



### Namobuddha Municipality, Nepal

### Situation Analysis for Green Municipal Development

May 2018



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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/

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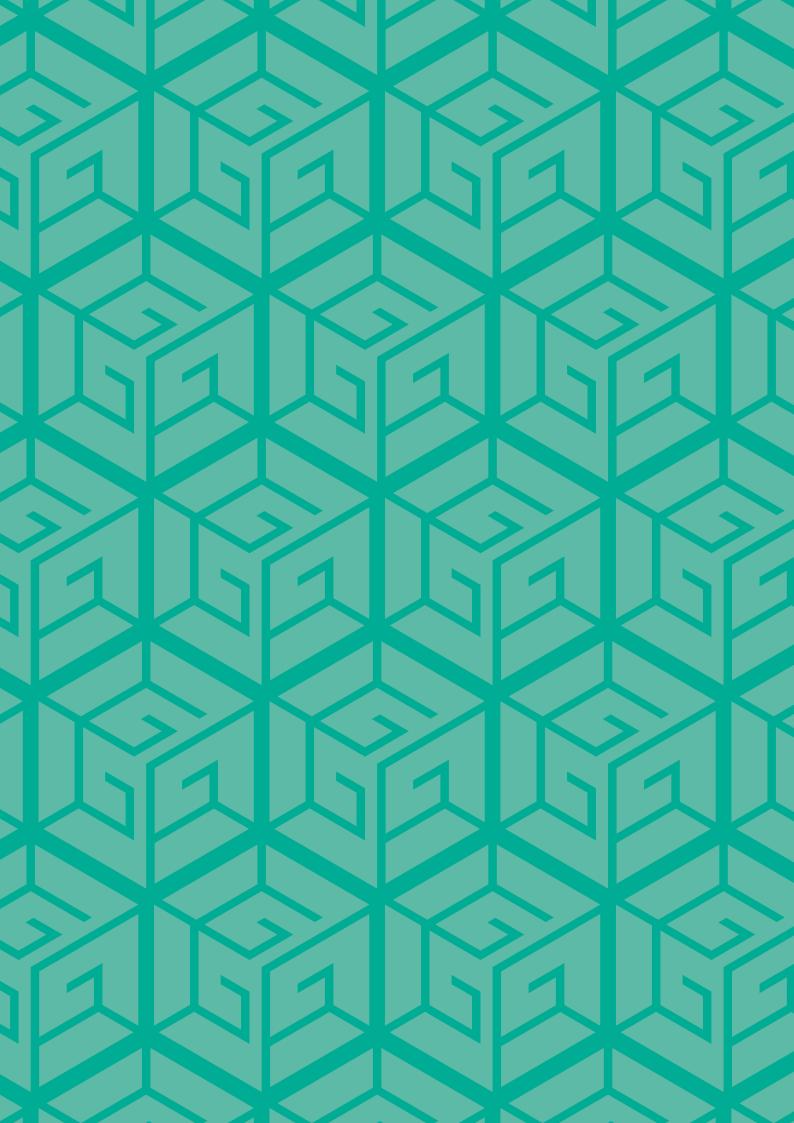
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## **Abbreviations and Acronyms**

| AAGR   | average annual growth rate (exponential)               |
|--------|--|
| СВО    | community-based organization                           |
| FY     | fiscal year  |
| GGGI   | Global Green Growth Institute                          |
| GMDP   | Green Municipal Development Program                    |
| ICT    | information and communication technology               |
| IGFT   | intergovernmental fiscal transfer                      |
| LGCDP  | Local Governance and Community Development Programme   |
| LPG    | liquefied petroleum gas                                |
| MoFAGA | Ministry of Federal Affairs and General Administration |
| MoFALD | Ministry of Federal Affairs and Local Development      |
| NGO    | non-governmental organization                          |
| NPR    | Nepali rupee   |
| NUDS   | National Urban Development Strategy                    |
| SDG    | Sustainable Development Goal                           |
| USD    | United States Dollars                                  |
| VDC    | village development committee                          |
| WASH   | water, sanitation and hygiene                          |
|        |  |



## 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).

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 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) 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 intermunicipal 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 Namobuddha Municipality in Kavrepalanchok District.

<sup>&</sup>lt;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.

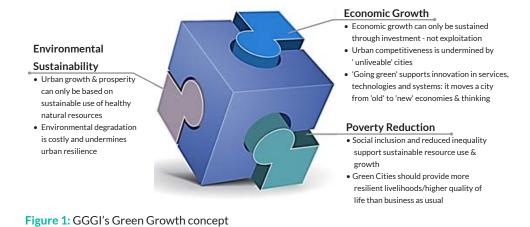


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Figure 2: Location of the seven GMDP partner municipalities

Source: GGGI 2017a

### 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. T.P. Sharma Timilsina and his team on 15 October 2017 at the municipal office guided by a list of research questions (see Annex 1 for questions and Annex 2 for meeting minutes.)
- Held focus group discussions with local entrepreneurs (members of Namobuddha Chamber of Commerce and Industry) at their office and organizations affiliated with social and environmental NGOs (see Annex 3 for participants in discussions).
- Shared preliminary findings at the GMDP Launch and First National Consultation Workshop 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.
- GGGI Nepal and Headquarter teams reviewed final drafts of the report



Discussions with mayoral team (October 2017)







Opening session of the GMDP Launch and First National Consultation Workshop (above); Namobuddha Mayor Mr. T.P. Sharma Timilsina 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).

| 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<br>and economic change. The major focus should be on physical, social, economic and institutional resilience,<br>which are pivotal for mitigating short and long-term vulnerability resulting from disasters and the regional<br>and global impacts of climate change. Planning and urban development should enhance the capacity of urban<br>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.   |

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

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 bankablehealthy 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 largescale 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

