



Global  
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## Belkotgadhi Municipality, Nepal

### Situation Analysis for Green Municipal Development

May 2018



Global Green Growth Institute  
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Global Green Growth Institute  
Jeongdong Building 19F  
21-15 Jeongdong-gil  
Jung-gu, Seoul 04518  
Republic of Korea

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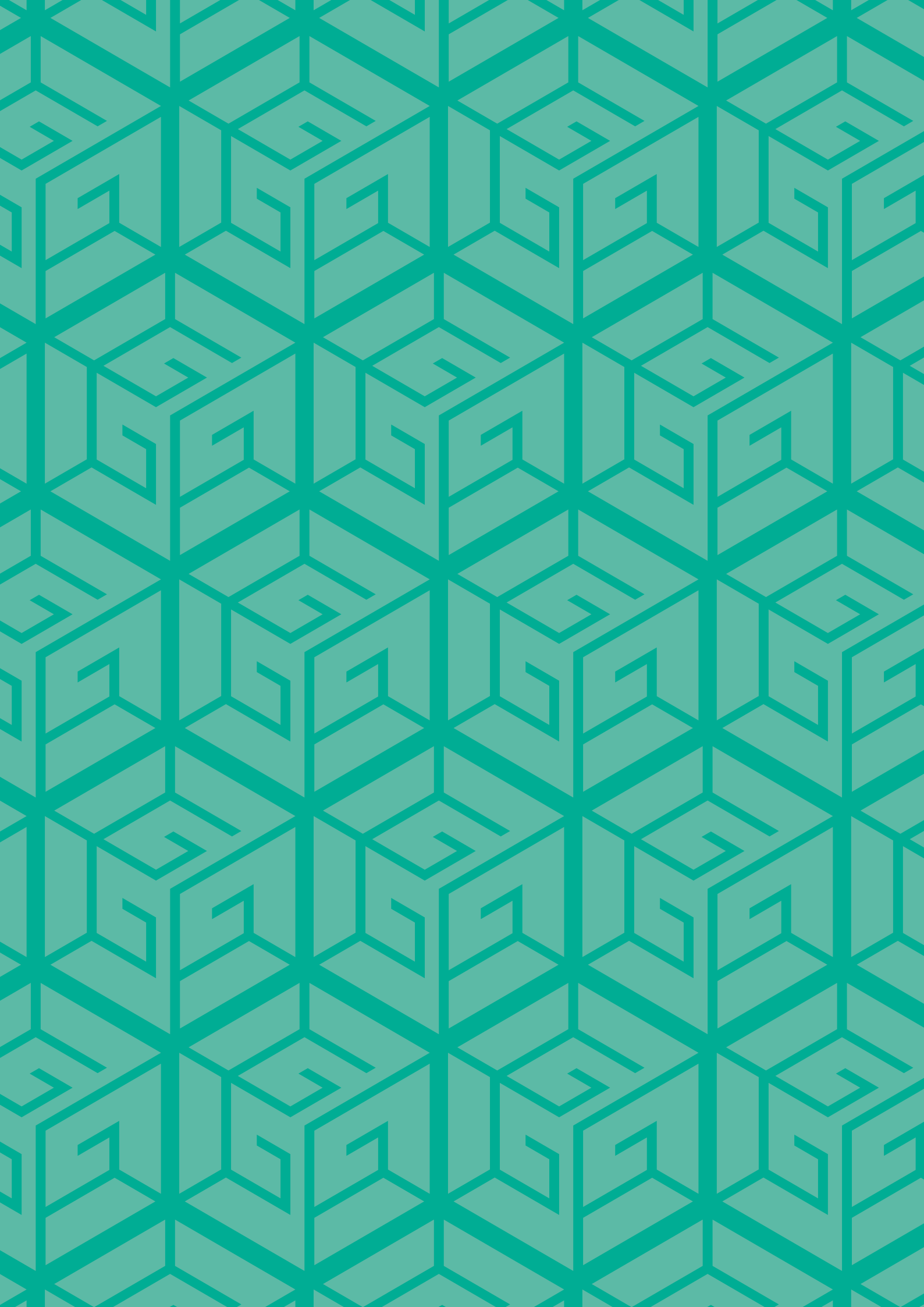
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# Abbreviations and Acronyms

<b>AAGR</b>	average annual growth rate (exponential)
<b>CBO</b>	community-based organization
<b>EFLGP</b>	Environmentally Friendly Local Governance Program
<b>GGGI</b>	Global Green Growth Institute
<b>GMDP</b>	Green Municipal Development Program
<b>ICT</b>	information and communication technology
<b>LPG</b>	liquefied petroleum gas
<b>MoFAGA</b>	Ministry of Federal Affairs and General Administration
<b>MoFE</b>	Ministry of Forests and Environment
<b>MoUD</b>	Ministry of Urban Development
<b>NGO</b>	non-governmental organization
<b>NPR</b>	Nepali rupees
<b>SDG</b>	Sustainable Development Goal
<b>USD</b>	United States Dollars
<b>VDC</b>	village development committee





# PART 1: INTRODUCTION

## 1. Background

### 1.1 Urbanization in Nepal

The rapid pace of urbanization in Nepal in recent decades and the recent declaration of many new municipalities has reinforced the need to bring sustainable urban development to the forefront of Nepal's development agenda.

Nepal recorded an average annual urban growth rate of 3.38 percent between 2001 and 2011 (CBS 2014: 31) – one of the highest in Asia, and as of 2011 had 58 municipal governments (metropolitan cities, sub-metropolitan cities and municipalities), which covered 17.1 percent of the population. In recent years the number of municipal governments has increased five-fold with the number standing at 293 in May 2018 including 6 metropolitan cities, 11 sub-metropolitan cities and 276 municipalities (nagarpalikas). These areas now cover about 42% of Nepal's population (MoUD 2016a).<sup>1</sup>

This situation, alongside the greatly increased levels of authority and the increased funding provided to municipal governments under Nepal's new federal constitution (2015), set the stage for the planned development of Nepal's municipal areas.

The development of Nepal's new municipalities presents many challenges and opportunities. On the one hand, many have neither adequate populations nor adequate economic structures to justify significant infrastructure investments. On the other hand, their early stage of development provides the opportunity to guide them along the path of sustainable development.

The Government of Nepal has committed to the sustainable development of its urban areas in its Environmentally Friendly Local Governance Framework and associated program (EFLGP) (MoFALD 2013), its Fourteenth National Plan (2016/17–2018/19) (NPC

2017), its National Urban Development Strategy (2017–2031) (MoUD 2017) and its National Report for Habitat III (2016–2036) (MoUD 2016b).

### 1.2 Green Municipal Development Program

Since 2015, the Global Green Growth Institute (GGGI)<sup>2</sup> has supported the Government of Nepal to align its national development policies with the green growth paradigm. This paradigm builds on a model of economic growth that targets the key aspects of economic performance of environmental sustainability, poverty reduction and economic growth (Figure 1).

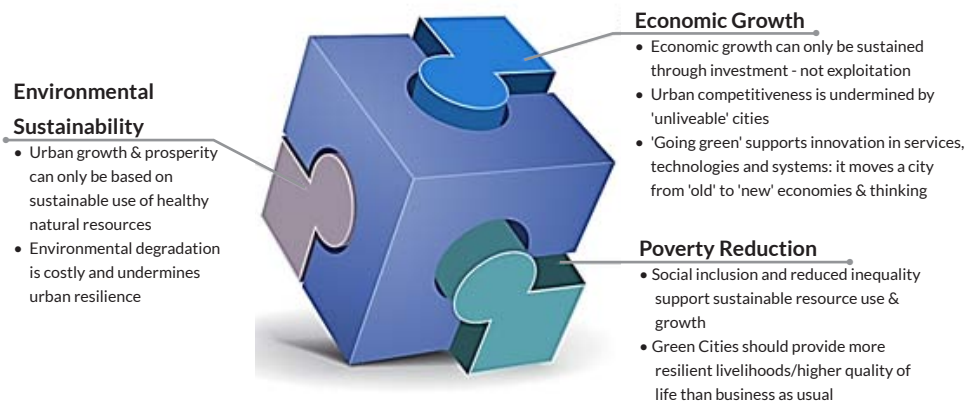
In 2017, GGGI in partnership with Nepal's Ministry of Federal Affairs and General Administration (MoFAGA) and seven of Nepal's new municipalities, launched the Green Municipal Development Program (GMDP). The focal point for the program is the Ministry of Forests and Environment (MoFE). Phase one of the program began in 2017 and will run to December 2018.

The goal of the program is to support the seven municipalities to identify and capture localized green growth opportunities. The program is designed to respond to the needs of federal and local governments and is founded on long-term municipal engagement. It aims to provide a range of customized technical and financial services to the municipalities as well as supporting inter-municipal learning and capacity building.

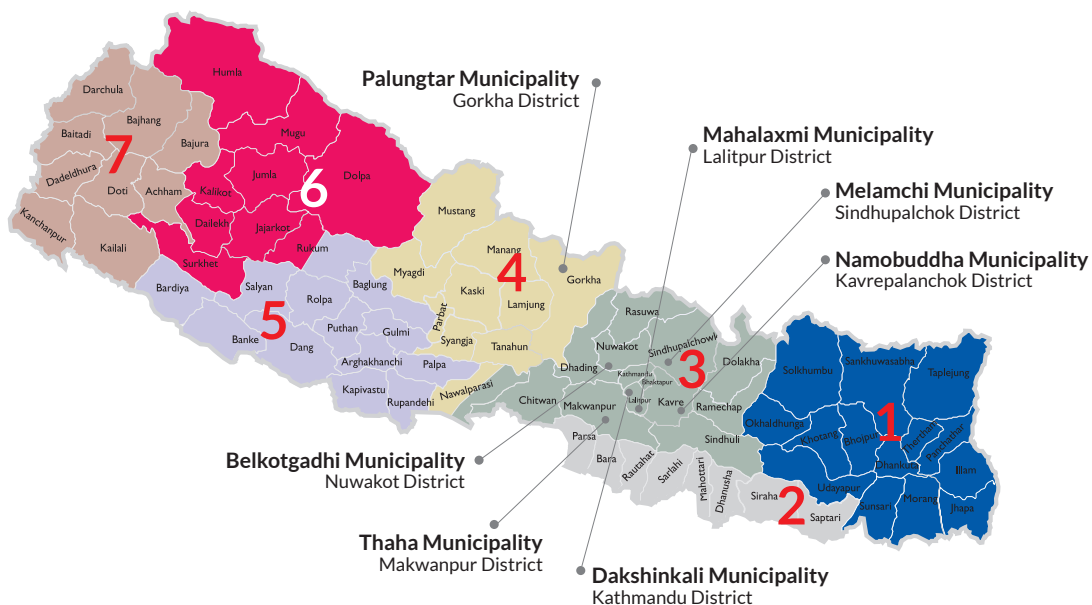
An initial program activity was the carrying out of a green municipal growth situation analysis in the seven partner municipalities of Belkotgadhi, Dakshinkali, Mahalaxmi, Melamchi, Namobuddha, Palungtar, and Thaha, which are shown in Figure 2. This report is one of a series of seven reports that present the findings of the analysis for Belkotgadhi Municipality in Nuwakot District.

<sup>1</sup>It is important to note here that the recent increases in the number of municipal governments have mainly been outcomes of political decisions and many parts of the new municipalities have more rural than urban characteristics.

<sup>2</sup>See <http://gggi.org/> for information on the Global Green Growth Institute.



**Figure 1:** GGGI's Green Growth concept  
 Source: GGGI 2017a



**Figure 2:** Location of the seven GMDP partner municipalities

### 1.3 Objectives

The objectives of the situation analysis of the seven new municipalities were as follows:

- Analyze and assess the current baseline and trends in the municipalities across economic, social and environmental dimensions, and understand the deeper reasons and drivers of change.
- Analyze and assess the policy and regulatory landscape in which the municipalities operate.
- Analyze and assess the institutional, technical, managerial and financial structure and capacity of the municipal administrations.
- Identify and formulate practical, operational and strategic findings based on the assessment.
- Advise on priority sectors, policy and planning interventions and possible projects that could be pursued to support green growth in the municipalities with GGGI inputs and consultations.
- Conduct a stakeholder assessment of the findings at national and municipal levels.

### 1.4 Methodology

This situation analysis report was prepared through the following steps and inputs:

- Studied secondary information about the municipality from authentic sources, which were verified by consulting other sources to the extent possible.
- Held discussions with the mayor Mr. Rajendra Raman Khanal and his team on 27 October 2017 at the municipal office guided by a five-point questionnaire (see Annex 1.1 for the research questions and Annex 2 for the meeting minutes in Nepali).
- Shared preliminary findings at the GMDP Launch and First National Consultation Workshop, held on 14–15 November 2017 in Kathmandu in the presence of high-level officials from partner ministries, the mayors and the chief administrative officers (CAOs) of partner municipalities, and representatives from other relevant ministries.
- Held focus group discussions with local entrepreneurs and persons affiliated with social and environmental non-governmental organizations (NGOs) on 2 December 2017 in Mahadevphant, Belkotgadhi (see Annexes 1.2 to 1.4 for the research questions and Annex 3 for participants).
- GGGI Nepal and Headquarter teams reviewed final drafts of the report.



