwa Mavi Dhunchhe</li> <li>Highline Aawasiya Mavi (Dhunchhe)</li> </ul>      | 2 | <ul style="list-style-type: none"> <li>Rasuwa Campus (Dhunchhe)</li> </ul> |

Table 9: List of different levels of school in Rural Municipality (survey by Periodic Plan team)

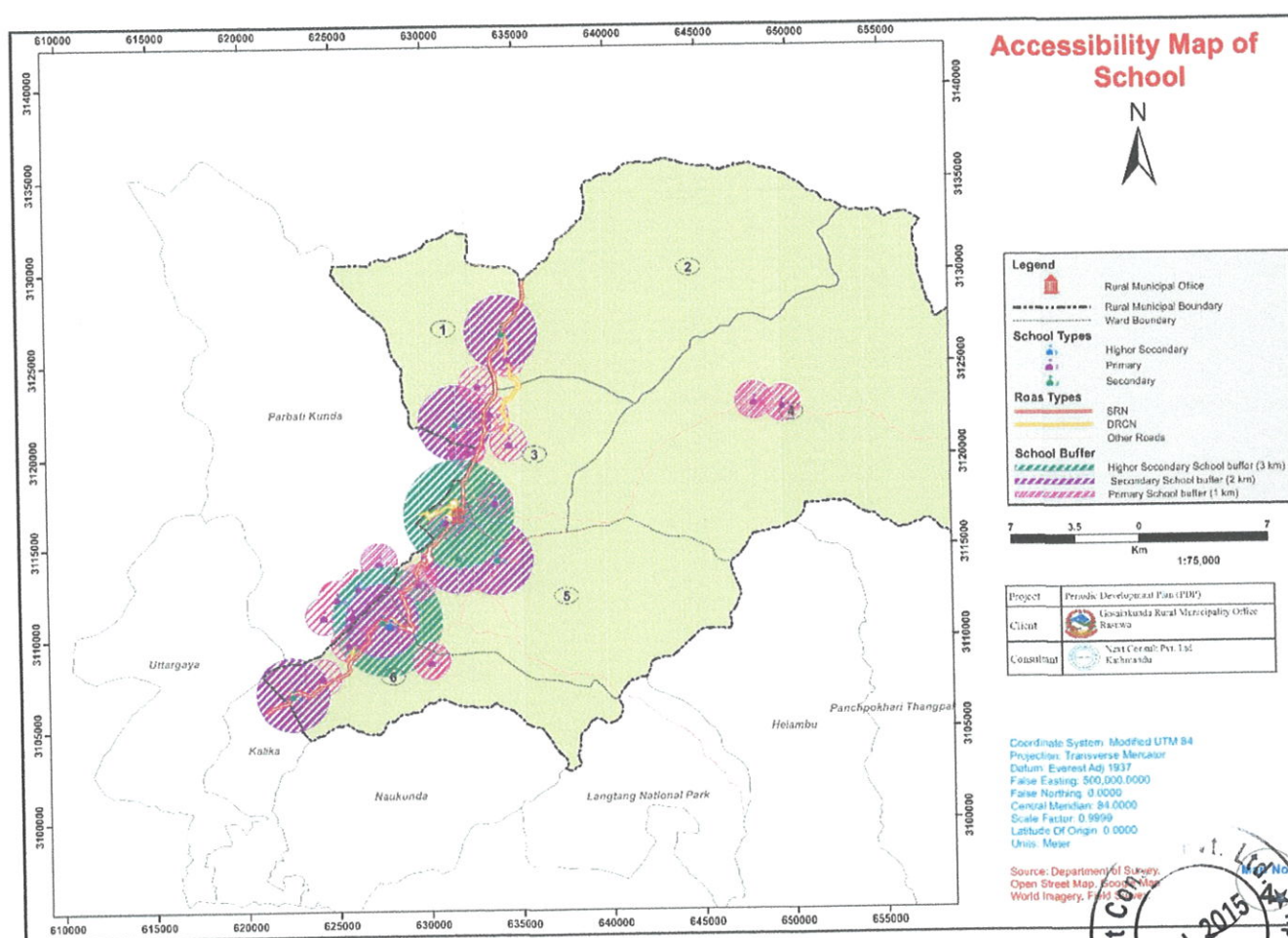


Figure 11: Basic school accessibility map



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 populations at a distance of 30 minutes' travel time 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.

Rasuwa District hospital located in Dhunche serves the population of surrounding region. 6 Health Centers are located in the Rural 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. Health centres in ward 1, 2 and 4 lack Maternity care and Child care units.

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    | Thuman Swasthya Chouki                          | Health post             | Ward 1                 | 2 bed                                     | No Lab, ambulance, maternity care, Child Health Care |
| 2    | Timure Swasthya Chouki                          | Health post             | Ward 2                 | 5 bed, Child health care, Maternity Care  | Lab, ambulance, required                             |
| 3    | Briddhim Swasthya Chouki                        | Health post             | Ward 3                 | Child health care, Maternity Care         | Lab, ambulance, required                             |
| 4    | Langtang Swasthya Chouki                        | Health post             | Ward 4                 |   | No Lab, ambulance, maternity care, Child Health Care |
| 5    | Syafru Swasthya Chouki                          | Health post             | Ward 5, 1, 2.3 and 4   | Child health care, Maternity Care         | Lab, ambulance, required                             |
| 6    | Rasuwa district hospital, Ilaka Swasthya Chouki | Hospital<br>Health post | All wards and district | -Hospital<br>-health care, Maternity Care |  |

Table 10: Health status of each wards of Gosainkunda Rural Municipality





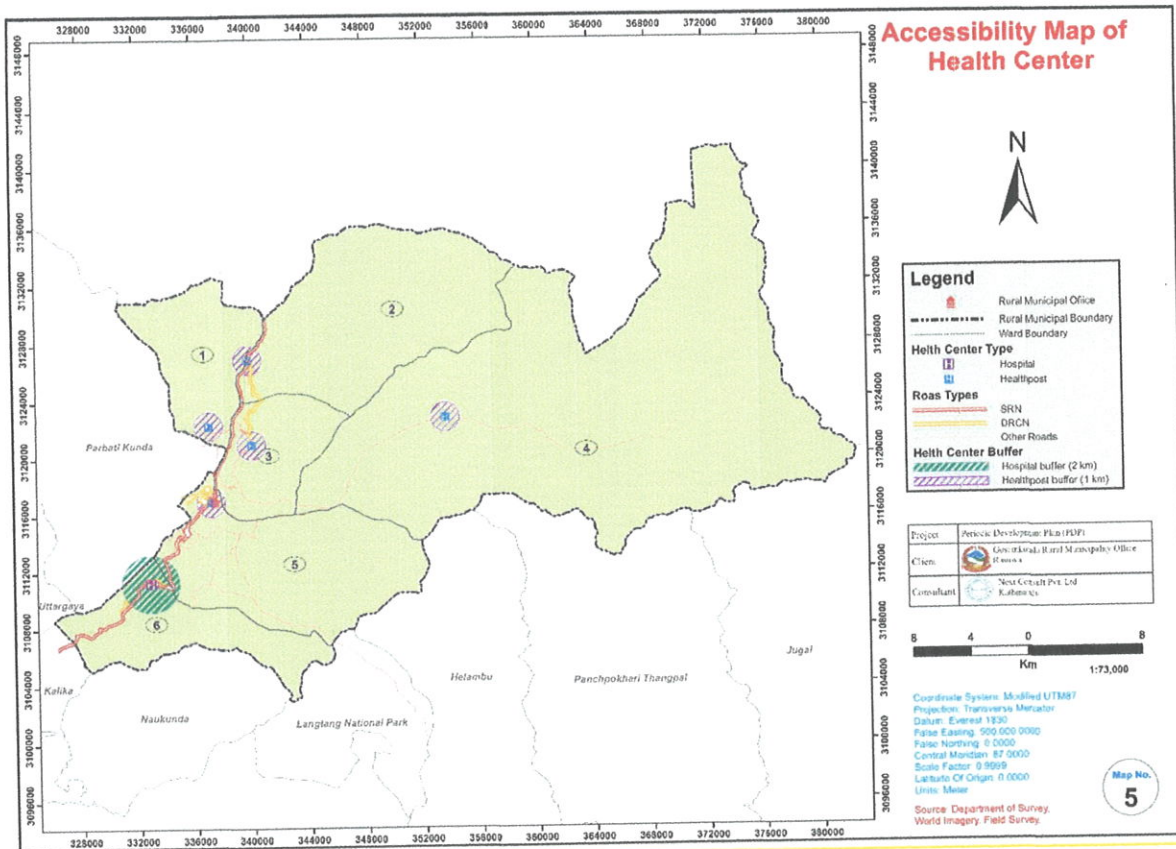


Figure 12: Health accessibility map

### 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 rural 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 Gosainkunda Rural Municipality. Ponds, public open spaces and community buildings within the municipality are the sources of recreation in the area. Most of the wards possess Gumbhas, 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) | Remarks            | Community Buildings          | Remarks         |
|----------|----------------------------------|--------------------|------------------------------|-----------------|
| 1        | School Chaur                     | 4 Ropanis          |                              |                 |
|          | Nakthali                         | Dherai(Not in use) |                              |                 |
| 2        |                                  |                    | Saajha Bhawan Timure(4 ana)- | During festival |
|          |                                  |                    | Saajha Bhawan Khaidi(3 ana)  | Not in use      |
| 3        |                                  |                    | Bansghari Samudayik Bhawan   | Not in use      |
|          |                                  |                    | Pelo Samudayik Bhawan        | In use          |
|          |                                  |                    | Syau Godam(Sherpa Gaun)      | In use          |
|          |                                  |                    | Khang Jim Upabhokta Samiti   | In use          |
|          |                                  |                    | Wangal Samudayik Bhawan      | In use          |
|          |                                  |                    | Surkha Samudayik Bhawan      | In use          |
| 4        |                                  |                    | Langtang and Kyanging        |                 |
|          |                                  |                    | Mundim samudayik Gumba       |                 |
| 5        | Gumba Area 20 Ropani             | not in use         | Thulobarkhu Samudayik Bhawan |                 |
|          | Bugu Area 40 Ropani              | not in use         | Aama Samuha Bhawan           |                 |
|          |                                  |                    | Thulobarkhu Samudayik Bhawan |                 |
| 6        | Dhunchhe Khelmaidan              |                    |                              |                 |
|          | Football ground(Hospital Side)   |                    |                              |                 |

