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# Integrated Urban Development Plan (IUDP) as a Guiding Tool to Municipal Development: Insights from Dudhauri Municipality, Nepal

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ABSTRACT

Several planning tools and approaches such as action plan, period plan, physical development plan have been applied for planned development for municipalities including other small and medium-sized towns of Nepal. Among them Integrated Urban Development Plan (IUDP) is the latest approach that focuses integrated sectoral development envisioning long-term spatial development by adopting strategic actions, which is backed by lead development sectors of that town. This study is based on field level data collection through municipal and community level interactions, observation and field mapping. Dudhauri municipality, which is located in the hilly region of Bagmati province Nepal has been selected for this study, which reveals an array of diverse patterns and challenges of municipal development. Present scenario of urban growth in Dudhauri has been taking place at and around Dudhauri bazaar, Dakaha and Sirthauri area and main roadsides in the form of compact and linear development pattern in unplanned way, which has resulted increasing built-up area and decreasing agriculture land. Rapid spatial expansion of residential buildings construction and densification of built-up areas have been increased by 56% within the time period of 10 years in Dudhauri area. Consequentially, fertile agriculture land has been converted into constructional area significantly. To regulate urban development in a right direction, a planned urban development of Dudhauri is needed. IUDP, in this context would be an appropriate tool to guide as a framework of municipal development by considering vision, goals, strategies, key activities and land use zones for regulated urban development.

## 1. Introduction

Urbanization is a good indicator of economic development of the country and it has always been an accelerator of growth and development, bringing about enormous changes in the spatial distribution of people and resources, and in the use and consumption of land<sup>[1]</sup>. The level of urbanization has

considerably increased in the last four decades in Nepal<sup>[2]</sup> and it has practiced to analyze urbanization in terms of the number of municipalities and people living there. In this respect, about 63% people are living in the urban area (what we called municipalities) in 293 municipalities in Nepal<sup>[3]</sup>. Urbanization in Nepal has mainly occurred due to three interrelated factors:

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- (1) Emergence of new towns
- (2) Expansion of existing urban areas, and
- (3) Migration (rural to urban and ridge-top to valley)

Over 65% of urban growth in Nepal over the recent past can be traced to migration <sup>[4]</sup>. In the recent years, internal migration particularly rural to urban and ridge-top to valley or hill to Terai (plain) have increased significantly in the many hills and mountain towns of Nepal.

However, the present scenarios in the context of urbanization (through incorporated/emergence of large number of places as municipal town in Nepal) is yet to be assessed <sup>[5]</sup> and this scenarios of the increasing number of urban center (municipalities) and people living in them does not mean that the country has accelerated rate of economic development through the transformation of agriculture economy into processing and services. Urban growth in hill and mountain region have determined by combination of factors, such as, local topography and environment, natural population growth and migration, infrastructure development, (local) elite's voice and choice, availability of space and land use. Particularly, in the case of (physical) infrastructure development and facilities, local elites and their decision shapes the city's future expansion (growth). Besides, as the Nepal government has declared 293 municipalities; most of them have poor provisions of municipal services and facilities. Such municipalities neither have basic physical and social infrastructure nor strong economic resources that could be invested in the prioritized sectors of development. In addition to this these municipalities pose poor data base, urban development regulation (bye-laws), development vision, mission, objective and strategic planning. It is thus, apparent that local government bodies, particularly newly formed municipalities are needed to enhance their skills and capacities more on their service delivery, planning and monitoring.

Lack of local level land use plan and zoning, among other factors, is probably one of the most persuasive factors to the haphazard urban development in most of the towns in Nepal. However, there have been some impressive practices over the planned urban development including widening of inner roads and streets by proportionate contribution of land by the landowners of adjoining plots <sup>[6]</sup>. There have been changed in the planning practices from action plan to periodic and integrated approach. Integrated approach of urban development is also called Integrated Urban Development Plan (IUDP) in general. In the few years, there have been shift towards a new paradigm in urban development through promulgated IUDP concept, as an effective tools

of sustainable urban development in Nepal, which focused the long-term thinking about spatial development by adopting strategic view and by supported by a common vision <sup>[7]</sup> correspond with the local situation.

IUDP has sought to provide a roadmap for the spatial transformation towards livable, inclusive and resilient towns and cities; and to guide the future growth and management of urban areas <sup>[8]</sup>. Therefore, the IUDP is about process and participation, which has focused on:

- (1) A comprehensive SWOT analysis of a town
- (2) Defining goals, objectives and strategies, and setting up a vision for the town
- (3) Preparation of planning framework, Multi Sector Investment Plan and implementation modality.

