

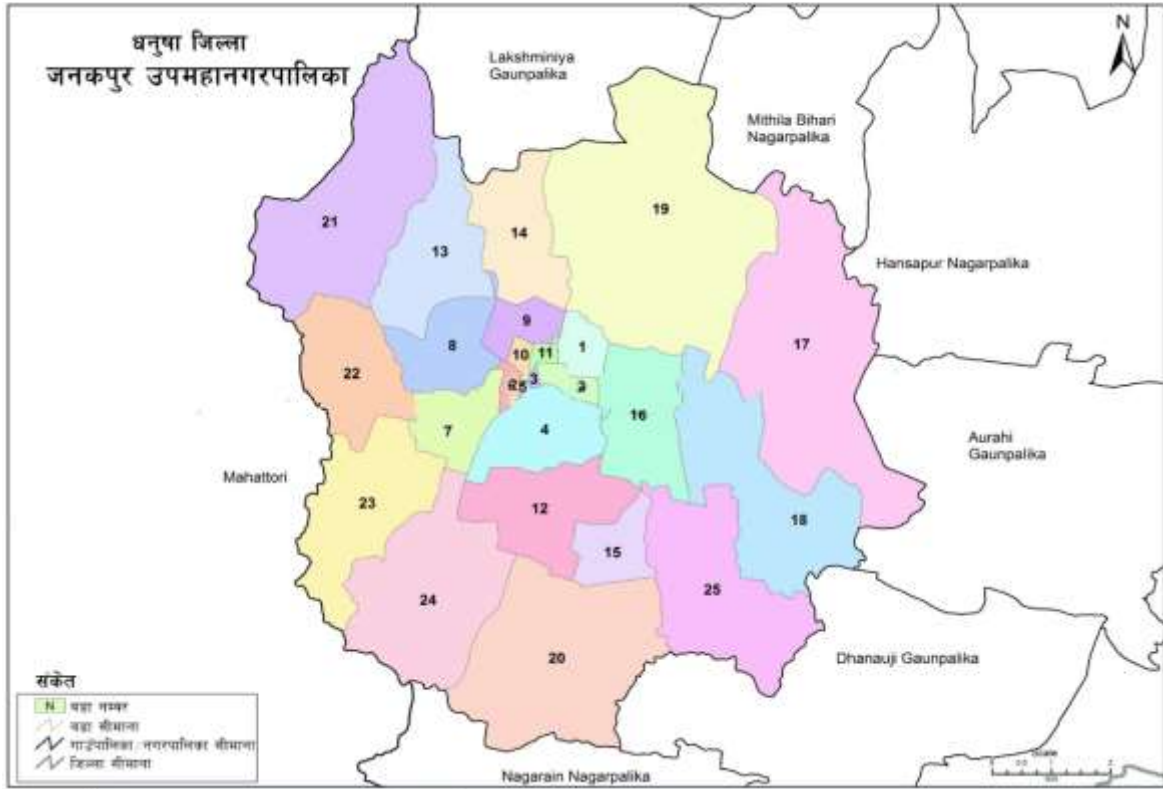
# TERM OF REFERENCE (TOR)

FOR

PREPARATION OF LAND CLASSIFICATION MAP

OF

JANAKPURDHAM SUB-METROPOLITAN CITY



## Background

Land is natural resource, commonly, stands for a section of the earth's surface with all the physical, chemical and biological features that influence the use of resource. It refers to the spatial variability of landscape in terms of geomorphology, geology, soil, topography, climate, hydrology, drainage, mechanical and biological measures. Land use encompasses the functional activities of land by human interaction for specific purposes that support food, shelters, fodder, fiber, fuel, timber and other biotic materials. In Nepal, land use change occurred due to the increased population growth, migration of rural to urban area, newly established planned urban and semi-urban center. It generated the high pressure in the limited land resources available for the high demand of built-up area.

Further, the real estate market has fragmented the agricultural land for housing, and land development towards haphazard infrastructure development and unplanned urbanization. The loss in agricultural land raised the threatening of the food security of the country. Therefore, land use activity is a challenging task to develop land design eco-friendly and sustainable use of land in terms of its spatial distribution to meet the demand of food for growing population, conserve the biodiversity, and preserve the ecosystem. These land use issues are closely related to the society, development activities and environment. These issues should be resolved through land use planning for effective land management. There are raised expectations to allocate the proper land use through land use plan for getting the optimum benefit from scarce land resource. For this, Government of Nepal has prepared land use plan of all local levels and hand over to them. Now, it is necessary to classify the entire land of this Janakpur-Dham Sub-Metropolitan City (JSMC) according to the public choices as well as the rules and regulations of land use. For this purpose, this JSMC also want to update the existing land use map but there is lack of human resource in JSMC, it offers for consultant service.