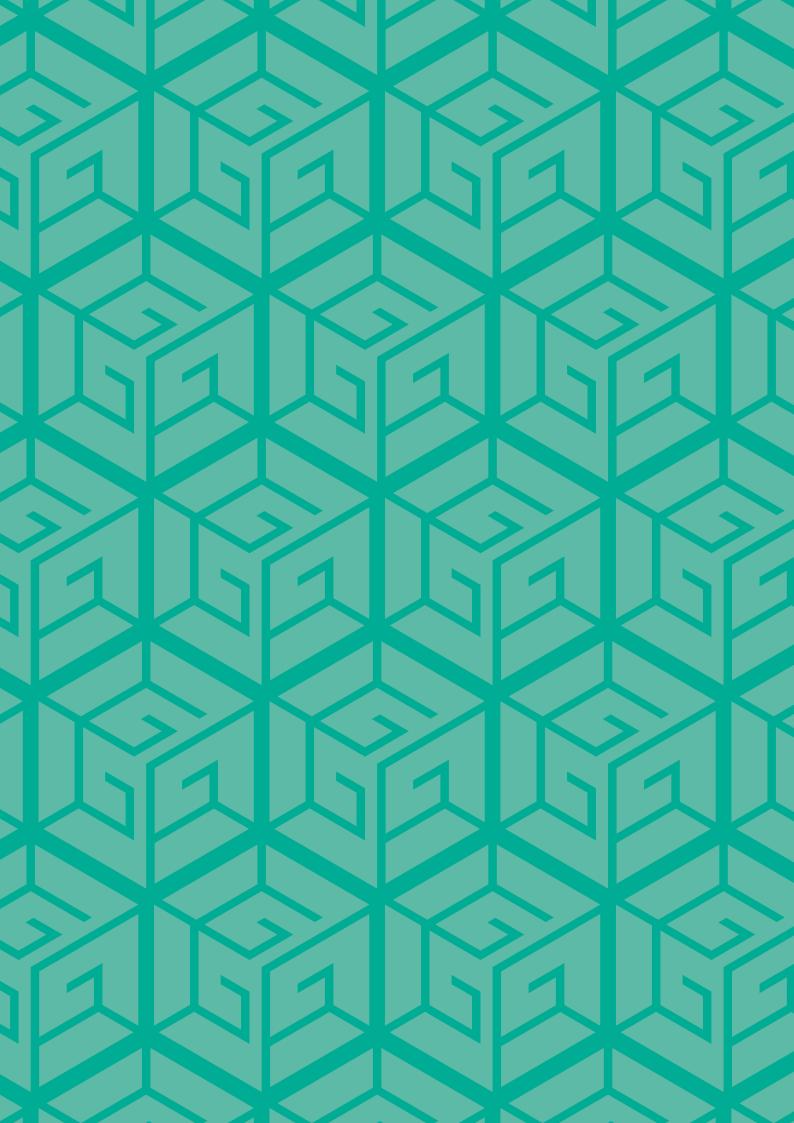
Two major international policy instruments are particularly relevant for the promotion of green urban development in Nepal:

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

Namobuddha Municipality is located in the center of Kavrepalanchok District in Province 3 (Figure 3). It lies 52 km east of the capital city Kathmandu and is easily accessible via the Arniko Highway to Dhulikhel and on along the BP Highway (Figure 4). The municipality has an area of 102 km2. The BP Highway runs through the center of the municipality. The highway has only been completed recently along its whole course through to Bardibas in the Tarai with sections of it in the municipality opening progressively from the early 2000s. The municipality was formed in 2017 by combining the two erstwhile village development committees of Kanpur Kalapani and Syampati Simalchour with Dapcha Kashikhanda Municipality. Dapcha Kashikhanda Municipality had been formed in December 2014 by amalgamating Dapcha Chatrebhanga, Daraune Pokhari, Khanalthok, Mathurapati Fulbari, Methinkot and Puranogaun VDCs. The current municipality is divided into the 11 wards shown in Figure 5.

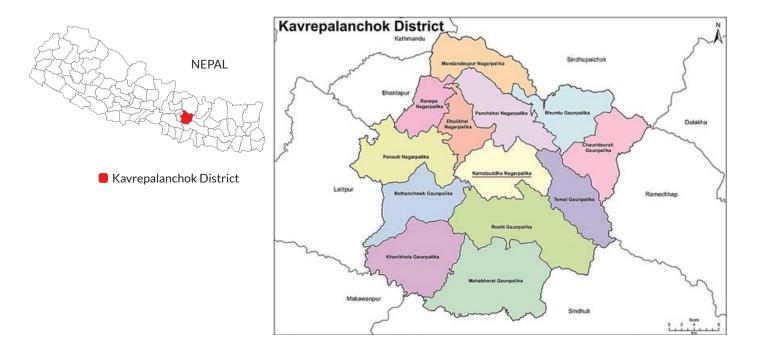


Figure 3: Location map of Namobuddha Municipality Source: CDNDoGM 2016/17

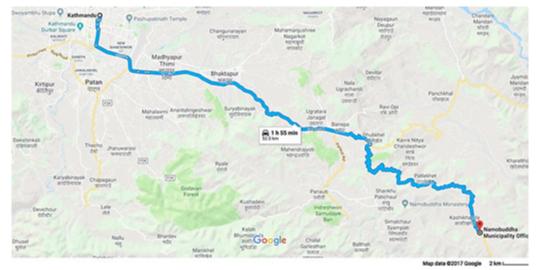


Figure 4: Road access to Namobuddha from Kathmandu

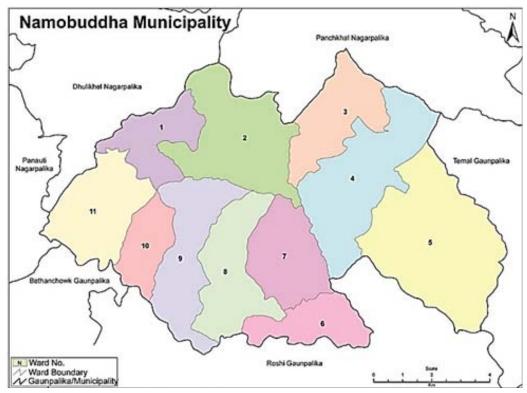


Figure 5: Wards of Namobuddha Municipality Source: (CDNDoGM 2016/17)

### 3.2 Demography

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

**Population growth and trends** – The population of the area that has become Namobuddha Municipality grew by an average of 1.39% per year between 1991 and 2001 but reduced by about 3,000 between 2001 and 2011 with all the erstwhile VDCs losing population in this period except for Methinkot, which stayed the same. In 2011, the population of the area covered by the current municipality stood at 29,519 across 6,584 households. The population was estimated to be more than 35,000 in

2017. The population density in 2011 ranged from 154 to 453 persons/km2 (Table 2).

The population of the municipality is expected to rise following the recent empowerment of Nepal's municipalities under the Constitution of Nepal (2015) and the economic opportunities brought by the completion of the BP Highway as a major route linking the capital city to eastern Nepal. An annual average growth rate of 0.5% would see the population rising to 32,000 by 2031, which is about the same as its 2001 population (Figure 6). A higher growth rate of 1.5% per year would see the population increase to about 40,000 by 2031.