In this context, IUDP is considered as an effective planned document to guide newly incorporated towns and municipalities. There are six main reasons why a municipality should have an IUDP <sup>[9]</sup>.

(1) *Effective use of scarce resources*: The IUDP will help the local municipality focus on the availability of resources and cost-effective ways of providing services at the local level, and to address the local level problems.

(2) *Helps to speed up delivery*: The IUDP helps to develop realistic project proposals based on the availability of resources. It identifies the least serviced and most impoverished areas and points to where municipal funds should be allocated.

(3) *It helps to attract additional funds*: Government departments and private investors are willing to invest where municipalities have clear development plans.

(4) *Strengthens democracy*: Through the active participation of all the important stakeholders, decisions are made in a democratic and transparent manner.

(5) *Rural-urban linkages*: Municipal resources are used to integrate rural and urban areas and to extend services to the poor.

(6) *Promotes co-ordination between local, provincial and national government*: The different spheres of government are encouraged to work in a coordinated manner to tackle the development needs in a local area.

Moreover, IUDP is a participatory process, which emphasizes community involvement in the planning process at different level. Participatory process of strategic planning and management ensures use of its stakeholders' knowledge, resources, and commitment <sup>[10]</sup>. Department of Urban Development and Building Construction (DUDBC) (2018) <sup>[11]</sup> has also focused participatory approach for IUDP that could reflect issues and problems not only in sectoral basis but through community as well as broad development framework that would guide municipal development in the long-run. Broadly, present IUDP

process involves through the following process (Figure 1).

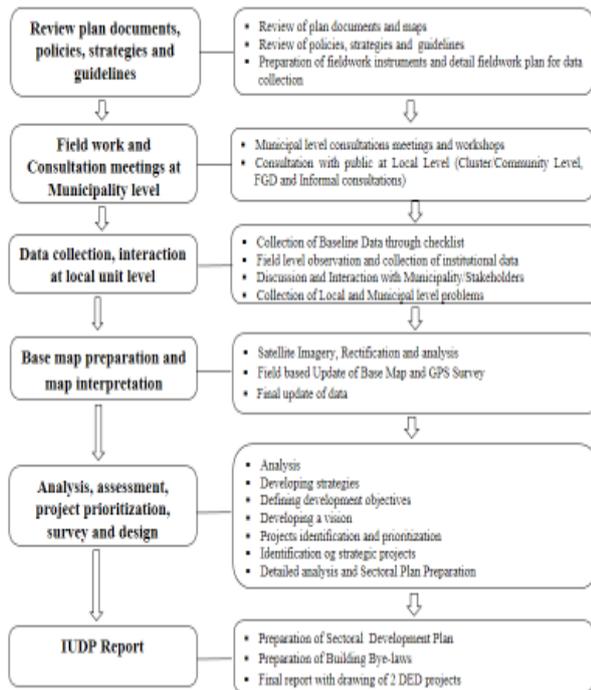


Figure 1. IUDP Process in General

## 2. Present Federal Context

With the promulgation of Constitution of Nepal-2015<sup>[12]</sup>, Nepal is a federal democratic republic with federal set up that constitutes federal, provincial and local government. There are seven federal states that governed six metropolitan cities, 11 sub-metropolitan cities, 276 municipalities and 460 rural municipalities. The constitution provides a framework and legal mandates for the devolution of powers to the federal and local level governments for governance, development activities and resource mobilization for the provincial and local governments. As such, the municipal government is assigned a larger functional, semi-judicial and fiscal authority. The constitution has empowered municipality a number of constitutional power of roles under the section 8 of Local Government Operation Act 2017<sup>[13]</sup>. These powers and duties are flexible and include the followings:

- (1) Constitution, operation, management and regulation of municipal police.
- (2) Formulation, execution, and regulation of cooperative policy and law.
- (3) Approval and Regulation of F.M Radio.
- (4) Fixation and collection of local taxes.
- (5) Management of local services.
- (6) Local data center.

(7) Identification, planning, and implementation of local development projects.

(8) Primary and secondary education.

(9) Mandates of the new laws are very wide and the municipality has tremendous duties and powers.

