

## Bhutan Urban Policy Notes Regional Development and Economic Transformation

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## **a. Executive Summary**

1. Bhutan's rapid economic growth has been propelled by the hydropower sector, which has effected a structural transformation of the economy from agriculture to industry and services. This has led to a more than ten-fold growth in GDP per capita between 1980-2016. The country has reduced headcount poverty from 31 percent in 2003 to 8 percent in 2017, as well as made significant advancements in human capital outcomes. Yet, as a landlocked and mountainous small country, Bhutanese economy faces unique challenges. Productive employment opportunities are scarce while the lack of diversification has led to economic vulnerability. The workforce is increasingly skilled but there are insufficient number of good private sector jobs. While overall unemployment rate was only 2.1 percent in 2016, youth unemployment was 13 percent overall and 28 percent in urban areas. A critical concern for policy makers is how to strengthen and extend Bhutan's structural transformation toward an economy driven by the private sector and based on employment in manufacturing and services, with sustainable jobs for the educated, the skilled, the youth and women. To achieve this, Bhutan needs to better understand and leverage its demographic-spatial and economic-spatial transformations.

2. The total population in 2017 was 735,553, of which 37.8 percent resided in urban areas. Based on the most recent census data, the intercensal average annual urban population growth rate was 2.5 percent, four times the overall population growth rate of 0.6 percent. The population and economic base are concentrated in the western part of the country. Thimphu district is home to 15 percent of the entire population and its synonymous thromde comprises around 40 percent of the total urban population. Phuentsholing, Samdrup Jonkhar and Gelephu are the next most populous municipalities.

3. At Nu 150,000, median household incomes in the urban areas are nearly triple those in the rural areas. Rural dzongkhags in the central and south have the highest incidence of deprivation. The poverty rates in rural Dagana, Zhemgang and Mongar districts are up to 10 times higher than Thimphu municipality. Literacy rates in these areas hover around 66 percent, far below Thimphu (80.2), Gelephu (85.6) and Phuntsholing (83.2). Overall, the literacy rate of urban dwellers is 23 percent higher than rural areas. Land ownership is higher in rural areas, but there is an inverse relationship between landholding and per capita household consumption quintile. However, access to basic infrastructure is converging between urban and rural areas: for example, per 2017 BLSS, for electricity and improved water, the rates in both areas are hover between 95 and 100 percent, including both poor and non-poor households.

4. Urbanization trends suggest that migration may be driven more by the "pull" factors of urban areas, such as employment—especially the higher wages in urban areas—and education opportunities or family linkages, than by "push" factors such as infrastructure scarcity, landlessness or conflict.

5. Cities are a critical driver of economic growth and Bhutan's urbanization trends are starting to reflect this shift. Agriculture's contribution to GDP has been diminishing, from 23.2 percent to 16.6 percent, but it constitutes a significant share of employment, rising from 43.6 percent in 2005 to 57.2 percent in 2016. The public sector, at around 20 percent of total, is the second largest employer after agriculture. In urban areas, the share of public employment exceeds 46 percent. Manufacturing and services sectors represent approximately 80 percent of the value of economic activity. Emerging sectors include hydropower, construction, transport, tourism and communication. Manufacturing contributes around 10 percent of the GDP and consists almost entirely of small and medium enterprises with less than 100 workers. The largest shares of light manufacturers are clustered in Thimphu, Paro, Chukka and Sarpang. Construction has growth potential in urban areas. Service sector accounts for 90 percent of nonfarm private sector firms and jobs clustered in the Thimphu-Paro region and around Phuentsholing. Tourism is the largest service sector industry, accounting for 31 percent of all firms, 18 percent of

jobs and about 9 percent of GDP. ICT, Finance, Insurance and Real Estate sectors are small but emergent industries.

6. Overall, spatial-economic transformation in Bhutan is largely driven by the economic opportunities that cities offer. However, Bhutan's larger urban centers are not well equipped to seize the benefits of agglomeration economies, in terms of specialization and market access, which affect the number and the quality of jobs, and in terms of quality of services, which affects their livability and competitiveness. The four largest Thromdes face infrastructure and service delivery backlogs, shortage of serviced land and affordable housing, and environmental pollution. For example, Thimphu Dzongkhag (with Thimphu Thromde) and Chhukha Dzongkhag (with Phuentsholing Thromde) have the highest number of households without reliable water; traffic congestion is also a key issue in these two Thromdes; and only 20 percent of households in Thimphu have sewer connections.

7. Gaps in connectivity infrastructure, both hard (such as roads and telecoms) and soft (information on and regulations facilitating market access), across cities and regions are also hampering the diversification of the economy and the development of private sector. Due to low connectivity with the rest of the country, cross-border trading with India and Bangladesh occurs largely at the border towns themselves, rather than at the end market location. This restricts access and knowledge about market conditions, terms of trade and the dissemination of business practices and skills or finance tools to other parts of the country. Limited international connectivity places additional costs on firms and consumers. Freight forwarding cost per container is the highest in the world. This is compounded by the additional time and costs required to access the major international port at Kolkata.

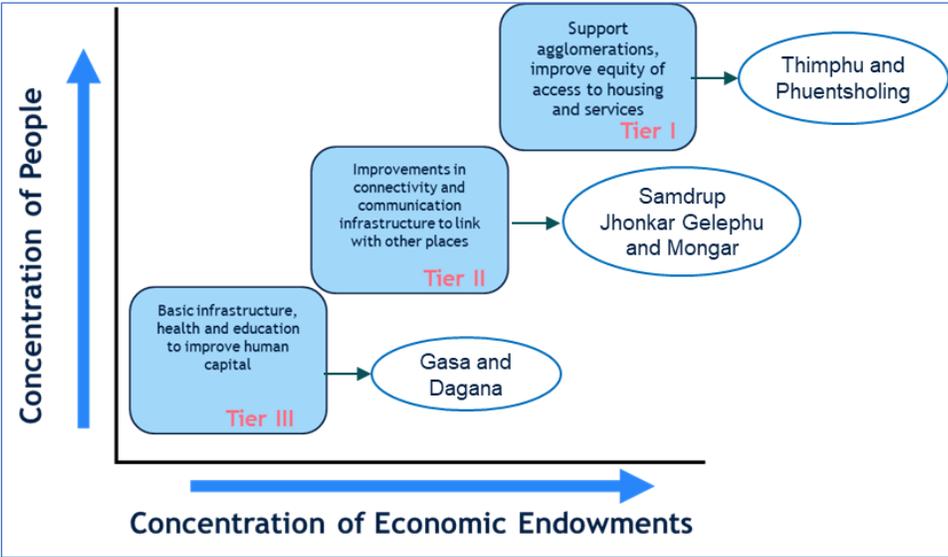
8. RGoB's policies on regional development are set out in the 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> Five Year Plans (FYPs), the National Urban Strategy (NUS, 2008) and the National Human Settlements Strategy (NHSS, 2017). These policies aim at planned urban development that is economically, socially, and environmentally sustainable, and at stimulating economic growth while ensuring regional balance. The 10<sup>th</sup> and the 11<sup>th</sup> FYPs prioritize balancing regional development to manage the rapid pace of urbanization and to spread development and opportunities equitably across the country, through the development of regional growth centers outside Thimphu and Phuentsholing. Both NUS and NHSS aim to reduce regional imbalances in population and economic activity through place-based approaches that encourage more equitable economic development and in-migration. Finally, a Comprehensive National Development Plan for Bhutan 2030 (CNDP), aimed at addressing issues of rural-urban migration and regional imbalances in development, is also being presently formulated.

9. The RGoB's spatial policies do not distinguish between the demands of enabling growth and the needs of equitable service delivery. These require differentiated yet complementary approaches that involve "place" and "people"-based approaches. "Place-based" levers such as large infrastructure investments that are proximate to economic centers, where firms and people are concentrated, can enhance the benefits of agglomerations. "People-based" interventions targeted to rural areas and small towns, where poverty and human capital deprivations are more acute, would include support for basic infrastructure, health and education, complemented with policies and programs that facilitate better skilled people to migrate to more productive areas. Prevailing regional development strategies, such as the NHSS, tend to emphasize a narrow set of "place-based" approaches rather a comprehensive approach that support a convergence of living standards everywhere.

10. Rather, a regional development approach should integrate three related factors. Build on the benefits of **agglomeration** in leading cities, **connect** strategic regional hubs to better integrate markets and ensure **equity** for good living standards for people across the country.

11. Across the world, economic transformation is supported through the agglomeration and scale effects that city-regions provide. Agglomeration economies produce growth through concentrating firms and people and from

processes of knowledge spillovers, innovation and technology adoption and the easy matching and sorting between firms and workers. Urban areas also concentrate services that benefit from scale economies and lead to greater productivity in cities. Bhutan’s rapid structural transformation and rural-urban migration parallel these global trends toward the urban concentration of population and economic activity. However, rapid and uncontrolled urban growth can have negative consequences. Bhutan is reaching the point where gaps in urban planning, service delivery and affordable housing within cities can start to negatively impact economic growth and competitiveness as well as quality of life over the long term. National policies on urbanization and local actions by municipal governments can a critical role in planning and managing this urban growth to not only sustain the economic advantages that cities provide, but also to ensure that they are livable and socially inclusive.



12. The figure above summarizes a basic approach for differentiating policies and prioritizing investments across settlements of different population densities and concentrations of endowments in Bhutan.

13. Regional development requires national and local governments to play complementary roles. At the national level, RGoB can ensure that regional and spatial development policies are aligned with decentralization, economic and public investment policies. It is also best placed to prioritize large, complex capital investments that can connect settlements and improve access to international markets, with a focus on Tier II cities, which would function as nodes between Thimphu and Phuntsholing and smaller market towns. Finally, the national government has a key a role in improving the overall investment climate for emerging service sectors, especially agribusiness, tourism and ICT, on both the regulatory and taxation side, as well as also on the networking and business and investment promotion side, especially in large and medium size settlements and special economic zones.

14. For settlements such as Thimphu and Phuntsholing (**Tier I**), efforts should be on improving livability, reducing disparities in access to services and **leveraging urban agglomerations** for deeper and more diverse private sector investments. To do that, it is important to ameliorate emerging congestion forces, such as land and housing shortages, traffic congestion and environmental pollution. These cities can make density work better through improved planning and land administration, re-densifying existing built up areas and strengthening urban resilience to reduce exposure to natural disasters. The municipal governments in these urban centers need to be equipped with greater role in planning and managing their land resources and assets and strengthening their service delivery mechanisms. These cities would also benefit from improvements to the business climate and technical

and vocational skills development programs to enhance the labor force. Finally, regionally connectivity, both hard and soft, can also play a key role in extending the economic gravity of these towns.

15. For settlements with locational advantages and nascent economic clusters, such as for example Gelephu, Samdrup Jongkhar and Mongar (**Tier II**), the focus should be on improving the conditions for private investment to link to potential markets in emerging sectors such as agribusiness, agroprocessing and manufacture, scaling up SMEs and cottage industries by improving **connectivity**. This could include identifying demand-side obstacles that have limited access to finance, constrained linkages in product value chains and impeded the spillover of knowledge, skills and technology. These cities also need to boost capacity in urban planning and land administration as well as strengthen infrastructure and service delivery to accommodate new growth. These settlements would also require improving the road and ICT connectivity with larger regional hubs and ports of entry, both within Bhutan and to India.

16. For rural and remote regions and regions with low endowments, higher levels of poverty and infrastructure gaps, efforts should focus on **equitable access** to basic public services, especially health and education services, that will improve human capital outcomes, enhance the quality of the labor force and provide skills that residents can use to move to larger centers.

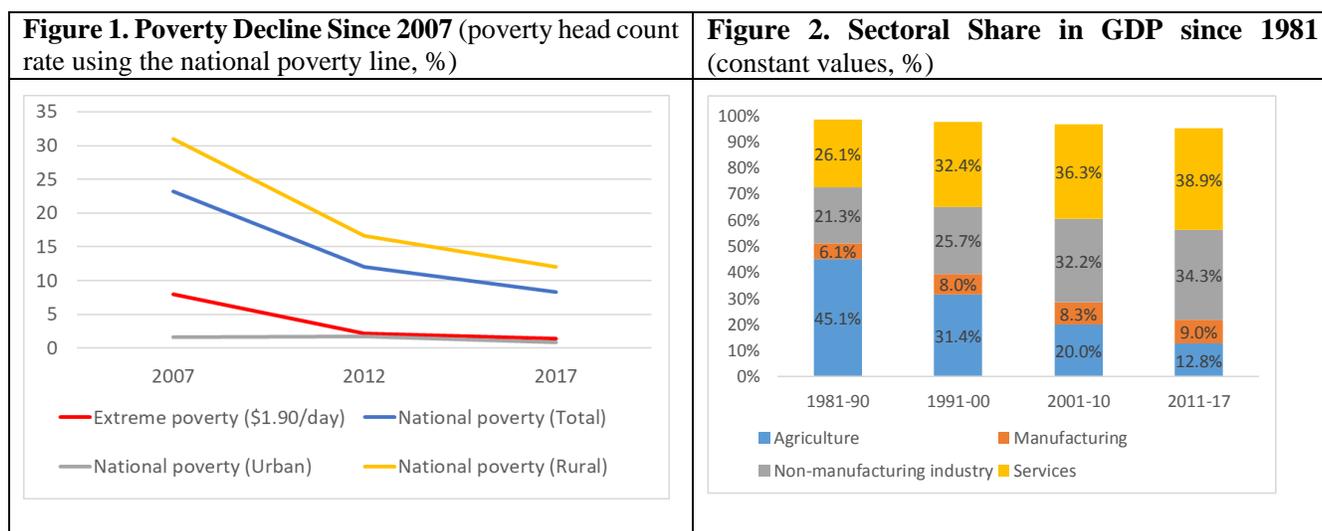
## b. Introduction

This paper is part of a series of four Urban Policy Notes that provide a critical review on emergent challenges to Bhutan’s increasing urbanization and its ramifications for growth, livability and sustainability in line with the directives of the 12<sup>th</sup> Plan and Vision 2020. The four notes are: (a) Regional Development, (b) Municipal Governance and Finance, (c) Affordable Housing and (d) Urban Resilience. These notes build on the long engagement between the Royal Government of Bhutan (RGoB) and the World Bank on urban issues as well as the experiences of urban operations under Bhutan Urban Development Projects I (1999-2006)<sup>1</sup> and II (2010-2019)<sup>2</sup> and intend to support the RGoB on key and emerging urban topics and guide Bank’s future analytical and investment support in the urban sector.

This Policy Note aims to present critical policy options for leveraging urbanization and supporting regional development to enable Bhutan to achieve sustainable growth, spur private sector development job creation and support balanced spatial development. The Note (a) takes stock of recent trends in urbanization, economic growth, and demographic change from a spatial perspective, (b) suggests a framework to guide policy making and (c) better target investments to leverage the potential of urban areas for job creation and livability, while also addressing the needs of poorer small towns and less populated rural areas. These focused areas align with the RGoB’s overall goal of balanced and equitable development.