Table 2: Ward division and population – Namobuddha Municipality, 2011

| Current ward no. | Erstwhile municipality/VDCs      | Population<br>2011 | Area<br>(km²) | Population density<br>(persons/km <sup>2</sup> ) |  |
|------------------|----------------------------------|--------------------|---------------|--|--|
| 1                | Dapcha Kashikhanda Municipality* | 2.042              | 5.74          | 250.22   |  |
| 1                | Simalchour Syampati              | 2,062              | 5.74          | 359.23   |  |
| 2                | Dapcha Kashikhanda Municipality* | 3,422              | 12.36         | 276.86   |  |
| 3                | Dapcha Kashikhanda Municipality* | 2,609              | 7.74          | 337.08   |  |
| 4                | Dapcha Kashikhanda Municipality* | 2,112              | 13.66         | 154.61   |  |
| 5                | Kanpur Kalapani                  | 4,376              | 18.76         | 233.26   |  |
| 6                | Dapcha Kashikhanda Municipality* | 1,514              | 5.22          | 290.04   |  |
| 7                | Dapcha Kashikhanda Municipality* | 3,193              | 7.6           | 420.13   |  |
| 8                | Dapcha Kashikhanda Municipality* | 2,684              | 8.64          | 310.65   |  |
| 9                | Dapcha Kashikhanda Municipality* | 2,766              | 9.23          | 299.67   |  |
| 10               | Dapcha Kashikhanda Municipality* | 1,988              | 4.38          | 453.88   |  |
| 11               | Simalchour Syampati              | 2,793              | 9.05          | 308.62   |  |
|                  | All the municipality             | 29,519             | 102.38        | 288.33   |  |

Sources: CDNDoGM 2016/17 for area; CBS 2011 for population

Table 3: Households, population and average household size - Namobuddha Municipality

| Population |        |        | Between 19     | 91 and 2001 | Between 20     | 01 and 2011 |
|------------|--------|--------|----------------|-------------|----------------|-------------|
| 1991       | 2001   | 2011   | Change in pop. | AAGR (%)    | Change in pop. | AAGR (%)    |
| 28,284     | 32,489 | 29,519 | 4,205          | 1.39%       | -2,970         | -0.96%      |

Source: CBS 1992, 2002 and 2012. Note: AAGR - Average annual growth rate (Exponential).

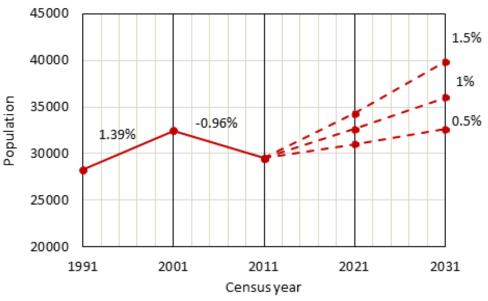


Figure 6: Population projection beyond 2011 — Namobuddha Municipality Source:CBS 1992, 2002, 2012

#### Table 4: Age-wise population – Namobuddha Municipality

| Age group    | Total  | Share (%) | Males  | Females | Sex ratio M:F |
|--------------|--------|-----------|--------|---------|---------------|
| 0 to 14      | 8,882  | 30.09     | 4,393  | 4,489   | 97.86         |
| 15 to 59     | 17,388 | 58.90     | 7,657  | 9,731   | 78.69         |
| 60 and above | 3,249  | 11.01     | 1,554  | 1,695   | 91.68         |
| Total        | 29,519 | 100.00    | 13,604 | 15,915  | 85.48         |

Source: CBS 2011

**Age** – In 2011, the economically active population (15–59 year olds) made up 59% of the population, which is a relatively large proportion (Table 4) and can be considered as an economic advantage. There were 100 women for every 79 men in the economically active age group meaning that job opportunities are particularly needed for women.

**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. And it is important that all groups are fairly represented and provided with opportunities under the principal of social inclusion.

In 2011, Tamangs made up the largest proportion of the population (about 44%), followed by hill Brahmans (about 25%), Newars (12%) and Chhetris (8%). The Tamangs live more in the less accessible and underserved hilly areas, and many are socioeconomically disadvantaged.

**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

Namobuddha Municipality lies in a hilly region with large areas of steep hills and predominantly rural landscapes (Figure 7). Settlements are scattered across the area with the exceptions of Dapcha, a compact ancient Newari town located on an ancient trade route, and the growing settlements around the BP Highway, particularly at Bhakundebesi.

The flatlands around Bhakundebesi are emerging as the main local market and is rapidly converting into an urban area (see Figure 8), a trend that is picking up momentum because of the growing traffic along the BP Highway, which passes through Bhakundebesi.

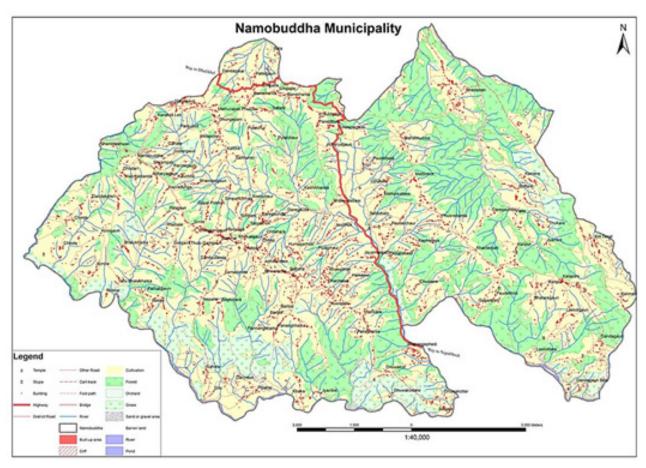


Figure 7: Land use map of Namobuddha Municipality, 1994 Data Source: DoS 1994

#### 3.4 Market Centers

The old Newari town of Dapcha is situated along the ancient trade route from Dhulikhel and used to be a business hub serving Bhojpur, Okhaldhunga, Sindhuli, and Ramechhap districts to the east. However, the BP Highway is now the main road and bypasses Dapcha, which has lost its competitive advantages and is a dying market town.

Bhakundebesi is the emerging marketplace due to its strategic location in the middle of the municipality astride the BP Highway. Most local business activities in the municipality take place in Bhakundebesi bazaar. It is a major place for local people to purchase consumer goods.