## Objectives

The main propose of this assignment is to update land use and database of sector map of JSMC.

The specific objectives are:

- To orient and interact with local stakeholders about the purpose and process of land use plan.
- To update land use plan in accordance with local needs and legal provisions.
- To integrate land use sector information in cadastral parcel.

## Scope of the Project Work

- Orientation and interaction with local stakeholders to increase awareness of land use activities.
- Development of guidelines for updating land use.
- Consultation with Local Implementation Committee and Municipal Land use Council.
- Analysis of local needs to meet the demand of land for growing population.
- Updating the land sector use plan according to local needs with reference to Land Use Act, 2076 & Regulation, 2079.
- Incorporating the land use zones in cadastral parcel.

## Methodology

The land resource data/information is essential for updating the land use plan map and database. This land resource data and requirements provided by the client should be reviewed and updated thoroughly to identify the existing situation of the land use zones. So, it requires the value-added information and other relevant information from field survey. The land resources data/information should be covered with the following feature:

- ❖ Location Name
- ❖ Existing land use (agriculture, residential, commercial, industrial, forest, public service, cultural & archeological, mine & minerals, riverine lake & marshy area, and other use area)
- ❖ Road networks with all existing streets
- ❖ General demographics
- ❖ Population density with its growth rate
- ❖ Public service infrastructure
- ❖ Social infrastructure
- ❖ Culture and tourism area
- ❖ Environment and risk status
- ❖ Separate drawing of map of each wards (1-25), including digital and physical (hard copy) both needed.
- ❖ Land classification showing distinct colored map according to cadastral zoning.
- GIS based technique is used for preparing land resource information as thematic layers after modification with reference to the freely available ortho-rectified satellite image or google image for modification of existing land use information.
- The members of the Municipal Land-use Council, other stakeholders and citizens are not always familiar with land resource maps. To allow mutual understanding, it is expected that

the consultant conduct at least one focus group discussion at JSMC to comment on each thematic map using local landmarks.

- Need assessment should be conducted with the involvement of local leaders and stakeholders in participatory process. The local level socio-economic information is collected at community level and used in updating local developing infrastructure plan. It includes demographic, migration, population growth rate, physical, utilities, social, economic, and environmental status of the local level.
- Based on the local needs, guidelines are prepared and approved by the local land use council; the existing land use zone database should be updated on basis of local needs with reference to Land Use Act, 2076 & Regulation, 2079.
- The client collects cadastral database of JSMC from concerned survey office and provides to the consultant to incorporate up to date land use zone in the cadastral parcel.

### Expected Outputs and Outcomes

- A comprehensive and updated land classification map in both printed and digital formats (PDF).
- The consultant is required to provide the finalized land use zoning map in the form of a GIS shape file including shape file of all the 25 wards. This digital file should include all relevant attributes and layers used in the mapping process. The shape file must be compatible with common GIS software (e.g., ArcGIS, QGIS) and should be accurately georeferenced to the official cadastral data of Janakpurdham Sub-Metropolitan City.
- One hard copy and one electronic copy of the draft study reports after the survey.
- Three hard copies and 1 electronic copy of the final reports and every raw data.

### Team Composition

S.N.	Position	Duration	Qualification	Experience	Remarks
<u>Key Experts</u>					
1	Team Leader	3 Months	Master Degree in Urban Planning / Geomatics Engineering / Geography	5 years	
2	GIS Expert	2.5 Months	Master Degree in Geography / GIS/ Water resources	5 years	
3	Civil Engineer / Geomatics Engineer	2.5 Months	Bachelors in Civil Engineering	5 years	
<u>Non-Key Experts</u>					

4	Experts from JSMC	3 Months	Related Field	-	5 Surveyors & 1 Forest Technician
5	GPS Operator	3 Months	Grade 12 or Equivalent	-	

**Period of the Project Work**

The entire project work shall be completed within 3.0 (three Months) months from the date of contract agreement.

**Report Schedule**

The consulting firm must be submitting the following reports:

S.N.	Description	Timeline from Contract Agreement	Remarks
1.0	Draft Report	Within 2.5 months	
2.0	Final Report	Within 3.0 months	

**Mode of Payments**

- Payment up to 40% after submission of draft report
- Payment remaining 60% after the submission of Final Report. TDS and advance will be deducted as per rule.