*Discussion with Belkotgadhi mayoral team (October 2017)*



*Focus group discussions with local entrepreneurs and NGO activists and social workers in Mahadevphant, Belkotgadhi (December 2017)*



Opening session of the GMDP Launch and First National Consultation Workshop (November 2017) (Above). Belkotgadhi Mayor Mr. Khanal speaking at the program (Below).



## 2. Green Municipal Development in Nepal

### 2.1 Overview

'Green growth' is a model of economic growth that targets the key aspects of economic performance of poverty reduction, job creation, social inclusion and environmental sustainability (see Figure 1). In other words, green municipal growth aims to ensure that investments on infrastructure and other types of physical development create socioeconomic benefits that are proportionately distributed in societies while ensuring that development does not result in environmental degradation. The green growth concept builds on the concept of sustainable development.

The commitments of the Government of Nepal to sustainable development are explained in Section 1.1.

above. Among these, Nepal's National Report for Habitat III (MoUD 2016b) builds on the country's commitment to Sustainable Development Goal 11 of making cities and human settlements inclusive, safe, resilient and sustainable by 2030. The sustainable development of Nepal's urban areas is also key to enabling Nepal to achieve its aim of graduating from Least Developed Country to Middle-Income Country status by 2030, for which cities have a major role to play as engines of economic growth.

Nepal's National Urban Development Strategy (2017–2031) has the five underlying and interconnected guiding principles of inclusivity, resilience, green development and efficiency (Table 1).

**Table 1:** Guiding principles of National Urban Development Strategy, Nepal (2017-2031)

Guiding principles	Explanation
Inclusivity	Urban areas should be socially inclusive in terms of ethnicity, caste, gender, and economic class. Inclusion should be reflected in the space the city provides for the nurturing and celebration of social and cultural diversity and sensitivity particularly to disadvantaged, marginalized and minority groups, and poor people and youth in general. Inclusivity promotes social justice and contributes to equity and balanced development. The increasing rates of poverty in urban areas mean that their development needs to be pro-poor in terms of addressing the poor's basic needs for education, health, housing, livelihoods and transportation.
Resilience	Resilience refers to physical and social resilience to make urban areas safer and adaptable to environmental and economic change. The major focus should be on physical, social, economic and institutional resilience, which are pivotal for mitigating short and long-term vulnerability resulting from disasters and the regional and global impacts of climate change. Planning and urban development should enhance the capacity of urban areas to cope with different types of hazards and to absorb shocks and risks.
Green development	Strategies for urban development should be guided by keeping urban areas green, cool, and wet. The main thrust should be on saving, protecting and promoting greenery including green parks, green open spaces, urban agriculture and forests. Urban areas should promote low carbon emission land use and technology and the use of green materials, increase the use of alternative energy, reduce the effects of urban heat islands and lower ambient temperatures. They should also promote and protect clean water bodies (ponds, wells, rivers and canals) that contribute to the survival of aquatic life, urban biodiversity and the recharging of ground water.
Efficiency	Urban areas need to be efficient, well governed and effectively managed to become sustainable, inclusive, resilient and green. The strategy should therefore be guided by i) enhancing the capability and technical competence of local governments, ii) the institutionalization of transparency and accountability in urban planning and development processes, and iii) the citizen-oriented delivery of services and development outcomes.

Many of Nepal's new municipalities are predominantly rural in character. Most have limited technical capacity and have only limited funds. Given their limited resources, a fundamental question for Nepal's new municipalities is whether they should focus on large-scale projects or on creating livable communities.

Many of Nepal's municipalities are rich in terms of natural resources and need to avoid a business as usual path of haphazard urbanization, which has predominantly occurred so far across most of South Asia development. The green growth concept offers an alternative approach to urban development by stressing the optimal and wise use of local resources for sustainable and inclusive economic development through public participation. There is immense scope for green urban development in Nepal, and the time is right to promote this as municipalities gear up to exercise their newly acquired executive powers following the recent establishment of a federal system of governance in Nepal.

## 2.2 Green Urban Growth for Nepal

The characteristics and the transformations needed to produce green urban areas are listed in Boxes 1 and 2. The realization of such green urban areas will make a very large contribution to the achievement of Nepal's national development goals, including the Sustainable Development Goals and its 'Nationally Determined Contributions' to reduce greenhouse gas emissions.

### Box 1: The characteristics of green urban areas

In line with the green growth paradigm, green urban areas are:

- innovative and smart
- resource efficient and low carbon
- climate smart and resilient
- prosperous and bankable
- healthy and livable
- inclusive and pro-poor (GGGI 2017b).

### Box 2: The transformations needed to produce green urban areas

- Transform the way they plan, to achieve the vision of smart, green and sustainable urban areas. Unplanned growth has negative environmental consequences that can be avoided by creating well-informed urban plans.
- Transform the way they design and operate buildings, to achieve resource efficient, low carbon and disaster-proof built environments.
- Transform the energy they produce and consume, to shift away from using polluting fossil fuels to cleaner forms of renewable energy.
- Transform waste to resources, to close the waste and resources loop and to move towards circular economies.
- Transform water resource management, to improve access to clean water and sanitation.
- Transform the way people move and connect, to achieve connected and non-motorized cities to limit the use of fossil fuel-based transportation.
- Balance expansion and growth with inclusion, to move to inclusive and pro-poor urban areas.
- Transform the way urban areas manage and account for their assets, to create bankable and creditworthy cities that attract green finance.



As Nepal's municipalities urbanize, they have the option to follow either the business-as-usual pathway of haphazard and environmentally damaging growth or to shift to a green growth development trajectory. The green growth pathway has the three components of environmental sustainability, economic growth and poverty reduction:

### **Environmental sustainability**

Urban growth and prosperity should be based on the sustainable use of natural resources. Nepal's new municipalities have the opportunity to avoid unplanned urbanization and instead use existing tools and knowledge to better plan their development and their use of natural resources. This is very important for Nepal, which is situated in a vulnerable mountain ecosystem and is very prone to earthquakes, floods, landslides and other natural disasters and the impacts of climate change. These factors and the impacts of large scale human settlements and widespread migration are key factors in Nepal's development trajectory. The current high rate of urbanization is leading to large-scale environmental degradation, which has high costs and undermines urban resilience. In addition, compact, coordinated and connected urbanization is challenging to achieve in Nepal because of the limited availability of land across hill and mountain areas.

### **Economic growth**

Sustainable economic growth needs sustained and planned investment. Urban areas not only need to aim for sustainable economic growth by generating economic activity, but also need to focus on strengthening their financial resources. Municipal finance is one area that needs further attention in the context of financing urban infrastructure improvements.

There are many challenges for developing the infrastructure of Nepal's municipalities, which primarily rely on the state and central governments for their funding:

- The devolution of power: The legal and policy barriers to municipalities accessing other sources of financing.
- Creditworthiness: Most urban areas lack creditworthiness to raise debt in national and international markets.
- Access to international finance: Nepal's urban areas currently have limited access to international financing.
- Own sources of revenue: Municipal bodies are responsible for providing basic public services including street lighting, water, sanitation and other services, but have limited capacity to generate funds to pay for them.
- Valuation of assets: Municipal governments are unsure how to manage and optimize increased asset values through infrastructure investments.
- Capacity building: The limited capacity and awareness of municipal bodies to design and implement revenue generation and integration tools.

- Earthquake damage: The basic services infrastructure of the areas covered by the seven municipalities was badly damaged by the April–May 2015 earthquakes.

The adoption of a green growth pathway will support innovation in municipal services, technologies and systems, especially for municipalities that are embarking on the urbanization process.

### **Poverty reduction**

As cities develop, inclusive green urban growth becomes a vital component for achieving inclusive, sustainable and efficient urbanization. Social inclusion is an important aspect of the current municipality structure in Nepal and one of the elected positions in municipalities is for a person from a disadvantaged group. Gender equality is promoted in municipal bodies including by the stipulation in the Local Level Electoral Act (2017) that either the mayor or deputy mayor is a woman. In pursuing green growth Nepal's municipalities should promote and facilitate resilient livelihoods and an improved quality of life.

## **2.3 International Policy Drivers**

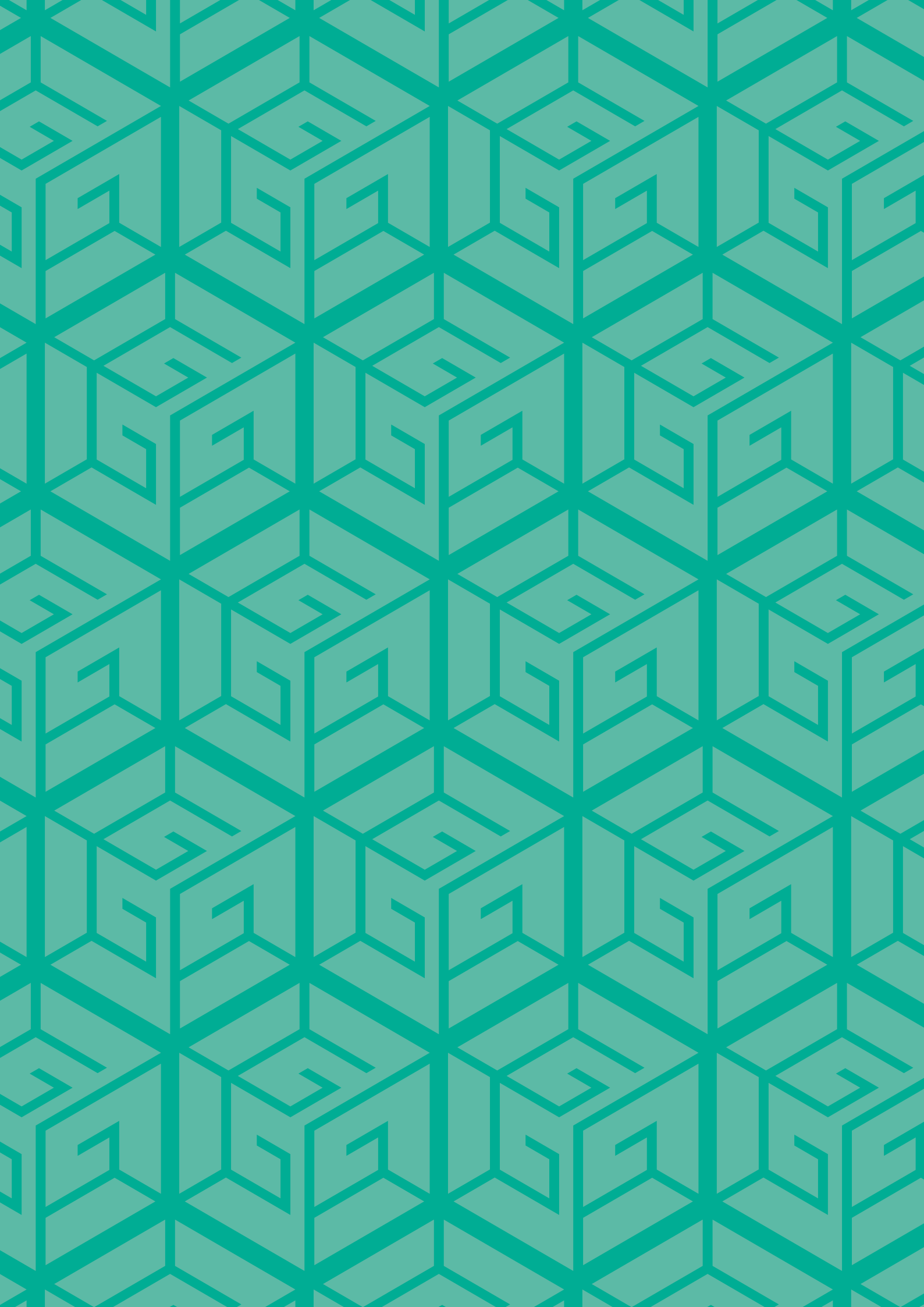
Two major international policy instruments are particularly relevant for the promotion of green urban development in Nepal:

**Nationally Determined Contributions** — The following Nationally Determined Contributions (NDCs) that Nepal submitted to the United Nations Framework Convention on Climate Change (UNFCCC) under the Paris Agreement (2016) emphasize sustainable and green urbanization:

- “Promote economic development through low carbon emissions with a focus on (i) energy, (ii) agriculture, (iii) forests, (iv) industry, (v) human settlements and waste, (vi) transport and (vii) commercial sectors.”
- “Maintain 40 per cent of the total area of the country under forest cover.”

**Sustainable Development Goals** – SDG 11 is to “Make cities and human settlements inclusive, safe, resilient and sustainable.” The following SDG targets are most relevant to the development of Nepal's municipalities:

- Target 11.3: “By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.”
- Target 11.B: “By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels.”





# PART 2: BASELINE SITUATION AND TRENDS

## 3. Basic Information

### 3.1 Location, Formation and Administrative Sub-Divisions

Belkotgadhi Municipality is located in the south-western part of Nuwakot District in Province 3 (Figure 3). The municipality was formed in March 2017 by amalgamating all of Duipipal, Ratmate, Kumari, Belkot and Jiling village development committees (VDCs) and parts of Madanpur VDC. It has an area of 155.6 km<sup>2</sup>.