#### **3.5 Places of Attraction**

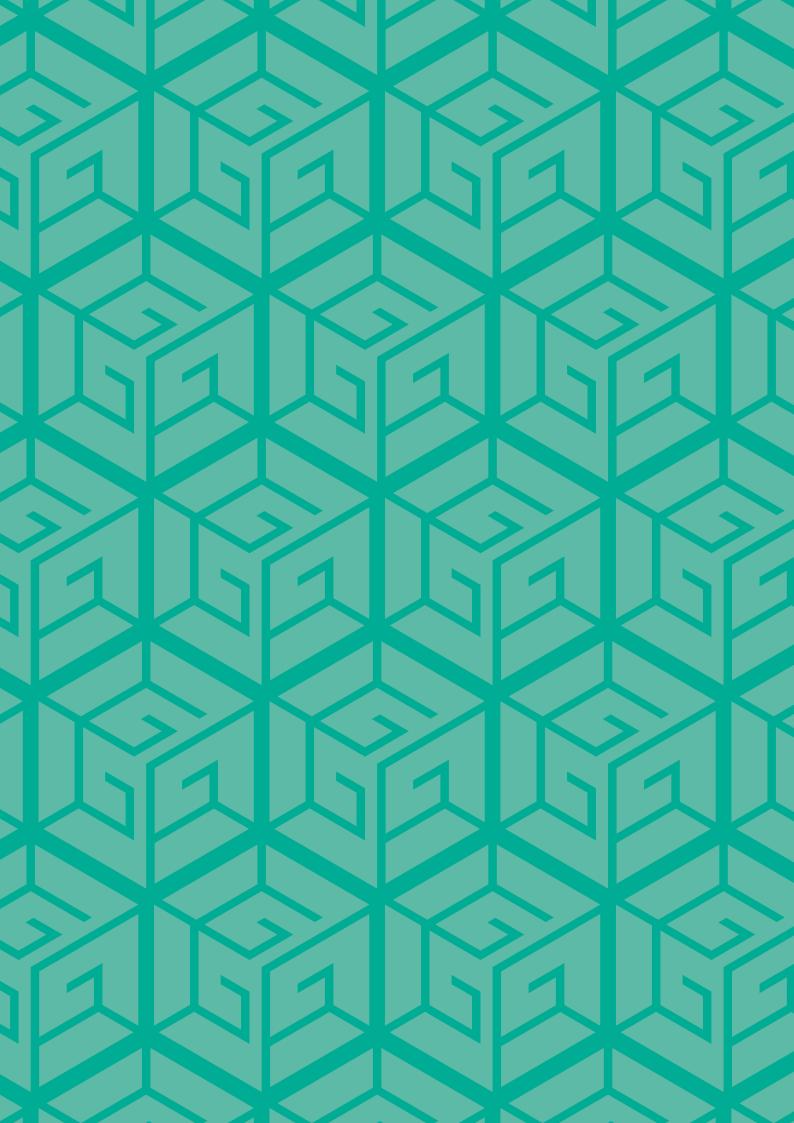
Namobuddha Municipality is known for its landscape and scenic views and for revered Buddhist and Hindu religious sites. The municipality is named after Namobuddha, which is one of the most important Buddhist pilgrimage sites in the world. Known by Tibetans as Takmo Lu Jin, the stupa at Namobuddha marks the site where a young prince (in some versions, Gautam Buddha in his earlier incarnation) allowed a starving tigress to consume him and thereby feed her cubs. The Thrangu Tashi Yangtse Monastery at Namobuddha was built in 1979, is home to hundreds of monks and is one of the main attractions in the area..



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



Namobuddha stupa (Image source: https://sacredsites.com) (left), Thrangu Tashi Yangtse Monastery (Image source: https://www.adventurethirdpole.com) (right)



### 4. Environment and Natural Resources

**Forests** – The municipal land use map of 1994 puts forest coverage at about 29% (Figure 7) while the 2017 forest map indicates forest cover of over 38% or 39 km2 (Figure 9). This suggests a large increase in forest cover over the 24 years, which could be due to the impact of the community forestry program, although it could also be due to methodological differences between the two studies. Whatever, about one-third of the municipal area is covered by forests.



Figure 9: Forest map – Namobuddha Municipality Source: DoFS 2017

Loss of farmland – In recent years, many brick kilns have been established in the area causing the loss of large areas of fertile farmland. These kilns give rise to air pollution which has a negative impact on human health. In addition, the haphazard drilling of borewells is leading to a lowering of the water table in some areas and the drying up of water sources.

**Water bodies** – The main river in the municipality is the Roshi River. Other important watercourses are the Dapcha, Soti, Hile, Jhigu, Dahare, and Samundre streams. Daraune Pokhari, Bhairav Kunda, Thuldhara pond, Aarubari Chaur pond and Jogipani Kuwa pond are some of the main ponds. They have, however, been shrinking in recent years. Spring sources have also been drying up. A research project undertaken by the Nepal Water Conservation Foundation (NWCF) and the International Centre for Integrated Mountain Development's (ICIMOD) has increased awareness about the importance of maintaining ponds and building new ones to improve the flow of springs (ICIMOD 2016).



Jogipani Kuwa pond (image source: ICIMOD 2016) (up), Daraune pokhari image source: GWP Nepal and JVS nd (Down).



### 5. Economy

The traditional occupation in Namobuddha Municipality is agriculture. Most households engage in vegetable and cattle farming. The increasing urbanization and loss of farmlands has seen many people switching from agriculture to non-farm occupations such as working in brick kilns. The opening of the BP Highway has led to the establishment of many hotels and restaurants and the development of local market places such as Bhakundebesi. Most local businesspersons are small entrepreneurs with limited investment capacity.





# 6. Infrastructure, Facilities and Basic Services

### 6.1 Housing

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

- Almost all (over 95%) households lived in their own houses and the remainder in rented accommodation. The share of renting households was relatively high (8.7%) in Khanalthok and Bhakundebesi.
- About 89% of households lived in houses with outer walls of mud bonded bricks or stones. Less than 4% lived in houses with outer walls of cement bonded bricks or stones, but the proportion was relatively higher in Dapcha Chatrebhanjh (6%) and Khanalthok (7.7%). About 21% of houses in Methinkot had outer walls of unbaked bricks while 94% of households lived in houses with foundations made of mud bonded bricks or stone.
- 71% of households lived in houses with galvanized iron rooves while 19% lived in houses with tile or slate rooves. The proportion of tile or slate rooves was high in Kanpur Kalapani (44%) and Methinkot (35%). Seven percent of houses in the relatively urbanized area of Khanalthok had reinforced concrete rooves. And one in ten households in Simalchour Syampati lived in houses with thatch rooves.

#### 6.2 Roads and Transportation

Namobuddha Municipality is easily accessible by motorable road from neighboring areas via the BP Highway, which splits the municipality into almost two equal halves (Figures 3 and 7). The highway, which runs from Banepa to Bardibas in the Tarai, is the shortest route from the Kathmandu Valley to the eastern hills and Tarai. The limited width of the road and its sharp bends mean that public transportation along the BP Highway is mostly by small buses and jeeps.

#### **6.3 Other Services**

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

**Drinking water** – In 2011, about 60% of households had access to taps or piped water with accessibility varying across the municipality. While about 80% of Puranogau

Dapcha households had taps or piped water, only 37.5% of households in Simalchour Syampati enjoyed such services. Other sources of drinking water were covered wells (12.3%), uncovered wells (20.2%) and water spouts (6.3%). Methinkot (40.8%) and Simalchour Syampati (31.4%) residents were most reliant on uncovered wells. Covered wells served sizeable household populations in Dapcha Chatrebhanjh (35.3%) and Simalchour Syampati (23%).

The 2015 earthquake badly affected local springs and other water sources. One study found that 20 out of 35 stone spouts, ponds and springs had dried up after the earthquakes in Dapcha Kashikhanda Municipality (GWP Nepal and JVS nd). Improved water management is a pressing issue.

**Cooking fuel** – In 2011, 88% of households mainly used firewood for cooking, followed by liquefied petroleum gas (LPG) (4.92%). In Puranogaun Dapcha, almost all households (99.8%) relied on firewood for cooking. LPG was relatively popular in Dapcha Chatrebhanjh (10.3%) and Khanalthok (11.5%). Less than 6% of households used biogas for cooking, with its use relatively high in Mathurapati Fulbari (19.3%) and Methinkot (15.9%).

**Lighting** – 93% of households used electricity for lighting while 5% depended on kerosene. Dependency on kerosene was relatively high in Khanalthok (8.1%) and Methinkot (7.4%). There was little solar lighting except for in Khanalthok where 3% of households relied on it.