Table 11: Lists of existing and possible recreational places





## 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).

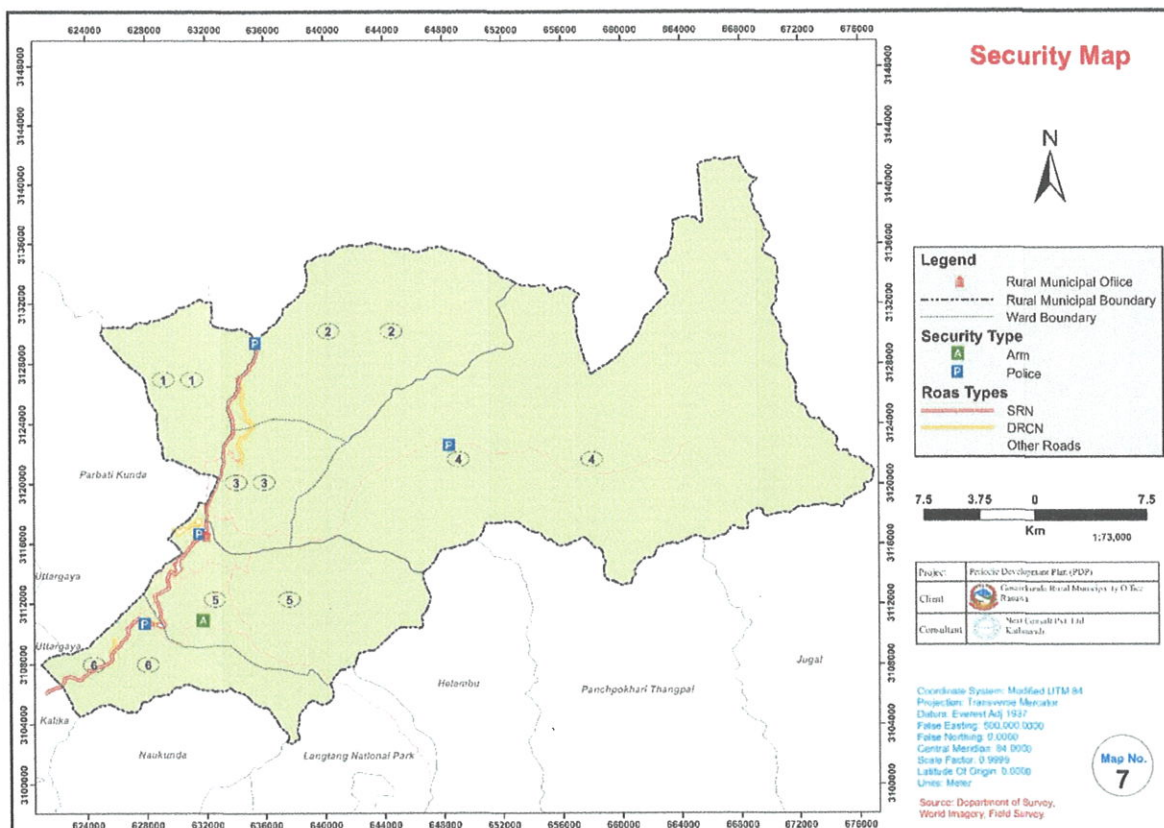


Figure 13: Location of security posts



## 5.5 Institutions

Institutions are established to support society and provide important services as well as employment opportunities. Gosainkunda is well resourced with education, health, financial and recreational institutes. Many institutions are located in the bazaar area (wards 5 and 6). Gosainkunda Rural Municipality has many education institutions, including a Rasuwa Campus, Kathmandu.

| Ward | Government Institutions                                 | Other Institutions  |
|------|---|---|
| 1    | स्कूल, वडाकार्यलय, स्वस्थय चौकि, प्रहरि चौकि            | No  |
| 2    | भन्सार, प्रहरी, आर्मि, हुलाक, ( कृषि पशू खाध्य ) को भवन | बैंक: सानिमा, जनता, इन्भेस्टमेन्ट, नेपाल बंगलादेश, वैक एफ काठमान्डौ   |
| 3    | वडाकार्यलय, स्वास्थय चौकि, आर्मि पोस्ट, हुलाक           | No  |
| 4    | प्रहरि चौकि, निकुन्ज                                    | NO  |
| 5    | स्वास्थय चौकि, प्रहरि चौकि, वडा कार्यलय                 | बैंक : जनता, प्रभू, एन. आइ. शी. एशिया<br>गैसस : छैन<br>अगैसस : छैन  |
| 6    | सि.डि.व कार्यलय, जिल्लाका सबै कार्यलय                   | बैंक : नेपाल बैंक, जनता बैंक, investment bank, ADB bank, NMB bank<br>गैसस : manekor society Nepal, saksham society Nepal.<br>अगैसस : lacos, dreams. |

Table 12: List of institutions





## 6 Physical infrastructure

### 6.1 Roads

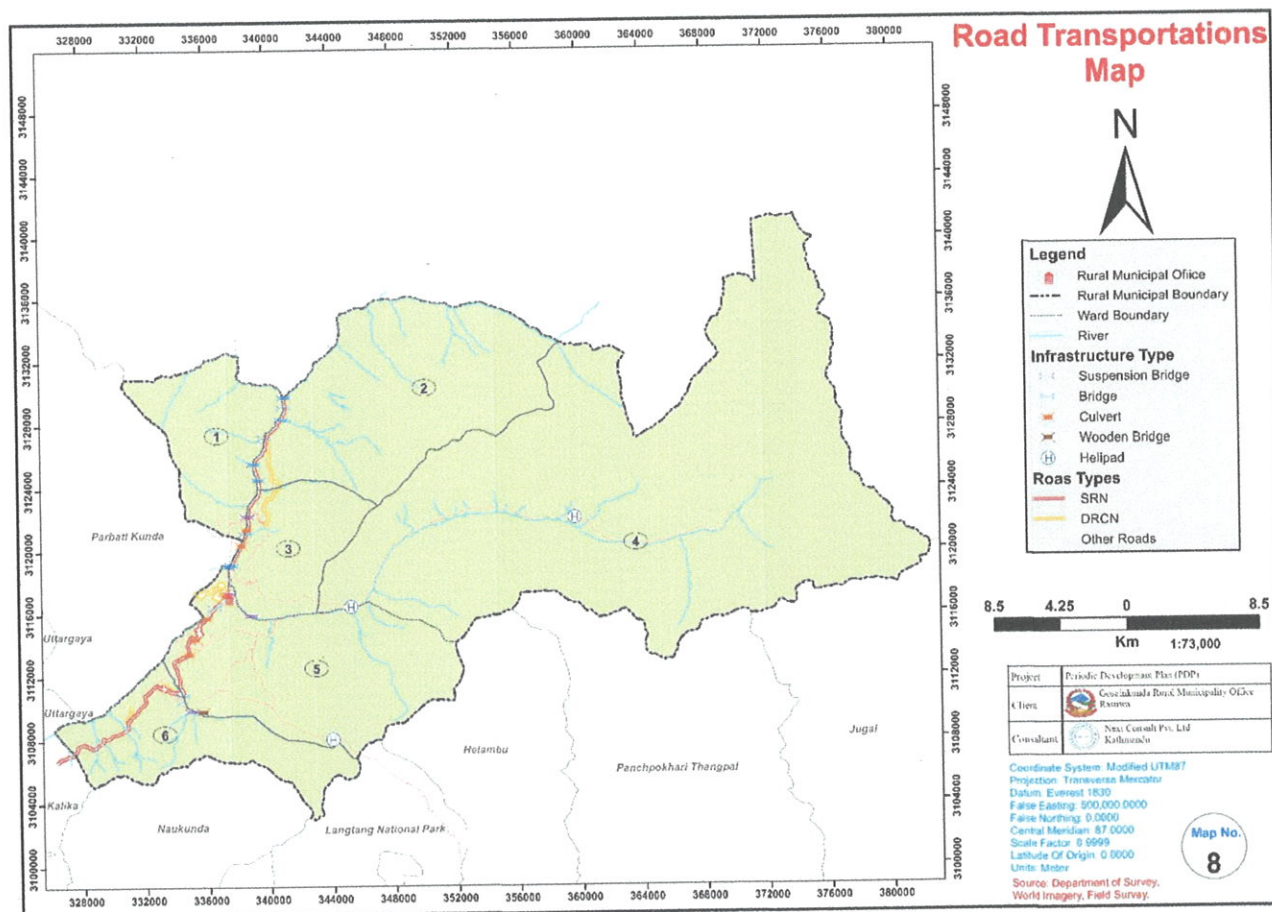


Figure 14: Road Network Gosainkunda

F021(Kathmandu - Trisuli - Dhunche - Rasuwagadhi (Pasang Lhamu Marg)) passes through Gosainkunda Rural Municipality. Pasang Lhamu Marg connects Kathmandu, Trisuli, Dhunche and Rasuwagadhi with Tibet's border town of Kerung. The Pasang Lhamu Marg provides Nepal's overland link with China. Likewise

Furthermore, 7 district roads (the core road network) pass through the major settlements of the rural 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   | Ronga-Desigang-Mendogaun-Thuman-DahalphediRasuwegadhi Hydro (29DR001) | Briddim, Chilime, Thuman   |
| 2   | Syafru-Gatlang-Somdang (29DR004)                                      | Gatlang, Goljung, Syafru   |
| 3   | Rudraganga-Charan-Bhotekoshi(29DR006)                                 | Dhunche                    |
| 4   | Sole-Bhimali-Hakubensi (29DR007)                                      | Dhunche                    |
| 5   | 29DR009(Timure-Khaide-Phyasing)                                       | Timure(New construction)   |
| 6   | Lingling-Pelko-Briddhim-Khamjing-Sherpagaun- Lama Hotel (29DR010)     | Briddim, Langtang          |
| 7   | Bharkhu-Brawal-Thulo Syabru-Langtang (29DR011)                        | Briddim, Langtang, Syaphru |

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 Muncipal 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, only a few are sealed (black topped). Parts of the roads that intersect the Pasang Lhamu Marg are black topped while most of the other roads in wards are earthen. All the roads listed above require either new construction or upgrading in terms of surface and width.