The northern part of Belkotgadhi Municipality is accessible from Nepal’s capital city (Kathmandu) via the Kathmandu– Okharpauwa–Trishuli road (marked in blue on Figure 4), and the southern part via the Kathmandu–

Naubise–Galchhi–Devighat–Trishuli route (marked in gray on Figure 4). Note that the Galchhi-Devighat road was opened about ten years ago with the completion of the road bridge over the Trishuli river and that this road is the first part of a new highway to China. The municipality office lies 48 km from Kathmandu via the Trishuli road and 81 km via the Galchhi road.

The municipality is divided into 10 wards (Figure 5) with the erstwhile VDCs of Belkot, Kumari, Duipipal, Ratmate, Jiling and Madanpur (part) restructured as municipal wards as shown in Table 2.

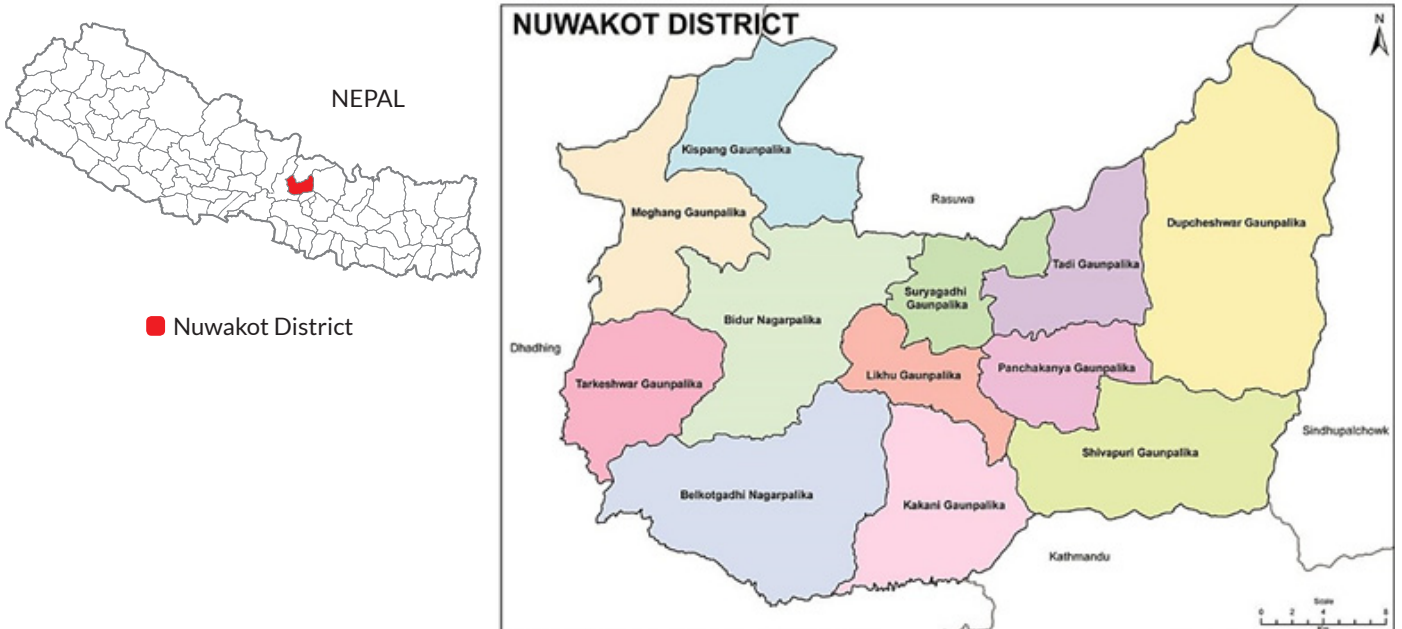


Figure 3: Location map of Belkotgadhi Municipality  
Source: CDNDoGM 2016/17

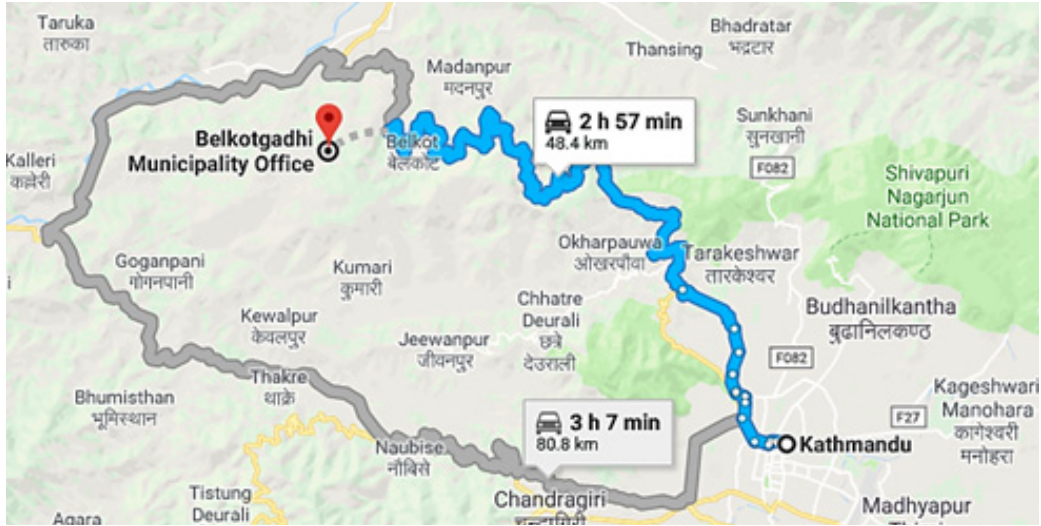


Figure 4: Routes from Kathmandu to Belkotgadhi Municipality Office

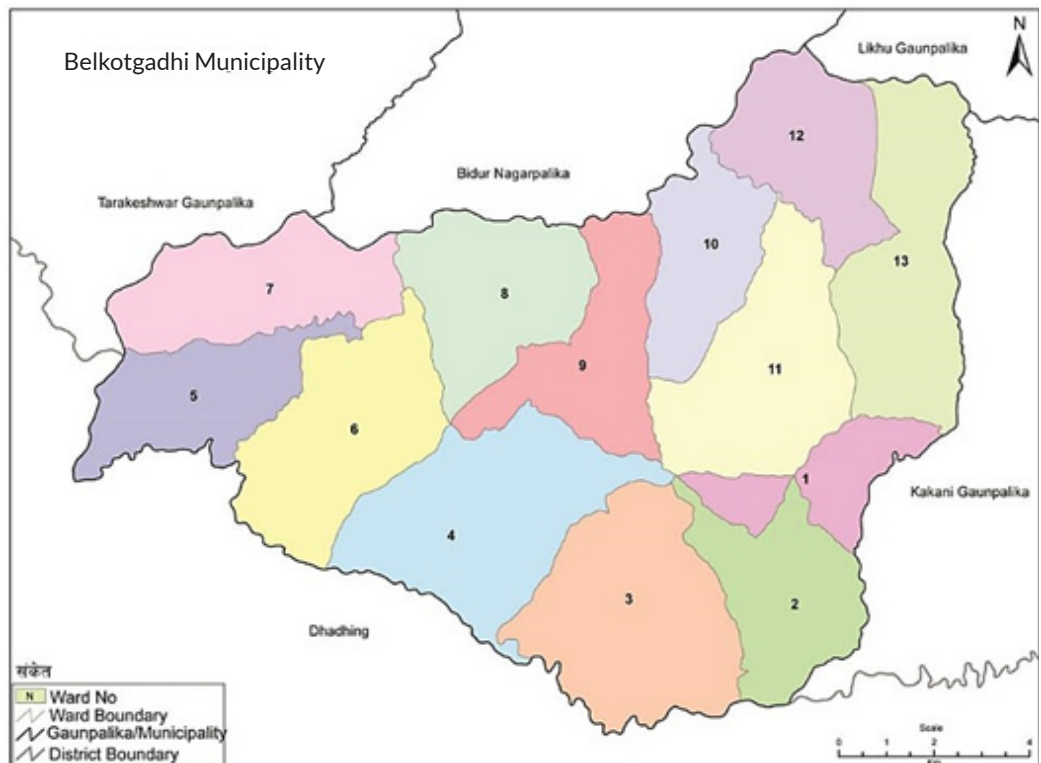


Figure 5: Belkotgadhi Municipality's wards

Source: CDNDoGM 2016/17)

**Table 2:** Erstwhile VDCs, current wards and population data – Belkotgadhi Municipality

Erstwhile VDCs	Current wards	No. households	Population (2011)
Belkot	1, 10, 11	1,549	7,660
Kumari	2, 3, partly 4	1,618	8,672
Duipipal	partly 4, 5, 6	1,569	7,790
Ratmate	7	822	3,793
Jiling	8, 9	1,271	6,286
Madanpur (part)	12, 13	1,112*	5,687
<b>Total</b>		<b>7,941*</b>	<b>39,888</b>

Sources: CDNDoGM 2016/17 for area and CBS 2012 for population. Note: \* = estimated.

### 3.2 Demography

The following data is derived from the 1991, 2001 and 2011 national population and housing censuses (CBS 1992, 2002, 2012).

**Population growth and trends** – The total population of the current Belkotgadhi municipal area stood at about 32,850 in 1991. Between 1991 and 2001, 6,680 persons were added at an annual growth rate of 1.85%. The next decade saw little population growth with only 358 persons added between 2001 and 2011 (Table 3) with

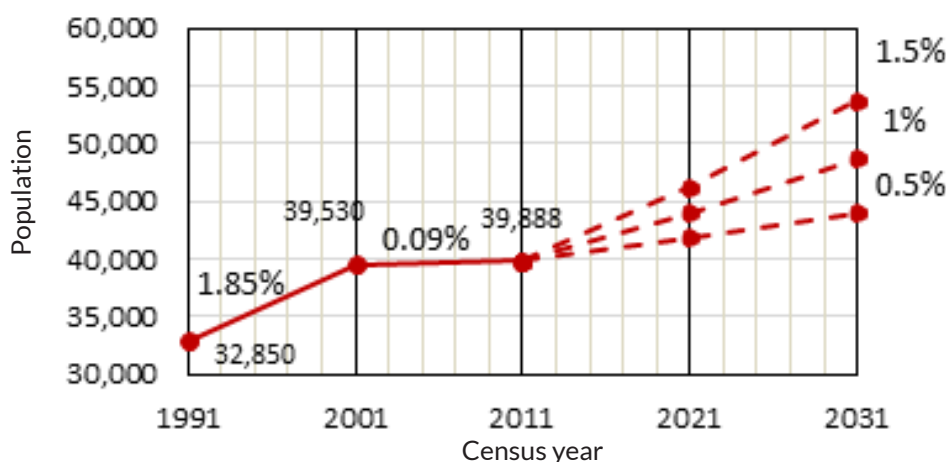
only Duipipal and Kumari VDCs recording non-negative growth. As of 2011, the municipal population stood at 39,888.

The population of Nepal’s municipalities is expected to rise after their empowerment under the new federal system of governance as per the Constitution of Nepal, 2015. If the population of Belkotgadhi Municipality grows at an average annual rate of 1.5%, its population will cross 50,000 by 2026 (Figure 6). A lower growth rate of 0.5% will result in a population of 44,000 by 2031.

**Table 3:** Population and average household size – Belkotgadhi, 2011

Population in census year			Between 1991 and 2001		Between 2001 and 2011	
1991	2001	2011	Change in population	AAGR (%)	Change in population	AAGR (%)
32,850*	39,530*	39,888*	6,680	1.85%	358	0.09%

Sources: CBS 1992, 2002 and 2012. AAGR = average annual growth rate (exponential). \* Figures adjusted for the population of Madanpur as only two of its nine wards were included in the municipality. AAGR = average annual growth rate (exponential)



**Figure 6:** Population projection beyond 2011 – Belkotgadhi Municipality

Source: CBS 1992, 2002, 2012

**Table 4:** Age-wise population – Belkotgadhi Municipality

Age group	Total*	Share (%)	Males	Females	Sex ratio M:F
0 to 14	14,397	33.43	7,246	7,151	101.33
15 to 59	24,436	56.74	11,395	13,041	87.38
60 or above	4,230	9.82	2,101	2,129	98.68
<b>Total</b>	<b>43,063*</b>	<b>100.00</b>	<b>20,742</b>	<b>22,321</b>	<b>92.93</b>

Sources: National Census 2011 (CBS). \* Madanpur VDC population figures are estimated figures.

**Age** – The economically active population (15–59 year olds) made up 57% of the population in 2011, which is quite a low proportion (Table 4) (CBS 2012). The availability of employment, is therefore of paramount importance to make use of the relatively low proportion of economically active people. The share of the female population in the economically active population is high with 100 women to every 87 men in this age group.

**Caste and ethnicity** – It is important to know the caste and ethnic makeup of an area as different ethnic groups have different perceptions, stakes and interests. It is important that all groups are fairly represented and provided with opportunities under the principal of social inclusion.

The 2011 census recorded hill Brahmins (39%) and Tamangs (32%) as the largest ethnic and caste groups in Belkotgadhi Municipality, followed by Chhetris (8%) and Newars (5%). The Tamang communities tend to be located in the less accessible and underserved parts of the municipality reflecting their generally disadvantaged socio-economic development status.

**Literacy** – The adult literacy rate in Belkotgadhi in 2011 was only 61.67% with female literacy standing at only 54.11% compared to 69.92% for male literacy.