**Toilets** – In 2011, about 63% of households had access to toilet facilities, with about 40% overall having flush toilets. The least toilet coverage was in Kanpur Kalapani and Simalchour Syampati VDCs where 63% and 58% of households respectively did not have their own toilets. Almost all households in Puranogaun Dapcha had their own toilets, mostly flush toilets.

**Waste management** – Namobuddha is in the early phase of urbanization with no systematic waste management. The Municipality Office is searching for a landfill site.

### 6.4 Social Infrastructure

The municipality has eight academic institutes for higher studies (higher secondary schools and colleges), nine health facilities, one agriculture service center and one animal service center.

- The main academic institutes are Dapcha Krishna Multiple Campus (community), Dapcha; Janahit Secondary School (public), Khanalthok; Janak Multiple Campus (community), Methinkot; Janak Secondary School (public), Methinkot; Kanpur Campus (community), Kanpur; and Kanpur Secondary School (public), Kanpur.
- The main health facilities are Methinkot Hospital, which is a 15-bed district level government hospital, and Dapcha Health Center, which is run by Kathmandu University and serves the people of Kanalthok, Daraunepokhari, Puranogaun Dapcha and Katunje Besi.



# 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. **Municipal vision and policies** – Namobuddha Municipality's vision statement is "The development of agriculture, business, tourism, and industry: Our campaign for a beautiful and prosperous municipality." Being a new municipality, it is yet to prepare the legal provisions to operate as per its rights and obligations under the Constitution of Nepal 2015 and the Local Level Governance Act (2017).

Major programs – Namobuddha Municipality is one of 191 municipalities implementing the Local Governance and Community Development Programme (LGCDP) 2. Executed by the Ministry of Federal Affairs and General Administration (MoFAGA), LGCDP empowers citizens to engage with local governments and increases the capacity of local governments to manage resources and deliver basic services in an inclusive and equitable way besides strengthening the institutional framework for decentralization, devolution and community development. Namobuddha Municipality is also implementing the Environment-friendly Local Governance Programme (EFLGP).





## 8. Municipal Institutions and Capacity

#### 8.1 Organizational Setup

The existing organizational setup became redundant following the recent state restructuring process. The municipality has separate environment, planning, information technology, building design, social welfare, education, health, agriculture, animal welfare, administration and account sections. The municipality's website is at http://namobuddhamun.gov.np/en

#### 8.2 Technical and Physical Capacity

Namobuddha Municipality operates from a rented building in Bhakundebesi as its own building is under construction. The municipal office only has two engineers (one under LGCDP) and so the workload is much more than can be handled by the available technical human resources.





Current Municipality Office in Bhakundebesi (up). Sketch of under construction new Namobuddha Municipality office (down)



### 9. Municipal Finances and Revenue

Municipal income increased by about 18% from 0.29 million USD in FY 2015/16 to 0.34 million USD in 2016/17 (Table 5). The share of revenue (from internal sources and revenue distribution) also increased from 15.3% to 21%. In FY 2017/18, the total income is estimated to increase by almost ten times (to 3.2 million USD) mainly due to greatly increased grants from the Government of Nepal under inter-governmental fiscal transfer (IGFT). The share of IGFT is estimated at 96.5% of total revenue in 2017/18 with the contribution of revenue being an estimated 3.45%. The share of recurrent expenditure is estimated to be only 10.51% of the total budget in 2017/18 with the remaining 89.45% to go for capital expenditure. This is in contrast with the previous fiscal year when recurrent expenditure significantly exceeded capital expenditure.

| Description  | FY 2015/16 (actual) |         | FY 20     | FY 2016/17 (revised) |         | FY 2017/18 (estimated) |             |           |           |
|--|---------------------|---------|-----------|----------------------|---------|------------------------|-------------|-----------|-----------|
| Description  | NPR                 | USD     | Share (%) | NPR                  | USD     | Share (%)              | NPR         | USD       | Share (%) |
| 1. Income  |                     |         |           |                      |         |                        |             |           |           |
| 1.1 Revenue  | 4,626,952           | 44,922  | 15.35     | 7,480,800            | 72,629  | 21.05                  | 11,335,000  | 110,049   | 3.45      |
| Internal income                                      | 2,939,777           | 28,542  | 9.75      | 5,004,800            | 48,590  | 14.08                  | 8,535,000   | 82,864    | 2.59      |
| Revenue distribution                                 | 1,687,175           | 16,380  | 5.60      | 2,000,000            | 19,417  | 5.63                   | 2,350,000   | 27,185    | 0.86      |
| Other income   |                     |         |           | 476,000              |         |                        | 450,000     |           |           |
| 1.2 Inter-<br>governmental fiscal<br>transfer (IGFT) | 25,515,000          | 247,718 | 84.65     | 28,055,000           | 272,379 | 78.95                  | 317,603,000 | 4,369     | 0.14      |
| Received from<br>Government of Nepal                 | 25,515,000          | 247,718 | 84.65     | 28,055,000           | 272,379 | 78.95                  | 317,603,000 | 3,083,524 | 96.55     |
| TOTAL  | 30,141,952          | 292,640 | 100.00    | 35,535,800           | 345,008 | 100.00                 | 328,938,000 | 3,193,573 | 100.00    |
| 2. Expenditure                                       |                     |         |           |                      |         |                        |             |           |           |
| 2.1 Recurrent  | 7,283,873           | 70,717  | 17.78     | 9,604,800            | 93,250  | 98.05                  | 34,569,404  | 335,625   | 10.51     |
| 2.2 Capital  | 33,686,397          | 327,052 | 82.22     | 191,279              | 1,857   | 1.95                   | 294,368,596 | 2,857,948 | 89.49     |
| TOTAL  | 40,970,270          | 397,770 | 100.00    | 9,796,079            | 95,108  | 100.00                 | 328,938,000 | 3,193,573 | 100.00    |

Table 5: Namobuddha Municipality income and expenditure (FY 2015/16 - FY 2017/18) year 2017/18)

Source: Namobuddha Municipality Budget, Policy and Program for FY 2074/75 (2017/18). Note: 1 USD = NPR 103



# **10. Municipal Stakeholders and Groups**

The main potential stakeholders for the implementation of the Green Municipal Development Program in Namobuddha Municipality are listed in Table 6. The business community will be instrumental in sharing the costs of projects. NGOs will play an important role in implementing social components while grassroot level community-based organizations (CBOs) will help mobilize local people.