In this federal governance system, municipality can have the right to formulate plans, allocate budget in their own priority sectors, implement resource generation plans and act as primary actors in the development process. This context has also justified to the need of IUDP for urban development as municipalities themselves can formulate plans for implementation.

## 3. Methods and Materials

This study is based on primary and secondary data and information. Field study has been conducted to collect primary data through applying a checklist which includes physical infrastructures (road and transportation, water supply and sanitation, electricity and alternate source, communication, irrigation, environmental situation etc.), social infrastructures (education, health, security, entertainment, parks and recreational area, etc.); and economic infrastructure (Haat Bazaar, cold store, agricultural and fruits processing center, etc.). In addition to this, information on existing government and non-governmental institutions within the municipality were also collected and located in the maps. During the field study, basic infrastructure, urban development pattern, development scenario were thoroughly observed and analyzed. Similarly, discussion and interaction with municipal officials and municipal elected representatives, service-providing agencies and local communities have been conducted to identify local and strategic issues for the municipal development. Observation of the urban expansion sites and environmental sensitive areas of the municipality have been done to get insight about the future expansion of the municipality and potential sites of further infrastructure development. In addition, key informants interview including the mayor, deputy mayor, and representative of civil society, political parties, local teachers, technical persons and local aged people were interviewed to get insights in the municipal information.

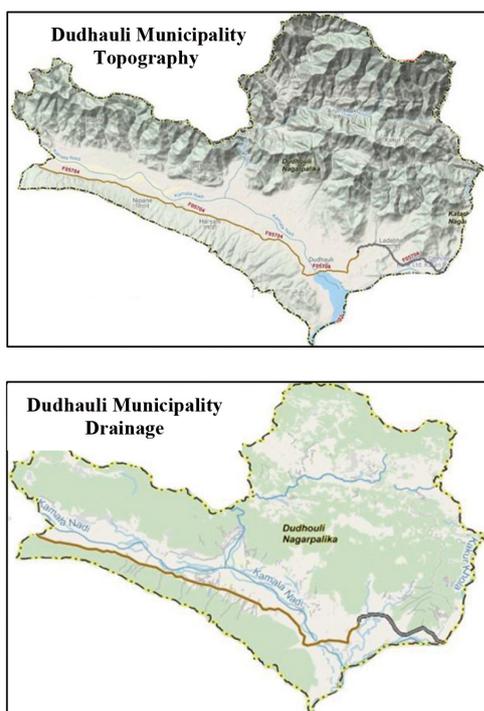
A number of articles, previous plans and policies, international case studies have been reviewed. National Urban Development Strategy 2017<sup>[14]</sup>, Land Use Policy 2015<sup>[15]</sup>, The Planning Norms and Standards 2013<sup>[16]</sup> have been reviewed. Spatial and situation analysis, SWOT analysis and trend analysis were acknowledged, as some of the important parts of the IUDP have been conducted to see different prospects and hindrances of municipal development.

## 4. Result and Discussion

### 4.1 Sites and Situation of the Municipality

Dudhauli municipality is located in Sindhuli district Bagmati province and has designated in municipal status in 2014 covered 390.39 square km of land with 14 wards [17]. The municipality lies in between Mahabharat Range (mountain region) in the north and Chure (Siwalik) range in the south, ranging its height from 158m to 2106m mean sea level (Figure 2). Topography of the municipality is rugged with steep to gentle slopes. It consists of sedimentary to low-grade meta-sedimentary rocks. Topographically, the Mahabharat Ranges is markedly higher than the Siwalik hill. It forms rugged terrain with sharp crest and steep slope. The northern slopes are generally steeper than the southern ones. Southern gentle slope as Kamala river basin is more populated.

The Chure hills are characterized by low terraces, alluvial fans, badlands, and thin sandy soil covers. Tawa Khola river valley and Kamala river are filled up by the alluvial and fan deposits. These river valleys are cultivated and are encroached in some places by the people resulting in the degraded forest, overgrazing pasture lands, and badlands topography. A great amount of sediments are contributed to these rivers. Other small streams and rivulets originating from the Chure hill remains nearly dry during most of the year except in the monsoon period.