## c. Bhutan’s Development Trajectory

**Bhutan has made remarkable achievements in economic growth and poverty reduction.** The more than ten-fold growth in GDP per capita between 1980-2017 far exceeded the regional average. The annual average growth rate, at 7.5 percent over the last three decades, is the third highest in the world. The country has made substantial advances in the eradication of extreme poverty, with the official headcount poverty rate dropping from 31 percent in 2003 to 8 percent in 2017. Bhutan also made significant advancements in human capital outcomes. For example, in a single decade, the primary school net enrollment rate increased from 59 percent to 89 percent, while infant mortality fell steeply from 186 per 10,000 births in 1969 to 27 in 2015, a figure that is well below the regional average of 43.



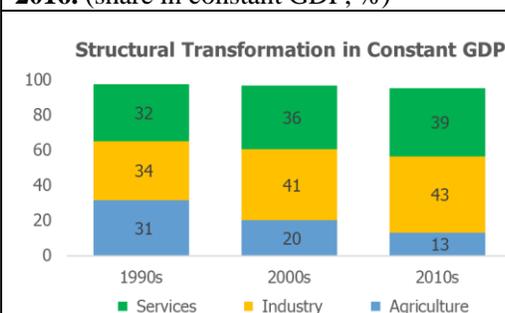
<sup>1</sup> <http://documents.worldbank.org/curated/en/235681468768567751/Bhutan-Urban-Development-Project>

<sup>2</sup> <http://documents.worldbank.org/curated/en/789041468205493325/Bhutan-Second-Urban-Development-Project>

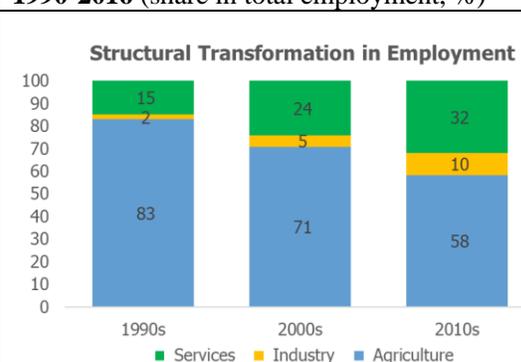
Source. National Statistics Bureau.

**Yet, as a landlocked and mountainous small country, Bhutan faces unique challenges to its economy and growth model.** Despite rapid growth, productive employment opportunities are scarce. Nearly 60 percent of all employed, and most of the poor, remain engaged in agricultural activities. Hydropower has driven the structural transformation of the economy. However, hydropower has limited direct job creation potential. After agriculture, the second biggest employer is the public sector; which attracts educated Bhutanese due to compensation, other benefits and social status, while quality job opportunities in the private sector remain limited.<sup>3</sup> Overall unemployment was just 2.1 percent in 2016, but this may mask high *under*-employment, such as subsistence agriculture and informal services in the rural areas. There is evidence that (in line with international experiences), younger people are gaining higher aspirations with better education, and opting to migrate to cities and bear period of unemployment to secure higher-quality jobs, rather than rather than accept a subsistence lifestyle in rural areas; youth unemployment was 13 percent, but 23 percent in urban areas. Meanwhile, a substantial share of women has left the labor market; the female labor participation rate fell steeply, from 65 percent in 2009 to 54 percent in 2016.

**Figure 3. Structural Transformation in GDP 1990-2016.** (share in constant GDP, %)



**Figure 4. Structural Transformation in Job Market 1990-2016** (share in total employment, %)



Source. World Bank Systematic Country Diagnostic Concept Note, 2018

A critical challenge is, therefore, how to advance Bhutan’s structural transformation toward an economy driven by the private sector and based on employment in higher value and tradeable manufacturing and, services, with sustainable jobs for the educated, the skilled, the youth and women. In order to achieve this, and to proceed toward the RGoB’s goal of balanced and equitable development, Bhutan needs to better understand the dynamics of its current Demographic-Spatial and Economic-Spatial transformations to better leverage the benefits of its economic shifts and spatial concentration of people.

#### d. Current Institutions and Policy Framework for Regional Development

**The Bhutan Vision 2020 outlines the country’s long term strategic development vision.**<sup>4</sup> It is divided into FYP periods. The government has finalized the 12<sup>th</sup> Five-Year Plan (FYP) for 2018-23. Relevant for spatial development, a Comprehensive National Development Plan for Bhutan 2030 (CNDP) is also under preparation, aiming to address issues of rural-urban migration and regional imbalances in development. While past five-year plans have focused on infrastructure development, the 12<sup>th</sup> Plan places greater emphasis on strengthening *institutions* to maximize the benefits of existing infrastructure. One of the key objectives of the 12<sup>th</sup> FYP is “just,

<sup>3</sup> World Bank (2016) “Bhutan’s Labor Market: Toward Gainful Quality Employment for All”

<sup>4</sup> Royal Government of Bhutan. “Bhutan 2020: A vision for peace, prosperity and happiness” Thimphu.

harmonious and sustainable society through enhanced decentralization.” The 12<sup>th</sup> FYP aims to empower local governments through provision of greater financial, planning, and administrative responsibilities and capacities.

### Box 1. Decentralized Authorities in Bhutan

Bhutan has four main levels of government: the national government, 20 *dzongkhags* (districts), 205 *gewogs* (sub-districts), and *thromdes* (municipalities). Each district has a district town (which may also be a municipality) which functions as an administrative hub and is afforded powers by the Local Government Act of 2009. An additional level of government is municipalities, which report to a Municipal Authority (*Thromde Tsogde*) and come in two classes:<sup>5</sup> class “A” municipalities are more autonomous, and consist of Thimphu, Phuentsholing, Gelephu and Samdrup Jongkhar.

In addition, in 2015, Parliament declared the creation of 16 *thromdes* and 20 *yenlang thromdes* (satellite municipalities). This move – consistent with the Local Government Act (2009) and Municipal Finance Policy (2012) – aimed to create *devolved urban authorities that function independently from the deconcentrated district administrations*.

Bhutanese local governments, both *Thromdes* and *Dzonkhags*, have limited authorities, resources and capacities. *Dzohkhags* and *gewogs* primarily rely on central government transfers for current expenses and capital projects.<sup>6</sup> Municipalities have the power to collect fees and taxes, yet (with the exception of Phuentsholing) also rely heavily on central fiscal transfers. Overall, incentives for own-source revenue collection are weak, and there are gaps in the efficiency, transparency, and predictability of the fiscal regime. As more *thromdes* are established, the demand for services they deliver will increase and local governments will have to identify additional sources of revenue and finance.

**The government has attempted to temper the concentration of firms and population around Thimphu and Phuentsholing through recent FYPs.** The 10<sup>th</sup> and the 11<sup>th</sup> FYPs prioritized spreading production and people across Bhutan’s territory, away from Thimphu and Phuentsholing. The government identified urban areas to serve as hubs for economic development in the western, central western, central eastern, and eastern regions, and Sarpang and Samdrup Jongkhar towns were designated as further regional growth centers because of their proximity to the Indian border and hence perceived potential for trade-related growth. Similarly, the National Urban Strategy (NUS 2008) and National Human Settlements Strategy (NHSS, 2017) aim to spread the population and economic activity more evenly across regions, focusing on place-based approaches to attract firms and people to less concentrated places.

**In addition to Thimphu, the NUS proposes six more national-level growth centers with anticipated populations of more than 10,000 people by 2020.**<sup>7</sup> These new growth centers – Gelephu, Samtse, Wangdue, Tsirang, Bumthang, Jongkhar-Nganglam and Gyalposhing-Monggar (mapped in red below) – are dispersed across the country, with typically over 5 hours travel time between each center. Although they represent local centers of population, they are currently small towns in sparsely populated areas overall. In addition to these growth centers, the NUS proposes sixteen district centers of 5,000-10,000 people, twelve “medium towns” of 1,500 to 5,000 people, and 23 “small towns” of 100-1,500 people.<sup>8</sup> However, it is unclear what economic or social incentives

<sup>5</sup> Four of the five following criteria must be met: (a) population of at least 1,500, (b) population density of at least 1,000 per km<sup>2</sup>, (c) more than 50 percent of population employed in non-primary sector activities, (d) the area of the urban centers should exceed 1.5 km<sup>2</sup>, (e) potential for future growth of the urban center in terms of the revenue base.

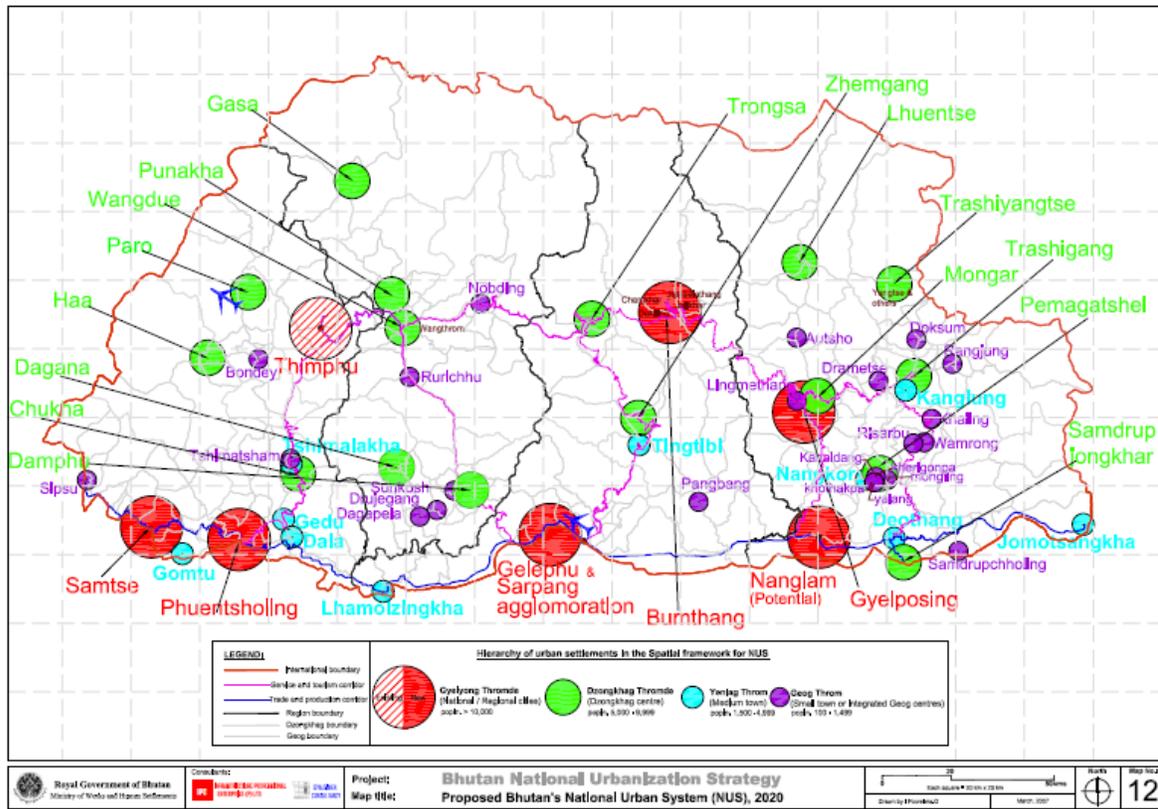
<sup>6</sup> A detailed analysis of local government and finance issues can be found in the accompanying “Municipal Governance and Finance Policy Note”.

<sup>7</sup> These settlements are anticipated to have more than 10,000 residents by 2020. Under the 11<sup>th</sup> FYP, plans for Nganglam and Gyalposhing as regional hubs have been prepared and will be implemented by local governments.

<sup>8</sup> These settlements would contain between 5,000-10,000 people, between 1,500 and 5,000 people and between 100-1,500 people.

there are for migration to these places as alternatives to the more common migration destinations of Thimphu and Phuentsholing.

**Figure 5. Bhutan National Urban System as Proposed in the National Urbanization Strategy 2008.**



Source: Royal Government of Bhutan, 2008. “Bhutan National Urbanization Strategy.” Thimphu.

The Progress Report on the Formulation of CNDP presents three strategic development alternatives as follows:

- Alternative A proposes to “**promote development of advanced economic regions** such as Thimphu and Phuentsholing to **return development profits to backward regions.**” This alternative prioritizes the National Capital Region, the Southern Economic Corridor along the Southern East-West Highway and the roads connecting the two regions.
- Alternative B aims to promote organization of settlement areas “esteeming spiritual richness and local culture in order to reduce regional disparity nationwide... (S)ince **this development model requires improvement of basic living conditions in each Settlement Zone**, improvement of feeder roads connecting urban centers and rural settlements within each Settlement Zone should be prioritized.”
- Alternative C encourages interaction between diverse sub-regions in order to balance development and conservation within each region. This emphasizes the development of **regional urban centers** of four longitudinal regions – especially of the three regions of the East, Eastern-Centre and Western-Centre – and link-roads connecting regional centers and other smaller centers in each region.

**It is important for the regional development strategy to distinguish goals and indicators regarding the economic production, on the one hand, and living standards and service delivery, on the other.** These need not follow the same distribution across space – for instance, production can concentrate, while living standards and service delivery equalize. Spatial patterns of both production and living standards/ service delivery affect

migration trends, urbanization rates, human welfare and human capital outcomes, and other critical development outcomes. This note provides a review of the key trends in the location and concentration of economic activity, as well as the distribution of living standards and service delivery, throughout the country, to provide a framework for structuring policy and strategic investment decisions.

**e. Spatial Transformation in Global Perspective**

**Although Bhutan has unique economic characteristics, its experience of rapid urbanization and spatial concentration reflects global experiences.** The rapid growth of developing and emerging countries in the past century has been accompanied by an intense concentration of production, jobs, and people in major cities. This reflects the importance of *agglomeration economies* in the modern economy: dense, large, markets offer a host of critical benefits to firms and households, such as access to diverse inputs (labor, materials, business services, and so on), consumers for their products, learning through knowledge spill-overs, higher-wage off-farm jobs, social and educational opportunities, and more efficient service and infrastructure-delivery. This urbanization and concentration have played an important role in the unprecedented growth and poverty reduction of the past century in many countries.