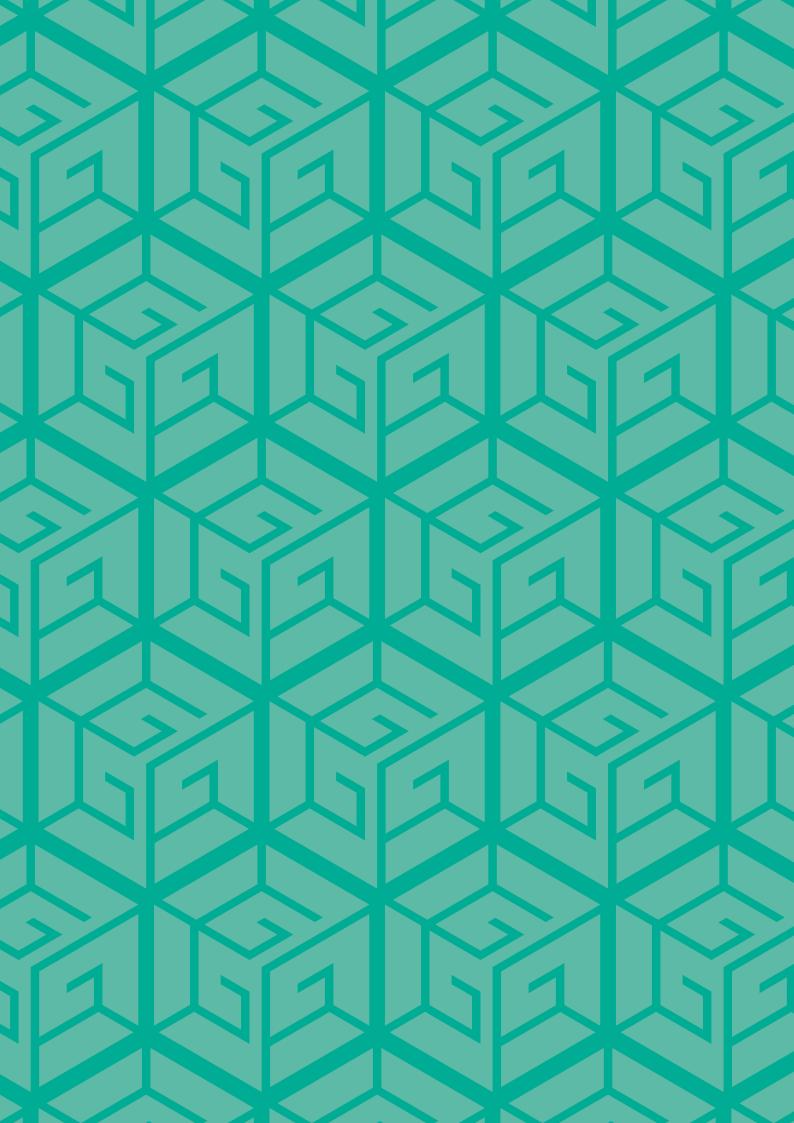
Table 6: Namobuddha Municipality – potential GMDP stakeholders

| Category                      | Stakeholders  |
|-------------------------------|---|
| Business community            | Namobuddha Chamber of Commerce and Industries, Nepal Chamber of<br>Commerce-Namobuddha  |
| NGOs and INGOs (sector)       | Civic Forum (WASH, governance), PHASE Nepal (health and livelihoods),<br>USAID (health), CEAPRED (agriculture), Nangsal (disaster risks), Save the<br>Children (disaster risk, school safety and social security) |
| Community-based organizations | Women's groups, Dalit groups and children's clubs   |

Source: Municipal Office and focus group discussions



<sup>3</sup>Mid-July 2017 to mid-July 2018



### PART 3: SECTORAL, POLICY AND PROJECT FINDINGS

# **11. Priority Sectors and Strategic Themes**

Namobuddha Municipality is mostly rural, which leaves scope for its development along the path of sustainable urbanization. Variations in topography, geographical features, and in particular, climatic conditions provide potential untapped opportunities for developing tourism and agriculture.

The whole of the Kavre Valley is famed for its vegetable production. There is ample scope for Namobuddha to collaborate with neighboring regions for promoting commercial agriculture. The municipality's strategic location between the Tarai and the Kathmandu Valley–Banepa– Dhulikhel area, with the BP Highway linking the two areas, provides a strong driver of the area's development.

To capitalize on its agricultural potential the area needs to adopt more commercial farming, take smart decisions on what to grow where and establish market nodes and links. To harness its tourism potential, the natural environment needs to be protected – particularly from the haphazard construction of physical infrastructure and particularly roads. The municipal office wants to see environmentfriendly and socially inclusive tourism. In this light it is necessary to ensure that the fruits of development are proportionately distributed to local people in the spirit of socioeconomic inclusion.

On the basis of their potential, sustainable infrastructure development and the commercialization of agriculture for green growth have been identified as having the most potential for promoting and enabling green growth in Namobuddha Municipality:

#### **11.1 Sustainable Infrastructure Development**

Development through tourism – The haphazard construction of roads without proper alignment, design, and sympathy to environmental concerns is rampant across Nepal and Namobuddha Municipality is no exception. Constructing roads, particularly in difficult terrain, is expensive and maintenance even more so. Although roads are important for development, the scattered nature of settlements in the municipality further raises questions to what extent road accessibility should or can be provided.

On one hand, the cost implications and technical feasibility of expanding road networks in hilly areas cannot be ignored. On the other hand, certain disadvantaged social groups (mainly Tamangs) mostly occupy the less accessible upper hill areas. One way of integrating such socially disadvantaged groups into mainstream development is by promoting tourism activities such as homestays, eco-tourism, and agro-tourism working with them as local partners and beneficiaries. Investments could be made on improving footpaths, agricultural roads (also called green roads), water supply and sanitation and energy sources in communities.

Water supply – The area's local springs and other water sources were badly affected by the 2015 earthquakes. Functioning water sources need to be protected for the sustainable availability of drinking water to meet present and future ongoing needs. The ongoing initiatives on water management should be scaled up.

Waste management – Most residential development in the municipality is likely to take place in Bhakundebesi and other locations along the BP Highway. Although most new buildings will have septic tanks, there is no planning for the ultimate disposal of fecal sludge and it is likely to be disposed of into the nearest rivers if there is no other alternative. One solution is to divert household-level investment to build wastewater treatment plants, and to recover energy and manure from waste.

Settlement growth will also result in the production of more solid waste. The Municipality Office is searching for a suitable landfill site. However, transporting waste to a faraway site will expend fuel and is not a sustainable option. There is scope for the municipality to promote the production of less solid waste by converting waste into manure and energy alongside the extraction of recyclable materials. Examples of innovative waste water treatment and waste management are given in Box 3. Energy – In rural areas, there is scope for producing biogas from household, animal and agro-waste. In 2011, 19% of households in Mathurapati Fulbari and 16% in Methinkot were producing biogas for cooking (CBS 2012). Its use reduces dependency on firewood, kerosene and LPG for cooking and produces manure for organic farming.

**11.2** Commercialization of agriculture for green growth

Namobuddha Municipality specializes in the production of green vegetables. The challenge is to secure markets and reasonable prices to make agriculture a part of sustainable urbanization. The lack of proper marketing means that the area supplies vegetables to other markets such as Banepa that in turn supply vegetables back to the municipality.