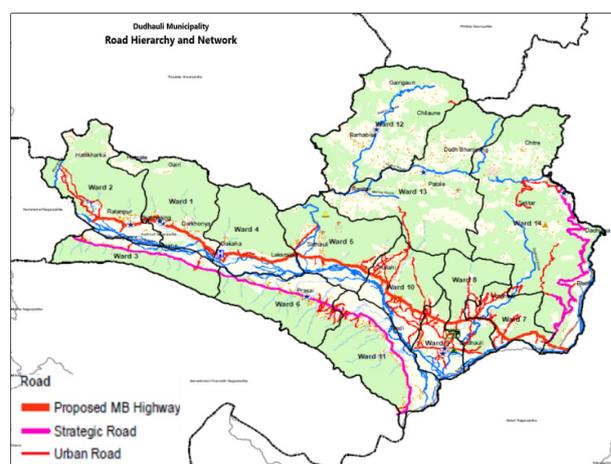
**Figure 2.** Topographical variation and drainage pattern of Dudhauli Municipality

### 4.2 Socio-economic Characteristics

As of National Population Census 2011, Dudhauli Municipality had 65,203 populations with an average household size 5.03. Out of this, 47.5% were male and 52.5% were female with gender ratio 90.54. Population density of the municipality was 119.12 persons per sq. The literacy rate (about 80%) of Dudhauli Municipality is above the national average of 66% [17]. However, more focus still needs to provide educational facilities to northern side, as these areas are still remote from the core market area. Future population projections on the basis of existing growth rate have been done. If the population growth rate remains same (present population growth rate 0.92 % annual), the population of Dudhauli municipality in the next five year would be 72,888 (2023AD), and 79,878 in the next 15 years (i.e. 2033AD). As being a newly emerging municipality located at south-east of Sindhuli district and left side of Mirchaiya-Katari-Okhaldhunga road corridor, it seems that physical infrastructure, inter-intra linkages and connectivity of the Dudhauli will grow significantly; as a consequence, the municipality will attract more population from surrounding district, municipalities and rural municipalities in the future.

### 4.3 Existing Infrastructure and Connectivity

Dudhauli Municipality is located about 14 km north of Mirchaiya Bazaar at east-west highway (Dhanusha District). The municipality has also connected by Bhiman-Dudhauli road which is partly gravel and partly earthen (Figure 3).



**Figure 3.** Road networks and road hierarchy

Dudhauli Bazaar, Dakaha, Dhansari, Maraghatte, Panchagachhi, Thakurdaman, Bitriya, Thapatar, Fakritar, Jyamitar, Bansbote, Chitre, Jiganu Phat, Pariyatar, Jinaju

Phat are the major settlement of the municipality. There are three periodic markets which are providing trading opportunities to the local people living in the surrounding areas. Among them, periodic market located at Dakaha Hatechock (ward no 4) opens every Wednesday. Gaagat Bazaar (ward no 2) and Sirthauli Bazaar (ward no 5) are other periodic markets open in every Thursday and Monday. Besides these, there are five agricultural market centers providing goods and services to the local people as well as buyers and traders of nearby villages and market centers.

### 5. Urban Growth and Future Scenario

Dudhauli municipality has a number of settlements. These settlements are mostly scattered and some are semi-compact form. Dudhauli, Dakaha, Hatpate, Nipane, Sankhatar, Dandatol, Khiriyani, Harsai, Sirthauli, Arunthakur are major semi-compact settlements. Among other, Dudhauli and Dakaha are main market centers and are developing in the linear patterns on both side of the roads. These are small newly growing market centers but it is observed that urbanization seems to be concentrated high in and around these areas. Migration seems to be high in the recent years, and physical infrastructure for example roads, bridges are constructing connecting to other settlements. Other socio-economic infrastructures are also expanding rapidly at these two settlements. Many traditional houses made with local materials are rapidly replaced into modern one and narrow roads and street are widening significantly. There is also increasing trends of building construction in the recent years. It was also observed that people are constructing new building with concrete structure with multi-story buildings. These indicate an increasing trend of urbanization which seems to be high in the next couple of years in Dudhauli and Dakaha areas of the municipality. Data also reveals that agriculture land has been rapidly converted into residential plots and construction in the last decade. Nearly 56% built-up area has been increased in the period 2008-2018 in the municipal area<sup>[18]</sup> (Figure 4). It includes residential plots, roads and other physical infrastructure, market places etc.