### 3.3 Land Use and Urban Growth Patterns

Belkotgadhi Municipality lies in a hilly region with large areas of steeply sloping hills (Figure 7). The municipality has flat lands, which are located along the banks of the Trishuli River, where there has been considerable settlement growth in recent years, especially around Mahadevphant along the Galchhi–Trishuli road (Figures 7 and 8). Large areas of these flatlands are being converted from rural to urban use. Most of the settlements in other

parts of the municipality are scattered across the hills. The lower belt along the Trishuli River has hot climatic conditions similar to those in the Tarai while the upper belt has cool climatic conditions similar to hill towns such as Ilam and Hile in eastern Nepal.

Forest cover has not changed much in recent times decreasing by only 2% – from 27% in 1994 (Figure 9) to 25% in 2017 (Figure 10).

### 3.4 Market Centers

Most of the settlements in Belkotgadhi Municipality are scattered. There is no distinct market in the southern part of the municipality, which is less accessible than the southern area due to the difficult topography (steep hills), although the areas by the Trishuli road are better served. These parts are mostly rural in character. The northwestern part of the municipality is more accessible due to the availability of flat lands and accessibility via the Prithivi Highway and the Galchii–Trishuli road. Mahadevphant is situated along this road, which runs parallel to the Trishuli River and is the municipality’s main market area. New shops and enterprises are coming up at a rapid pace in Mahadevphant.

### 3.5 Places of Attraction

Belkotgadhi Municipality has a mainly rural character and landscape. The two main local attractions are the historical site of Belkotgadhi fort, which was built by King Prithivi Narayan Shah in the eighteenth century to attack Nuwakot as part of his national unification mission, and the summit of Chimteshwor Mahadev that gives spectacular views of the Himalaya ranges and the Kathmandu Valley, Makawanpur District, Gorkha District, and even Kerung in Tibet. The Kathmandu–Trishuli road is currently being rehabilitated; and once this work finishes the area will be easily accessible from Kathmandu in less than two hours.



**Figure 7:** Satellite image of Belkotgadhi Municipality with Mahadevphant area in inset (December 2017)  
Source: Google Earth



**Figure 8:** Satellite image of Mahadevphant area (December 2017)  
Source: Google Earth



*Flat lands in Mahadevphant*



Figure 9: Land use map of Belkotgadhi Municipality, 1994

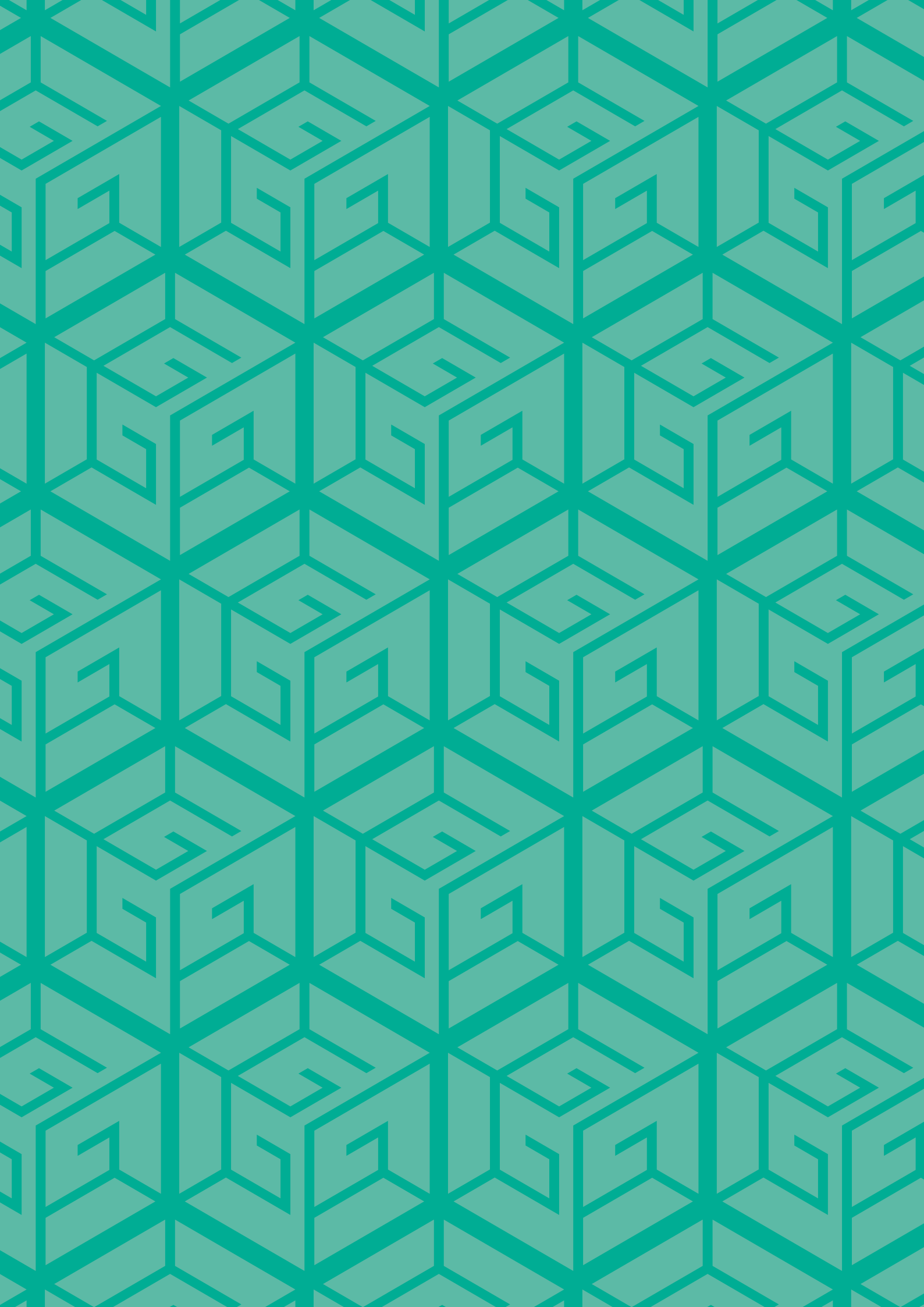
Source: DoS 1994



Figure 10: Forest map – Belkotgadhi Municipality, 2017

Source: DoFRS 2017







## 4. Environment and Natural Resources

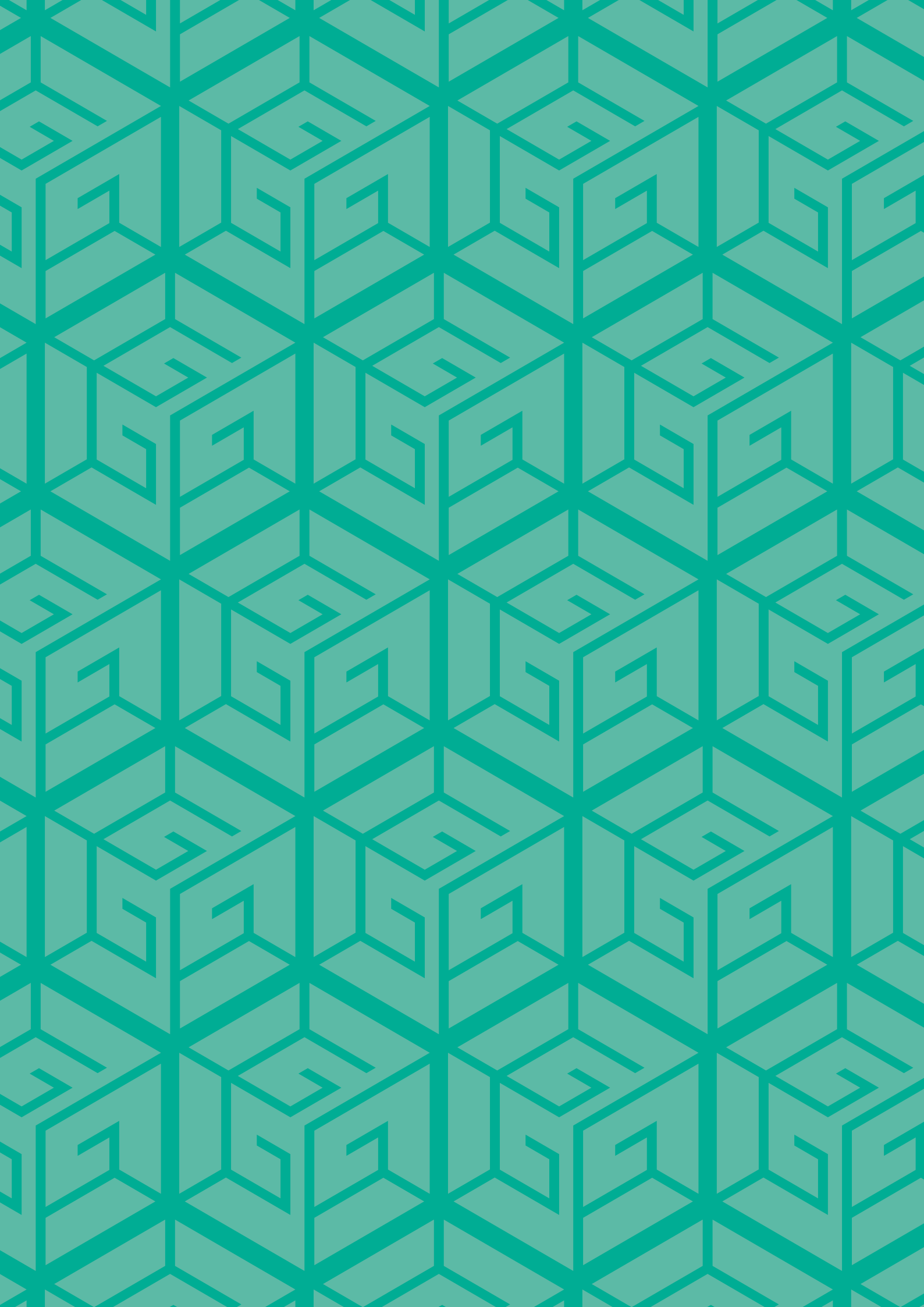
The Trishuli River is the main river in the area and defines the northwestern boundary of the municipality. The river's water is used to irrigate farmlands, but this is less so now that many sand mining industries and crushers have been established along the flood plain. The locals say that the excessive sand mining has lowered the river bed by several meters.

Once known for its aquatic ecosystem, the Trishuli River in Belkotgadhi Municipality is said to be polluted by chemical fertilizers that are washed into the river from adjacent fields during heavy rains.

In 2017 the municipality contained about 39.5 km<sup>2</sup> of forests, which covered about 25% of its area (Figure 10).



*Sand mining in the Trishuli River*



## 5. Economy

The main occupation in Belkotgadhi Municipality is farming. The fertile belt along the Trishuli River is known producing beans, chillies, tomatoes, cauliflowers, cabbage and other vegetables. The high quality agricultural produce from the municipality used to dominate the regional markets. However, production is decreasing as many local people turn to non-farm occupations.

Locals have been particularly attracted to sand mining, which pays more than farming. In recent years, brick kilns have also increased in number, which could threaten local agriculture by turning fertile soil from farmland into bricks.

In recent years, locals have started fish farming, leveraging Belkotgadhi's diverse climatic conditions. Already known for the production of rainbow trout fish, which requires cold flowing water, Belkotgadhi is gaining attention for the production of jalkapur (*Clupisoma garua*) fish.





## 6. Infrastructure, Facilities and Basic Services

### 6.1 Housing

Houses are an important asset that indicate their owners' economic status. The 2011 national census (CBS 2012) reported the following for Belkotgadhi Municipality:

- Almost all families lived in their own houses with only a few families in Duipipal, Madanpur and Ratmate (2% to 3%) renting accommodation.
- About 96% of households lived in houses with outer walls of mud-bonded bricks or stones. The proportion living in houses with outer walls of cement-bonded bricks or stone was slightly over 11% in Ratmate; but in all other VDCs, the share was less than 3%. Regardless of type of outer walls, most houses had foundations of mud-bonded bricks or stones.
- About two-thirds of households lived in houses with galvanized iron roofs and 28% in houses with tile or slate roofs.

Note that the 2015 earthquakes caused considerable damage to the houses in the municipality that had outer walls of mud-bonded bricks or stones.

### 6.2 Roads and Transportation

The eastern part of Belkotgadhi Municipality is accessible via the Trishuli Road, which connects the municipality with Kakani and the Kathmandu Valley to the southeast, and with Rasuwa district to the north. The southern part of the municipality is accessible via the Galchhi-Trishuli-Rasuwadga road which branches off Prithivi Highway in Galchhi. The Kathmandu–Bhimdhunga–Goganpani road also provides access for people in the southwestern part of the municipality. There are few other roads within the municipality, and all other roads are fair weather roads. The road density is very low in relation to the municipality's large area.

Although public transport is available along the two major roads, there are limited public transport options in the rest of the municipality. A few jeeps operate along a few routes, but services are irregular and are subject to favorable weather and road conditions.

### 6.3 Other Services

The following data is from the 2011 national census (CBS 2012):

**Drinking water** – In 2011, 79% of households in the municipality had taps or piped water. Other significant sources of drinking water were wells (8.5%) and spouts (8.4%). In Jiling and Kumari, between 12% and 15% of households depended on uncovered wells as their main sources of drinking water. In Duipipal, where about 63% of households depended on taps or piped water, about 24% of them relied on water spouts.