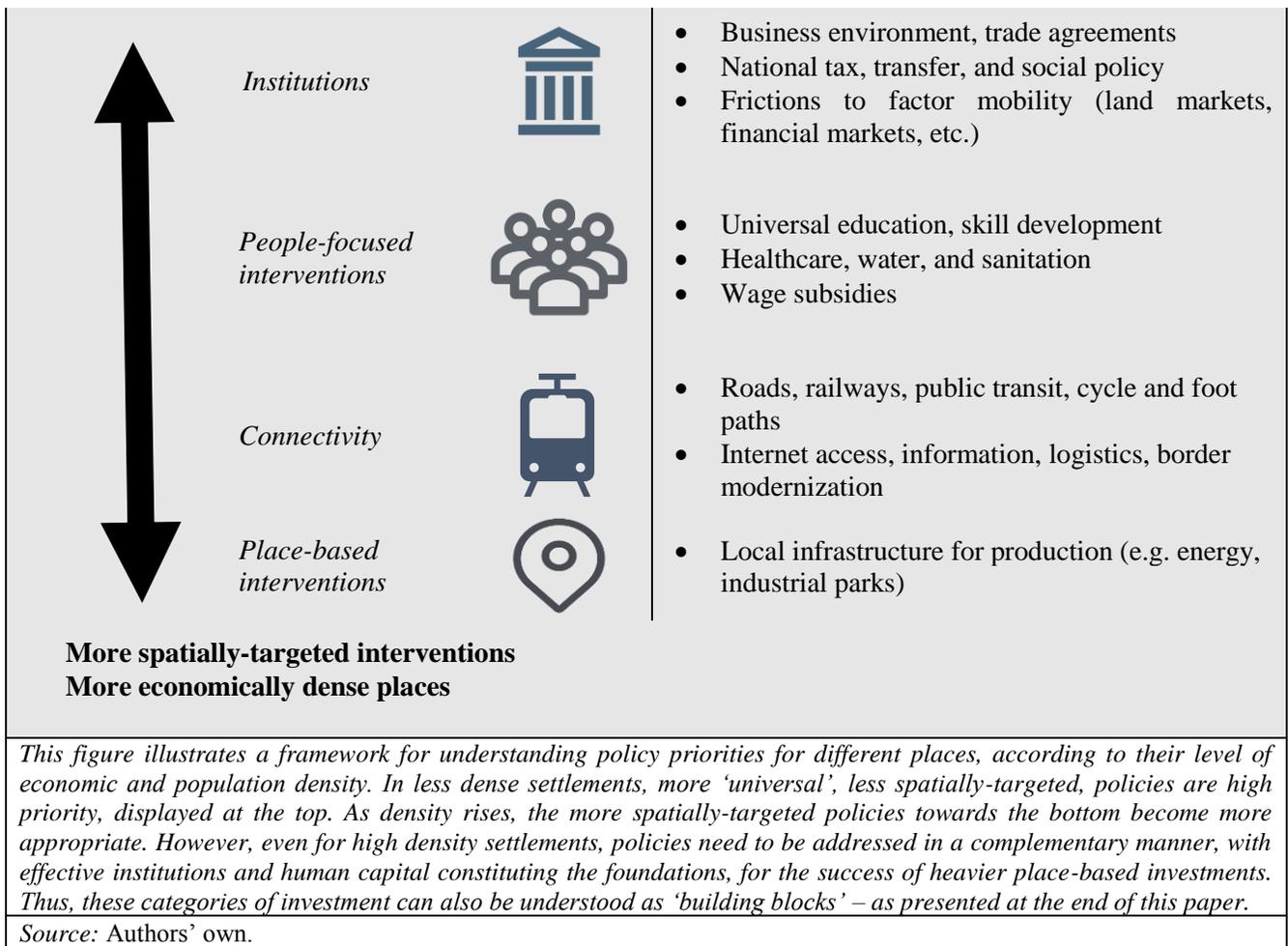
**However, this virtuous density has also raised an equity problem.** Agglomeration entails intense ‘peaks’ of economic concentration and dynamism, surrounded by relatively less dense and concentrated ‘plains’ with much fewer firms and households, and often (though not exclusively) relatively worse welfare outcomes. This emerging *regional inequality* has become a major development challenge. Policy makers often respond to this challenge with attempts to ‘flatten’ the peaks of economic density and spread production more evenly across the country. The risk of this approach, however, is forgoing the crucial *benefits* of agglomeration economies for poverty reduction, job creation, and sustainable growth. Furthermore, attempts to flatten the peaks of density have typically failed, instead forcing activities in the leading areas into informality, exacerbating congestion and exclusion of the urban poor, while creating ‘stranded’ under-utilized assets in lagging areas at a high cost to both local and national governments.

**Countries can reap the gains of agglomeration economies for job creation and poverty reduction, while ensuring these gains raise opportunities and living standards for people everywhere.**<sup>9</sup> These gains can be materialized when the most dynamic cities ‘pulling ahead’ are properly supported to serve their function as engines of national growth, job creation, and poverty reduction, while places with lower economic dynamism and density are *integrated* into the success of major cities, and robust *social policies* ensure that people in even the most remote, disconnected, rural areas are ensured a decent basic quality of life, the health and skills necessary to access opportunities elsewhere in the country. Through this package of complementary policies, countries can pursue *unity* across a territory, without *uniformity* in production across places, for fast and inclusive growth.

This global experience implies that settlements with different **sizes and densities** will serve different functions, and require different policy focuses. The appropriate policy focus for settlements with different levels of agglomeration and density is illustrated in Figure 1.

<b>Figure 6. A framework for place-sensitive policy</b>
<b>Less economically dense places Less spatially-targeted interventions</b>

<sup>9</sup> World Bank 2009. *World Development Report: Reshaping Economic Geography*



## I. Territorial Development Trends in Bhutan

### a. Urbanization: Bhutan’s Leading Cities are Creating Opportunities

Despite its land area approximately one quarter that of Bangladesh or Nepal, Bhutan has one of the smallest populations in the world at 727,145 according to the 2017 census.<sup>10</sup> Population density is thus very low by international standards, at around 20 people per km<sup>2</sup>, compared to over 200 per km<sup>2</sup> in Nepal, and over 1,200 per km<sup>2</sup> in Bangladesh. This low average density masks important variation across the country. Around one percent of the land area of Bhutan is used for human settlement,<sup>11</sup> and the population is fairly dispersed among these settlements. Just 19.5 percent of the population resides in Bhutan’s two largest municipalities, all other cities have less than 10,000 people, and 62.2 percent of the population reside in rural areas in 2017.<sup>12</sup>

**The most substantial agglomerations of people and production are in two leading centers in the West and South** – the cluster formed by Thimphu (the capital), Paro and Wangdue Phodrang, and the area around Phuentsholing at the Southern Indian border, as well as the corridor connecting these two clusters. Thimphu municipality comprises around 40 percent of the urban population, while the wider Thimphu district hosts 125,551

<sup>10</sup> Population and Housing Census of Bhutan, 2017

<sup>11</sup> National Human Settlements Strategy, 2017

<sup>12</sup> Population and Housing Census of Bhutan, 2017

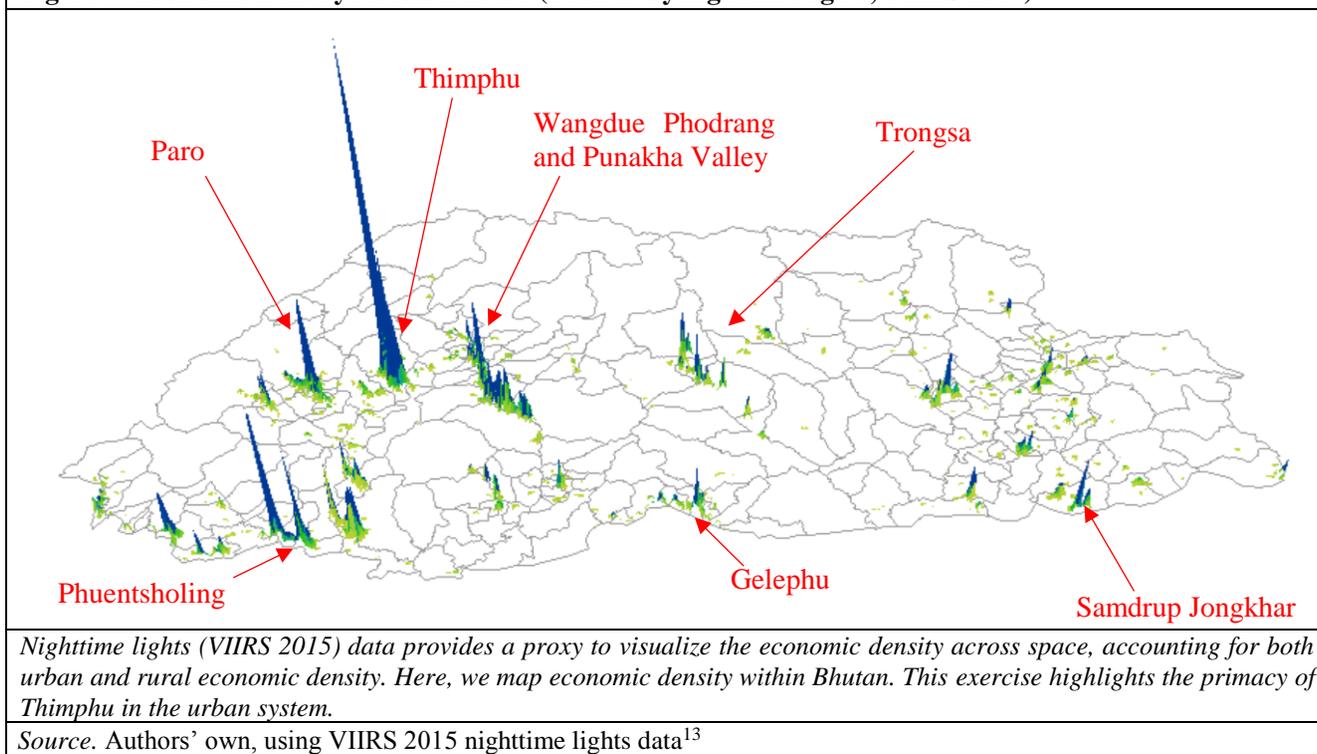
people (15 percent of the population). The next largest center, Phuentsholing, at the main trading post with India, hosts approximately 28,000. Other small centers (such as Gelephu at the central border with India, Samdrup Jongkhar at a South-Eastern Indian border, and central Trongsa) have fewer than 10,000 people and less than 4 percent of the national urban population each. The Eastern population and economy are much smaller, and more dispersed across smaller settlements. Figures 7 and 8 utilize nighttime lights data to estimate economic activity and population density. The peaks demonstrate the concentration of people and economic activity in and around Thimphu and along the southwestern border area.

**Table 1. Population Characteristics of the Most Populous Four Municipalities**

Name	Population, 2017	% Share of Urban Population in 2017	Average Annual Growth Rate (%) 2005-2017
Thimphu	106,487	38.8	2.9
Phuentsholing	27,658	10.1	2.9
Gelephu	9,858	3.6	4.8
Samdrup Jongkhar	9,376	3.4	0.6

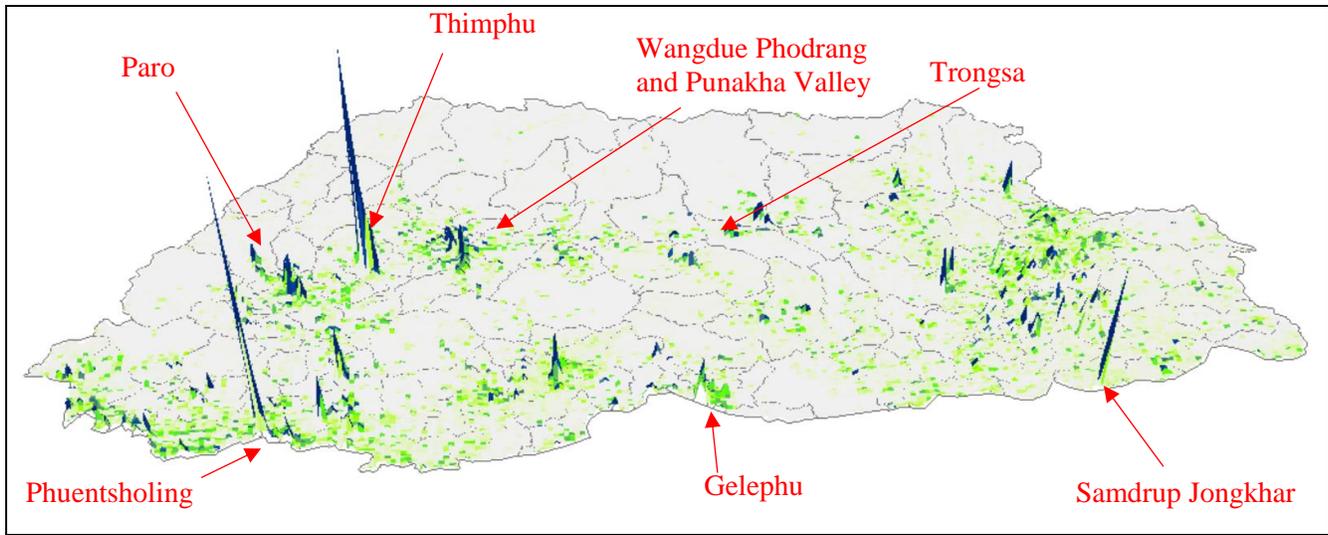
Source. PHCB 2017.

**Figure 7. Economic Density Across Bhutan (Proxied by nighttime lights, VIIRS 2015).**



**Figure 8. Bhutan Population Distribution (Landsat 2012)**

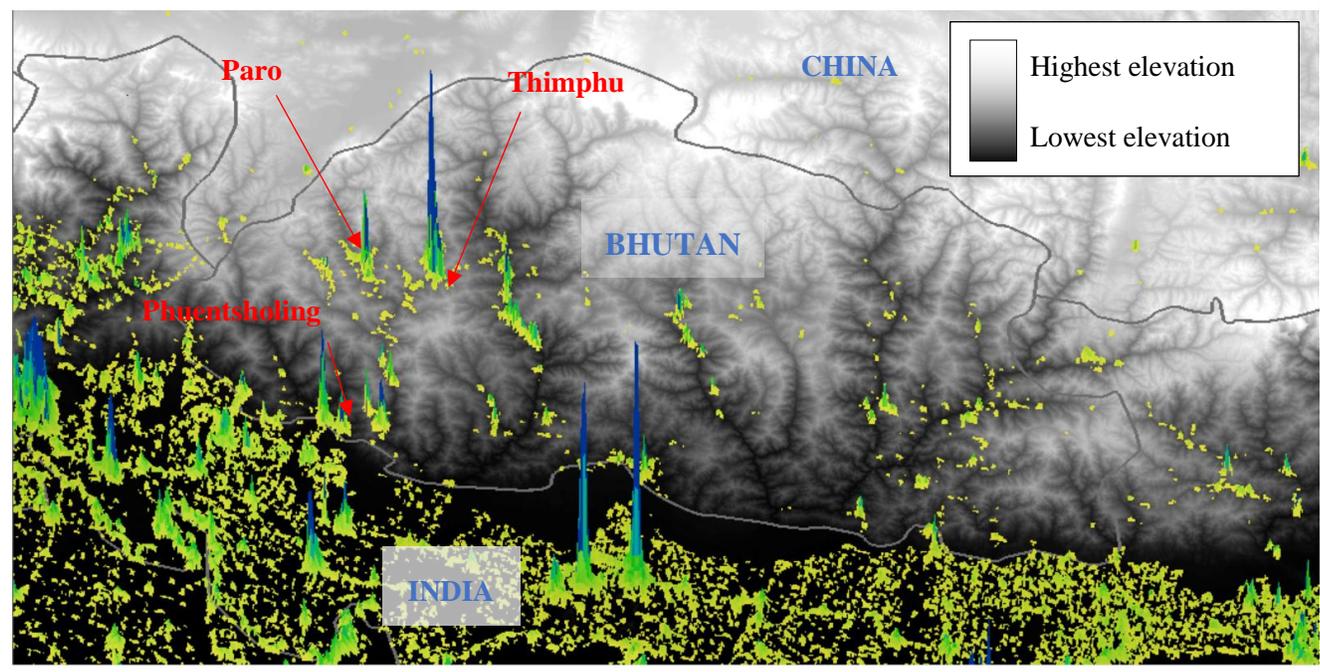
13 1 VIIRS Day/Night Band Nighttime Lights (yearly VIIRS Cloud Mask - Outlier Removed - Nighttime Lights), Earth Observation Group, NOAA National Centers for Environmental Information (NCEI)



*This map shows an estimate of population distribution across Bhutan, using 2012 Landsat data. Concentration in the same centers is observed, though as expected, compared to economic density, the population is more spread across rural areas, while certain secondary cities (such as Phuentsholing and Samdrup Jongkhar) have relatively high population density relative to economic density, suggesting a greater need for interventions to support growth in these cities.*

*Source. Authors' own, using Landsat 2012 population density data.<sup>14</sup>*

**Figure 9. Economic density (nighttime lights) overlaid with topography.**



*This map overlays the former data on economic density across space with a topographical map, illustrating the general alignment of population and economic centers along valleys and areas of low elevation. This also highlights the advantage*

<sup>14</sup> LandScan 2012 global population database. Oak Ridge, TN: Oak Ridge national laboratory. This is the most recent population dataset available for the LandScan analysis.