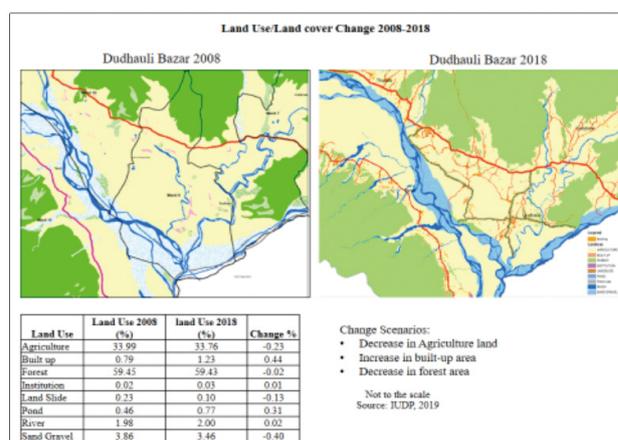


Figure 4. Land use changed 2008-2018 (main Dudhauli Market area)

Settlement pattern of municipality is found semi-compact, linear as well as scattered. Dudhauli and Dakaha bazaar area have compact as well as linear settlement pattern. These market center are developed on both side of the roads. Linear settlements are increasing in ward no. 8, 9 and 10 at the low lying basin of Kamala river and Tawa River. Rest of the areas of the municipality have scattered settlements.

At the nodal points and road junctions, some cluster settlements have been developed to serve as small market centres such as Dakaha, Hatpate, Harsai and Nepane. These market centres serve as suppliers of goods and services and collection of local production. Figure 5 shows that there has been significant changed in the urban form of Dudhauli in the year 2000-2018.





**Figure 5.** Urban Expansion Scenario, Dudhauri Bazaar Area 2000-2018

Source: Google Earth Archive.

### 6. Lead Sector and Vision of Municipal Development

Being about 79% people are still dependent on the agriculture and allied activities, it is one major sector of development. Paddy and maize are the major cereal crops; and fruits (mango and sweet orange), vegetables (potato and others), and spices (zinger, big cardamom) are major cash crops. Importance of Dudhauri for agriculture development has also been recognized as it has been selected for paddy block, mango and zinger pocket area for Prime Minister Agricultural Modernization Project, one of the focussed project of Nepal Government. Agriculture, thus, has been leading sector of economic development of the Municipality. Similarly, the municipality is also known for its ethnic, cultural and religious diversity. There are more than 40 ethnic groups, who have their own cultural and religious practices, traditions and dialects. Likewise, the municipality is also rich in its flora and fauna of subtropical climate. Municipality has hot to cool climate lying on the Chure and Mahabharat region. Therefore, people who are living in the southern hot climate zone can enjoy with cool climate of Mahabharat region within short distance. Site scene and trekking are also potential in the municipality. Therefore, tourism has considered as a sub-sector of municipal development.

Taking consideration into above lead sectors of development, a municipal vision has been finalized through participatory consultations. The vision reflects municipal development dream in the long-run, it gives guides and track to the municipality to address the existing problems through phase wise interventions. The vision statement for Dhudauri municipality is: “agriculture, tourism and infrastructure are the main basis of prosperous

Dudhauri”. It indicates that agriculture and tourism are the major leading sectors of development which should be backed by infrastructure development to make prosperous and livable municipality.

### 7. Potentials and Problems Analysis

SWOT is a strategic planning technique that helps to identify strengths, weaknesses, opportunities and threats of institution related to project/planning. Strengths and weakness are generally defined in terms of internal factors; whereas, opportunities and threats are commonly known as an external factor. Based on the interaction with the local communities and municipal officials, impressions of detailed fieldwork and municipality profile (2017), data and literature, Dudhauri municipality has some potentialities and weakness of development which are presented below (Table 1).