## 6.2 Water supply

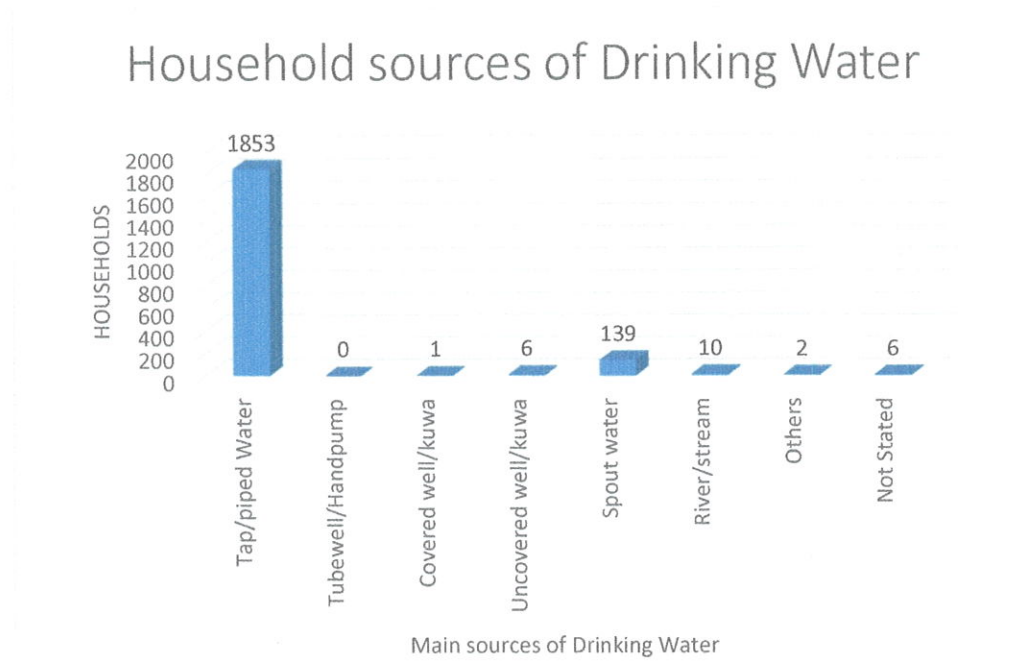


Figure 15: Bar diagram of different sources of water available in Rural Municipality

The sources of water supply identified are derived by natural rivers/streams, and Spout. According to National Population and Housing Census 2011 (Village Development Committee/Municipality), the main source of drinking water in Gosainkunda Rural Municipality is tap/piped water with 92 % of total households depending on this source. 7% of total households depend on spout water. The remaining household are dependent upon other sources for water.

Here are the list of existing water supply projects and current situation inside the Rural Municipality. Further probable sources of water for every ward is listed below:

| Ward | बिद्यमान खानेपानी योजनाहरु   | सेवा पुगेका बस्तीहरु                      | सेवा पुगेका घरधुरी संख्याहरु |
|------|--|---|------------------------------|
| 1    | वृहत थुमन खानेपानी<br>थुमन गाउँमा वृहत खानेपानी<br>निर्माण(75/76)      | थुमन बस्ती                                | १०० घरधुरी                   |
| 2    | छैन  |   |                              |
| 3    | सवै आफ्नै व्यवस्था गरिएको<br>पेल्लको लिङलिङ खानेपानी<br>निर्माण(75/76) |   |                              |
| 4    | छैन  |   |                              |
| 5    | स्यो खा.पा.योजना<br>याड.याड. खा.पा.योजना                               | कोमेन, ढुङ.दि, नरगुदे,<br>स्यप्रवेशी बजार | १० घरधुरी<br>८० घरधुरी       |





|   |                                     |                         |                        |
|---|-------------------------------------|-------------------------|------------------------|
|   | पान्डा खा.पा.योजना                  | पुरानो स्याप्रवेशी      | १२० घरधुरि             |
|   | सानो वारखु र ठुलो वारखु खा.पा.योजना | सानो वारखु र ठुलो वारखु | १०० घरधुरि र ९० घरधुरि |
| 6 | ठाडेखर्क खा.पा. योजना               |                         | १५० घरधुरि             |
|   | घट्टेखोला भिमले                     |                         | १५० घरधुरि             |
|   | याखर्क खा.पा. योजना                 |                         | १५० घरधुरि             |
|   | डोमिसनेन खा.पा. योजना               |                         |                        |

Table 14: Existing water supply projects

| Ward | Probable Sources   |
|------|--|
| 1    | <ul style="list-style-type: none"> <li>✓ लाबिखोला खानेपानी</li> <li>✓ भुङ.चे खानेपानी</li> </ul>   |
| 2    | <ul style="list-style-type: none"> <li>✓ दुधकुण्ड खोला</li> </ul>  |
| 3    | <ul style="list-style-type: none"> <li>✓ ठयावल खोला ( लिङ.लिङ. र ब्रिदिम पुग्छ)</li> <li>✓ गर्पाल खोला</li> <li>✓ कुम्जुङ. खोला (खाङ.जिम पुग्छ)</li> </ul> |
| 4    | <ul style="list-style-type: none"> <li>✓ दाङ्.लो खा पा योजना - क्यान्जिम</li> <li>✓ नियुकेसा खा पा योजना - लाम्टाङ.</li> </ul>                             |
| 5    | <ul style="list-style-type: none"> <li>✓ सबै माथि कै भय पुग्छ</li> </ul>   |
| 6    | <ul style="list-style-type: none"> <li>✓ दुरसाङ.खोला खा.पा. योजना</li> <li>✓ छेलेल खोला</li> </ul>   |

Table 15: Sources of Drinking Water



According to Planning Norms and Standards 2013, the water supply system in the Rural 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 Gosainkunda Rural Municipality, wards 1,2,3 and 4 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 6 have enough 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 Drainage and sanitation

According to the National Population & Housing Census 2011 (Village Development Committee/Municipality), out of 2017 households of RM, only 1298 households (i.e. 64% households) have a toilet facility while remaining 714 households (i.e. 35% households) do not have a toilet facility. Among the 64% households which have toilet facility, 877 households have a flush toilet, 421 households have an ordinary toilet and the remaining 5 household's toilet type is not stated.

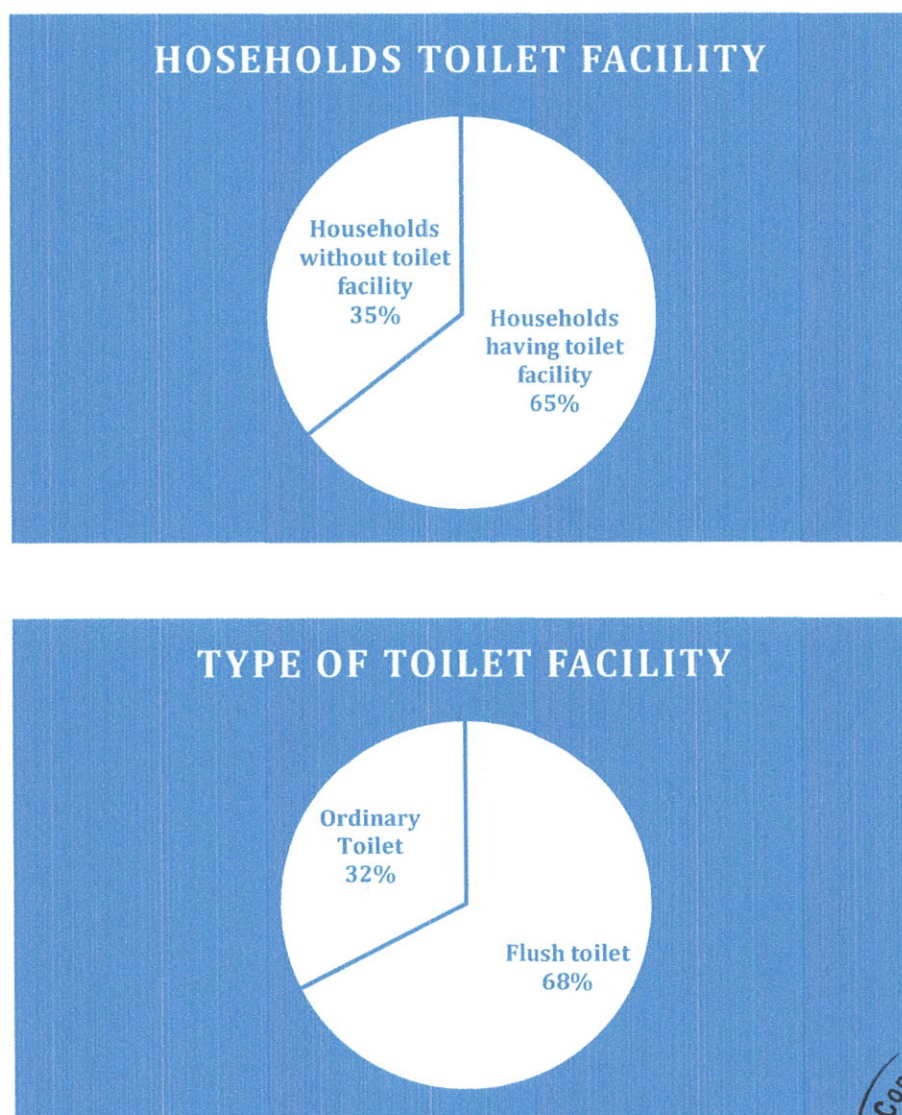
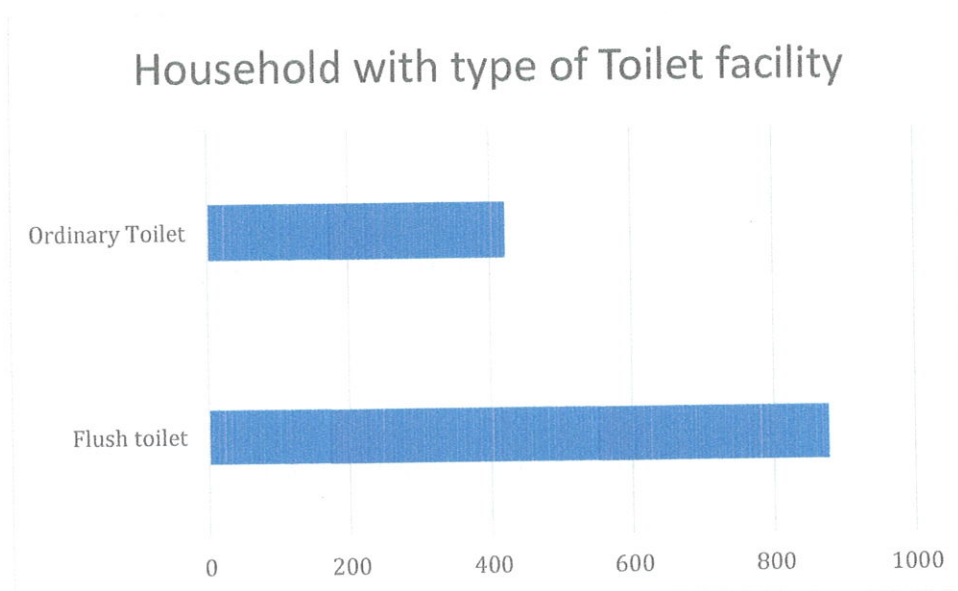


Figure 16: Pie chart showing households with/ without toilet



**Figure 17: Bar graph showing types of toilet facility**

According to Planning Norms and Standards 2013, According to Planning Norms and Standards 2013, 30% of households in the Rural 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 Periodic Plan team, a pipe sewerage system is not available in many wards of Gosainkunda Rural Municipality. Most households are serviced by a septic tank while some others have ring tank as well. All wards of Gosainkunda Rural Municipality have been declared as Open Defecation Free (ODF) zone.