*of the Southern border region, with far lower elevation and flatter land supporting greater agriculture and development of urban structures.*

*Source.* Authors' own, using VIIRS 2015 nighttime lights data.<sup>15</sup>

**The distribution of urban settlements according their size and rank in the urban system suggests that Bhutan's case is reflective of other urbanizing and landlocked countries.** In countries that are urbanizing, global experience shows that people and firms initially tend to concentrate in one city. These “primate” cities are typically home to the main concentration of industries, services, and government functions. These cities benefit from a large and more diverse pool of labor and skills, which encourages more rapid innovation and diffusion of knowledge and increasing returns to scale. Across the world, cities as diverse as Male (Maldives), Bangkok, Buenos Aires, Cairo, Jakarta, Kuala Lumpur, Lima, Mexico City and Tehran are examples of such primate cities.<sup>16</sup>

**The primacy of Thimphu is proportionate to Bhutan's income level and urbanization.** Global experience shows that the concentration people in a country's largest city tends to increase (up to around 40 percent of the national population) as per-capita incomes rise, until approximately US\$10,000. After this per-capita income level, the total population share of the largest city tends to plateau or even decline as livability, economic diversity, and market access in secondary cities improve.<sup>17</sup> In more complex urban systems, secondary cities often begin to specialize in certain lower value-added industries, benefiting from ‘spillover’ growth as prices rise in dynamic leading hubs.<sup>18</sup> At Bhutan's current levels of per-capita income, private sector dynamism and diversity, and agglomeration, a system of robust secondary cities as alternative migration and investment poles is unlikely to emerge soon. Among international comparators, the share and total size of the population in Thimphu is relatively low (greater concentration may even be expected given the large travel times between settlements, and topographical limits on population dispersion) .

**Table 2. Urban Capital City Primacy in Selected Countries**

	<b>Bhutan</b>	<b>Nepal</b>	<b>Bangladesh</b>	<b>Afghanistan</b>	<b>Sri Lanka</b>	<b>Mongolia</b>	<b>Thailand</b>	<b>Egypt</b>	<b>Nicaragua</b>
<i>Capital</i>	<i>Thimphu</i>	<i>Kathmandu</i>	<i>Dhaka</i>	<i>Kabul</i>	<i>Colombo</i>	<i>Ulaanbaatar</i>	<i>Bangkok</i>	<i>Cairo</i>	<i>Managua</i>
<b>Population</b>	114,551	975,453	18,906,039	3,564,855	561,314	1,372,000	5,782,159	18,290,000	1,033,622
<i>Second City</i>	<i>Phunsholing</i>	<i>Pokhara</i>	<i>Chittagong</i>	<i>Herat</i>	<i>Dehiwala</i>	<i>Erdenet</i>	<i>Nonthaburi</i>	<i>Alexandria</i>	<i>Leon</i>
<b>Population</b>	27,658	426,759	7,400,439	463,300	184,468	97,814	270,609	5,200,000	206,264
<b>Primacy</b>	4.14	2.29	2.55	7.69	3.04	14.03	21.37	3.52	5.01
Source	PHCB 2017	CBS, 2011	PHC 2011	State of Afghan Cities, 2015	DCS, 2012	NSO, 2015	DLA, 2015	CAPMAS, 2018	INIDE, 2015

**Bhutan is undergoing a rapid spatial transformation, characterized by high rural-urban migration and migration from east to west.** Bhutan experienced the fastest rural-urban migration rate in the South Asia region for the period 2000-2010 with an annual growth rate of 5 percent. Between 2005 and 2017, the share of the

<sup>15</sup> As above, Version 1 VIIRS Day/Night Band Nighttime Lights (yearly VIIRS Cloud Mask - Outlier Removed - Nighttime Lights), Earth Observation Group, NOAA National Centers for Environmental Information (NCEI)

<sup>16</sup> [https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/List\\_of\\_primate\\_cities.html#cite\\_note-2](https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/List_of_primate_cities.html#cite_note-2)

<sup>17</sup> Geographers have proposed that countries where the largest city is twice that of the second largest city are characterized by a condition of urban primacy (see Jefferson, M. 1939 “The Law of the Primate City”). Countries that are undergoing rapid urbanization typically have more extreme primacy conditions. Over time, primacy reduces as other cities become more specialized in economic production and population concentration in the main city slows (see Davis, J.C. and Henderson, J.V. 2001 “Evidence on the Political Economy of the Urbanization Process”). Some upper income countries still retain a degree of primacy, including Korea, Japan and the UK where the largest cities around three to four times the population of the second. In contrast, the United States, Canada and most Western European countries as well as China and India do not have urban primacy at the national level. Also see World Bank 2009, pg. 61; Ades and Glaeser 1995; Krugman and Livas 1992.

<sup>18</sup> World Bank 2009

population that has migrated from their place of birth increased from 32.7 to 39.8 percent.<sup>19</sup> The eastern part of the country has been characterized by net out-migration, while the western region has been the main recipient. In some Western provinces, 40-50 percent of inhabitants are lifetime migrants from other regions. Overall, net urban migrants represent 47 percent of all urban residents.<sup>20</sup> From 2005 to 2017 the average annual population growth in rural areas was actually negative (-0.27 percent).<sup>21</sup> The districts with the highest rate of out migration (per 1,000 people) are concentrated in the central and eastern regions with high isolation from major domestic or international markets, including Zhemgang (-640), Lhuetse (-593) and Trashigang (-537) and Trashy Yangste (-518).

**High rural-urban migration appears to be driven by ‘pull-factors’ – the opportunities cities offer, and higher aspirations of citizens – rather than rural desperation.** High universal service delivery and rural land ownership suggest that migration may be driven more by positive pull-factors of urban areas, such as employment and education opportunities or family linkages, rather than by negative rural push-factors such as infrastructure scarcity, landlessness or conflict.<sup>22</sup> Bhutan’s migration patterns are in line with global experience on wage-driven rural-urban migration. Overall, the most cited reasons for migration in 2017 is family move (17.8 percent), followed by employment (12.7 percent), and education (8.3 percent): this likely reflects both the ‘pull factor’ and the age profile of migrants. Young people are far more likely to migrate.

**Migration trends particularly reflect the higher aspirations of the younger generation.** Migration to western and urban centers is the norm among younger people, while older people tend to stay in the region in which they were born. About 66 percent of the 25-29 age group have already migrated since birth, and a higher share of 10-14-year-olds have migrated than those over 60. This reflects the global experience, in which as human capital rises and off-farm opportunities grow, young people are highly motivated to migrate to acquire new skills and enjoy the higher wage differentials offered by emerging service and manufacturing sectors, compared to small plot or subsistence agriculture.<sup>23</sup>

**Although the urban migration of youth is not unusual, policy-makers and other stakeholders have increasingly expressed concerns about the unemployment of urban youth.** While the overall unemployment rate was 2.1 percent in 2016, the youth unemployment rate was 13.2 percent, with urban youth unemployment more than twice that at 23.3 percent. Three considerations are important here: First, rising youth unemployment reflects a transition out of under-employment in the rural economy – with more educated youth preferring to risk and bear periods of unemployment to secure a better urban job, than work in low-productivity rural jobs (median household incomes in urban areas are 2.6 times those in rural areas<sup>24</sup>). Second, international experience shows that, while rural productivity can be improved, the dense markets of major cities are the most promising locations for large-scale job creation of the kind required. Third, Bhutan’s leading cities are underperforming with respect to private sector job creation; just 50 percent of those employed in urban areas in 2016 were employed by private businesses, the majority remaining employed by the government, and as above, many remaining unemployed.<sup>25</sup> Diagnosing and unlocking the barriers to their greater dynamism is at the heart of delivering on the aspirations of the younger generation and putting growth on a sustainable and inclusive footing.

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<sup>19</sup> PHCB 2017

<sup>20</sup> Walcott, S. 2009. “Urbanization in Bhutan” *Geographical Review* Vol. 99, no. 1, pp. 81-93; Ellis, P. and Roberts, M. 2015 *Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Livability* World Bank: Washington DC.

<sup>21</sup> PHCB 2017 and PHCB 2005

<sup>22</sup> PHCB 2017

<sup>23</sup> Lall, Selod and Shalizi, 2006. “Rural-urban migration in developing countries: A survey of theoretical predictions and empirical findings” World Bank Policy Research Working Paper 3915

<sup>24</sup> Nu 150,000 vs. Nu 57,000

<sup>25</sup> Labor Force Survey Report 2016, pg 45.

## b. Job Creation and Structural Transformation

**High growth has not been translated into job creation.** Nearly 60 percent of all employed in 2016, and most of the poor, remain engaged in agricultural. This share of employment in agriculture has declined rapidly since 2003 (79 percent) but the decline has slowed in recent years as the share has fluctuated between 62 in 2012 and 55 percent in 2018.<sup>26</sup> Agriculture’s share in GDP also fell since 2000, from 31 to 16.6 percent in 2016. Most producers, particularly in northern areas, grow subsistence staples, such as rice, maize, wheat and potatoes.<sup>27</sup> The fluctuation in agricultural employment may be a response to limited private sector job availability in urban areas for more skilled rural migrants, leading workers to instead return to the agricultural sector.<sup>28</sup>

**The public sector attracts young and skilled workers, reducing the competitiveness and growth potential of private sector firms.** While nationally public employment is 20 percent, in urban areas, the share of public employment exceeds 46 percent,<sup>29</sup> suggesting cities are not yet functioning as dynamic centers of job creation and entrepreneurship in the private sector. Thimphu is the primary government administrative center and a hub of cultural, educational and medical facilities. Public sector jobs offer higher pay, social status, and other benefits, making them the sector of choice for most educated Bhutanese. Indeed, this has created challenges for private sector firms in need of skilled labor, which struggle to both attract and retain skilled workers.<sup>30</sup>

**As well as low private sector dynamism, and a return to low-paid agricultural work, these challenges have begun to create urban unemployment challenges.** A critical concern for policymakers is therefore how to strengthen and extend Bhutan’s structural transformation toward an economy driven by the private sector, with high employment in higher value and tradeable manufacturing and services.

**Table 3. Employment and GDP Contribution of Select Industries**

Sector	Industry	Employment in 2016	GDP Contribution in 2017
Primary (% share)		57.2%	21.6% <sup>31</sup>
	Agriculture, Livestock, and Forestry	198,429	17.4%
	Mining	1,148	4.2%
Secondary (% share)		8.7%	36.4%
	Manufacturing	19,833	7.3%
	Construction	9,106	15.9%
	Electricity, Water, Gas	2,539	13.2%
Tertiary (% share)		34.2%	37.2%
	Wholesale/Retail Trade	26,660	8.2%

<sup>26</sup> World Bank/ILO STAT <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=BT>

<sup>27</sup> World Bank 2017. Increasing Agribusiness Growth in Bhutan

<sup>28</sup> World Bank 2017, Increasing Agribusiness Growth in Bhutan

<sup>29</sup> Labor Force Survey 2016, pg. 45. Public employment is defined as “civil service,” “other government agencies,” armed forces” and “public/government companies.”

<sup>30</sup> This may also help account for the contradiction in the broad private sector demand for worker skills but their reluctance to invest in these programs as workers may take the skills elsewhere.

<sup>31</sup> NB, the total GDP contribution of Agriculture and Mining are combined here with the later removed from “Secondary Sector,” as the 2016 Economic Development Policy only counts Agriculture’s GDP contribution as “Primary Sector” (pg. 3).

Sector	Industry	Employment in 2016	GDP Contribution in 2017
	FIRE (finance, insurance, real estate, & business services)	3,315	7.1%
	Transportation/Storage/Communications	11,101	9.1%
	Other services <sup>32</sup>		12.8%

Source: Royal Government of Bhutan. 2018 “National Account Statistics”; Ministry of Labor and Human Resources 2015. “Labor Force Survey Report”

### c. Regional Markets and Economic Geography

**A country’s interaction with regional and wider export markets has substantial impacts on its domestic economic geography.** For instance, locations with higher accessibility to international trade routes and ports, and those which specialize in products in which a country has a comparative advantage, may tend to grow more quickly, while less connected areas, and those lacking an advantage in internationally competitive products, grow more slowly and experience higher outmigration. India (with which Bhutan has a major free trade agreement and to whose currency the Bhutanese ngultrum is pegged) is by far Bhutan’s most important trading partner, accounting for over 80 percent of Bhutan’s trade, 90 percent of which passes through Phuentsholing, around which Bhutan’s major secondary city has formed.<sup>33</sup> The Indian market also offers opportunities as a large export market for more informally traded goods, and as source of knowledge spill-overs for Bhutan’s typically small firms.

**However, Bhutan faces disadvantages in competing with India (and other regional neighbors) in attracting investment.** Bhutan struggles to compete through low-cost labor, given India’s large pool of low-cost workers in dense cities. **Figure 10** below presents population density across the region, showing the comparative density of countries and areas surrounding Bhutan. The country’s topography, small population and long distances between domestic settlements raise the cost of Bhutanese goods and limits competitiveness. The freight forwarding cost per container of US\$2,577 is the highest in the world,<sup>34</sup> while mean road speeds between Phuntsholing and Kolkata port range between 9 and 15 km/hour, and customs requirements, depending on the type of products traded, take up to 29 days to complete.<sup>35</sup> Cross-border trading occurs via smaller merchants and wholesalers in the border towns themselves, rather than at the end market locations; this restricts knowledge-sharing about market conditions, terms of trade, and the dissemination of business practices and skills or finance tools to other parts of the country.<sup>36</sup> Finally, Bhutan’s much smaller cities offer far reduced local markets and agglomeration benefits.

