

## SECTOR ASSESSMENT (SUMMARY): MULTISECTOR (AGRICULTURE, NATURAL RESOURCES, AND RURAL DEVELOPMENT; AND WATER AND OTHER URBAN INFRASTRUCTURE AND SERVICES)<sup>1</sup>

### Sector Road Map

#### 1. Sector Performance, Problems, and Opportunities

1. During 2000–2010, Bhutan’s rate of urbanization was the highest in South Asia, at 5.7%.<sup>2</sup> In 2015, the National Statistics Bureau estimated Bhutan’s population at 757,042, 31% of whom lived in cities, with an annual growth rate of 1.2% in rural areas and 1.4% in urban areas. The average household size is 4.6.<sup>3</sup> At the current rate of urbanization, more than 50% of Bhutan’s population will live in cities by 2030;<sup>4</sup> this figure is estimated to reach 75% by 2040.<sup>5</sup> This growth has mainly occurred in Thimphu, the capital, and Phuentsholing, Bhutan’s second largest city.<sup>6</sup> Rapid urbanization coupled with a lack of comprehensive planning has left urban areas with inadequate and unsustainable infrastructure. Furthermore, poor spatial planning and development controls have led to urban overcrowding, environmental degradation, and encroachment into unsafe environments. Flood risk, water shortages, and pollution are key challenges facing many of Bhutan’s towns.

2. **Rural and urban flood protection.** Towns in Bhutan experience flooding and riverbank erosion each year during the monsoon season. Phuentsholing, which is located on the banks of the Amochhu River, a major Himalayan river, has suffered significantly from flood damage and riverbank erosion from six notable events over the past 25 years. Monsoon-triggered flash floods are also becoming more frequent due to dense development, the loss of natural ground cover, and climate change. In 2009, Cyclone Alia, the most devastating event in Bhutan’s recent history, caused significant loss of land and infrastructure. The Eleventh Five-Year Plan (2013–2018)<sup>7</sup> stresses the need to strengthen disaster resiliency by balancing nature and development. Towns also require well-designed drainage systems and adequate maintenance systems. Urban areas like Phuentsholing that are developing along high-velocity rivers require integrated flood disaster mitigation to protect built assets and preserve developable land, which is scarce in Bhutan. There is an opportunity to strengthen disaster risk reduction in Phuentsholing for both the existing township and future development areas by installing flood and erosion defenses, as well as a flood early warning system and community management plan.

3. **Scarcity of land.** Bhutan suffers from a dearth of suitable and safe space for urban growth due to a high prevalence of steep slopes, flood plains, and encroachment into land designated for agricultural use. The project will reclaim flood plains and enable the safe and sustainable expansion of Phuentsholing.

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<sup>1</sup> This summary is based on Government of Bhutan, Ministry of Works and Human Settlement (MOWHS). 2008. *Bhutan National Urbanization Strategy*. Thimphu. [http://www.mowhs.gov.bt/wp-content/uploads/2010/11/Bhutan\\_National\\_Urbanization\\_Strategy\\_2008.pdf](http://www.mowhs.gov.bt/wp-content/uploads/2010/11/Bhutan_National_Urbanization_Strategy_2008.pdf).

<sup>2</sup> World Bank. 2016. *Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Livability*. Washington, DC.

<sup>3</sup> National Statistics Bureau. 2015. *Statistical Year Book of Bhutan 2015*. Thimphu.

<sup>4</sup> Annual population growth is more than 8% in Thimphu and 3% or higher in Phuentsholing and the other 18 regional and provincial centers.

<sup>5</sup> ADB. 2013. *Bhutan Transport 2040, A Strategic Vision*. Manila; Government of Bhutan. *Strategy for Gross National Happiness 2028*. Thimphu.

<sup>6</sup> Urban growth in Phuentsholing has been severely restricted due to the shortage of suitable land for development.

<sup>7</sup> Government of Bhutan. 2013. *Eleventh Five Year Plan, 2013–2018*. Thimphu.

4. The Government of Bhutan is prioritizing the provision access to safe drinking water. The share of the population with access to piped drinking water in urban centers increased from 78% in 2000 to 93% in 2015.<sup>8</sup> In Phuentsholing, 100% of the population has access to an improved drinking water supply;<sup>9</sup> however, its delivery is intermittent and quality substandard due to poor operational management and insufficient budget resources. The government has set a water security target in its Eleventh Five-Year Plan to ensure that all towns have a continuous supply.

5. The rate of access to improved urban sanitation facilities has also increased, rising from 90% in 2000 to 97% in 2015.<sup>10</sup> Nearly 50% of solid waste generated in urban areas is organic material; less than 20% is paper and plastic. Waste is disposed of in controlled dumpsites. Urbanization is placing notable stress on existing infrastructure and services. Phuentsholing has the opportunity to replicate the composting plant currently operating in Thimphu, and to adopt Bhutan's "3R" (reduce, reuse, and recycle) policy, which most authorities currently lack resources to implement.

6. **Other urban services.** Urban development strategies such as valley-wide planning<sup>11</sup> and integrated urban water management principles and/or water-sensitive urban design, which are currently being developed, are well-suited to Bhutan's terrain and natural resources. These approaches support the country's desire to conserve, use, and sustainably manage its fragile environment. Building on a government-facilitated decentralization approach, municipal institutional structures can also be strengthened to enhance service delivery. This can include building the municipalities' capacity to (i) operate as autonomous and accountable service providers; (ii) deliver safe, reliable, and high-quality urban services; and (iii) make use of public-private partnerships wherever practical.