**Cooking fuel** – In 2011, 95% of households relied on firewood for cooking. In the more urbanized Ratmate area, the use of LPG stood at about 9%. Slightly over 1% of households used biogas for cooking, including 4% of Jiling households.

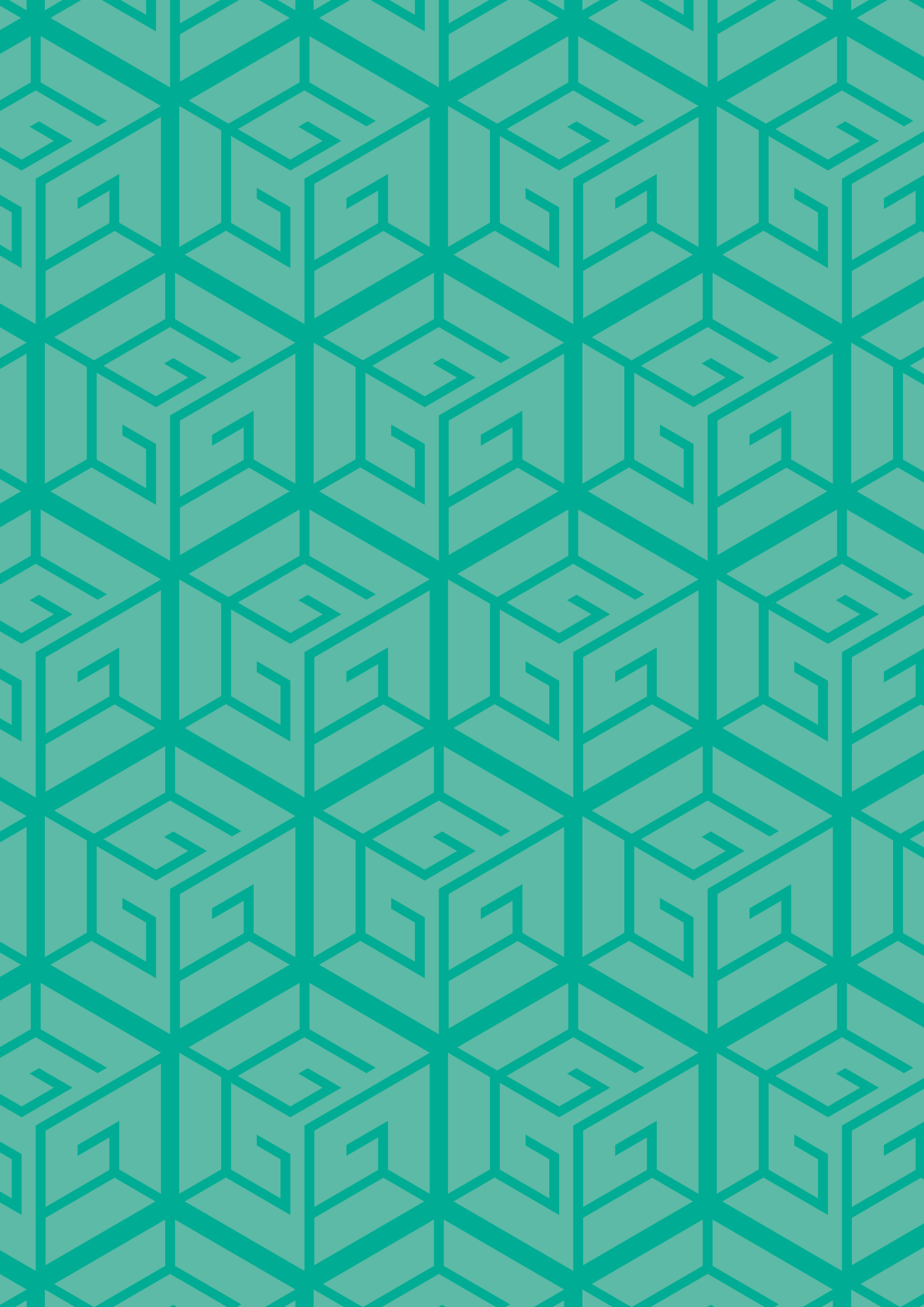
**Lighting** – In 2011, about three-quarters of households used electricity for lighting while about 18% used kerosene and 6% solar panels. In Kumari, only 23% of households had access to electricity from the national grid, and instead relied on kerosene (48.1%) and solar power (26.4%) indicating solar power as an alternative source of energy.

**Toilets** – In 2011, 43% of households did not have toilet facilities in their households. Even in Ratmate, which is relatively more urbanized, a third of households did not have a toilet. Among the erstwhile VDCs, the situation was the worst in Madanpur where a half of households did not have a toilet.

**Waste management** – Belkotgadhi is in the early phases of urbanization and has no systematic waste management system.

### 6.4 Social Infrastructure

There is one community college in Kumari, eight public schools (two each in Belkot and Madanpur, and one each in Jiling, Duipipal, Kumari and Ratmate), and one community school in Belkot. The area's health posts, Hindi temples, Buddhist gumbas, saving and credit groups, community forest groups, and farmers cooperatives are also an important part of the area's social infrastructure.



## 7. Policy, Regulation and Planning

**Local Level Governance Act** – The basis for the functioning of local governments (municipalities and rural municipalities [gaunpalika]) were established by the promulgation of the Local Level Governance Act, 2017. The act, formulated in accordance with the Constitution of Nepal, 2015, grants local governments significant legislative, executive and judicial rights. The act gives local legislatures the power to formulate local laws in line with federal level legislation, while local judiciaries can decide cases related to irrigation, daily wages, pastures and other issues.

The act gives local governments the authority to manage teachers, staff and education up to the basic level (Grade 8) and to oversee basic health care. They can set up their

own police forces, issue land ownership certificates, collect revenue on property, and register births, deaths and marriages. They can also levy taxes on house rent, entertainment, property and tourism.

**Policies and vision** – Being a new municipality, Belkotgadhi Municipality is yet to prepare the legal provisions necessary to run the office as per its rights and obligations under the Constitution of Nepal 2015 and the Local Level Governance Act. Belkotgadhi Municipality's vision is: "Agriculture, tourism, and infrastructure development as the basis for a modern prosperous city."







## 8. Municipal Institutions and Capacity

### 8.1 Organizational Setup

The previous VDC-wise setup has become redundant following state restructuring under the new federal system. As one of the most recently formed municipalities, Belkotgadhi is yet to establish its organizational structure. Note that the first local government elections under the new federal constitution were held in 2017.

### 8.2 Technical and Physical Capacity

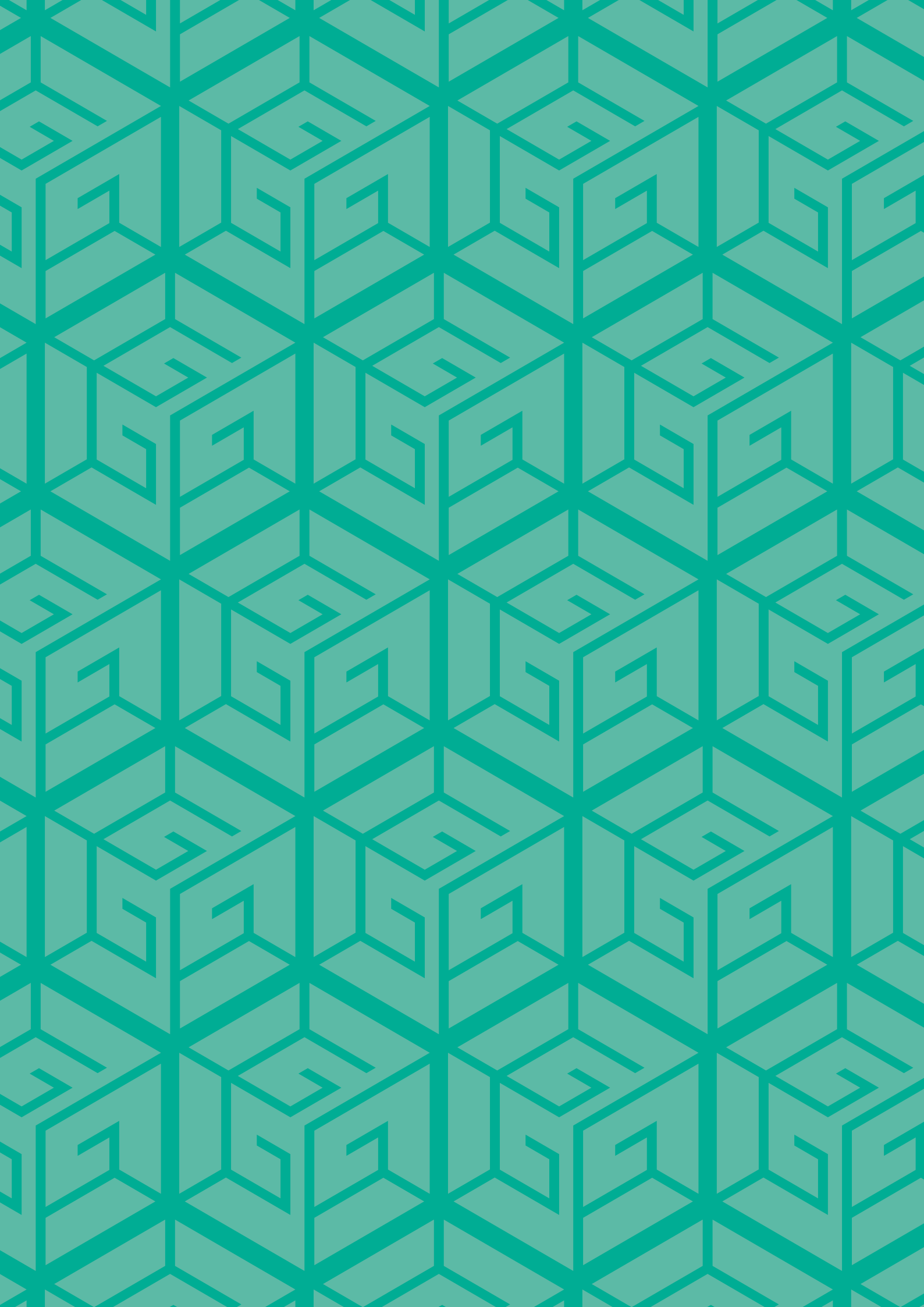
In October 2017, the office of Belkotgadhi Municipality was operating from a community building, which was built as a post-earthquake transitional shelter. The municipal office in Bagkhor, Jiling is situated in a less

accessible place, several miles from the Trishuli Road on a hilltop amidst steep terrain in the northern part of the municipality. The intention of locating it there was to make it equally accessible from all parts of the municipality. But the large size of the municipality with ward offices situated in far-flung locations, and the poor road network means that the office seems isolated from the rest of the municipality.

As of December 2017, the municipality only had two staff with no technical personnel, and hence no mechanism for issuing building permits or supervising the construction of buildings.



Belkotgadhi Municipality office



## 9. Municipal Finances and Revenue

In 2017, Belkotgadhi Municipality unveiled its first budget. It amounts to NPR 474 million or USD 4.6 million (Table 5). The share of internal revenue was estimated at only about 1% of the total budget while the fiscal equalization grant under inter-governmental fiscal transfer (IGFT)

was estimated to contribute slightly more than half of the budget. The most important source of planned internal revenue is house and land registration fees. In terms of expenditure, recurrent expenditure (51%) was expected to be slightly more than capital expenditure (49%).

**Table 5:** Belkotgadhi Municipality estimated budget for fiscal year 2017/18<sup>3</sup>

Particulars	NPR ('000)	USD ('000)	Share (%)
<b>A. INCOME</b>			
1. Internal revenue	4,700		0.99
1.1. House rent taxes	30	0.29	0.64
1.2 House and land registration fees	2,200	21.36	46.81
1.3 Vehicle taxes	30	0.29	0.64
1.4 Charges	800	7.77	17.02
1.5 Advertisement tax	40	0.39	0.85
1.6 Business tax	790	7.67	16.81
1.7 Land tax	800	7.77	17.02
1.8 Penalties	10	0.10	0.21
2. Revenue sharing			
2.1 Revenue sharing (received)	9,860	95.73	2.08
3. Other income			
3.1 Outstanding balances	4,450	43.20	0.94
4. Inter-governmental Fiscal Transfer (IGFT)			
4.1 Grant from Government of Nepal			
4.2 Fiscal equalization grant	242,355	2,352.96	51.04
4.3 Conditional grant	140,966	1,368.60	29.69
5. Grant from other agencies			
5.1 Grants from road board	2,500	24.27	0.53
5.2 Grants for social security	70,000	679.61	14.74
<b>Total</b>	<b>474,831</b>	<b>4,610.01</b>	<b>100.00</b>
<b>B. EXPENDITURE</b>			
Recurrent	242,185	2,351.31	51.00
Capital	232,646	2,258.70	49.00
<b>Total</b>	<b>474,831</b>	<b>4,610.01</b>	<b>100.00</b>

Source: Policy and Program FY 2074/75 BS. Note: 1 USD = NPR 103.