**Figure 10. Population Distribution in the Region (Landsan 2012)**

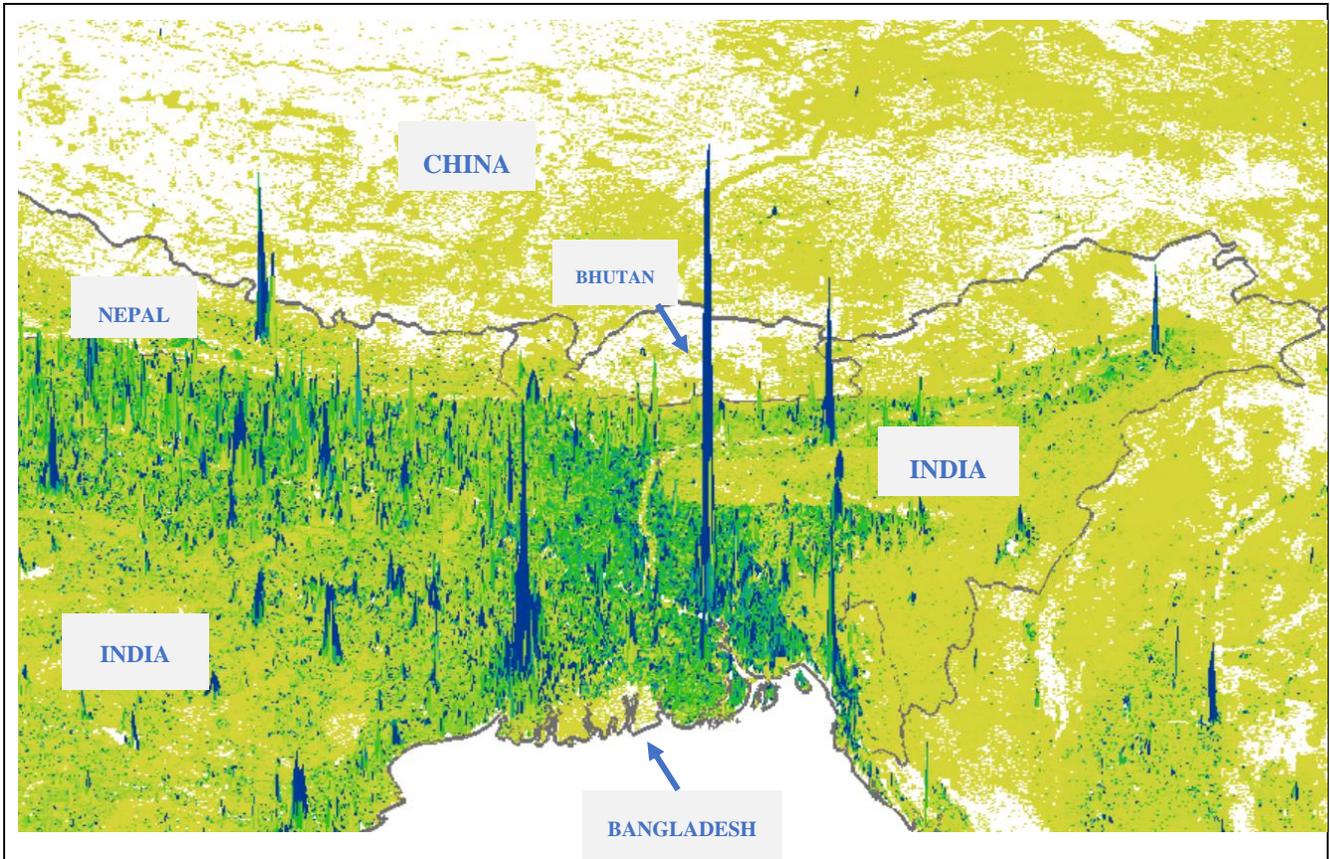
<sup>32</sup> Hotels and restaurants, public administration, education and health, and private social and recreational services.

<sup>33</sup> <http://www.kuenselonline.com/bhutan-india-trade-grows/>

<sup>34</sup> World Bank. 2016. Increasing Agribusiness in Bhutan. World Bank: Washington DC

<sup>35</sup> ADB 2017. Trade and Transport Facilitation Monitoring Mechanism in Bhutan: Baseline Study

<sup>36</sup> World Bank. 2016. Increasing Agribusiness in Bhutan. World Bank: Washington DC



*Landscan (2012) maps population density at a highly granular level across space. Here, we map population density in the wider region around Bhutan. Overall, it is clear that India and Bangladesh offer very important nearby markets, with several large dense cities around Bhutan's southern border, as well as relatively developed rural areas compared to Bhutan. There is important economic density along trade corridors from Bhutan to the coast (and in North-Eastern India), reflecting important markets for longer-distance regional trade and value chain integration. The largest nearby cross-border markets are around Darjeeling (South West), Bongaigoan (South central), and Guwahati (South East).*

Source. Authors' own, using Landscan 2012 population data.<sup>37</sup>

### **Box 2. Geography is Not Destiny (But it is Important): Structural Transformation in Small Isolated Economies**

Other countries with similar geographic and demographic challenges have managed both urbanization and economic transformation to their advantages.

Small island countries face a somewhat analogous situation in terms of distance from international markets and small populations. The Caribbean nation of Trinidad and Tobago, for example, has transformed from an economy that was historically reliant on cash crop agriculture, to become a competitive petroleum and chemical processor, raising GDP per-capita to US\$16,240 (World Bank 2009). Today, to shift from a reliance on extractives and preserve the natural environment and tourism potential of the islands, the government has begun supporting the growth of more knowledge-intensive jobs in ICT, export-oriented agribusiness, eco-tourism and cultural/creative industries, renewable energy, and energy sector consulting and equipment services for other emerging markets.

Strategic management of natural resource rents can also pay off. In Norway, the government established an Oil Fund in 1990 with contributions of revenues from the petroleum sector used to fund public sector pensions (it is currently the largest pension fund in the world, with assets valued at over US\$1 trillion). This fund frees up other sources of public

<sup>37</sup> LandScan 2012 global population database. Oak Ridge, TN: Oak Ridge national laboratory

revenue that could be used for investment for wider economic development and diversification, while also providing a safety net for formal sector employees.

Switzerland is today one of the wealthiest countries in per-capita income terms, despite being landlocked, having a small population, a history of dependence on agriculture, and limited connectivity with its neighbors. In 1820, by contrast, it had among the lowest per-capita GDPs in Europe (Weder and Weder 2009). However, through extended periods of peace and neutrality, the government has built on Switzerland's niche 20<sup>th</sup> century market of international banking and financial services, to develop a diverse and robust services economy. The economy today also has important concentration in high-value add precision manufacturing, pharmaceuticals, hospitality and boutique agriculture products.

The lessons that emerge from these cases suggest that Bhutan can consider how to:

- Invest revenue sources from natural resource exports, such as hydropower, to support wider economic diversification, human capital development, and social protection.
- Develop flexible assets that can perform different economic functions as the economy and sectoral balance transforms (as in the case of Trinidad and Tobago). This means delivering strong human capital, competitive major cities, and broad-purpose basic infrastructure.

Weder, B. and Weder, R. 2009. "Switzerland's rise to a wealthy nation: Competition and contestability as key success factors" Working Paper, UNU-WIDER No. 2009.25

World Bank 2009. *World Development Report 2009: Reshaping Economic Geography*. World Bank: Washington DC

#### d. Structural transformation and economic geography

**The service sector is particularly important for Bhutan's structural and spatial transformation.** Services account for 90 percent of nonfarm private sector employment. Firms are clustered around the leading cities of Thimphu, Paro and Phuentsholing. Most are small firms (particularly sole proprietorships). Secondary and tertiary sectors represent approximately 80 percent of GDP, with major industries including hydropower,<sup>38</sup> tourism, construction, transport, and communication, which together amount to about 38 percent of GDP.<sup>39</sup>

**At a more granular level, tourism is a particularly important sector for future non-farm job creation.** Tourism accounts for 31 percent of all firms and 18 percent of private sector jobs.<sup>40</sup> It is also a growing sector: once closed to tourists completely, Bhutan attracted just over 7,000 tourists in 1999, rising to 254,704 (and US\$79.8 million) in 2017.<sup>41</sup> Tourism has potential to spread employment across the country, due to the dispersion of natural and cultural attractions. However, current tourism infrastructure and accommodation are concentrated in the more developed western region. Thimphu, Paro, Punakha, and Bumthang account for 87 percent of tourist overnights.<sup>42</sup> A location quotient analysis highlights that Thimphu, Paro, Punakha are a specialized tourism corridor (figure 12). There may be chance to expand the sector to create employment opportunities in rural hub towns such as Gasa, Monggar, or Trongsa. This could be facilitated by a strong tourism sector strategy that emphasizes improved institutional management of the sector, such as coordination between the Ministry of Agriculture and Forests, Ministry of Home and Cultural Affairs and the hospitality sector, expanded visa and immigration services to other entry ports,<sup>43</sup> protection and promotion of heritage sites, and investment in wider tourism infrastructure and training.

<sup>38</sup> Exports in 2016 alone accounted for \$190m

<sup>39</sup> BNUS, pg. 26

<sup>40</sup> World Bank 2016. "Bhutan's Labor Market: Toward Gainful Employment for All" pg. 27

<sup>41</sup> Bhutan Tourism Monitor, 2017.

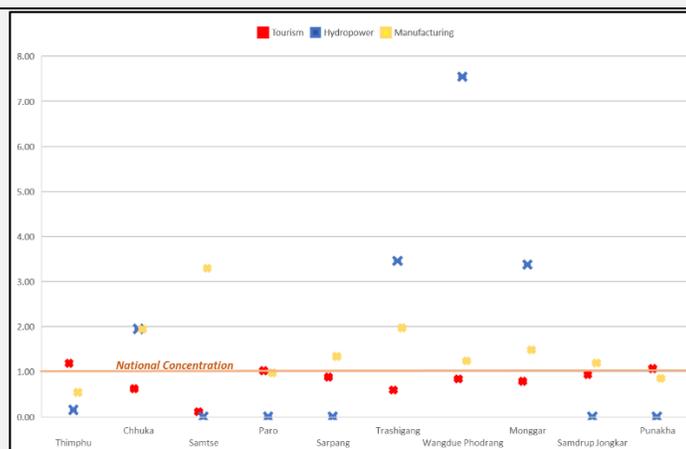
<sup>42</sup> World Bank 2017. Investment Climate Report.

<sup>43</sup> For example, less than 10 percent of tourists arrive by land.

**Figure 11. Location Quotient of Firms in Tourism, Manufacturing and Hydropower for Ten Most Populous Districts, 2017.**<sup>44</sup>

A location quotient expresses the concentration of firms in a given economic sector in a subnational region compared to the national concentration of firms in that sector. Quotients greater than “1” indicate that the local region is relatively specialized in the given sector (with a higher share of firms in that sector than the national average), while quotients of less than “1” show that firms are less concentrated than they are nationally. It should be noted that the lower-than-average specialization in Thimphu reflects its influence over the national sectoral share of firms.

The figure shows the location quotients for tourism, hydropower, and manufacturing in the ten most populous districts of Bhutan. Hydropower is the most spatially concentrated sector, with high specialization in Wangdue Phodrang, Trashigang, and Monggar (and, to a lesser extent, Chhuka). Manufacturing is relatively specialized in Samtse, followed by Chhuka and Trashigang, reflecting the location of these areas along export corridors and close to natural resources used heavily in the manufacturing sector, including agriculture and forestry. Tourism is less concentrated, but Thimphu, Paro, and Punakha, have relatively high specialization, reflecting their position as a tourism corridor.



Source. Establishment Survey 2017, Population and Housing Census 2017.

**Skill-intensive services, though currently underdeveloped, have strong job creation potential.** Transport, Storage and Communication and high value “FIRE” (Finance, Insurance and Real Estate) are currently small but emergent industries within the service sector, constituting 9 and 7.1 percent of GDP in 2017, respectively.<sup>45</sup> Thimphu Tech Park, developed in Thimphu in 2012, generated about 700 jobs in a group of internationally-based IT firms were attracted by low taxes, a productive workforce, and electricity cost and reliability. Two key challenges have emerged for the industry so far, however. First, internet access is comparatively expensive and less reliable than regional comparators.<sup>46</sup> Second, relevant ICT skills are scarce even among nonfarm workers – around 60 percent of firms report that workers do not have appropriate computer skills<sup>47</sup> (while only 14 percent of firms offer training for their workers).<sup>48</sup>

**Manufacturing represents less than 10 percent of GDP, and consists almost entirely small and medium enterprises with less than 100 workers.**<sup>49</sup> Manufacturing is concentrated around major population centers, trade corridors, and natural resources. A large share of manufacturers are situated around the capital city – Thimphu and Paro –, where labor and skills are concentrated. Planned industrial estates in Jigmeling (Sarpang), and Bondeyma (Mongar) aim to build on this concentration of labor and firms (see Figure 12). However, small towns with access

<sup>44</sup> The table shows the location quotient of each district relative to the national share for each of the three sectors.