7. A limited revenue base and lack of local government funding hamper infrastructure development. Land taxes have remained stagnant since 1992, and water and sewer service tariffs are low (less than Nu4.60 per cubic meter) and do not cover operation and maintenance costs. Land development and major expansions of basic services are funded largely through external loans. Local governments' operational and financial constraints are key factors in the government's decision to pursue a commercial approach to the new township development.

8. **Regional integration.** Bhutan's regional growth centers need higher quality infrastructure and services to drive economic growth. In particular, they urgently need improved urban roads to enhance connectivity, adequate and sustainable water supply services and sanitation facilities to reduce environmental impacts, and drainage to control flooding. Medium-sized industries are expected to be established along the southern east-west highway. This border region will house industrial estates, which are expected to focus on medium- and high-end production, processing, and manufacturing.<sup>12</sup> The provision of sustainable urban infrastructure is a critical step to enable Phuentsholing, Gelephu, and Samdrup Jongkhar to leverage their potential as Bhutan's gateways to India and the wider South Asian region.

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<sup>8</sup> Government of Bhutan. 2015. *Annual Health Bulletin*. Thimphu.

<sup>9</sup> Government of Bhutan, MOWHS, Department of Engineering Services. 2016. *Preparation of Water and Wastewater Master Plan for Phuentsholing Thromde*. Thimphu.

<sup>10</sup> These improved sanitation facilities are mostly improved toilets and latrines. They do not necessarily include a connection to a sewerage or septic management system.

<sup>11</sup> Stadt Zurich and Government of Bhutan, MOWHS. 2013. *Master Plan: Bumthang Valley Bhutan*. Zurich and Thimphu.

<sup>12</sup> Government of Bhutan, MOWHS. 2008. *Bhutan National Urbanization Strategy*. Thimphu.

## 2. The Government's Sector Strategy

9. Bhutan seeks to strengthen its institutional capacity for disaster risk management, mainstream disaster risk reduction, and establish integrated and coordinated disaster management mechanisms involving community participation.<sup>13</sup> Bhutan also seeks to achieve planned urban development that is economically, socially, and environmentally sustainable and stimulates economic growth while ensuring regional balance.<sup>14</sup> The Eleventh Five-Year Plan calls for the development of regional growth centers outside of Thimphu and Phuentsholing, and the government has identified strategic urban areas for regional economic development in the western, central western, central eastern, and eastern regions.

10. The government plans to develop an economic corridor along the yet-to-be-completed southern east–west highway between Samtse and Samdhrup Jongkhar, and passing through Phuentsholing. This corridor plan is included in the 2008 Bhutan 2020 vision document, the 2009 National Poverty Reduction Strategy, and subsequent five-year plans.<sup>15</sup> The eighth five-year plan (1998–2003)<sup>16</sup> stressed the need to provide basic urban services; the ninth plan (2003–2008)<sup>17</sup> focused on poverty reduction and built on the concept of devolving responsibility to local governments; the tenth plan (2008–2013)<sup>18</sup> concentrated on improving the management of urban services through legislation and the granting of autonomy to municipalities; and the eleventh five-year plan seeks to continue improving urban services, while emphasizing the promotion of regional and balanced growth and environmental sustainability.

## 3. ADB Sector Experience and Assistance Program

11. Since 2000, the Asian Development Bank (ADB) has provided five urban sector technical assistance (TA) projects, including the preparation of detailed feasibility studies for two loans. ADB support in the sector increased substantially through the Urban Infrastructure Improvement Project (completed in June 2005),<sup>19</sup> followed by the much larger Urban Infrastructure Development Project (approved in 2006 and still being implemented).<sup>20</sup> Both loans focused on Thimphu and Phuentsholing; the most recent also included Dagana municipality. In 2011, ADB approved the Urban Infrastructure Project, which focuses on infrastructure development in Thimphu, Phuentsholing, and Samdhrup Jongkhar.<sup>21</sup>

12. The impacts of ADB involvement to date include the provision of much-needed investments in urban infrastructure in Thimphu and Phuentsholing. This has improved the quality of life, public health, and environment of more than 130,000 people and enabled greater private and commercial development. ADB's continued involvement in the sector is key to building municipalities' capacity and meeting the municipal service requirements of their rapidly growing populations.

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<sup>13</sup> Government of Bhutan. 2013. *Disaster Management Act*. Thimphu.

<sup>14</sup> Government of Bhutan. MOWHS. 2008. *Bhutan National Urban Strategy*. Thimphu.

<sup>15</sup> Government of Bhutan, Planning Commission. 1999. *Bhutan 2020: A Vision for Peace, Prosperity and Happiness*. Thimphu.

<sup>16</sup> Government of Bhutan. 1999. *Eight Five Year Plan, 1998-2003*. Thimphu.

<sup>17</sup> Government of Bhutan. 2004. *Ninth Five Year Plan, 2003-2008*. Thimphu.

<sup>18</sup> Government of Bhutan. 2009. *Tenth Five Year Plan, 2008-2013*. Thimphu.

<sup>19</sup> ADB. 1998. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Bhutan for the Urban Infrastructure Improvement Project*. Manila.

<sup>20</sup> ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to the Kingdom of Bhutan for the Urban Infrastructure Development Project*. Manila.

<sup>21</sup> ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Bhutan for the Urban Infrastructure Project*. Manila.

## MULTISECTOR PROBLEM TREE (Agriculture, Natural Resources, and Rural Development; and Water and Other Urban Infrastructure and Services)