On one hand, the current trend of abandoning farming for jobs like sand mining and converting fertile lands into brick kiln sites will bring environmental harm alongside The large size of the municipality means that there is no lack of space for solar farming, although in 2011 there was very little solar lighting in the area. Solar lighting has great potential for providing electricity in unserved and underserved areas and to reduce dependency on kerosene.

economic gains. In addition, the jobs and incomes from brick kilns are unlikely to be sustainable. And as urbanization increases, there will be more local demand and stronger local markets for agro-products including milk, meat, and fish. The municipality has the capacity to meet both local needs and those of neighboring areas. Market linkages and infrastructure needs to be strengthened for this to happen.

#### 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 Shreekhandapur 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 the country

# **12. Policy and Planning Recommendations**

Namobuddha Municipality needs to invest in soft initiatives such as plans and policies as well as hard initiatives such as projects. The municipality is preparing several municipal plans. It needs to prepare all the plans and byelaws listed in Table 7 to underpin and regulate its development. These initiatives are an opportunity to integrate green growth concept and principles into the area's development.

**Technical and logistic support to municipal staff** – As a new municipality with limited human resources, Namobuddha Municipality is in need of technical and logistic support. The municipal office operates from a rented building and has one civil engineer and one environmental engineer to carry out regular municipal tasks. Given the rapid urban growth, the availability of technical human resources is inadequate to meet the large work load. Technical and logistic support required for 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 need managerial skills to carry out their jobs. They also need to keep updated about urban challenges and practices to be able to address them. Likewise, the municipality's chief administrative officer (formerly executive officers) have important roles as 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.

#### Table 7: Municipal plans and policies needed by Namobuddha Municipality

| Plans Objectives  |   | Components  |  |  |
|---|---|---|--|--|
| (1) Comprehensive<br>town development<br>plan   | To realize the municipal<br>vision and priorities by<br>promoting infrastructure<br>development that<br>proceeds with green<br>growth potentials and<br>concerns, and to promote<br>planned urbanization. | <ul> <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: <ol> <li>Risk sensitive land use plan</li> <li>Municipal transport master plan</li> <li>Tourism master plan</li> <li>Environment preservation master plan including natural resource management plan</li> <li>Wunicipal finance plan</li> </ol> </li> </ul> |  |  |
| (2) Risk sensitive land<br>use plan   | To ensure safe housing<br>while promoting local<br>architecture; to ensure<br>safety from floods,<br>landslides, and climatic<br>risks; and to prevent river<br>pollution                                 | a. Multi-hazard risk assessment (including climate risks) and zoning<br>b. Slope and watershed analysis<br>c. Byelaws on setbacks from rivers and streams   |  |  |
| (3) Building byelaws  | To control population<br>density, ensure space for<br>mobility, and preserve<br>traditional architecture  | a. Setback, ground coverage, height, and floor area ratio<br>b. Guidelines for buildings in traditional settlements of of Dapcha  |  |  |
| (4) Municipal To ensure efficient and<br>effective mobility within<br>transport master plan the municipality and to<br>and from neighboring<br>areas  |   | a. Twenty-year road construction and connectivity plan<br>b. Integrated land use<br>c. Transport options<br>d. Traffic management including road safety<br>e. Parking management  |  |  |
| (5) Tourism master<br>plan  | To harness the<br>municipality's tourism<br>potential, attract private<br>investment and address<br>poverty in underserved<br>areas (e.g., through<br>homestay programs)                                  | <ul> <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<br>protection master<br>plan including natural<br>plan  |   | <ul> <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>  |  |  |
| <ul> <li>(7) Municipal finance</li> <li>plan</li> <li>To improve and increase<br/>revenue collection,<br/>explore new avenues for<br/>revenue generation and<br/>optimize investment and<br/>expenditures ensuring<br/>value for money</li> </ul> |   | <ul> <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>  |  |  |

# **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 discussion with local stakeholders, the project initially identified 10 projects that would benefit the municipality (see Annex 4). Further discussions identified the following five projects as the ones with the greatest potential.

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

**Description:** Namobuddha's great tourism potential needs harnessing to bring unserved and underserved areas into mainstream development by creating economic opportunities and improving basic services. Tourism activities can be integrated with improving the provision of basic services such as water supply and sanitation through homestay, ecotourism and agrotourism programs in targeted locations and communities. Linking tourism-promoting activities with water supply and sanitation improvements and the development of entrepreneurship skills will bring positive changes in living standards.

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

#### **Activities**

- 1. Promote homestay programs, eco-tourism, and agrotourism 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. Commercialization of agriculture for urban use

**Description:** The municipality is known for producing green vegetables, milk and meat. This produce and its by-products can be consumed locally and supplied to neighboring urban centers. New markets and consumers need to be identified and developed. The Municipal Office plans to join hands with five neighboring municipalities and two rural municipalities for the combined production and marketing of agricultural produce.

**Objective:** Increase the commercial viability of agricultural activities and develop market opportunities for local agro-products.

#### **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:** The municipality has many suitable locations that receive plenty of sunlight throughout the year to establish solar farms. Their establishment would i) provide electricity to areas unserved by the National Grid, ii) reduce dependency on kerosene for lighting and iii) generate revenue from the sale of surplus power to the National Grid.

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

#### Activities

- 1. Install solar farms (photovoltaic power station) at suitable sites
- 2. Subsidize the installation of solar panels at household level in unserved areas.

#### **Project 4: Integrated solid waste management**

**Description**: The flat lands along the BP Highway are rapidly urbanizing (especially at Bhakundebesi), which is leading to a rapid increase in solid waste. Transporting it to faraway landfill sites is unsustainable. 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, 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 areas. 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 solutions (wastewater treatment plants). Due to the increasing volume of wastewater, there is the need for a wastewater treatment plant to treat wastewater while producing biogas and compost fertilizer.

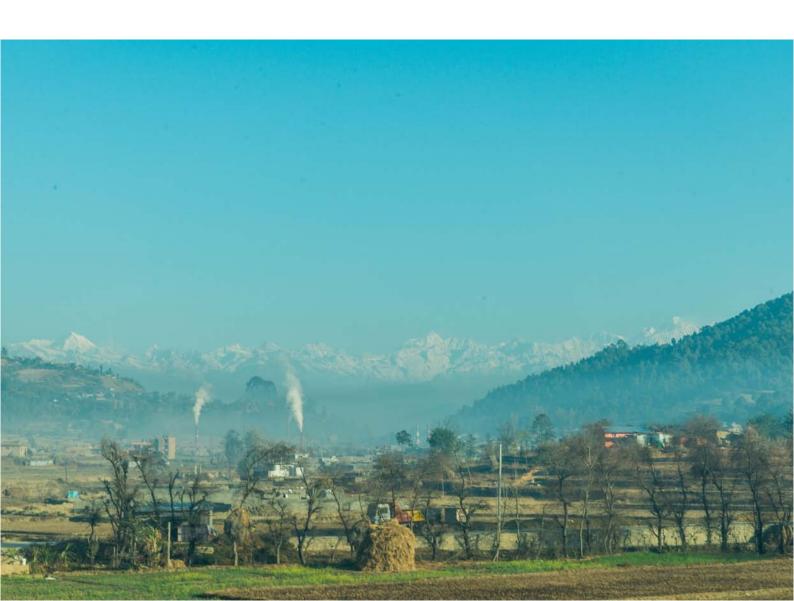
**Objective**: Manage fecal sludge at household and municipality levels in an environment-friendly and integrated way.