In summary it was found that there are no pipe sewerage systems in any of the ward. In denser areas, without a proper pipe sewerage system, contamination is likely which can affect drinking water and create serious public health issues. Therefore, Pipe Sewerage system is recommended in Bazar areas of th Rural Municipality. There are no public toilets except for Langtang and Kyanjin in ward number 4. However public toilets are recommended in governmental, public buildings and tourist locations.

Dhunchhe in ward number 6 has its own waste collection system, it uses Truck and Tractor. Syafru in Ward number 5 collects waste using Thela Vehicle. There is no such system in Timure of ward 2. Waste collection system is recommended in all the Bazar areas with a sanitary landfill site. However, waste can be managed in household level in villages using biodegradable methods.





## 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 Periodic Plan team, there is no proper waste management at any wards of Gosainkunda Rural Municipality. Service is mainly concentrated to bazaar areas. The waste of Dhunche is currently deposited in Imrung Khola and Syafru is currently deposited beside the Bazar area. However, there are many potential landfill sites in different wards of Gosainkunda Rural Municipality.

## 6.6 Electricity

According to Planning Norms & Standards 2013, access to power for any Rural 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 Rural 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 Rural Municipality. Almost 100% of households in all wards have access to electricity except for Ward 2 (98%). 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      | Remarks                               |
|------|---|---------------------------------------|
| 1    | 100%                                      | Poor wooden poles                     |
| 2    | ९८% ( विद्युत नपुगेको गोम्वालिङ; गुम्वा ) | Poor management, insufficient voltage |
| 3    | 100%                                      |                                       |
| 4    | 100%                                      |                                       |
| 5    | 100%                                      |                                       |
| 6    | 100%                                      |                                       |

Table 16: Electricity Coverage in Gosainkunda



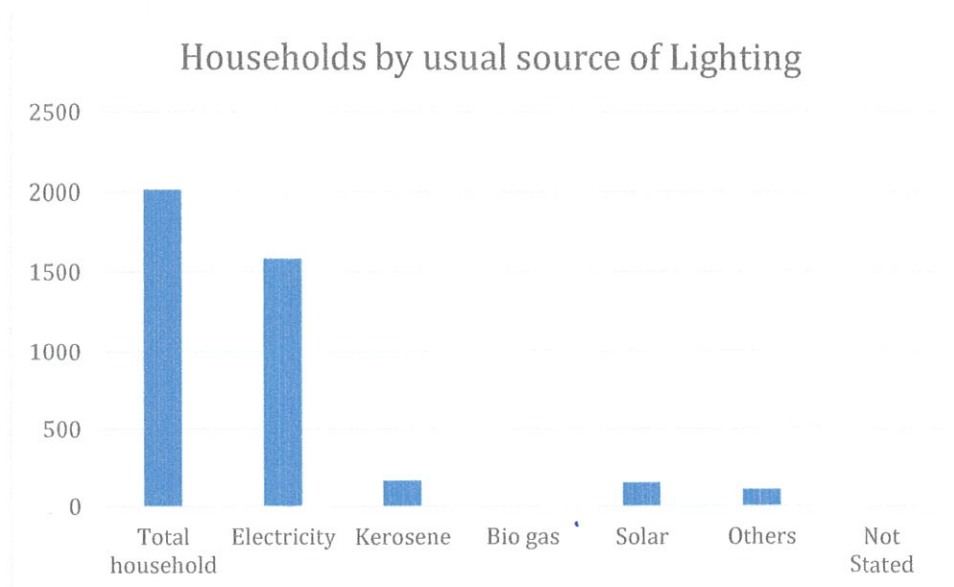


Figure 18: Electricity access and its condition in wards





## 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 17: Settlement Hierarchy according to 2013 Planning Norms and Standards**

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

### Settlement and Retail Hierarchy in Gosainkunda Rural Municipality

There are three major market centers inside the Rural Municipality Timure, Syafrubesi and Gosainkunda.

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 Rural Municipality. This will strengthen the urban rural connectivity of the Rural Municipality. Market centers/activity centers, along with their service roads are listed in the map and table below:

| Wards | Major settlements   | Major market centres | Linkage              |
|-------|---|----------------------|----------------------|
| 1     | धूमान, नागथलि   |                      |                      |
| 2     | टिमुरे, घट्टेखोला,  | Timure               |                      |
| 3     | ब्रिदिम, खाड, जिम,  |                      |                      |
| 4     | लाम्टाड, र क्यान्जिम  |                      |                      |
| 5     | स्यापुवेशी, तुलो वारखु, सानो वारखु, तुलो स्यापु, ब्रावल, कोमजिन, दूड, दी, कोमेन | Syafrubesi           | Pasang Lahmu Rajmarg |
| 6     | धुन्चे, ठाडे, सोले, भिमाले, नागुड., आवो, बोकेझना                                | Dhunche              |                      |

**Table 18: Market centres and linkage**



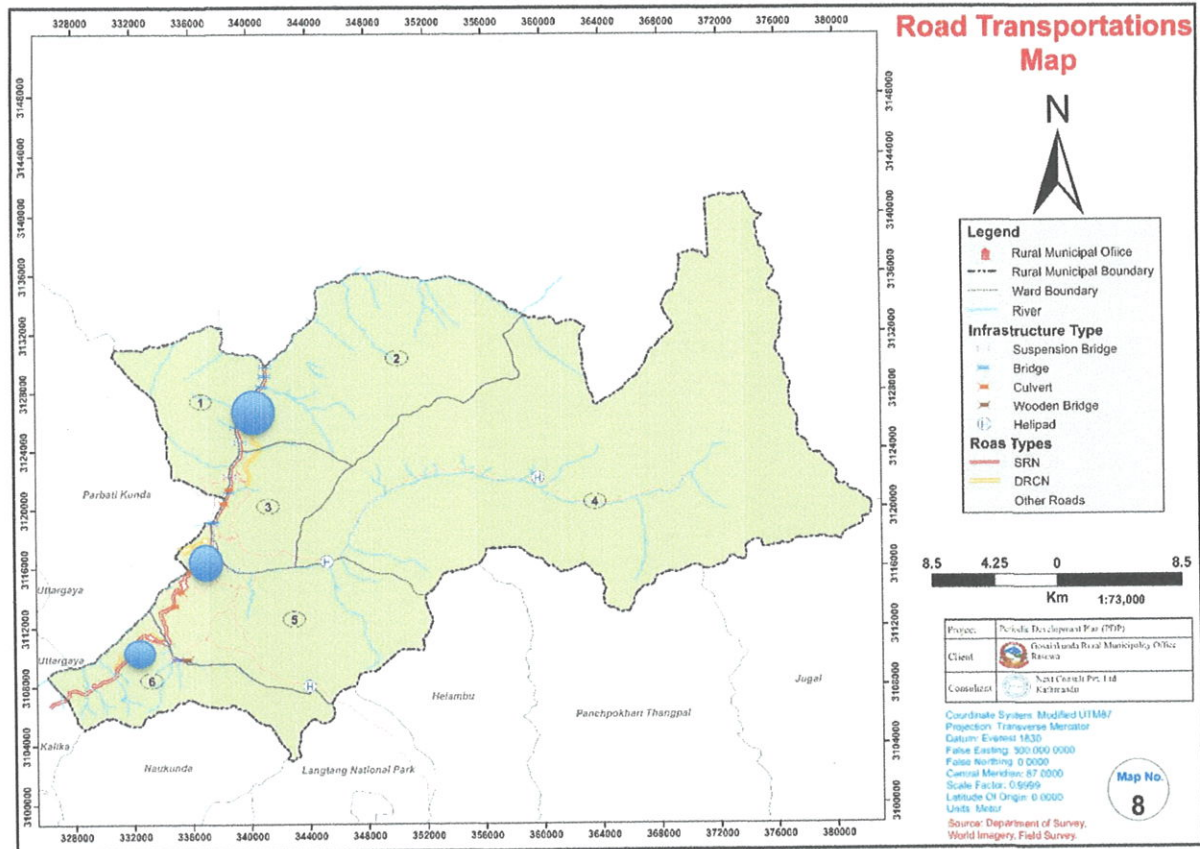


Figure 19: Market centers and linkage

Dhunche Bazaar is the major market center in the municipality. Like most of the cities of Nepal it is developed around the Pasang Lhamu Highway. Timure and Syafrubesi Bazaar are the other major trading centers for the people in the Rural 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 Dhunche bazaar area and Syafrubesi. Similarly, NGOs, INGOs and social institutions are concentrated in those 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. 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 Gosainkunda Rural 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.

Economic centers and sources of Gosainkunda include the following:

| Ward | Market centers<br>(mukhhe bazar) | Agriculture   |  | Industry   |
|------|----------------------------------|---|--|--|
| 1.   | बजार छैन<br>नजिकको बजार टिमुरे   | आलु, धान, मुसुरो,<br>केराऊ, कालो दाल, कोदो,<br>सिमी | चैरि, याक, भेडा,<br>बाख्रा                                     | ✓ चिज उद्योग   |
| 2.   | टिमुरे                           | आलु, कालो दाल                                       | चैरिगाइ, खसी,<br>बाख्रा,                                       | ✓ छैन  |
| 3.   |                                  | स्याउ, मकै, कोदो, आलु                               | चौरीगाइ  | ✓ छैन  |
| 4.   |                                  | आलु, फापर, जौ                                       | याक, चौरि  | ✓ दुध बिकास संस्था<br>✓ हिमालयन डेरि पा. लि<br>✓ मिनिरल वाटर फ्याक्ट्री<br>✓ चिज फ्याक्ट्री                                |
| 5.   |                                  | आलु चिज कालो मुसुरो<br>दाल                          | भेडा, चौरीगाइ,<br>बाख्रा, भैसी                                 | ✓ माछा पालन, कुखुरा पालन, चिज<br>फ्याक्ट्री  |
| 6.   |                                  | चिज, घ्यु, आलु, टिमुर,<br>कालो दाल                  | वंगुर पालन,<br>भेडा पालन, चौरि<br>पालन, रेन्वो<br>ट्राउट, माछा | ✓ पानी फ्याक्ट्री - ३ वटा (<br>Himalayan spring water,<br>hilltop spring water and<br>thade water)<br><br>✓ चिज फ्याक्ट्री |

Table 19: Economic centers and sources of Gosainkunda



## 8 Resources

Cultivable land and forest are the major resources of Gosainkunda Rural Municipality. In the municipality 52.70% of total land is forest area and 18.24% is agricultural land. Community forests are the major resources in wards. There is also a large government forest area. Apart from forest resources, a number of rivers run through the Municipality. The rivers are the source of water for electricity, irrigation as well as drinking water.