**Table 1.** SWOT Analysis (Municipal level)

		Strengths	Weakness
Positive		<ul style="list-style-type: none"> <li>Road connectivity and accessibility (309 km of roads and connected by Mirchajaya-Katari road and Bhiman-Dudhauri strategic road)</li> <li>Diversified ethnic composition-multi-cultural and multi-ethnic communities.</li> <li>Ample land available for infrastructure development.</li> <li>Good share of economically active population (53%).</li> <li>Presence of forest (59%) and water resources</li> <li>Availability of flat and fertile land for agriculture and irrigation facilities (47 irrigation schemes)</li> </ul>	<ul style="list-style-type: none"> <li>Lack of planned urban development initiatives.</li> <li>Poor irrigation and agricultural support programs/incentives.</li> <li>Weak institutional capacity (human resources, technical expertise and logistics).</li> <li>Low revenue generation and poor spending capacity.</li> <li>Poor urban infrastructure and services (poor road condition and market infrastructure, no bus park, drainage network and landfill site).</li> <li>Outward migration of youth for employment</li> </ul>
		<p>Opportunities</p> <ul style="list-style-type: none"> <li>Increase accessibility by upgrading existing roads including Madan Bhandari highway (proposed), and bridges over Kamala and Tawa Khola</li> <li>Larger markets in adjoining areas e.g. Mirchaya, Katari and Bhiman</li> <li>High potentiality of commercialization of agriculture e.g. Ginger, Junar, Paddy</li> <li>Potentiality of natural and religious tourism-Madhuganga</li> </ul>	<p>Threats</p> <ul style="list-style-type: none"> <li>High dependency on external funds for infrastructure development.</li> <li>Flash food and inundation (Kamala and Tawa rivers).</li> <li>Depletion of productive land (Change in land use).</li> <li>Forest Encroachment (Chure region)                             <ul style="list-style-type: none"> <li>High cost for infrastructure development</li> <li>Outsourcing the technical experts                                     <ul style="list-style-type: none"> <li>Youth outmigration</li> </ul> </li> </ul> </li> <li>Chure degradation and climate change impacts</li> </ul>
Negative			

### 8. Planning Issues and Strategies for the Municipality

From the detailed field work, major issues of Dudhauri municipality have been identified. As explained above, the issues were identified through the interaction with the municipal officials and local communities as well as field observation and informal conversations at different areas and sectors in the municipality. Identified planning issues are listed out as follows:

(1) Kamala River, Tawa River and seasonal river and rivulets are major problems for Dudhauri causing flooding and inundation. These issues need to be addressed by river

embankment and implementing flood control mechanisms.

(2) Poor physical infrastructure development (road, bridge, sewerage, electricity and irrigation), insufficient community infrastructures (health, educations, community halls etc) need to be implemented on phase-wise basis.

(3) Having insufficient water supply, many people are depended upon tubewell and well even river which are unsafe for health. Different schemes of water supply projects should be implemented.

(4) Encroachment of public land, forest and Chure area and increasing squatter settlement are other issues which need to be addressed incorporating in annual plans and programmes of the municipality.

(5) Institutional strengthening through capacity development (skills and knowledge enhancement, provisions of infrastructures and municipal assets and data base management etc.) should be priority in institutional development for the municipality.

(6) Rapidly conversion of agriculture land, public land and open space into built-up form in an unplanned development causing haphazard urban growth need to be controlled from the beginning to develop a healthy urban development. Land use planning and implementation of building bye-laws<sup>[19]</sup> for urban growth regulation should be implemented in the municipality.

(7) Increase social facilities and infrastructures to enhance accessibility to education and health and economic opportunities in a balance way that would bring municipal people in a proximity of easy service delivery system.

(8) Conservation of natural resources including Chure conservation, conservation of traditional culture may enhance tourism promotion and economic development which need to be addressed in annual plans and programmes of the municipality.

(9) Agriculture incentives, pocket area development, promotion of high value crops, livestock development and market infrastructure development will be important strategies for agriculture development and employment generation in the municipality which could be intervene in the annual plans and programmes of the municipality.

(10) Tourism promotion, tourism infrastructure development with tourism route development linking important tourism sites is an important strategy to develop tourism activities in the municipality.

## **9. Land Use Zones and Regulation**

In Nepal, Land Use Policy (2015) has emphasized the safe and secure settlement along with the environmental protection, food security and it has mandated for designation of land use zones/classes<sup>[20]</sup>. Based on the

existing land use pattern of growth and considering increasing trend of land use changes, which was quite visible during the field visit, growing urbanization and growth trends lead demand of land for non-agricultural uses, land use zoning of the municipality has been prepared. The land use zoning has been proposed to regulate controlled land use zoning so that unwanted haphazard urban development would be discouraged and urban development would be regulated in a right direction.