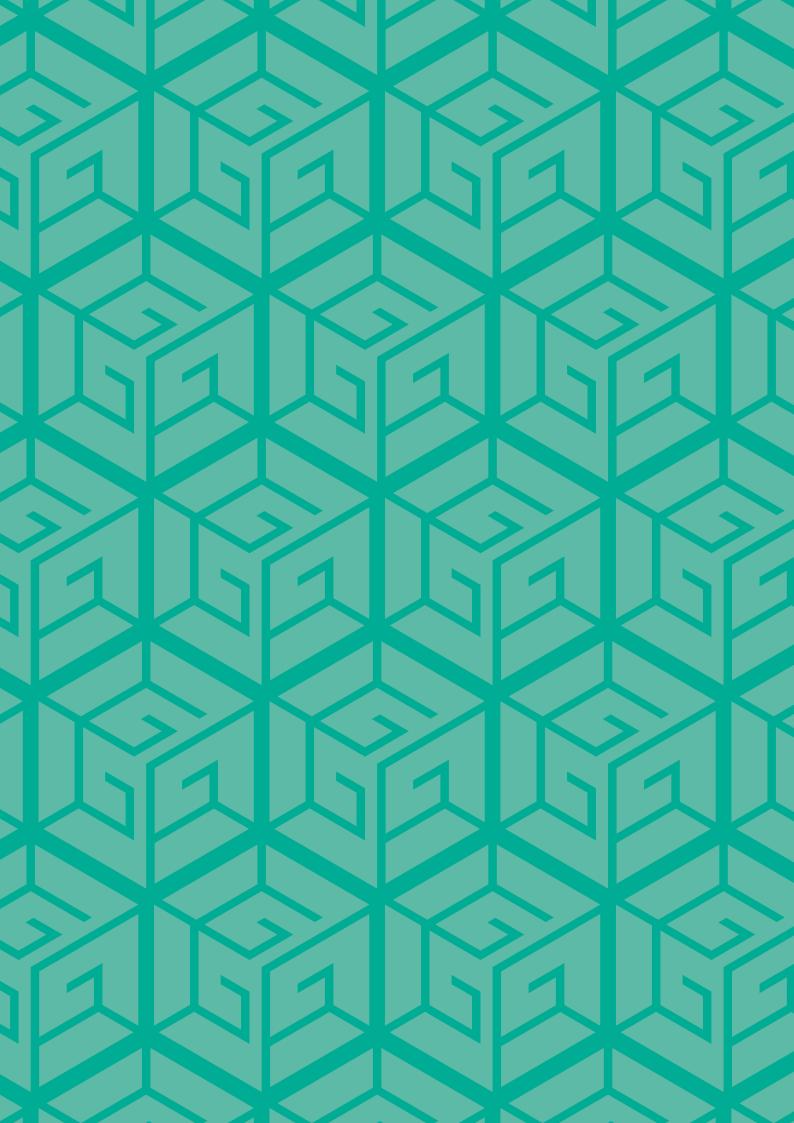
#### Activities

- 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 Namobuddha 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.





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# **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

- 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 (15 October 2017)

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# Annex 3 – Participants in Focus Group Discussions (31 October 2017)

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Green Municipal Development Program

Green Municipal Development Program

FGD with NGO/CBO Leaders and Environmental Organizations/Activists

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FGD with Business Community/ Private Sector

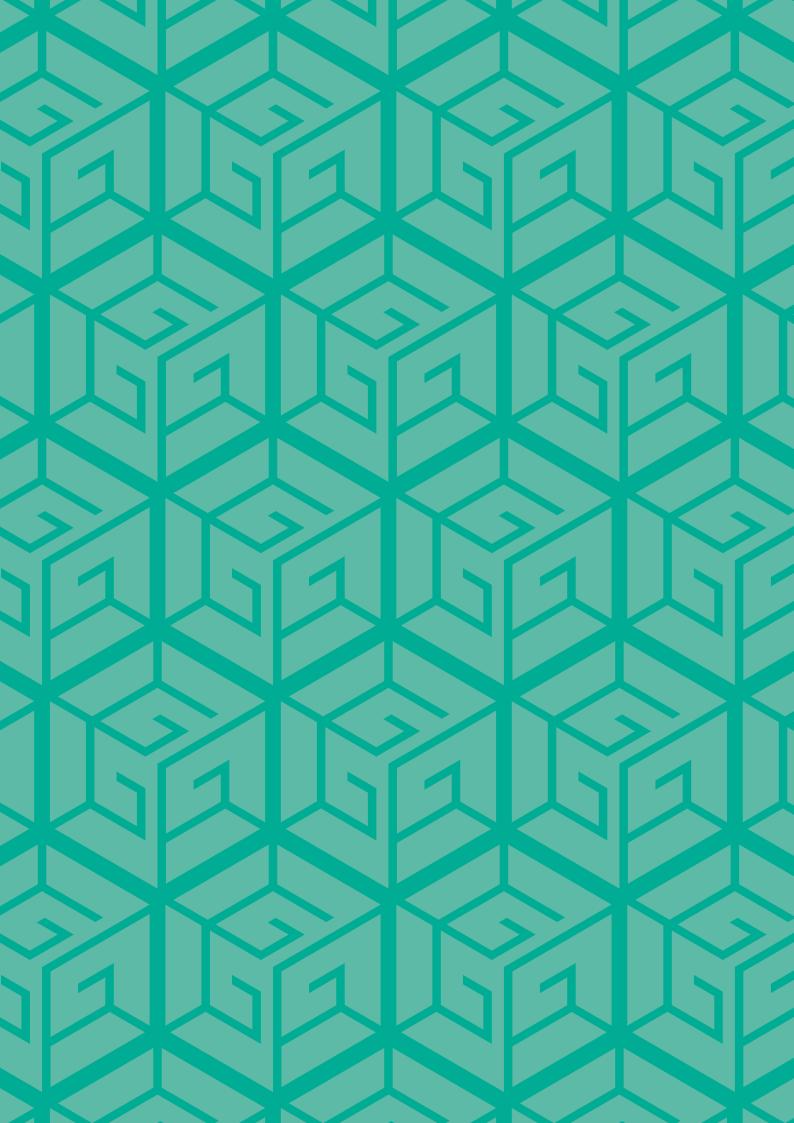
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Attendance Sheet

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# Annex 4 – Project Ideas from Municipal Consultations

| Project Ideas   |
|---|
| 1.Control of pollution from brick kilns   |
| 2.Construction of a bus park  |
| 3.Watershed management  |
| 4.Helipad   |
| 5.Build a ring road   |
| 6.Infrastructure development  |
| 7.Trail bridges   |
| 8.Projects contributing to Environmentally Friendly Local Governance Program (EFLG) |
| 9.Tourism promotion   |
| 10. Projects identified in municipality's recent policy and programs                |





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