The land cover and resources of Gosainkunda Rural Municipality are mapped below:

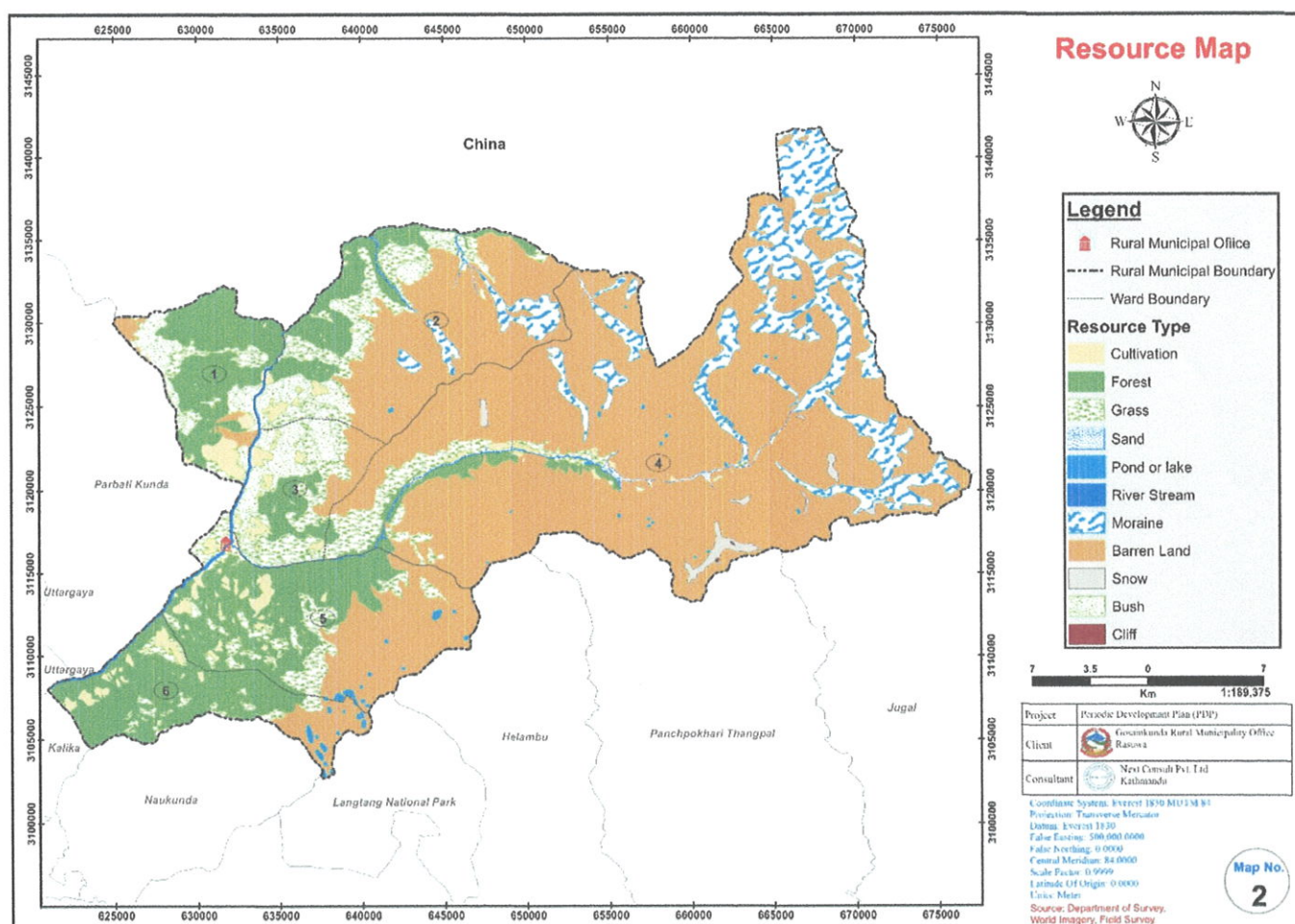


Figure 20: Resource map of Gosainkunda





## 9 Disaster/Natural Hazards

Areas within Gosainkunda Rural Municipality are affected by land erosion, river induced erosion and landslides.

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 Gosainkunda Rural Municipality, the Rural Municipality does not contain a Disaster Management Centre.

Table below shows environmentally sensitive areas in the Rural Municipality:

| वातावरणीय संवेदनशील क्षेत्र   | Ward 1            | Ward 2 | Ward 3 | Ward 4 | Ward 5  | Ward 6                   |
|---|-------------------|--------|--------|--------|---|--------------------------|
| हाल चालू अवस्थामा रहेका ईटाभट्टा  | No                | No     | No     | No     | No  | No                       |
| वायु प्रदूषण गर्ने खालका उद्योगहरू                                      | No                | No     | No     | No     | No  | No                       |
| भूक्षय प्रभावित क्षेत्र   | Many              | No     | No     | No     | No  | भिमले, ठाडे,<br>पानाखोला |
| नदी कटान तथा बाढी पहिरो ग्रस्त क्षेत्र                                  | No                | No     | No     | No     | पुरानो बजार   | No                       |
| सिम्सार क्षेत्र   | No                | No     | No     | No     | गोसाइकुण्ड, सुर्यकुण्ड, भैरवकुण्ड,<br>दुधकुण्ड, दोड, दोड. | गोसाइकुण्ड<br>सिम्सार    |
| बस्ती भित्र तथा बस्तीबाट ५०<br>मिटरको परिधिमा पर्ने पेट्रोल पम्प        | No                | No     | No     | No     | No  | No                       |
| प्लाष्टिक मुक्त क्षेत्र घोषणा भएको<br>अवस्था                            | No                | No     | No     | No     | No  | No                       |
| विपद व्यवस्थापन योजना एवं कोषको<br>स्थिति                               | No                | No     | No     | No     | छ (समुदायले बनाएको)                                       | No                       |
| विपद उद्धारका लागि सुरक्षित स्थलहरू<br>र न्यूनतम पूर्वाधार तयारी स्थिति | नाकथलि,<br>गुम्बल | No     | No     | No     | No  |                          |