<sup>45</sup> RGoB. 2018. “National Accounts Statistics 2018”

<sup>46</sup> World Bank. 2017. Bhutan Investment Climate Assessment

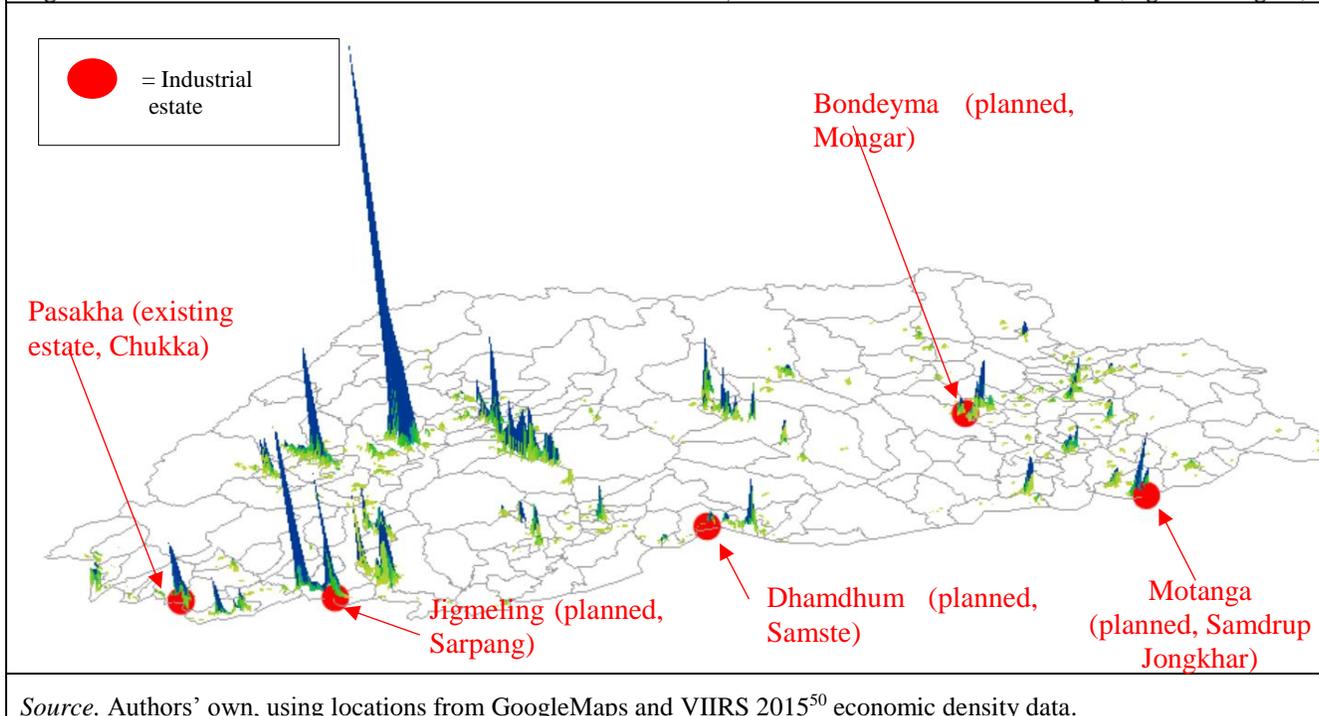
<sup>47</sup> World Bank 2016. “Bhutan’s Labor Market: Toward Gainful Quality Employment for All”

<sup>48</sup> World Bank 2016. “Bhutan’s Labor Market: Toward Gainful Quality Employment for All”

<sup>49</sup> According to the Cottage, Small and Medium Industry Policy these small firms make up more than 90 percent of total firms in the industrial sector.

to international markets have also enjoyed above-average manufacturing. Above-average shares of manufacturing are found, for example, in Chukka, Sarpang, and Samtse, located along export corridors or near the Indian border, while also being proximate to more valuable agriculture and forest materials. Planned industrial estates in Montanga (Samdrup Jongkhar), and Damdhum (Samtse) aim to leverage proximity to the border for input and export markets.

**Figure 12. Location of Current and Planned Industrial Estates, Overlaid with Economic Density (nighttime lights)**



**Although subsistence agriculture dominates employment, the southern border region has potential to grow higher value-add crops.**<sup>51</sup> Bhutan has potential to raise productivity and exports in several crops, considering its more competitive prices, despite current under-use of mechanization and land consolidation.<sup>52</sup> The success of agriculture depends on both natural conditions like climate, topography, and water access, and on access to markets. Given the importance of market access, value-add agriculture is performing best near Bhutan's main cities and border posts, while subsistence agriculture prevails in more isolated places. This highlights the essential interdependence between rural and urban areas – in this case, cities providing essential markets for rural products; for the agriculture sector, this entails that Bhutan needs a place-sensitive strategy, emphasizing food security to reduce poverty in more isolated, rural places, and supporting commercial agriculture in places with higher market access and investment returns.<sup>53</sup> The NHS identifies several smaller towns along the Indian border, such as Samdrup Jongkhar and Sarpang, with strong potential in higher-value export crops,<sup>54</sup> due to a favorable climate, elevation, access to water, and access to export markets.<sup>55</sup> These advantages could be leveraged through improved mechanization, improved connectivity to international markets, and institutional reform to reform public sector

<sup>50</sup> Version 1 VIIRS Day/Night Band Nighttime Lights (yearly VIIRS Cloud Mask - Outlier Removed - Nighttime Lights), Earth Observation Group, NOAA National Centers for Environmental Information (NCEI)

<sup>51</sup> 10 percent of farmers (growing higher-value crops) account for 73 percent of sales of higher value-added agricultural products.

<sup>52</sup> World Bank 2018. "Bhutan Agriculture Policy Note,"

<sup>53</sup> World Bank 2018. "Bhutan Agriculture Policy Note,"

<sup>54</sup> Those noted include oranges, chilies, apples, various spices, lemons, asparagus, mushrooms, and walnuts.

<sup>55</sup> These include wild mushrooms, honey, fruit, nuts and spices.

ownership and management of the sector as key factors for success in these places.<sup>56</sup> Barriers to selling or consolidating rural land owned by absentee owners may also agricultural limit productivity and income growth for those remaining.

**Hydropower has been an important source of rapid growth and structural transformation, but with limited impacts on job creation or equalizing incomes across places.** Bhutan’s otherwise challenging topography has supported steady investment in hydropower for export. Hydropower capacity will reach 5,260 MW by 2024 and constitute as much as 36 percent of government revenues.<sup>57</sup> Existing and planned facilities are concentrated in the west (Wangdue Phodrang District), central (Trongsa District) and southern (Chuka District) regions. Trashigang, Wandue Phodrang and Monggar have a relative specialization of employment in hydropower. However, rather than spurring broader local growth in these settlements, the sector has created relatively few direct jobs locally, and has weak linkages to the local economy. Hydropower locations remain largely rural, small towns, despite their outsized contribution to GDP and government revenue.

**e. Spatial Dimensions of Poverty and Service Delivery**

**Despite relatively concentrated production, Bhutan has made substantial advances to equalize welfare and service delivery across regions.** Poverty fell from 31 percent in 2003 to 8 percent in 2017. Considerable spatial inequality in incomes remain, though income inequality is not excessive considering cross-country comparisons. Median household incomes in urban areas are 2.6 times those in rural areas (Nu 150,000 vs. Nu 57,00), and monetary poverty is 11.9 percent in rural areas, versus 0.8 percent in urban areas.<sup>58</sup> Income patterns also suggest considerable inequality within/between rural areas, however, with the top 20 percent of rural households earning slightly more (Nu 138,000) than the second richest 20 percent of urban households (Nu 124,000).<sup>59</sup>

**On non-monetary deprivations, substantial differences remain between rural and urban areas.** Multidimensional poverty (MPI) is based on a composite index of deprivations including income, education, access to housing, electricity and water, and asset ownership. The main contributors to MPI include lack of education (32 percent), child mortality (23 percent), and school attendance (13 percent). MPI shows considerable variation between districts (map 1). The poorest districts —Dagana, Zhemgang and Mongar — have multidimensional poverty rates up to 10 times higher than Thimphu (3.4 versus 46.6); however, from 2007 to 2017, MPI poverty has also fallen fastest in the poorest districts, reflecting strong convergence in welfare outcomes across places.

<p><b>Figure 13. Multidimensional Poverty Index by District, 2017.<sup>60</sup></b></p>	<p><b>Figure 14. Poverty Reduction Gap in Districts, 2012-2017</b></p>
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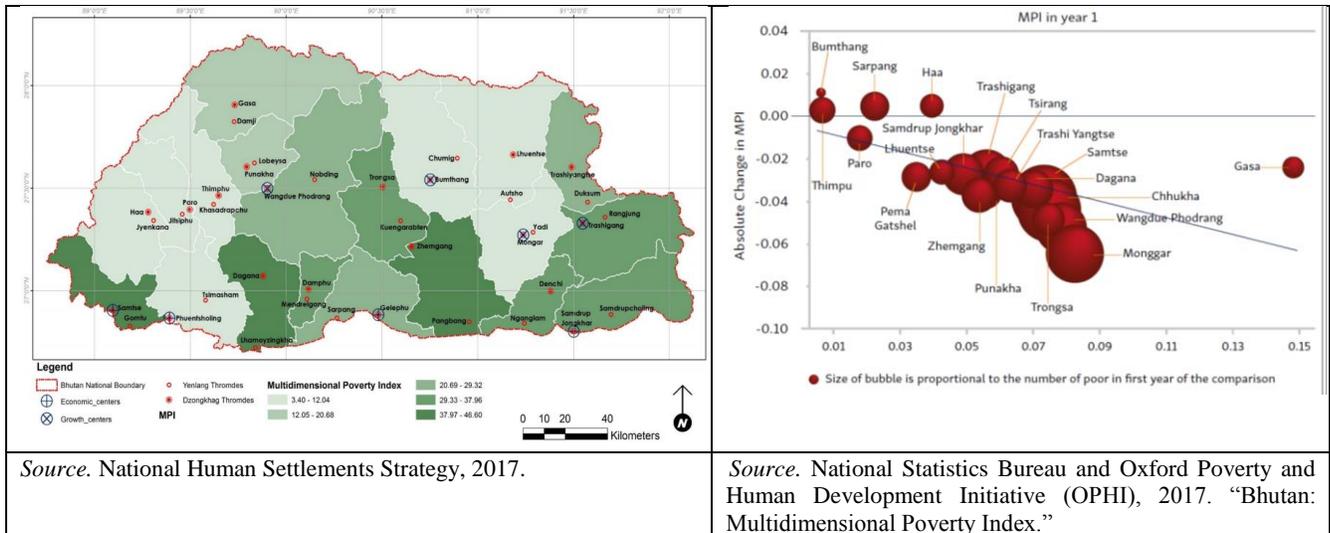
<sup>56</sup> Renewable and Natural Resources Marketing Policy 2017; World Bank 2017. “Increasing Agribusiness Growth in Bhutan”

<sup>57</sup> World Bank 2019, Bhutan Development Report

<sup>58</sup> World Bank 2017. Bhutan Poverty Analysis Report

<sup>59</sup> BLSS pg. 64

<sup>60</sup> Districts with darker green colors reflect areas with greater deprivations for the average household.



**MPI shows divergence of access to basic infrastructure between urban and rural areas.** More than 95 percent of households has access to electricity and improved water, across urban and rural areas. However, quality gaps remain. The BLSS asked households the top actions government should take to improve their welfare, and in both the urban and rural areas, timely and continuous water supply was among the top three priorities mentioned; regarding electricity, 60 percent of households report power outages of at least an hour in the past 7 days, with the rate approximately 20 percentage points higher in rural area. Gaps in improved sanitation coverage are also substantial: 97.6 percent in urban versus 88.1 percent in rural areas overall, while 8 of 20 districts have under 80 percent coverage, with the lowest coverage rate just 55 percent in Gasa.<sup>61</sup> Considerably more urban households have piped water inside the dwelling than those in rural areas,<sup>62</sup> though the remaining rural households typically have piped water in their compound.

**Despite overall improvements in human capital, divergence across districts remains substantial.** Infant mortality has fallen from 186 per 1,000 births in 1969 to 25 in 2017.<sup>63</sup> In a single decade, from 2001-2012, the primary school net enrollment rate increased from 60 percent to 89 percent.<sup>64</sup> While the high overall primary completion rate is universal across the country, there is considerable inequality in secondary school attendance and completion across districts. In urban areas, the secondary school completion rate is around 90 percent, while the rate is 60 percent in rural areas. The net attendance ratio at district level ranges from 22.7 percent to 66.4 percent for middle secondary, and from 7.7 to 70.7 percent for upper secondary.<sup>65</sup> The national literacy rate is 66 percent, there is a 23 percentage point gap between urban and rural literacy rates (81.7 percent vs. 58.3 percent);<sup>66</sup> and wide variation between rural districts (45.7 percent in Wangdue Phodrang) and more populous municipalities like Thimphu (84.2 percent), Gelephu (85.4 percent) and Phuntsholing (83.2 percent).<sup>67</sup> again underlining the urban-rural disparity in basic education and skills outcomes.

**Connectivity to services and markets is a major challenge for households and firms across Bhutan, but with considerable subnational variation.** Nationally, transport and communications are the largest nonfood household expenditure item (accounting for 25.2 percent of the nonfood budget, compared to, for example, just 15.4 percent

<sup>61</sup> PHCB 2017

<sup>62</sup> 75.6 percent, vs 31.5 percent in rural areas. Only 5 percent of Bhutanese lack piped water in their house or compound.

<sup>63</sup> World Bank, 2018. <https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?locations=BT>. This is well below the regional average of 43.

<sup>64</sup> World Bank, 2018. <https://data.worldbank.org/indicator/SE.PRM.TENR?locations=BT>

<sup>65</sup> BLSS 2017

<sup>66</sup> BLSS 2017

<sup>67</sup> BLSS 2017

for rent). According to the BLSS, road infrastructure improvements are the second highest priority for government attention and in rural areas, they are the first... In five districts (Gasa, Haa, Samdrup Jonghar, Trashigang, and Zhemgang), at least 10 percent of households must travel over an hour to reach any road head.<sup>68</sup> Public transport use is low in part due to limited routes and frequencies, with just 3 percent of rural households and 16 percent of urban households using public transport daily.<sup>69</sup>

**Internet and mobile phone access can overcome the connectivity challenge, but more isolated people are also less connected through ICT.** While mobile penetration is almost universal, half of rural households do not own a smartphone (versus 10 percent in urban areas). Internet access is also low everywhere, and particularly so in isolated places. The highest rate by far is in Thimphu, where 26.7 percent of households have internet access, but penetration rates fall to under 5 percent in 14 of Bhutan's 20 districts, falling to lows of 0.6 percent in Gasa.<sup>70</sup> Mobile banking services have in other contexts greatly extended financial access in isolated places and to the poor, but are not yet developed.<sup>71</sup>

#### f. Access to Services in Municipalities

**Public investment in fastest-growing urban centers has not kept pace with households' demand.** The four municipalities suffer infrastructure and service delivery backlogs, a shortage of land serviced with basic infrastructure (improved roads, drainage, sanitation, etc) and affordable housing, and environmental pollution, threatening the inclusiveness, dynamism, and sustainability of the cities. Thimphu municipality has the greatest backlogs, followed by Phuentsholing municipality. Thimphu's population has increased nearly 40 percent since 2005. Thimphu has created important job opportunities and agglomeration economies, but its rapid development also creates a need for better management of the city to take account of negative externalities such as congestion and environmental degradation.

- **Resilience.** The urban area in Thimphu has increased from 7.13km<sup>2</sup> in 1990 to 26.5km<sup>2</sup> by 2008.<sup>72</sup> Housing affordability is also a concern, with Thimphu's mean monthly rents of Nu 5,104 being the highest in the country.<sup>73</sup> As a result of urban expansion in the increasing scarcity of land, there is increasing demand to develop hilly topography and in low lying flood areas. It has consumed considerable flat agricultural land and greenfield spaces, while putting increasing pressure on steep slopes and in flood and landslide prone areas, elevating the risks from natural disasters.
- **Transport.** Traffic congestion has also increased. Vehicle registration has risen to 52.9 percent of households in Thimphu and 36.2 percent in Phuentsholing,<sup>74</sup> with higher automobile usage exacerbated by a lack of parking management and inadequate public transportation coverage and service frequency.<sup>75</sup> Air quality in urban areas such as the Thimphu valley, Phuentsholing, and around the Pasakha industrial estates is deteriorating – particularly during winter months – both due to industrial activity and additional vehicular traffic.<sup>76</sup>
- **Sanitation.** Water contamination has become a key concern in major cities. Only 20 percent of households in Thimphu and 60 percent in Phuentsholing have sewer connections, and there is evidence of dangerous

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<sup>68</sup> PHCB 2017

<sup>69</sup> BLSS 2017

<sup>70</sup> BLSS 2017

<sup>71</sup> World Bank 2017. Investment Climate Report.