## 10. Municipal Stakeholders and Groups

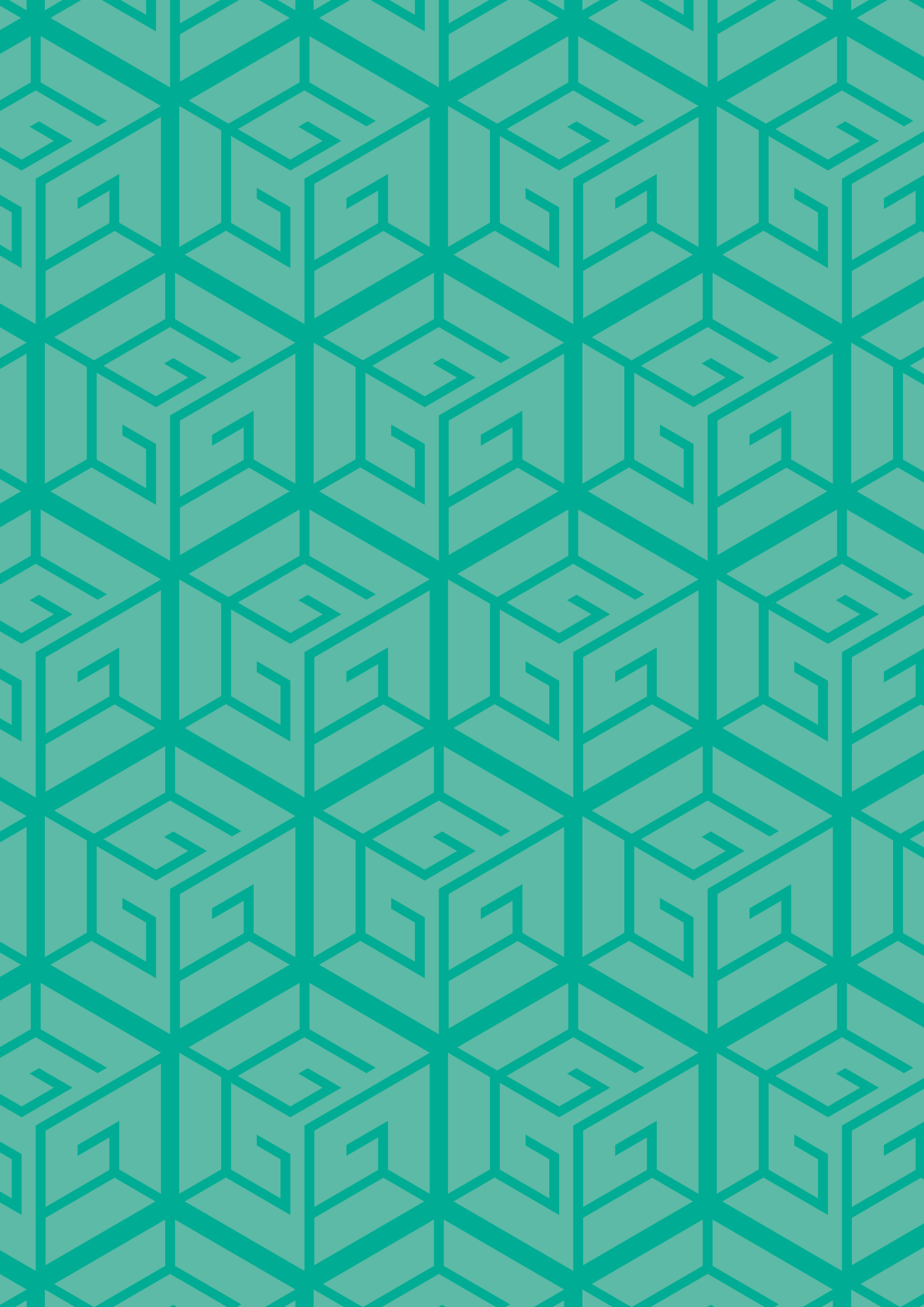
The main potential stakeholders for the implementation of the Green Municipal Development Program in Belkotgadhi Municipality are listed in Table 6. The business community will be instrumental in sharing the

costs of projects. The NGOs will play an important role in implementing social components while grassroots level community-based organizations (CBOs) will help mobilize local people.

**Table 6:** Belkotgadhi Municipality – potential GMDP stakeholders

Category	Stakeholders
Business community	Individual entrepreneurs and Nuwakot Chamber of Commerce and Industries
NGOs	Village Development Trust, Belkot Youth Club, Social Awareness Youth Club, Nalgaun Social Youth Club, Niranjana Village Society Nepal, RHCRD
Community-based organizations	Women’s groups, indigenous community groups, single women’s groups, Dalit groups and children’s clubs

Source: Municipal office and focus group discussions



# PART 3: SECTORAL, POLICY AND PROJECT FINDINGS

## 11. Priority Sectors and Strategic Themes

Belkotgadhi Municipality is predominantly rural in character, which provides scope for its development along the path of sustainable urbanization. Large variations in topography, geographical features, and in particular, climatic conditions provide exciting untapped opportunities in the tourism, agriculture and fisheries sectors. The lower belt of Belkotgadhi Municipality has hot climatic conditions while the upper belt has a cool climate similar to hill towns in eastern Nepal. These variations provide diverse conditions for a range of farming possibilities including fisheries.

If the municipality is to capitalize on its large potential in agriculture and fisheries, it needs to promote the commercialization of farming, smart decisions on what to grow where, and the establishment of market nodes and linkages.

And to harness the area's tourism potential, the natural environment needs to be protected particularly from the haphazard construction of physical infrastructure and in particular, roads. It is equally necessary to ensure that the fruits of development are proportionately distributed to the different groups of people in the spirit of socioeconomic inclusion. Note that in March 2018 a national newspaper reported that "Belkotgadhi Municipality in Nuwakot district is set to expand 255 local roads in one go for urban development in the municipality." (Himalayan Times 2018).

Based on the above discussions, sustainable infrastructure development and the commercialization of agriculture have been identified for the green growth of Belkotgadhi Municipality by municipal leadership, community groups and GGGI. The next two sections discuss plans, policies and project ideas with reference to these strategic themes.

### 11.1 Sustainable Infrastructure Development

Development through tourism – The haphazard construction of roads without proper alignment, design and sympathy for environmental concerns is rampant across Nepal. Belkotgadhi Municipality is no exception. The construction and maintenance of roads in difficult terrain is expensive. Although roads are important for development, the

scattered nature of settlement growth in the municipality raises the question of to what extent road accessibility should or can be provided.

On the one hand, the cost implications and technical feasibility of expanding the road network in hilly terrain cannot be ignored. On the other, certain social groups (Tamangs in Belkotgadhi) live in upper belts. One way of integrating groups such as Tamangs, who mostly live away from mainstream development opportunities, is by promoting tourism activities such as homestays, eco-tourism and agro-tourism in their communities. Investments to improve foot-trails, agricultural roads (also called green roads), water supply and sanitation and energy sources at community levels would facilitate this.

**Water supply** – Belkotgadhi Municipality has natural spring sources that supply water locally. These sources need to be protected for the sustainable provision of clean water to communities.

**Waste management** – Most future residential development is likely to occur along the Trishuli river floodplain. Although new buildings will be built with septic tanks, there has so far been no planning for the ultimate disposal of fecal sludge. Without an alternative, fecal sludge will most likely be disposed into the river. However, there is scope for diverting household-level investment in favor of wastewater treatment plants and the subsequent recovery of energy and manure from the waste.

Settlement growth will result in the production of more solid waste in coming days. The transportation of waste to faraway landfill sites, expending fuel, is not sustainable. There is scope for the municipality to decrease the volume of solid waste by converting waste into manure and energy and extracting recyclable materials. See examples of innovative waste water treatment and waste management practices in Box 3.

### Box 3: Examples of good practices from Nepal

**Wastewater treatment** – Nepal’s first large-scale community-based wastewater treatment plant and biogas reactor has recently been set up at Shreekhandaipur in Dhulikhel Municipality. It treats the wastewater of 200 households and produces biogas for cooking for 60 families. Solid waste is separated and sent to two biogas reactors. Liquid waste is sent to reed bed treatment plants and the digested sludge can be used as compost fertilizer.

**Waste into energy** – Kathmandu Metropolitan City has launched a pilot project to convert waste into energy with a sample production of 14 KWs of electricity from a biomethanation plant at Teku, Kathmandu. The Alternative Energy Promotion Centre has also initiated large scale biogas projects including one in Bhairahawa with a capacity of 3,700 cubic meters that produces one large tanker of LPG per day. This conversion of waste to energy could be replicated in other parts of Nepal.

**Energy** – There is scope for biogas production from household, animal and agro-waste in more rural areas. Already about 4% of households in Jiling use biogas for cooking. Its use not only reduces dependency on firewood but also contributes to solid waste management and produces manure. Also, given its large area, Belkotgadhi Municipality has ample space for solar farming. Already in 2011, 26% of households in Kumari VDC used solar electricity to light their houses. The expansion of solar power generation would reduce the number of households that depend on kerosene for lighting (18% in 2011).

#### 11.2 Commercialization of Agriculture

Belkotgadhi Municipality specializes in the production of beans, chili, tomato, cauliflower and cabbage. Locals have also started farming rainbow trout and jalkapur fish. The

challenge is to secure markets and reasonable prices for this produce as a part of sustainable urbanization.

On the one hand, the current trend of abandoning farming to work in sand mining and converting fertile lands into brick kiln sites is bringing environmental harm alongside economic benefits. In addition, the jobs and returns from brick kilns are unlikely to be sustained. On the other hand, as urbanization picks up momentum, there will be stronger local markets for agro-products such as milk, meat and fish. Belkotgadhi has the capacity not only to meet local needs but also to export its produce to neighboring markets. For this, market linkages and infrastructure need to be strengthened.



## 12. Policy and Planning Recommendations

Belkotgadhi Municipality needs to invest in soft initiatives such as plans and policies, as well as hard initiatives such as projects. The municipality needs to prepare the plans and byelaws listed in Table 7 to underpin and regulate its development.



**Table 7:** Municipal plans and policies needed by Belkotgadhi Municipality

Plans	Objectives	Components
(1) Comprehensive town development plan	To realize the municipal vision and priorities by promoting infrastructure development that proceeds with green growth potentials and concerns, and to promote planned urbanization.	<ul style="list-style-type: none"> <li>a. Baseline mapping</li> <li>b. Twenty-year perspective plan guided by structural land use plan considering the trend of urban growth and land use change</li> <li>c. A Multi-sector Investment Plan of short to mid-term infrastructure and socio-economic projects (5–7 years)</li> <li>d. Measures to integrate the following companion plans that will be prepared separately: <ul style="list-style-type: none"> <li>i. Risk sensitive land use plan</li> <li>ii. Municipal transport master plan</li> <li>iii. Tourism master plan</li> <li>iv. Environment preservation master plan including natural resource management plan</li> <li>v. Municipal finance plan</li> </ul> </li> </ul>
(2) Risk sensitive land use plan	To ensure safe housing while promoting local architecture; to ensure safety from floods, landslides, and climatic risks; and to prevent river pollution	<ul style="list-style-type: none"> <li>a. Multi-hazard risk assessment (including climate risks) and zoning</li> <li>b. Slope and watershed analysis</li> <li>c. Byelaws on setbacks from rivers and streams</li> </ul>
(3) Building byelaws	To control population density, ensure space for mobility, and preserve traditional architecture	<ul style="list-style-type: none"> <li>a. Setback, ground coverage, height, and floor area ratio</li> <li>b. Guidelines for buildings in traditional settlements of Lubhu and Siddhipur</li> </ul>
(4) Municipal transport master plan	To ensure efficient and effective mobility within the municipality and to and from neighboring areas	<ul style="list-style-type: none"> <li>a. Twenty-year road construction and connectivity plan</li> <li>b. Integrated land use</li> <li>c. Transport options</li> <li>d. Traffic management including road safety</li> <li>e. Parking management</li> </ul>
(5) Tourism master plan	To harness the municipality's tourism potential, attract private investment and address poverty in underserved areas (e.g., through homestay programs)	<ul style="list-style-type: none"> <li>a. List potential investment projects</li> <li>b. Identify sites, activities and costs for homestay programs, ecotourism and other community-based tourism programs</li> <li>c. Map tourism potential areas and activities</li> <li>d. Market and promote the area's tourist attractions</li> </ul>
(6) Environment protection master plan including natural resource management plan	To protect environmentally sensitive areas and promote environment-friendly practices	<ul style="list-style-type: none"> <li>a. An inventory of natural resources including forests and public lands</li> <li>b. An inventory of flora and fauna</li> <li>c. Mapping of environmentally sensitive areas</li> <li>d. The zoning of natural resources and land</li> <li>e. The management of river mining</li> <li>f. Solid waste management</li> <li>g. Landslide and soil erosion prevention and reduction</li> <li>h. The prevention of air, water, soil and noise pollution</li> <li>i. The management of urban parks and recreational areas and activities</li> </ul>
(7) Municipal finance plan	To improve and increase revenue collection, explore new avenues for revenue generation and optimize investment and expenditures ensuring value for money	<ul style="list-style-type: none"> <li>a. Long-term planning and budgeting</li> <li>b. Review tax rates and service fees</li> <li>c. Identify revenue sources</li> <li>d. A procurement plan</li> <li>e. Asset management</li> <li>f. A GIS-based information system documenting firms, businesses and other tax paying entities in the municipality</li> <li>g. A GIS-based land information system (with data on land ownership, area, plot number and size, land price and location)</li> </ul>

Technical and logistic support to municipal staff – Belkotgadhi is a new municipality with limited human resources and needs technical and logistic support to prepare and implement plans. Given its large area and many scattered settlements, the availability of technical human resources is inadequate to meet the potential and growing work load. The technical and logistic support needed by the municipality, at least in the short run, is as follows.