Table 20: Environmentally sensitive areas

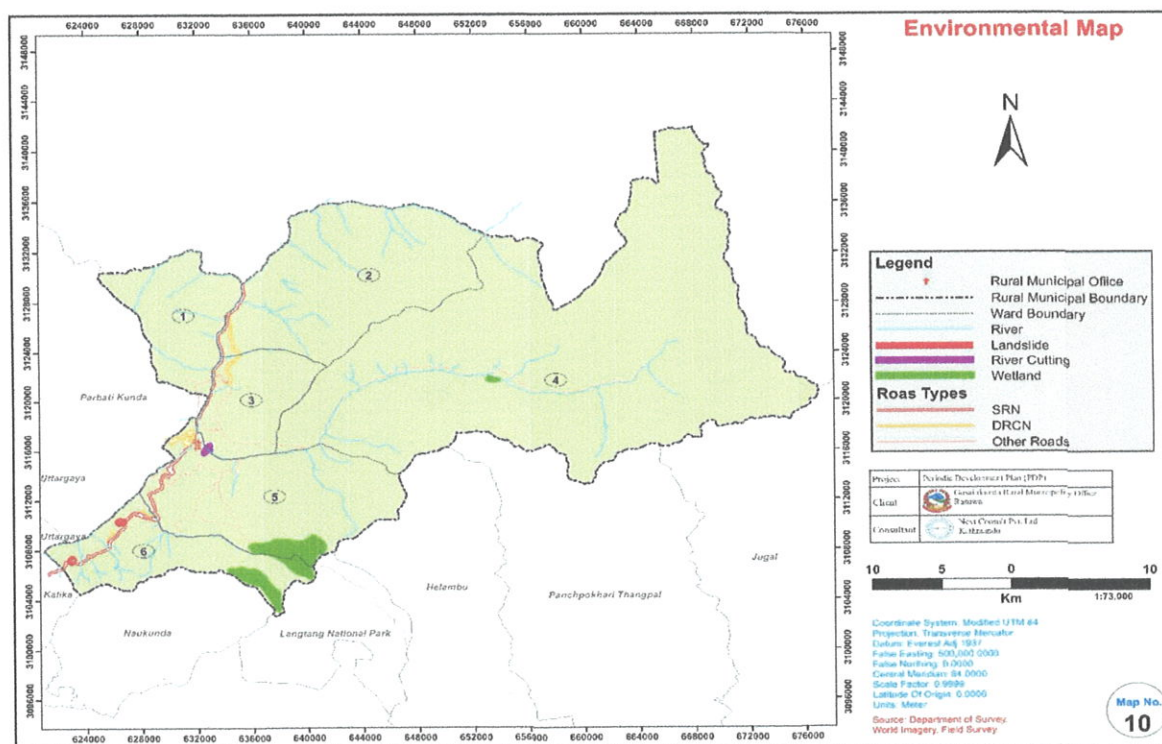


Figure 21: Natural Disaster Map

## 10 Existing land use

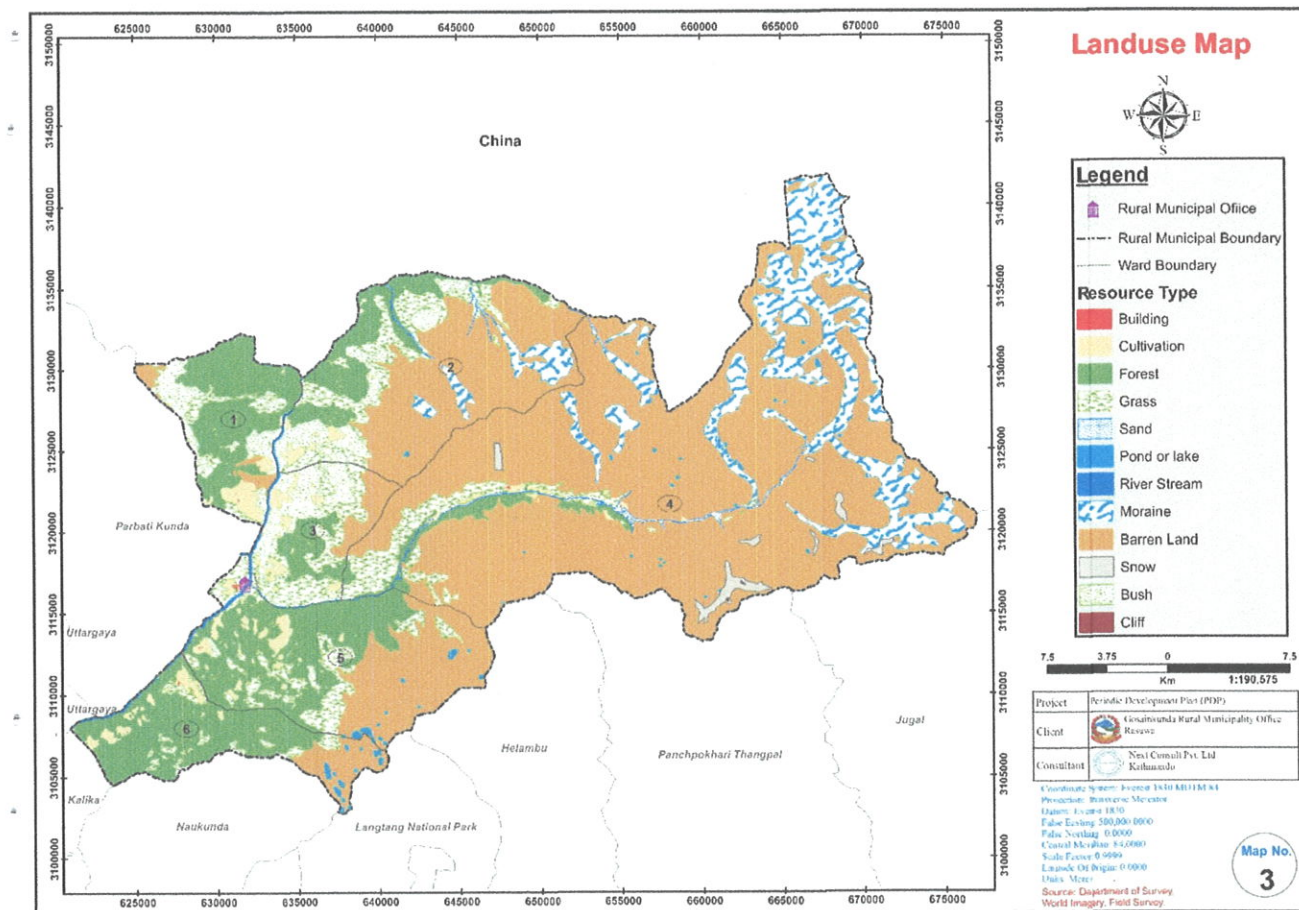


Figure 22: Land cover map

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

The municipality is covered by significant area forest as Langtang National Park lies within the Rural Municipality. Most of the area on the RM is covered by forest whereas agriculturally productive land occupies comparatively less area. 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 Culture and tourism

Major ethnic groups in the municipality are Tamang. Every ward in the Rural Municipality is enriched with Monastries and every ward celebrates festivals throughout the year. Therefore, the Rural Municipality has immense potential for Religious and Cultural tourism.

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

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

| Ward no. | S.n. | Potential tourist places   | Remarks                      |
|----------|------|--|------------------------------|
| 1        | 1    | Taruchhe (तरुछे)   | View points                  |
|          | 2    | Nakthali (नाकथलि)  | points view(Religious)       |
|          | 3    | Mehebum (मेहेबुम)  | View point                   |
|          | 4    | Pangachen (पंगरचेन)  | points view(Religious)       |
|          | 5    | Thuman (थूमन)  | Cultural heritage settlement |
| 2        | 1    | Ghattekhol-Dudhkunda-Gumling (घट्टेखोला-दुधकुण्ड-गुम्लिङ)  | Trekking route               |
|          | 2    | Rasuwaagadhi Tourism Area (रसुवागढि पर्यटकिय क्षेत्र)  | Border                       |
|          | 3    | Hot water spring conservation (तातोपानि संरक्षण)   | Timure                       |
| 3        | 1    | River kunda (रिभर कुण्ड)   | pond                         |
|          | 2    | upper and lower Pangsang (पाङ.साङ).  | View points                  |
|          | 3    | Pangsang trekking route (पाङ. साङ. पास)  | Trekking route               |
|          | 4    | Ghodekang trekking route (घोदेकाङ.)  |                              |
| 4        | 1    | Mountaineering school  |                              |
|          | 2    | Rock climbing  |                              |
|          | 3    | paraglading  |                              |
| 5        | 1    | Thulosyafu Paragliding (ठुलो स्याफु प्यारग्लाइडिङ.)  |                              |
|          | 2    | Red panda zoo  | Thulosyafu                   |
|          | 3    | Syafrubesi-Chilime-Barbal-Sing Gumaba-Gosainkunda (स्याफ्रुवेशि-चिलिमे-ब्राबल-शिङ.गुम्बा-गोसाईकुण्ड)                                     | Trekking route               |
|          | 4    | View tower (cholang)   | Rongadanda                   |
|          | 5    | Syafrubesi-Komen-Baundanda-Mahabung danda-Ghale Durbar-Parbati Kunda (स्याफ्रुवेशि-कोमेन-बाउनडाडा-माहाबुङ. डाडा-घले दरबार-पार्वति कुण्ड) | Trekking route               |
| 6        | 1    | Dhunche-Gosainkunda Cable car (धुन्चे - गोसाईकुण्ड केवल कार)   |                              |
|          | 2    | Dhunche-Laksardanda-Gosainkunda (धुन्चे - लक्सर डाडा - गोसाईकुण्ड)   | Trekking route               |

Table 21: Tourist attractions in Gosainkunda



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

| Ward no. | S.n. | Religious Sites   | Remarks                 |
|----------|------|---|-------------------------|
| 1        | १    | Mingyur Samling Gumba (मिङयुर साम्लिङ; गुम्बा)  | Thuman                  |
|          | २    | (Nagthali Gumba) नागथलि गुम्बा  | Nakthali                |
|          | ३    | Gyagharling Gumba (ग्याघरलिङ; गुम्बा)   | Nakthali                |
| 2        | १    | Saburgang Gumba (सबुरगाङ; गुम्बा)   | Khaidi (खैदि)           |
|          | २    | Dhoje thaye Gumba (धोजे ठाय गुम्बा)   | Timure (टिमुरे)         |
|          | ३    | Thakarchango, Ghaledurbar, Rasuwagadhi, Guru Gumba (ठकरछंगो, घलेदरवार, रसुवागडि, गुरु गुम्बा) | Khaidi (खैदि)           |
|          | ४    | Chayoling Gumba (छयोलिङ; गुम्बा)  | Ghattekholā (घट्टेखोला) |
|          | ५    | Dudhkunda (दुधकुण्ड)  | Timure (टिमुरे)         |
| 3        | १    | सेर्पागाउ गुम्बा (लुम्बु छेलिङ.)  | सेर्पा गाउ              |
|          | २    | छमगाड. (mediation place)  | सेर्पा गाउ              |
|          | ३    | वेन्झयाड. गुम्बा  | वेन्झयाड.               |
|          | ४    | खाड.जिम गुम्बा, छुम्प्रा गुम्बा   | खाड.जिम                 |
|          | ५    | कामदिन छोइलिङ. गुम्बा, गुरुदूक्फु गुम्बा  | ब्रिदिम                 |
| 4        | १    | तेन्जिन गुम्बा  |                         |
|          | २    | सम्लिङ. गुम्बा  |                         |
|          | ३    | जुम्लुङ. गुम्बा   |                         |
| 5        | १    | गोसाइकुण्ड  |                         |
|          | २    | मेचे गुम्बा, मंगिनछेलिङ. गुम्बा   | ठुलो स्यापु             |
|          |      | इयाड.झुछोर्तेन गुम्बा   |                         |
|          | ३    | सम्देनयाड.जेन गुम्बा, प्रवलछेलिङ.   | ब्राबल                  |
|          | ४    | इयाड.झुछोर्तेन गुम्बा, डुक्सड.गछेलिङ. गुम्बा, शिव मन्दिर                                      | स्याप्रुवेशि            |
|          | ५    | साड.पछेलिङ. गुम्बा  | नोकोटि                  |
|          | ६    | टासिम्याड. गुम्बा, सिङ.गुम्बा, फुलुङ. गुम्बा,   | ठुलो स्यापु             |
|          | ७    | बुद्ध मन्दिर  | लाउरेबिना               |
| 6        | १    | गोसाइकुण्ड  |                         |
|          | २    | दुप्चेस्वर  | ठाडे                    |
|          | ३    | घलेदरवार  | सोले                    |
|          | ४    | ठाडे गुम्बा, बाकेझुन्डा गुम्बा  |                         |
|          | ५    | टुल्कुछेलिङ. गुम्बा, पाँच माने, छ माने  | धुन्चे                  |

Table 22: Major religious Monastries in Gosainkunda





| Ward no. | S.n. | Major Festivals in Gosainkunda | Remarks         |
|----------|------|--------------------------------|-----------------|
| 1        | १    | लोसार                          |                 |
|          | २    | दशौ तिहार                      |                 |
|          | ३    | बुदजयन्ति                      |                 |
|          | ४    | मानेछेप्पा                     |                 |
|          | ५    | जनैपुणिमा                      |                 |
| 2        | १    | मानोछेपा                       | माघ - फागुन     |
|          | २    | ल्होसार                        |                 |
|          | ३    | बुदजयन्ति                      |                 |
|          | ४    | ड;बाछीजु                       | श्रावण          |
|          | ५    | चुवाछिजु                       | मंसिर           |
| 3        | १    | ग्याल्पो लोसार                 | फाल्गुन         |
|          | २    | मोलपुजा                        | वैशाख           |
|          | ३    | छिजु                           | चैत्र           |
|          | ४    | चुभछिजु                        |                 |
|          | ५    | हिउशाड.                        | पौष             |
| 4        | १    | ल्होसार                        |                 |
|          | २    | डुक्पा देजु                    |                 |
|          | ३    | नाला                           |                 |
|          | ४    | ह्युवा छेजु                    |                 |
|          | ५    | टोरपे छिजु, नुडे.              |                 |
| 5        | १    | बुद्ध जयन्ति                   | बैशाख पुर्णिमा  |
|          | २    | ल्होसार                        | तामाङ. नया वर्ष |
|          | ३    | त्रिपिटक                       | मंसिर           |
|          | ४    | भदौ मेला                       | भदौ             |
| 6        | १    | ल्होसार                        |                 |
|          | २    | बुदजयन्ती                      |                 |
|          | ३    | छेजु (प्रतेक महिना १ पटक)      |                 |
|          | ४    | चेन्जे छेवा                    | कार्तिक         |