<sup>72</sup> Giri, N. and Singh, O.P. 2013. "Urban growth and water quality in Thimphu, Bhutan" *Journal of Urban and Environmental Engineering* Vol. 1, No. 1., p. 82-85.

<sup>73</sup> CNDP Progress Update, 2017

<sup>74</sup> Ministry of Works and Human Settlement, National Report 2016. The 3rd UN Conference on Housing and Sustainable Urban Development: Royal Government of Bhutan, Thimphu.

<sup>75</sup> Dorji, G.K. 2015 "Tackling traffic jams" *Kuensel* August 7

<sup>76</sup> CNDP Progress Update

subsequent contamination of the Thimphu River,<sup>77</sup> and risks of other seepage to ground and surface water.<sup>78</sup> Solid waste generation has also exceeded the capacities of landfill and recycling facilities, which has further contaminated water supplies and exacerbated public health concerns. Thimphu Dzongkhag (with Thimphu municipality) and Chhukha Dzongkhag (with Phuentsholing municipality) have the highest number of households without reliable water.

- **Institutional capacity.** As detailed in the Policy Note on Local Governance and Finance, there are important gaps in municipal capacity for planning and capital investment, particularly for the regeneration and densification of downtown areas and ensuring services are responsive to people’s needs. Revenue mobilization also remains inadequate. Institutions are not yet effectively engaging the business community and pursuing reforms to improve the business climate.
- **Land management:** A land pooling program has demonstrated the potential for land conversion to higher density mixed uses, to better accommodate new growth.
- **Transport:** Thimphu municipality has partnered with the IFC to implement a transport plan to pedestrianize the main commercial thoroughfare and collect revenue from a parking facility, to improve traffic and parking management.
- **Sanitation:** Investments under the World Bank’s Bhutan Urban Development Project (BUDP II) have helped to increase Thimphu’s water supply and treatment capacity, though demand still exceeds supply.
- **Institutional capacity:** The BUDP II has also improved the management capacities of Thimphu and Phuentsholing municipalities, enabling them to meet recurrent expenses from own-source revenues, and hence strengthen planning and budgeting for service delivery.

## II. Trade-Offs in Territorial Development

Considering its future territorial development trajectory, Bhutan faces certain key trade-offs.

### 1. Resist agglomeration, or work with market forces?

The RGoB faces a choice in territorial development, between prioritizing the *place* or the *pace* of growth and job creation.

**While living standards can be equalized across the territory, production tends to tightly cluster in leading centers, due to agglomeration economies and the need for strong market access.** In Bhutan, this is observed in the concentration of people and firms in Thimphu, including the migration of young people from Eastern Bhutan to Thimphu rather than closer secondary settlements. The government can try to fight this concentration, but international experience shows that even heavy investment and regulation are often inadequate to counteract agglomeration forces. People and firms continue to cluster in leading centers, but are forced into the informal sector, while new infrastructure built to attract people to lagging areas goes under-utilized. These challenges are illustrated by the cases of South Korea, Egypt, and Indonesia outlined below.

**Furthermore, when properly supported, dense leading agglomerations create opportunities that can benefit the whole country, through trade, migration, raising government revenues, and higher growth.** Rather than trying to develop smaller and more peripheral places in isolation, a more effective strategy emphasizes their *integration* with leading growth hubs. This entails i) supporting growth and dynamism in the leading market, and ensuring these can absorb new trade, investment, and migration; ii) develop the connectivity of leading and smaller/lagging markets (considering hard and soft linkages- such as transport, financial markets, migration, information,

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<sup>77</sup> A sample of water collected in central Thimphu measured BOD 8.05 mg/L (Biological Oxygen Demand, a measure of water pollution), indicating a high level of contamination. Giri, N. and Singh, O.P. 2013. “Urban growth and water quality in Thimphu, Bhutan” *Journal of Urban and Environmental Engineering* Vol. 7, n.1 pp.82-95

<sup>78</sup> World Bank 2014. “Green Growth Opportunities for Bhutan”

and so on); and iii) addressing bottlenecks in lagging areas that impede their ability to benefit from integration (such as human capital, basic services, and business environment institutions).

**Given these dynamics, an important trade-off is between prioritizing the *place* of growth, and the *pace* of growth.** Prioritizing where growth takes place, upfront, typically comes to the cost of national growth, and with depressed outcomes in the targeted location. By contrast, supporting agglomerations, where market forces have signaled the strongest potential, can support faster growth nationally, and in time create opportunities for a wider portfolio of places.

The development path of South Korea (**Box 3**) demonstrates these priorities. The country achieved rapid and inclusive growth by allowing firms to concentrate according to market forces around Seoul, while providing quality institutions and human capital everywhere, and incrementally connecting secondary markets as their own density and Seoul’s dynamism rose. South Korea’s case also illustrates the challenges when governments *resist* the agglomeration of firms and people, and the adverse consequences of many efforts to spread industry contrary to the forces of agglomeration. These challenges are also illustrated in the case of Egypt’s failed attempts to deconcentrate industry (**Box 4**), and the poor performance of Indonesia’s isolated investments in SEZs in lagging areas (**Box 5**).

**Box 3. Long Term Regional Convergence: “Unity, not Uniformity” in South Korea<sup>79</sup>**

Home to more than 10 million people, Seoul produces one-quarter of Korea’s national GDP. The broader Seoul Metropolitan Area (SMA) covers 12 percent of the country’s land, contains half the national population, and generates around half of national GDP.

Since the middle of the 20<sup>th</sup> century, however, tensions arose over how best to manage the SMA. Some policy makers, concerned that rapid SMA growth would lead to regional imbalances, argued its growth should be constrained with strict regulations. Regulations restricted development in certain areas, imposed fines on buildings exceeding given parameters, limited allocations of SMA land to industry, limited the industrial output allowed in the SMA, prohibited various classes of activities, and required national government approval for land development projects exceeding one million square meters. In the 1970s a greenbelt strategy was employed to constrain Seoul’s growth and promote 14 alternative cities across the country.

These controls were not successful. Investors and citizens led to a rapid succession of new investments in the SMA regardless of policies, including residential complexes, metropolitan highways, new towns, and a new international hub airport—bypassing the objective of limiting growth. However, the controls did hurt efficiency: more than 200,000 factories in the SMA are unregistered, contributing to unmanaged urban development. Urban growth is also fragmented due to failure to invest adequate resources in managing and planning the SMA, exacerbating congestion and environmental degradation.

As Korea sought to position Seoul as a 21st-century world city, the government relaxed limits that restricted the location of new colleges, firms, industrial estates, and housing sites in the SMA. It moved instead to price instruments to regulate urban construction, levying a development charge on new commercial buildings.

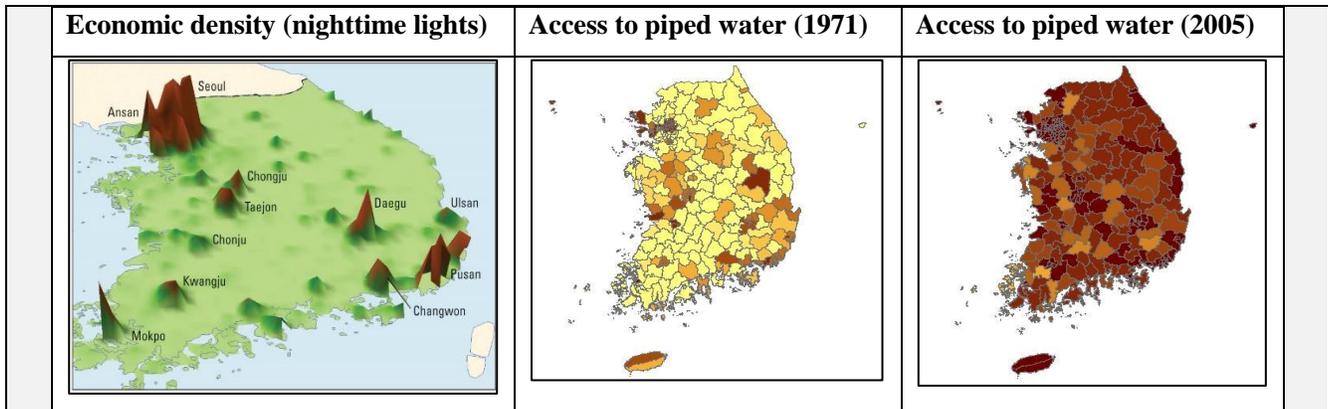
By recalibrating city management through deregulation and more market-based price instruments, Korea is making Seoul’s quest to become a competitive global city more likely to succeed.

**Concentration was complemented by basic services everywhere, and incrementally connected urban centers<sup>80</sup>**

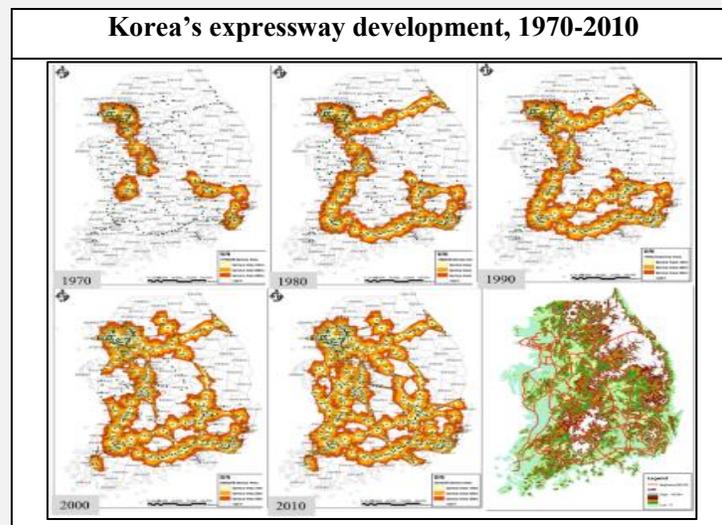
While production concentrated heavily in the SMA has also used strong universal social policy to deliver quality education, health, and sanitation, and to address poverty, everywhere.

<sup>79</sup> Adapted from World Bank (2018), “Rwanda’s Future Drivers of Growth”

<sup>80</sup> Adapted from World bank (2018), “Rwanda’s Future Drivers of Growth”



In addition, as the density of secondary economic centers (cities) grew, Korea made incremental investments to integrate these with Seoul and other major cities like the port area of Pusan. The image below, for instance, shows the incremental development of Korea’s expressways, from 1970 to 2010.



This combination of universal human capital development and living standards, alongside powerful cities to interface with global markets, and incremental connectivity between cities, helped South Korea become one of the most successful development stories of the past century.

**Box 4. Misaligned Incentives: Egypt’s Failed Attempts to Disperse Industry**<sup>81</sup>

Egypt’s capital, Cairo, produces 50 percent of GDP on just 0.5 percent of the country’s land. Concerned about pressures this may put on Cairo, Egyptian policy-makers have attempted to divert firms and people to less developed areas.

Egypt thus restricted manufacturing outside of industrial parks, and focused these parks in remote, often lagging, areas. Of 139 industrial zones created in 1975-2012, almost all were in desert locations disconnected from large domestic cities and the services, customers, and labor they offer. Most also suffered poor access to international markets, particularly those in Southern Egypt, far from Egypt’s Northern ports.

Given these disadvantageous locations, the rationale for firms to invest there was weak. The main incentives for firms were ‘compensatory’ – in the form of highly subsidized government land –, and ‘coercion’ – legal restrictions that

<sup>81</sup> Adapted from ‘Reshaping Egypt’s Economic Geography’, World Bank (2012)

prevented them from locating elsewhere. This represents Egypt's choice to prioritize the place production happens, at the cost of efficiency and hence the pace of development.

The results were poor. In some cases, to overcome the challenges of disconnected locations, new towns were built around the zones where – in theory – people could live and agglomerations develop. However, few workers settled here. For towns at a commuting distance from Cairo, the result has been huge fleets of buses shuttling workers daily from Cairo and other urban centers to the industrial parks. More remote new towns struggled even more, attracting just 800,000 of the 5 million people they were planned for. Overall, government-sanctioned industrial estates in Egypt's new towns and governates, by 2006, had space for 2.5 million workers, but hosted just 483,000 jobs. By comparison, in 2009, there were 1.8 million workers in registered<sup>82</sup> factories outside formal industrial zones, mainly within current urban agglomerations. Most jobs within industrial zones were in those near Cairo, rather than the most isolated zones Southern Egypt.

In Egypt, despite large supply-driven investments, subsidies, incentives, and legal regulations, firms and households have 'voted with their feet' for major cities with strong local agglomeration economies and access to international markets.

#### **Box 5. The Risks of Industrial Policy to Drive Regional Integration: Indonesia's Empty Special Economic Zones (SEZ)**

The west of Indonesia (Java, Bali and Sumatra) has been historically more prosperous than the east. Java and Sumatra account for more than 80 percent of Indonesia's GDP, while Java accounts for 60 percent of the total population.<sup>83</sup> The east has lagged relative to the west, with a sparse population and relative economic sluggishness.<sup>84</sup>

From the early 1990s, the government introduced targeted policy to revive the eastern region. A centerpiece was the Integrated Economic Development Zone (KAPET) program, introduced in 1996 to promote growth and social development in the eastern region. The program provided a complete package (at least on paper) of tax and non-fiscal incentives for firms locating in the eastern region. Tax incentives included a 30 percent reduction of taxes on capital, more choices for amortization of capital and losses, fiscal loss compensation for 10 years and special reductions on taxes for foreign taxpayers. Moreover, firms received tax exemptions and benefits when importing inputs, renting for construction or expansion, or paying employees. Additional 'complementary' investments were implemented – such as up-skilling local workers and MSMEs, laying infrastructure, and introducing institutions such as 'one stop shops' for business registration.<sup>85</sup>

In the first 15 years of implementation, twelve KAPET SEZs were launched in the eastern region, targeting high-tech firms. However, just 17 percent of planned investment was mobilized. All investment mobilized from 2005 to 2010, was in just three KAPET locations, and 80 percent of this was in a single KAPET SEZ in the – more developed – West (Sumatra).<sup>86</sup> KAPETs did not create the much-anticipated inflow of workers to the region.