- Supplementary technical human resources: Although the municipal office plans to create additional positions for technical human resources, external support in the form of short or mid-term engineering or planning staff would go a long way to build the municipality's capacity for sustainable urbanization based on green growth principles. As engineers are not usually trained to address urbanization issues, the municipality's technical team should have an urban planner.
- Trainings and exposure visits for the mayoral team on urban management: The mayor and other elected representatives are not necessarily skilled as

managers but need managerial skills to carry out their jobs. They also need to keep updated about current urban challenges and practices to be able to address them. Likewise, the municipality's chief administrative officer (formerly executive officers) have important roles as they are advisors to the mayor, and as urban area managers.

- Trainings and exposure visits for municipal staff: Municipal staff need to update their skills and knowledge from time to time to learn about ways to address emerging issues – particularly about sustainable urbanization and green growth.
- ICT support: Improved service delivery through information and communication technology (ICT)-based applications including interconnectivity between municipal office and ward offices would promote time-saving and environment-friendly ways of doing business and managing urban areas. An IT-based platform could be created whereby municipal officials could respond to problems posted online or reported through mobile apps by residents.



## 13. Ideas for Projects

The Green Municipal Development Program is identifying potential infrastructure projects for prioritization and support based on their economic, social and environmental worth. In discussions with local stakeholders the project identified 11 types of projects that would benefit the municipality (see Annex 4). Further discussions with local stakeholders identified the following five projects as the ones with the greatest potential.

### Project 1. Water supply and sanitation schemes in tourism pocket areas

Description: Belkotgadhi is relatively close to Nepal's capital city. Its large tourism potential can be harnessed to bring unserved or underserved areas into mainstream development by creating economic opportunities and by improving the provision of services to households. Tourism activities can be integrated with the provision of basic services (e.g., water supply and sanitation) through programs such as homestays, ecotourism, and agro-tourism in targeted locations and communities. Linking tourism-promotion with water supply and sanitation improvement and the development of entrepreneurship skills, will improve living standards and attitudes in the long run. A pilot project could be launched in the settlements around Chinteshwor Mahadev temple and its spectacular viewpoint.

**Objective:** Improve water supply and sanitation status in tourism-potential areas.

#### Activities

1. Promote homestay programs, eco-tourism, and agro-tourism in appropriate areas focusing on marginalized communities and areas and run awareness programs on hospitality and sanitation.
2. The preservation of local water supply sources and establishment of small-scale water supply schemes.
3. Promote rainwater harvesting.
4. Build toilets with biogas plant in communities.
5. Develop trekking routes.
6. Promote educational tours and eco-heritage walks.

7. Promote local products (food, souvenirs) by mobilizing women and marginalized groups.
8. Mobilize local youth for tourism-promoting activities and entrepreneurship.

### Project 2. The commercialization of agriculture

Description: The municipality is known for its production of vegetables, rainbow trout and jalkapur fish. These products can be consumed in local markets and supplied to neighboring urban centers. New markets or consumer bases should be identified and developed.

**Objective:** Increase the commercial viability of agriculture and develop markets for local produce.

#### Activities

1. Identify pocket areas for crops as per climatic conditions.
2. Expand irrigation facilities through improved water management (e.g., by building retention ponds).
3. Establish cold storage facilities for milk and other products.
4. Promote organic farming.
5. Establish markets (physical structures) in each ward
6. Train farmers and agro-entrepreneurs on agricultural business operations.
7. Develop a brand for local agro-products.
8. Run business development and promotion activities.

### Project 3. Solar farming

Description: Belkotgadhi Municipality has many locations that receive large amounts of sunshine year-round and could house solar power farms. The establishment of such farms would provide electricity for the many households that do not have access to the national grid, while excess power could be sold to the national grid.

**Objective:** Produce power from solar farming to serve areas unserved by the national grid, and to generate revenue by selling excess power to the national grid.

### Activities

1. Install solar farms (photovoltaic power stations) at appropriate sites.
2. Install subsidized solar panels in households in areas unserved by the national grid.

### Project 4: Integrated solid waste management

**Description:** The flatlands along the Trishuli River, such as at Mahadevphant, are beginning to rapidly urbanize following the construction of the Galchhi–Trishuli–Rasuwadhi road. This implies a corresponding increase in the generation of solid waste. Transporting waste to faraway landfill site expending fuels is not sustainable. The need is to decrease the volume of solid waste by converting it into manure and energy alongside the extraction of recyclable materials.

**Objective:** Manage solid waste in a sustainable and environment-friendly way while turning waste into resources.

### Activities

1. Build a recycling center with a material recovery facility
2. Build a large-scale composting plant to produce organic manure
3. Establish a waste collection system that collects and processes different kinds of waste separately.
4. Support waste separation at source.
5. Run awareness campaigns through NGOs on household solid waste management.
6. Train and support farmers on the use of organic manure.

### Project 5: Integrated waste water management

**Description:** With increasing urbanization along the Trishuli corridor area, waste water management is becoming a thorny issue. Presently, septic tanks are the only active component of fecal sludge management and only in more urbanized area, such as Mahadevphant. Encouraging the large-scale adoption of on-site treatment systems such as septic tanks would relieve pressure on future centralized wastewater treatment systems, and would lower associated construction costs, including the cost of large-scale sewer systems. Septic tanks are funded by house owners at no cost to municipalities. However, it is difficult to achieve economies of scale when building individual septic tanks in households. And most septic tanks are not properly designed or constructed. The best way is to opt for both short-run (e.g., septic tanks) and long-run options (wastewater treatment plants). Due to the increasing volume of wastewater due to population growth, there is the need for a wastewater treatment plant to treat wastewater while producing biogas and compost fertilizer.

**Objective:** Manage fecal sludge at household and municipality levels in an environmentally friendly and integrated way.

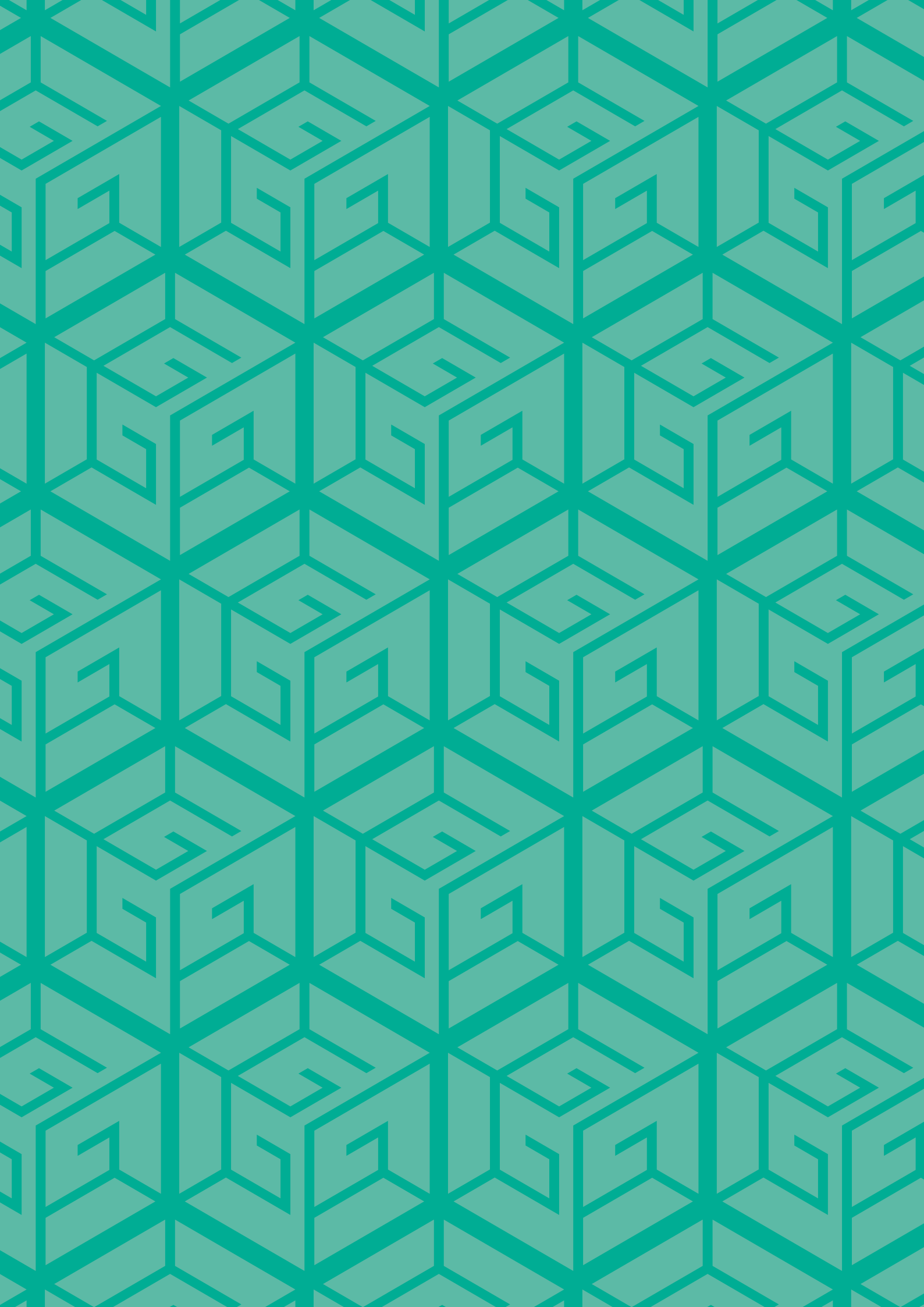
### Activities

1. Build a wastewater treatment plant with a biogas reactor at a suitable location in the municipality.
2. Provide technical support for the design and construction of septic tanks via a help-desk in the municipal office.
3. Run awareness programs on the design and construction of septic tanks.

## 14. Conclusions

This report presents a situation analysis of Belkotgadhi Municipality based on secondary information and discussions with the mayoral team and other stakeholders. Five potential projects have been identified building on discussions and consultations with the mayoral team. Additional inputs came from discussions with local stakeholders that helped explore and understand additional dimensions to make the project concepts more socioeconomically attractive and environmentally responsible. A list of recommendations was also prepared on planning and policy making.







# References

- CBS (1992) National Population and Housing Census 1991. Kathmandu: Central Bureau of Statistics.
- CBS (2002) National Population and Housing Census 2001. Kathmandu: Central Bureau of Statistics.
- CBS (2012) National Population and Housing Census 2011. Kathmandu: Central Bureau of Statistics.
- CBS (2014). *Population Monograph of Nepal: Volume 1, Population Dynamics*. Available at <<http://cbs.gov.np/image/data/Population/Population%20Monograph%20of%20Nepal%202014/Population%20Monograph%20of%20Nepal%202014%20Volume%20I%20FinalPrintReady1.pdf>> accessed 6 June 2018.
- CDNDoGM (2016/17). Commission for Determining the Number and Demarcation of Gaunpalika, Municipality and Special, Protected or Autonomous Region. Kathmandu.
- DoFRS (2017). Forest map. Department of Forest Research and Survey, 2017.
- DoS (1994) Topographic map, 1994. Kathmandu: Department of Survey
- GGGI (2017a). Presentation at launch and first national coordination meeting of the Green Municipal Development Program, Kathmandu, 14–15 November 2017. Global Green Growth Institute.
- GGGI (2017b). GGGI Refreshed Strategic Plan 2015–2020: Accelerating a Transition to a New Model of Economic Growth. Seoul, Korea: Global Green Growth Institute. Seoul: Global Green Growth Institute. Available at <<http://gggi.org/report/gggi-refreshed-strategic-plan-2015-2020/>> accessed 6 June 2018.
- Himalayan Times (2018). 'Belkotgadhi Municipality to expand, upgrade 255 local roads', 20 March 2018. Available at: <<https://thehimalayantimes.com/nepal/belkotgadhi-municipality-to-expand-upgrade-255-local-roads/>>
- MoFALD (2013). *Environment-friendly Local Governance Framework, 2013*. Kathmandu: Ministry of Federal Affairs and Local Government. Available at <<http://mofald.gov.np/sites/default/files/Resources/EFLG-2013.pdf>>, accessed 5 June 2018.
- MoUD (2016a) About the Conference (National Conference on Municipal Finance). Kathmandu: Ministry of Urban Development. Available at <<http://moud.gov.np/wp-content/uploads/2016/12/About-the-Conference.pdf>>, accessed 6 June 2018.
- MoUD (2016b). Third United Nations Conference on Housing and Sustainable Urban Development (Habitat III) – Nepal National Report. Kathmandu: Ministry of Urban Development. Available at <[http://habitat3.org/wp-content/uploads/Nepal-HII-National-Report\\_email.pdf](http://habitat3.org/wp-content/uploads/Nepal-HII-National-Report_email.pdf)> accessed 5 June 2018.
- MoUD (2017). *National Urban Development Strategy, 2017*. Kathmandu: Ministry of Urban Development. Available at <[http://moud.gov.np/wp-content/uploads/2017/02/NUDS\\_cabinet-document\\_approved-on-2073-10-9.pdf](http://moud.gov.np/wp-content/uploads/2017/02/NUDS_cabinet-document_approved-on-2073-10-9.pdf)> accessed 5 June 2018.
- NPC (2017). *Fourteenth Periodic Development Plan (2016/17–2018/19)*. Kathmandu: National Planning Commission.