Table 23: Major Religious Festivals



## 12 Site Analysis

### 13.1 Trend/Spatial Analysis

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

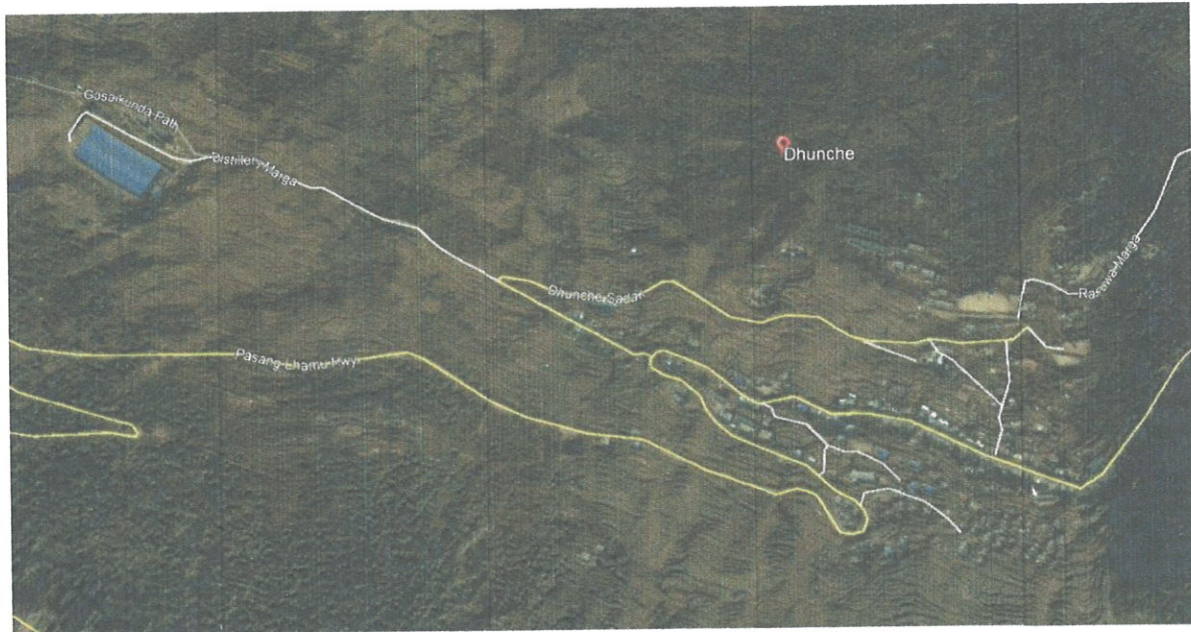


Figure 23: Aerial view of built up areas 2010

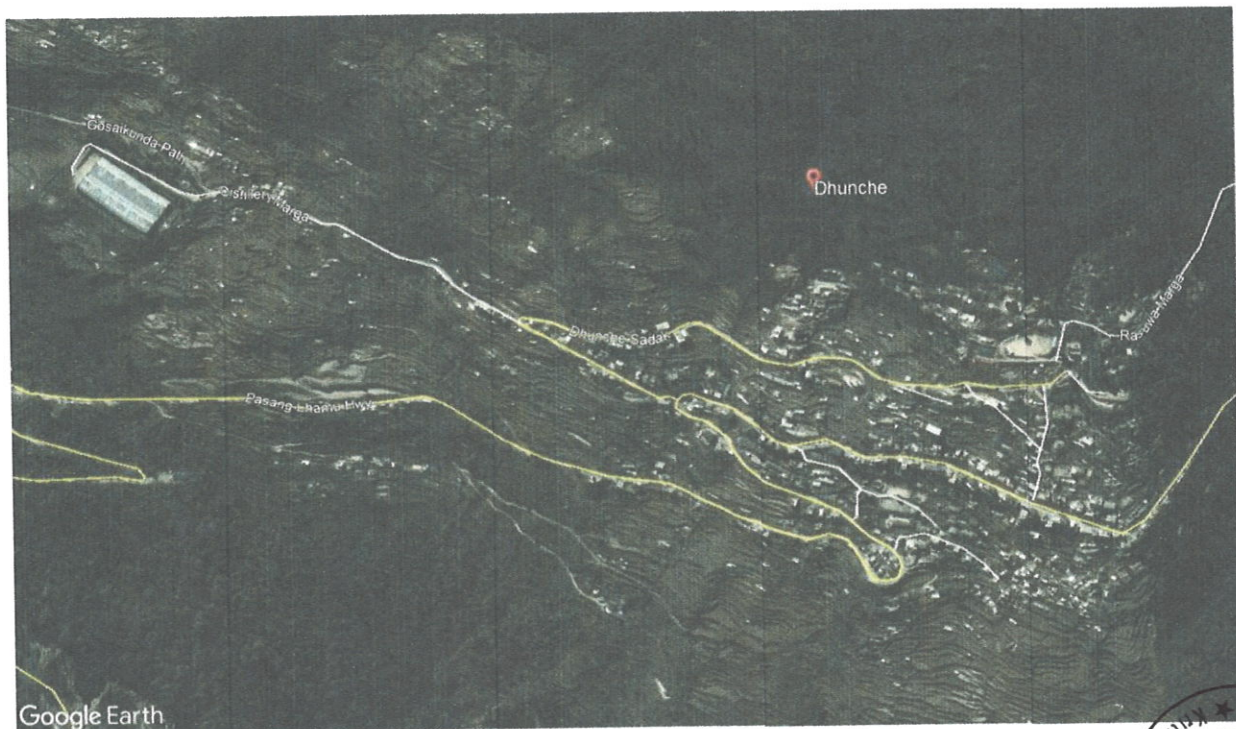


Figure 24: Aerial view of built up areas 2018





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

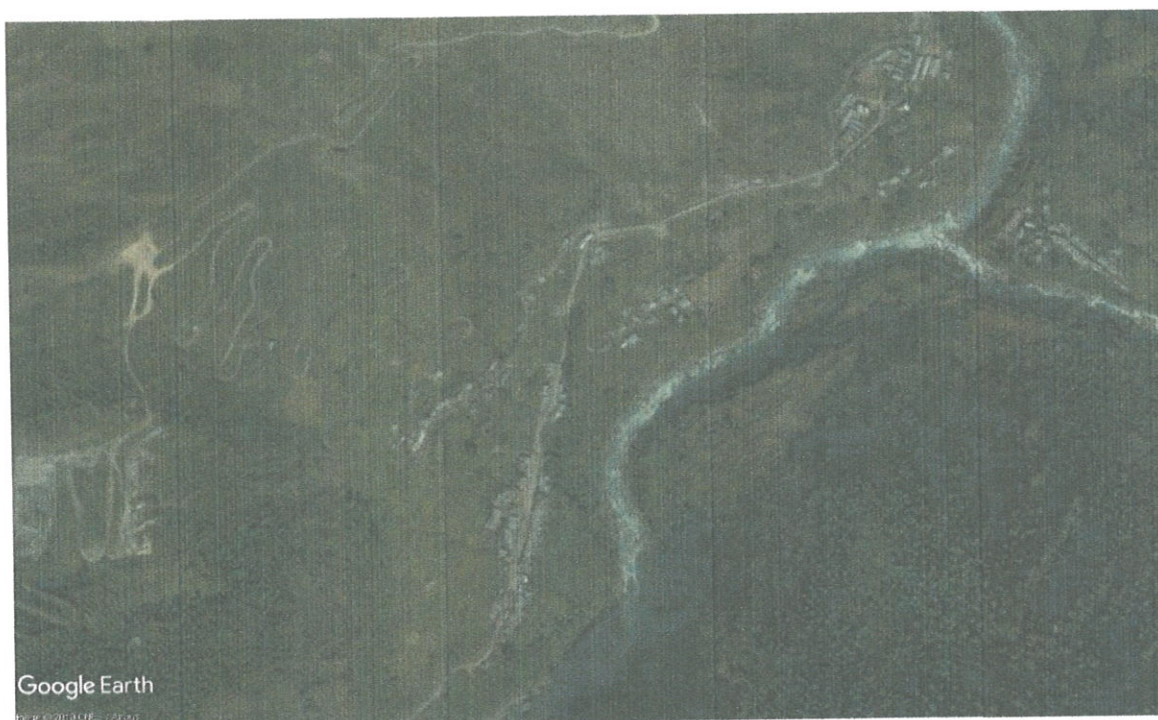


Figure 25: Aerial view of built up areas 2010



Figure 26: Aerial view of built up areas 2018



As revealed in the aerial maps, urban growth in the Rural Municipality is sporadic and does not show any specific growth pattern or direction. Usually, the major market places are developed around highways. In the case of Gosainkunda Rural Municipality, the major built up areas are concentrated at Pasang Lhamu Highway.