Agriculture area which has been identified and demarcated on the basis of quality of land, land capability, and irrigation facilities which would contribute to increase agriculture productivity. Dudhauli (ward 9), Rajbas, Khariyani, Thalaha, Patayani, Narkate, Jitpur, Dudaha, Daman, Jagadi, Laxmipur, Khuttepani and Dandagaun falls in this zone. Based on its potentiality, the agriculture zone further classified as fruit, paddy and zinger pocket areas with other mixed agriculture zones. Potential area for future residential expansion has been identified and demarcated on the basis of proximity to existing residential area, access road and infrastructural services and facilities avoiding fragile topography including low land and flood prone areas. The following areas are categorized as residential areas in the municipality:

(1) High density residential area: Dudhauli, Dakaha, Sirthouli,

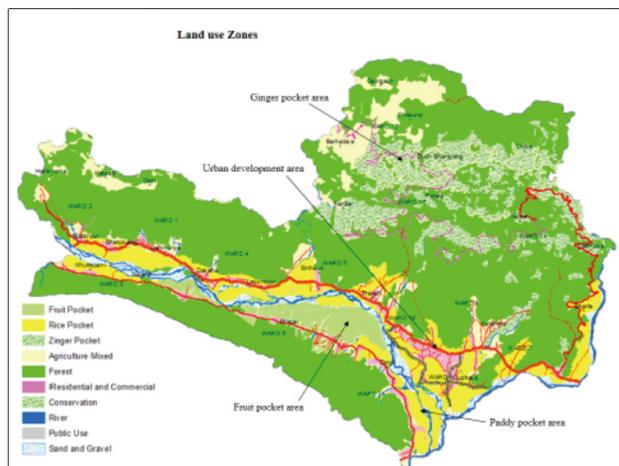
(2) Medium density residential area: Tandi, Thalahi, Sirthouli, Dakaha, Majhuwa

(3) Low density residential area: Arundana, Saldanda, Barhabise, Ranitar, Phulbari, Hattikharka, Katahare

Commercial zone comprising of areas occupied by existing government institutions, community services and commercial activities. Dakaha, Dudhauli, Jhankritar and Sirthouli area are categorized in this zone. Existing industrial areas as well as areas identified and demarcated as potential area for future expansion of commercial activities which would likely to take place in near future because the area lies in the proposed highway. There is huge coverage of forestland in the municipality, which shall be protected and developed as forest zone (Figure 6). Besides barren lands, flood land and wetlands are also identified and demarcated in the forest zone. Other land use zone is identifying and demarcating public land containing man made and historic features, public utilities, natural and cultural heritage sites and environmentally sensitive areas like water sources, rivers and streams, canals, ponds etc. which need to be protected against encroachment.

The land use zoning has also been guided by urban infrastructure and service provisions. Road hierarchy with 50m (Madan Bhandari Highway), Bimad-Dudhali

feeder road (22m), municipal strategic roads (11m-15m) and other municipal roads (6m to 8m) has been proposed for long-term development. Besides, other infrastructures provisions have also been guided by bye-laws for restriction and ease to municipal development in the long-run.



**Figure 6.** Land use zones and potential sites of development

## 10. Prioritized Key Sectoral Strategic Projects for IUDP Implementation

This IUDP consists of various sectoral development plans including physical infrastructures, social, economic, tourism and cultural development, environmental management, disaster risk reduction, institutional development plans. Integration of these sectoral development plans thereby promote sustainable development of the municipality is the main concern. To summarize major sectoral strategic activities that need to be implemented as project level planning in the municipality, following activities should be municipal major focus and priority:

**Physical Development:** Physical development plans consists of upgrading of 200 km road and construction of 150 km new roads which will connect low land and highland area/settlements to integrate important settlements in the municipality. Five overhead tanks are needed to provide water supply in the major settlement areas. Construction of drainage and sewerage network at Dudhauli Bazar, Dakaha and main market areas needs to be expanded. Expansion of irrigation canals in agricultural pocket areas is also important to develop in the municipality. Conservation and promotion of traditional ponds and drinking water source at 5 different locations are proposed. Similarly, construction of one bus park and a slaughter house at Tandī, convention/city hall at Dudhauli

Bazar area, cremation and cemetery/burial ground, etc., are some of the prioritized physical development projects. Besides, land use zoning and provisions of Right of Way (RoW) have also been proposed as physical development plan.

**Social Development:** social development activities consist of upgrading and improvement of school infrastructures (school building, class room, library, science/computer lab, toilet, playground, etc.) at 10 different schools is needed. Construction of one technical institution (skill promotion) at Sirthauli area, reduce school dropout rate and increase school enrollment to targeted groups and community through community campaign and providing them different economic opportunities, construction of one hospital (50 beds) and birthing centers at each ward, one community library at each ward, four urban service centers at Dudhauli bazar, Dakaha Bazar, Sirthauli and Tandī; construction of two public toilet at each ward and three community recreation parks at Dudhauli Bazar, Dakaha and Sirthauli; construction of old age home are major projects to be implemented within the municipality.