# Annex 1 – Research Questions

Note: Green growth is defined as a model of economic growth that targets key aspects of economic performance including poverty reduction, job creation, social inclusion and environmental sustainability.

## Annex 1.1 Meeting with the mayor and his or her team

1. You lead a new municipality. What is your vision for the municipality, and the priorities for your tenure? What are the technical (e.g., staff) and physical barriers (e.g., office space) faced by your office?
2. In terms of infrastructure development, how do you evaluate the status of the municipality? Where do your priorities lie and why?
3. Although infrastructure development generally tops the list of municipal priorities (and this is because the majority of public demands are related to infrastructure), there are now equally important concerns about economic development, social inclusion and environmental sustainability.
  - 3.1 What are the economic potentials in the municipality, and to what extent have these been harnessed? What are the challenges?
  - 3.2 Socially and economically diverse groups live in the municipality. How does such diversity reflect in terms of public demands you receive, and how do you (plan to) ensure social inclusion in the planning and delivery of municipal services?
  - 3.3 Infrastructure development often takes place at the cost of environmental losses. To what extent have you been successful in balancing the use of natural resources while implementing infrastructure projects? What are the key challenges?
4. The Green Municipality Development Program (GMDP) aims to promote green growth. How would you define the scope of GMDP in this municipality? What should be the priority projects?

5. Would you share your top 5 project ideas for your tenure in terms of priority? Why are these the priorities?

## Annex 1.2 Focus group discussion with business community/private sector

1. Please explain your work and engagement in this municipality.
2. What are the business and economic opportunities you see in the municipality? What are the challenges or barriers?
3. What are the opportunities for public-private partnerships, and what has been the response of the municipality and government agencies to the possibility of partnering with your organization?
4. There are limited examples where the private sector works on green growth. How do you plan to change this? What related support do you expect from the municipality?
5. What are your key projects and initiatives for the next 5 years with or without collaboration with the municipalities?
6. The Green Municipality Development Program (GMDP) promotes green growth. How would you define the scope of the program in this municipality? What should be priority projects?

### Annex 1.3: Focus group discussion with NGO and CBO leaders

1. Please explain your work and engagement in this municipality.
2. What are the major social development gaps in this municipality? What were some past initiatives to address them, and to what extent were they successful?
3. Do you think the existing (infrastructure) projects have helped to reduce social disparities (including economic disparities)? Please give examples of successful projects as well as failures.
4. How do you judge the role of the municipality in promoting social inclusion in the municipality? What do you expect from the municipality?
5. What are your key projects and initiatives for the next 5 years with or without collaboration with the municipalities?
6. The Green Municipality Development Program (GMDP) promotes green growth. How would you define the scope of GMDP in this municipality from the perspective of working with the NGO and CBO sector? What should be priority projects?

### Annex 1.4 Focus group discussion with environmental organizations and activists

1. Please explain your work and engagement in this municipality.
2. What are the major environmental problems and issues in this municipality? What are the past initiatives to address them, and to what extent have these been successful?
3. Do you think that existing infrastructure projects have been effective in taking care of the environment? Can you give examples of successful projects as well as failures?
4. How do you judge the role of the municipality in promoting environmental sustainability in the municipality? What related support for this do you expect from the municipality?
5. What are your key projects and initiatives for the next 5 years with or without collaboration with the municipalities?
6. Have any of your environment concerns been mainstreamed into the municipality's planning? Where do you see the opportunities to do this?
7. The Green Municipality Development Program (GMDP) promotes green growth. How would you define the scope of GMDP in this municipality from the perspective of working with environmental organizations and communities in this municipality? What should be priority projects?

# Annex 2 – Minutes of Meeting with Mayoral Team (31 October 2017)

आज मिति २०७४/१०/१० गते कैलन्डोवारी नगरपालिका, की कामालयमा वडा प्रमुखको अध्यक्षतामा सार्वजनिक मामिला तथा स्थानीय विकास मन्त्रालय की सहकार्यमा कलेक्टर श्री श्रीमती इन्दिरेन्द्रा (जोशी) पाल्पा पुरानो १५३०००) ले करिबी लुम्बिनी, रीपब्लिकी सुपरी, सामाजिक समन्वय तथा स्वयं सहायता समूहको विकासमा आएका सबै भन्दा नगरपालिका मा हरिन इन्डिया कार्यक्रमको लक्ष्यमा कार्यन्वयनमा लागि समन्वयको रूपमा कार्य विभाग गरी सहकार्यमा कार्य गर्नुको निम्न विवरण हुनथुला धारी निर्माण कार्यमा ।

उपस्थितः

- प्रमुख :- रामेश्वर शर्मा खनाल
- उप-प्रमुख :- उदय शर्मा
- काउन्सिलर ४ :- सुदाम शर्मा, रामेश्वर शर्मा, रामेश्वर शर्मा, रामेश्वर शर्मा
- काउन्सिलर ५ :- अनन्त शर्मा, रामेश्वर शर्मा, रामेश्वर शर्मा, रामेश्वर शर्मा, रामेश्वर शर्मा
- प्रमाणिकाला :- श्रीमती सुकुमारी
- सहायक प्रमाणिकाला :- सुनील शर्मा

निर्माण नं. १५ नगरपालिका मा हरिन इन्डिया कार्यक्रम की अन्तर्गतमा हुनथुला कुँदा (सहकार्यमा आएका) निम्न कार्यहरूको कार्य गर्नका लागि निर्माण कार्यमा ।

- १) सडक निर्माण तथा सुदाम शर्मा
- २) नगरपालिका कार्यालय भन्दा नया बस स्तानको विकास
- ३) निम्नोक्त कार्यहरूको लागि कार्यकारी सहायक

- १) माडा तथा माडु की उच्चा व्यवस्थापन
- २) अस्पताल निर्माण
- ३) दुग्ध पार्क तथा पुलपुल उत्पादन तथा उच्चा व्यवस्थापन
- ४) क्लिड हरि निर्माण
- ५) उद्योगीय क्षेत्र की सुदाम शर्मा
- ६) सामाजिक व्यवस्थापन तथा निर्माण
- ७) सिंगल की व्यवस्थापन तथा निर्माण
- ८) उद्योगीय व्यवस्थापन तथा निर्माण

निर्माण २ मा नया सडक सुदाम शर्मा, रामेश्वर शर्मा, सुदाम शर्मा (Parallel), रामेश्वर शर्मा सुदाम शर्मा स्थापना की लागि पहला कार्य १ निर्माण कार्यमा ।

# Annex 3 – Participants in Focus Group Discussions (2 December 2017)

## Green Municipal Development Program

FGD with Business Community/ Private Sector

Date: Dec 2, 2017

Venue: Bhera Municipality (Mahadev Prant)

SN.	Name of the Participants	Designation	Organizations / Firms	Phone No.	Email address	Signature
१.	मोहनराज चौधरी	व्यापारी		९८०८९०९६७१		
२.	नाथनाथ शर्मा	मिस्टर (होम सप्लायर)		९८०८२००८८		
३.	अरुण कुमार शर्मा	विकासोपकारी/सहायक		९८९८८४४०९		
४.	सुदीप शर्मा	विकासोपकारी/सहायक		९८९८८२९००		
५.	सोहन शर्मा	विकासोपकारी/व्यापारी		९८९००८६२०९		

Attendance Sheet

## Green Municipal Development Program

FGD with NGO/CBO Leaders and Environmental Organizations/Activists

Date: Dec. 2, 2017

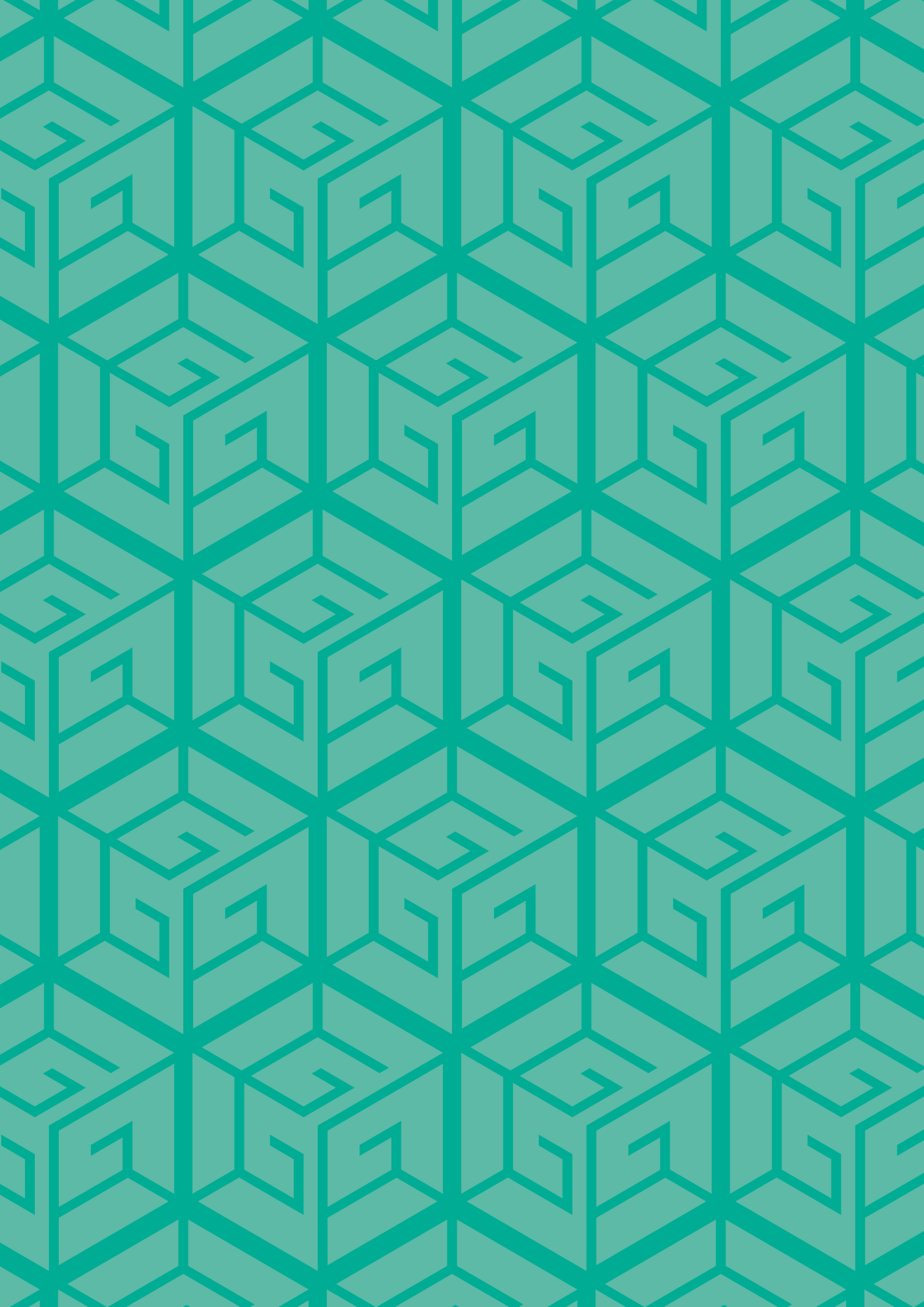
Venue: Bhera Municipality

SN.	Name of the Participants	Designation	Organizations / Firms	Phone No.	Email address	Signature
1	Ram Sharan Bajajain	E.D	Shreehar health counseling center and development	९८६०२७४६४३		
2.	Hari Krishna Paudel	president	RHC RD	९७५१०१७९५२	paushaniraza@hotmail.com	
3.	Kabita Paudel	member	RHC RD	९८१३९९७७५२		
4.	Kishor Nepal	"	RHC RD	९८६००८५५५०		
5.	Jurfa Paudel	"	RHC RD	९८६०४९६३३०		

Attendance Sheet

## Annex 4 – Projects Ideas from Municipal Consultations (October 2017)

Project Ideas
1. Road construction and upgrading
2. The construction of municipal and ward office buildings
3. The development of Chinteshwor (scenic hilltop) and historic Belkotgadhi fort as tourist destinations
4. The development and management of markets for locally grown meat and fish
5. The construction of a hospital
6. The development and management of markets for local milk and fruits
7. The construction of a cold store for storing agricultural products
8. The promotion of organic farming
9. Water supply schemes
10. Irrigation schemes
11. Solid waste management





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This report is one of a set of seven  
situation analyses of the Nepalese  
municipalities of Belkotgadhi,  
Dakshinkali, Mahalaxmi,  
Melamchi, Namobuddha,  
Palungtar and Thaha.

All seven reports are available at  
[www.gggi.org/country/nepal/](http://www.gggi.org/country/nepal/)