### 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.

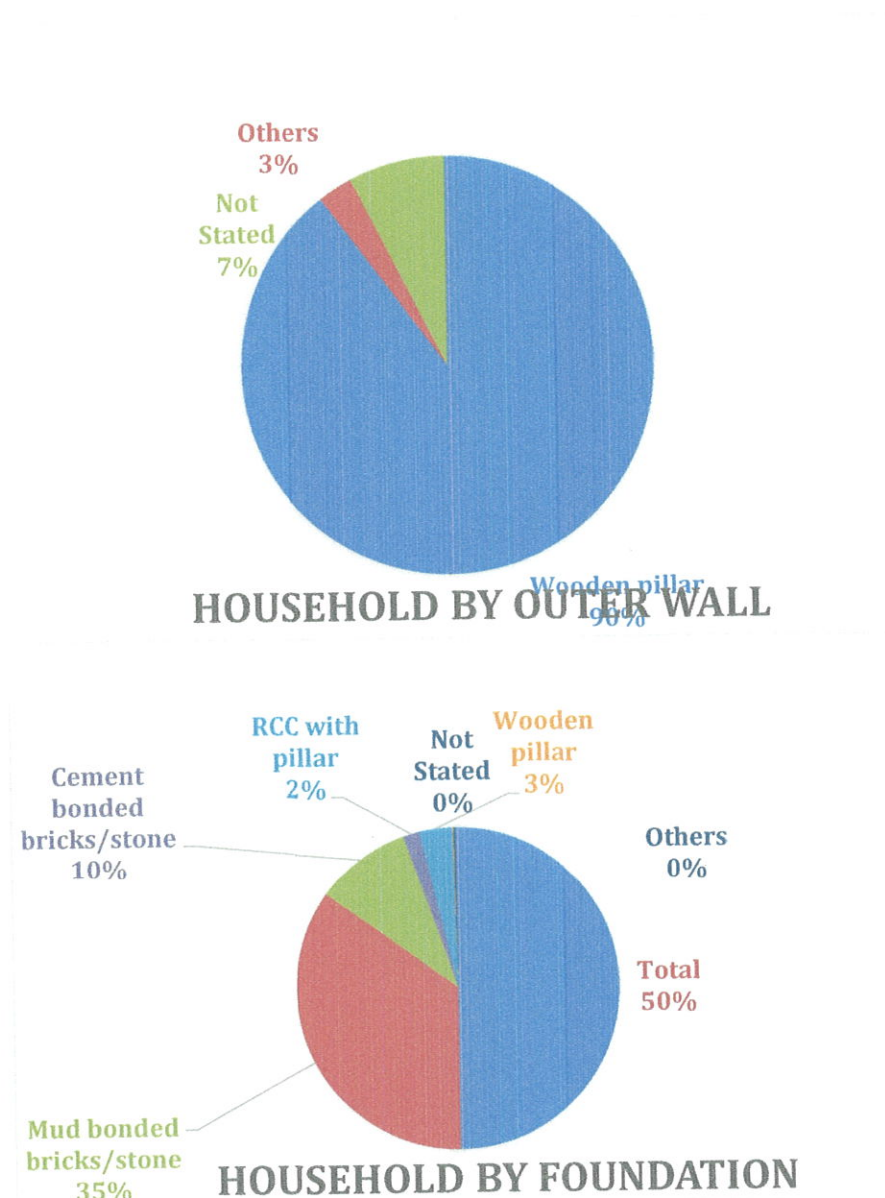


Figure 27: Pie charts showing materials used for constructing household foundation and outer wall



## 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 Periodic Plan identifies a number of projects and implementation steps that will facilitate sustainable urbanization for Gosainkunda Municipality, as well as three key signature projects for pre-feasibility assessment that lie within the jurisdiction of local government. However, the Periodic Plan 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 Gosainkunda, 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 Gosainkunda Rural Municipality is illustrated in the Organogram as shown in Chart below. Four departments work under CEO, sub-departments are further classified.



अनुसूची १.१



design, data collection surveying, preparation of estimates and guidance to User Committees, who then undertake the works.

Given the urban development challenges facing the Rural Municipality, there is a need to ensure the municipality has the capacity to carry out long term strategic planning (as outlined in the Periodic Plan) 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 Periodic Plan identifies the need for the development of sectors that are important to Gosainkunda. 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, Gosainkunda 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.



## 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

- Major highway Pasang Lhamu Highway.
- District roads: 29DR001, 29DR004, 29DR006, 29DR007, 29DR009, 29DR010 and 29DR011 are accessible via Pasang Lhamu Highway.
- Dhunche Bazar, Syafruvesi, Timure are the major market centres in the Rural Municipality providing different services to the people of the Rural Municipality.
- Many Probable water resources.
- 100% households have electricity facility except ward 2 with 2% household deficit.
- 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 not introduced in many wards of municipality and 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 and 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 6 for residential or commercial development with basic infrastructure without compromising high quality agricultural land

## 16.2 Socio-economic

### Strength

- Newly formed local government
- Dhunche, Syafrubesi and Timure Bazaar is a major trading center in municipality provides access to important goods and services.
- Abundant availability of agricultural land and forest areas throughout the municipality.
- Important institutes.
- Rivers with sources of building materials (stones)
- Many hotels and resorts.

### Weakness

- Informal settlements around highway and bazaar areas.
- Most of wards lack access to police station except ward 3 and security condition is critical.

### Opportunities

- Possible recreation and tourism attractions in RM.

### 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 places are found in the Rural Municipality
- High quality built heritage within Gosainkunda RM
- 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

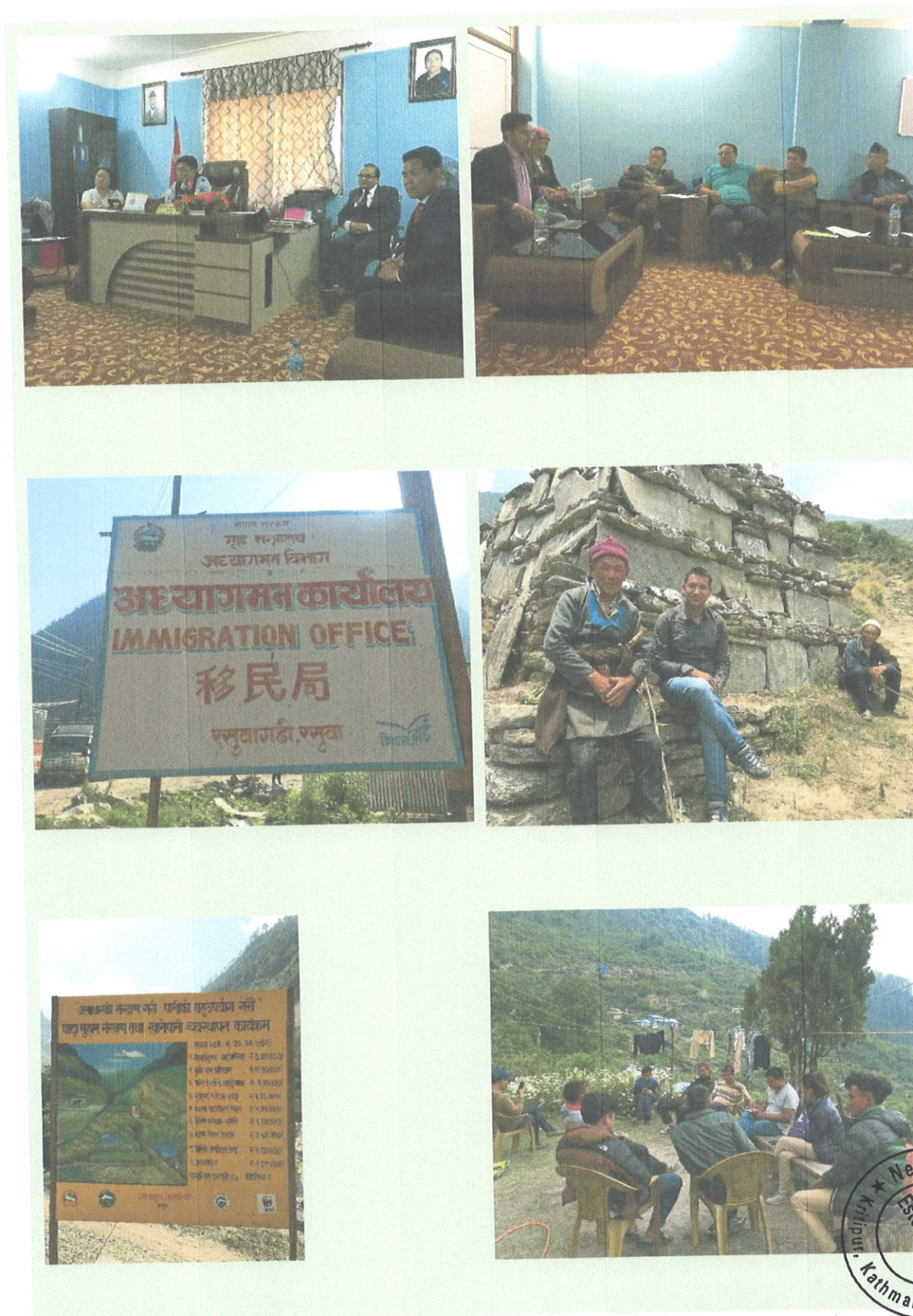
- Possibility of promotion of recreational place along forest areas and river side.





## Appendix 2

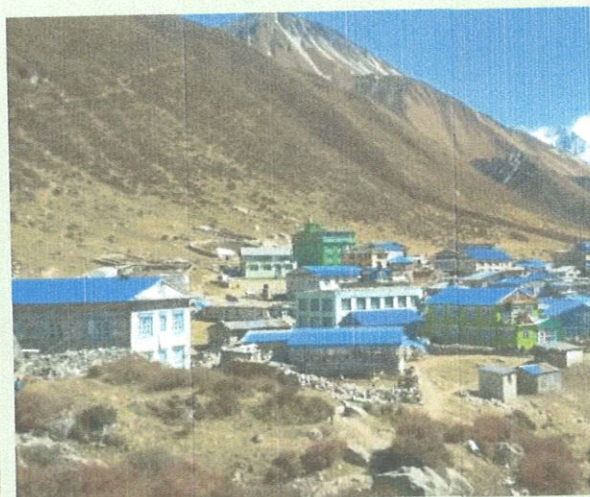
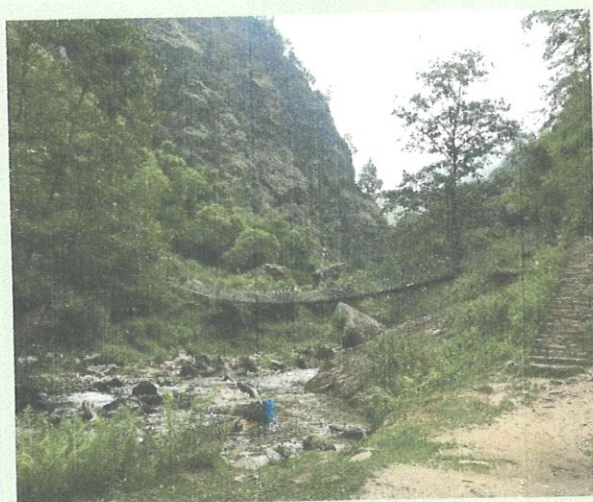
### Consultation and Draft Visits













## Raw Survey Data

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समावेशित कार्यका लागि आवश्यक जानकारी (EXISTING WORKS)

६. विवरण

- विद्युत सेवा पुर्णतया उपलब्ध छ/छैन

Yes No

- विद्युत प्रसारण लाइन तथा टावरहरूको अवस्था

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७. ग्राम विकास तथा संरचना

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८. स्वास्थ्य संस्था

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९. वस्ती विकास तथा भवनहरू

- वस्ती विकास तथा भवनहरू

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१२. स्वास्थ्य संस्था

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| क्र.सं. | नाम                | स्थान   | सुन सुन खंडबाट | कति बना |
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| 1       | गोहानुम            | गोहानुम |                |         |
| 2       | दुलेश्वर, हडि, गोह |         |                |         |

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