**Economic Development:** Economic development activities constitutes agriculture related infrastructure development, promotion, market development, skill development to youths, entrepreneurs, farmers incentives and subsidies and market access to them. Major priority project activities within economic development consists of one integrated market centre at Tandī, five collection centres and hat-bazzars, two cold storages at Dudhauli and Dakaha, training to farmers, establishment of fruit processing plant, soft loan provision through banks etc.

**Tourism and Cultural Development:** Tourism and cultural development activities create peoples' involvement in employment and economic earnings. As tourism has been a lead development sectors, tourism promotion connecting it with cultural connection will be important. Therefore, construction and management of tourism centre, promotion and broadcast on tourism significance, development of tourism route connecting different tourism sites, cultural home stay, agro-tourism are major activities identified.

**Environment Management:** Major environment management activities prioritized by the study are the development of landfill site, waste collection and disposal, forest area conservation, strengthening of community forest users' groups, environmental sanitation, water reserves through community ponds, river management, etc.

**Disaster Risk Reduction:** Major disaster risks to

Dudhauli municipality are flooding, inundation, and land slide hazards. To minimize the disaster risks, river bank protection of Kamala River (26 km both sides at Dudhauli area), Tawa river protection, establishment of flood early warning system, forest protection and plantation are identified as major priorities.

*Institutional Development:* institutional development as such is important to Dudhauli Municipality, as it is very poor in municipal human resources, poor skilled and trained personnel in the municipal governance, poor infrastructures and logistics, very low internal resource capacity for project investment. For this purposes, key activities such as skill development training to municipal staffs, recruitment of technical experts, revenue generation campaign, community awareness, construction of municipal office building, equipped with logistics and facilities in the municipality and each ward offices have been prioritized.

The projects and strategies of municipal development have been planned in a way that these would be tied up to each other to meet targeted vision, goal and objectives. Sectoral integration and connections have been done through different aspects of planning principles.

To make vision operationalize, agricultural development; and tourism promotional activities have been prioritized. Infrastructure development has been proposed as backup of agriculture; and tourism development to foster prosperous Dudhauli. Main attention has been given to connect between lower level social communities to upper class communities and spatially poor geographically backwarded areas to comparatively fair developed geographical areas.

## 11. Conclusion

Current swift in urbanization and growth has demanded the immediate need of planned intervention in Dudhauli municipality. The town has largely agro-based activities and has initiated new physical infrastructure development in the fertile agriculture land. Its locational advantage attracts more people, goods and services in the recent years; consequently, traditional form of town has rapidly been replaced into modern one by use of modern constructional materials in buildings and houses. Moreover, towns in other hill region like Dudhauli have generally to be considered as risk sensitive particularly of flooding, inundation and landslide in urban planning context. Recent growth trend has resulted the conversion of agriculture land into built-up area leading to unprecedented hapazard urban growth. Settlement expansion mainly found in and around the main market centers and along the strategic road corridors. The

growing settlements has already started showing chaotic urban growth that demands plan interventions from the beginning. But the initiatives are lagged behind to proper management as the municipal local governance seems poor in its capacity in terms of investment, human resources enhancement and service delivery to its people.

To regulate unwanted hapazard growth and development, a proper planning with long-term development vision is needed not only to regulate development but guiding to municipal authorities lead into right directions. In this context, IUDP approach of urban planning has to be considered as an effective tool of planning. IUDP is one of the most effective tools to regulate the urban development by envisioning future, targeting to the goals and strategies, utilizing the potential resources integrating different sectoral development. The IUDP through proposed land use zoning, ROW, bye-laws will regulate the town for sustainable development as an appropriate tool to emerging towns like Dudhauli. Being a newly formed and emerging municipality, urban forms of Dudhauli has not been reached to an unmanageable yet. Nevertheless, it needs a planned course of actions as guided by IUDP.

However, there is always challenge that plan itself does not make a sense if it is not implemented properly. IUDP is a guiding tool to Dudhauli municipality for best achievement integrating physical, social, economic, environmental and institutional development. Success and failure of this plan all depend on how the municipality will adopt its vision, mission, goal, objectives and the direction and consequent formulation of annual plans and programme in the coming years.

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