Why did this approach fail? Investments and incentives were not informed by firm consultations and so did not address the greatest bottlenecks for firms. Tax incentives offered little compensation for poor conditions, where firms were unlikely to turn a profit. The firms targeted needed strong market access to supply various crucial inputs, such as diverse business services and a pool of varied skilled labor. By contrast, the East offered a small market, KAPETs had poor connectivity to larger markets elsewhere, and with so many KAPETs scattered across the East, firms could not be coordinated into any effective new cluster. Firms also required cheap and reliable energy and good transport infrastructure, which were largely missing in the East. The low capacity of local governments in the East, compounded by the Asian Financial Crisis and a decentralization drive from 2001, meant KAPETs were also poorly executed.<sup>87</sup>

<sup>82</sup> Registered with the Industrial Development Authority (IDA)

<sup>83</sup> Indonesia Investments, 2018

<sup>84</sup> For instance, Papua, a province in the east of Indonesia, has a population density of 8/km<sup>2</sup>.

<sup>85</sup> Temengung, 2013

<sup>86</sup> Temengung, 2013

<sup>87</sup> Hofman and Kaiser, 2004

The costs of failure were borne by all. Ultimately, the effort was costly not only nationally, but also to local governments in the East, which financed the zones from their scarce budgets, at the expense of addressing other urgent challenges like low human capital and service delivery, weak connectivity to national economic hubs, and poor governance.

## 2. Lead with hard infrastructure, or build from ‘soft’ foundations?

**Territorial development strategies that focus on the roll-out of hard infrastructure (such as roads, railways, airports, and SEZs) in secondary and lagging regions are attractive**, being highly visible and often politically popular. However, outcomes are often weak, when investments reflect political priorities rather than market demand. Supply-led hard infrastructure is often under-utilized, entailing minimal local impacts, yet heavy upkeep and running costs on local governments. An even greater risk is that, by opening local markets to tougher external competition, connective infrastructure can in fact lead to economic decline and outmigration from less advanced regions.<sup>88</sup>

**Effective strategies therefore apply a multidimensional approach**, examining the spectrum of conditions needed for successful regional development and addressing these in a coordinated manner. Efforts should follow from diagnosis of the greatest binding constraints to local productivity, and address these specifically, rather than assuming any particular infrastructure solution *prima facie*. The trade-offs involved in choosing a unidimensional versus multidimensional strategy are illustrated by the cases of Spain below and Korea above.

### Box 6. Risks of a Unidimensional Strategy: Spain’s High-Speed Ghost Trains.<sup>89</sup>

Supported by EU financing, the Spanish government has invested heavily in transport infrastructure to boost lagging areas. This investment has focused on new hard infrastructure like high-speed rail and motorways, rather than upgrading and repairing existing services or addressing logistics and governance challenges. New infrastructure was politically rewarding – being highly visible and a relatively easy way to disburse EU funds, compared to softer governance, education, and social policy reforms. However, investments often bore no relation to demand, and were not accompanied by essential complements like education and institutional strengthening.

The result has been threefold. First, Spain has a dense network of some of the best infrastructure in the world. However, second, much of this infrastructure quickly became bankrupt due to gross under-utilization. A classic example is the high-speed train from Toledo to Albacete, which cost an average of 18,000 euros per day to operate for just 9 daily passengers; more broadly, a group of Spanish researchers conservatively estimate wastage on infrastructure at 80 billion euros (Romero et al., 2018). Third, connecting disadvantaged towns to leading centers in some cases deepened concentration, due to a lack of complements. For instance, a high-speed passenger train was hoped to boost the lagging economy of Andalucía by connecting it to booming Madrid. However, the train was overwhelmingly used by Andalucians, to access business services and tourism in Madrid. By enabling firms to serve the smaller market (Andalucía) from the more favorable environment of the larger market (Madrid), the rail line in fact deepened concentration in the leading city.

## III. Policy Options and Way Forward

This note’s introduction presented a framework for place-sensitive policy, informed by the assets and potential of each place. This recommends supporting agglomeration economies in major cities and building on place-based endowments, while using social policy, education, and institutional strengthening to achieve convergence in well-being and access to opportunities everywhere. This framework differentiates between locations with higher density

<sup>88</sup> Venables and Duranton. 2018. “Place-based policies for development.” *NBER Working Paper No 24562*.

<sup>89</sup> Posé (2018), “Models of the Use of European Structural and Regional Development Funds”

and market access, where more spatially-targeted investments can support firm growth and job creation, and areas of low density and relative isolation, where opportunities for growth and job creation are more limited, but welfare and education policies can ensure *people* have access to opportunities and a good quality of life, while place-neutral institutional reforms can unlock latent private sector development potential.

### Investment Priorities for All Places

- **Institutions:** All places require quality institutions as the foundation for productivity and citizens’ well-being. While institutions are often national, they have profound effects on *subnational* outcomes and convergence. Social policy institutions (like taxes and transfers) can capture the benefits of agglomeration and redistribute to people in less advantaged places, supporting more equal welfare across space while production concentrates. Institutional reforms to the business environment also relieve bottlenecks to productivity, without placing expensive, fixed, capital investments in places with highly uncertain future trajectories.
- **People:** Investment in human capital are also high priority for all places, even those with lower economic density and dynamism. Human capital gives *people* opportunities, without making risky bets on the economic future of the *place* in which they reside, by enabling people to access better income opportunities either at home or in other locations. People-focused policies also include those addressing disparities in well-being directly, through basic public services such as health, education, local government services and basic neighborhood infrastructure.

### Spatially-Targeted Investment Priorities

- **Access to Markets (connectivity):** A key factor for local economic and social development is access to markets – including the size and connectivity of the *local* market, but also connectivity to larger, *external* markets. For firms, market access extends access to inputs, products, and value chain integration, and facilitates knowledge spillovers, and for households increases access to jobs, public services, and other goods and services. Connectivity entails not just roads, but logistics, ICT, transport services, and so on. However, as highlighted under ‘trade-offs’ above, investment in connective must be moderated according to the density and market size of the targeted place, and local demand for the infrastructure: over-investment in under-utilized roads, railways, and airports with high operation and maintenance costs draining local budgets are a common, ineffective, approach to boost ‘lagging regions’. As also discussed above, connective investments need to be coordinated with *complements* to address remaining bottlenecks to local productivity, particularly the quality of institutions and human capital, or risk deepening concentration away from the targeted places.
- **Local Economic Development:** As noted above, firms and investment cluster in major agglomerations, which offer multiple benefits for productivity. These agglomerations are the most promising place for the government to *complement* firms’ demand with heavier investments in support of local economic development. This includes investments to manage the forces of congestion attendant on agglomerations (such as traffic management, grid planning, and land management) and to minimize adverse effects like pollution. Successful cities make investments informed by quality consultation with firms and households, to diagnose the most important bottlenecks they face, rather than applying ‘one size fits all’ solutions (such as Special Economic Zones for every town).

**Table 4. Summary of Endowments Along Above Dimensions for Select Districts**

District	Human Capital	Connectivity	Economic Specialties
<b>Tier I</b>			
Thimphu	Royal Thimphu College Khesar Gyalpo Medical School	East-West Highway Proximity to Paro Airport	Government administration Services hub Agriculture

<b>Tier II</b>			
Paro	Paro College of Education General Hospital facility	International Airport East-West Highway	Tourism, MICE <sup>90</sup> destination and facilities
Wangdue Phodrang		East-West Highway	Agriculture hub Tourism hub Punatsangchhu hydro plant
Punakha	College of Natural Resources	East-West Highway connectivity	Agriculture hub
Samdrup Jongkhar	Jigme Namgyel Engineering College	Strategic position along Indian border	Agriculture and forest products hub Motanga Industrial Estate
Chhuka	College of Science and Technology Gaeddu College of Business Studies	Proximity to Indian Markets East -West Highway terminus	Industrial and logistics hub
Sarpang		Proximity to Indian markets Reliable electricity supply	Jigmeling Industrial Estate
<b>Tier III</b>			
Samtse	150-bed hospital	Border proximity to Indian markets	Proposed Damdhum Industrial Estate Agriculture and Forest resources
Trashigang	Sherubtse College	East West Highway terminus, Access to Yongphula airport	Tourism hub
Monggar	150-bed hospital	Gyelposhing-Nganglam Highway, Proximity to Bumthang and Yonphula airports	Bondeyma Industrial Estate
Trongsa	College of Language and Culture Studies	East West Highway Magde Chhu river	Tourism and cultural heritage Nikachhu Hydro Plants

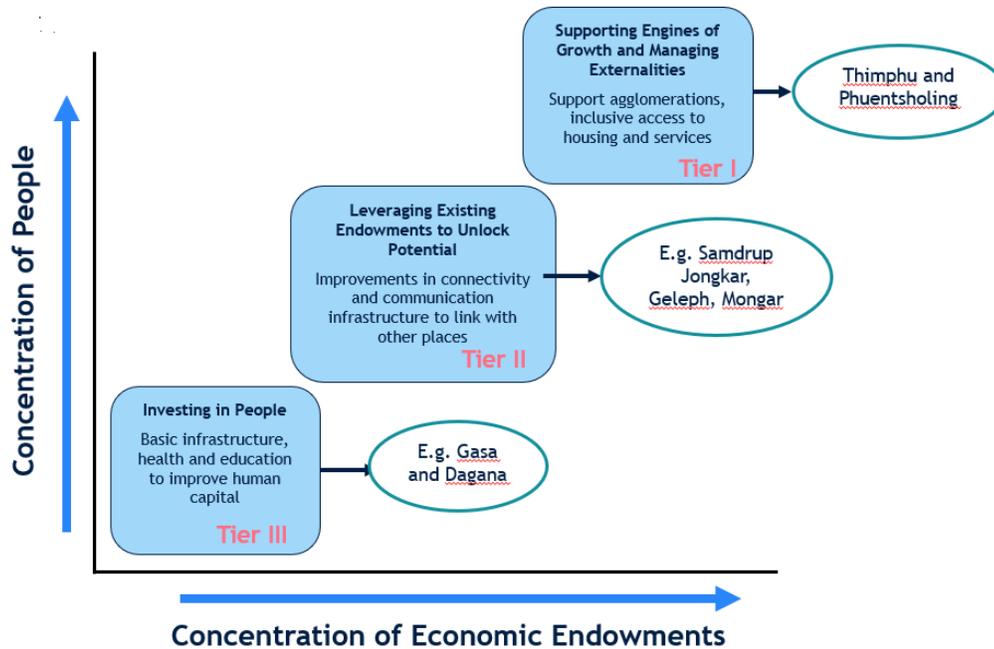
*Source.* Adapted from National Human Settlement Strategy, MoWHS. 2017.

**Following the above framework, informed by the extent of local agglomeration, Bhutanese settlements can be categorized into three broad ‘tiers’, each serving a different function and requiring different policy and investment priorities.** Bhutan can harness its existing dynamic, dense clusters – centers of firm growth and immigration – as engines of growth and opportunities to address the development challenges. Smaller towns and cities can benefit from integration with the success of larger external markets (both within and outside Bhutan), and build on any place-specific endowments and advantages. In more remote and rural areas with lower viability as centers of production, Bhutan can deliver opportunities and quality of life for all through a people-focused strategy – closing gaps in human capital and addressing barriers to migration and using social policy to ensure quality of life (while not neglecting bottlenecks to productivity in agriculture and so on) (**Figure 15**).

**Figure 15. Framework for Regional Development Approaches by Settlement Type.<sup>91</sup>**

<sup>90</sup> MICE refers to Meetings, Incentives, Conferences and Exhibitions which covers large planned gatherings and events for business, recreational or other purposes.

<sup>91</sup> Authors’ own



Source. Authors' own.

This framework entails different priority policies to support each Tier of settlements, as well as priorities relevant for the national portfolio of places.

## National Level Priorities

**Synergies across regional development and other policy agendas:** Spatial development requires a multidimensional approach, and is essentially cross-sectoral. Regional and spatial development policies should therefore be closely coordinated with economic, environmental, decentralization, and public investment policies at the national level. For example, alignment with the decentralization agenda would entail agreement on the definition and identification of different settlement types, which affect transfers, decentralized responsibilities, and regional investment and policy priorities. A clear delineation of settlement types can also improve the monitoring of urbanization, internal migration, and rural-urban disparities in living standards. Similarly, more efficient, better targeted, public investments, subsidies, and intergovernmental fiscal transfers can improve regional development outcomes, as detailed further in the accompanying Municipal Governance and Finance Policy Paper.

**Business environment:** Certain business environment challenges can pose bottlenecks to productivity across all settlement Tiers. Priorities in Bhutan include insolvency procedures, permits and licenses, quality certification, customs procedures, immigration restrictions, property transfer, and taxation, among others.<sup>92</sup> However, while the national government must take the lead reforms here, it should also ensure that institutional quality improvements trickle down to regional hubs like Tier I and Tier II cities (such as by monitoring and modernizing local offices).

**Coordination:** Operating alone, local governments may tend to over-invest in connective and other productive infrastructure, and offer excessive incentives (like reduced taxes), to compete for investment. While a degree of competition can improve the business environment, the attendant risk is a 'beggar they neighbor' race to the

<sup>92</sup> World Bank 2017. Investment Climate Report.

bottom, with low-impact spending and large revenue foregone in tax breaks. The national government thus has an important role to *coordinate and prioritize* investments and regional development plans across the country.

**Place-sensitive national planning:** Decentralization can enhance the quality of local services thanks to local governments' greater sensitivity to local needs, although the attendant risk is low government capacity; appropriate ways forward are detailed in the accompanying note on decentralization. Beyond decentralization however, the sensitivity of policies to local needs can also be enhanced by better *spatializing national* economic planning and diagnostics, as exemplified in the case of Colombia (**Error! Reference source not found.**). Appropriate data systems can strengthen the regional tailoring of national policies and investments, and enable coordination vertically between different levels of government and horizontally across ministries or local government entities within particular regions. These might include spatially disaggregated data on:

- Private investment, economic productivity, specialization, market prices, firms and firm performance;
- Government spending, finance, service-delivery, and assets such as land, schools, and hospitals;
- Land use, roads networks, public transit services, trunk infrastructure networks;
- Climate change and natural disaster hazard maps;
- Incomes, living costs, living standards, and human capital outcomes.

### **Tier I: Leading Cities (Supporting Engines of Growth and Managing Externalities)**

Large and dynamic cities (Tier I), such as Thimphu and Phuentsholing, are most important engines of national production and job creation, and the main interface with the global economy. These cities offer a different scale of agglomeration benefits and attendant dynamism, which can be leveraged to create the off-farm and higher-wage employment increasingly sought out by the population, and to drive spill-over benefits for other areas. Harnessing their dynamism requires (a) 'growing the pie' for productivity and job creation and (b) managing congestion forces and pollution through stronger urban planning for inclusive and sustainable access to new urban opportunities.

'Grow the pie' for productivity and job creation. For major agglomerations, it is less important to identify *which* products and services the city will produce, because the same fundamentals form the basis of productivity across a wide range of products. Whether a firm focuses on tourism, manufacturing, or transport and trade services, it will benefit from a dense, well-*connected* market of labor, suppliers, and customers (quality public transport, traffic management, land use planning to reduce sprawl, and accommodation of new migrants), a secure and transparent *business environment* (including for small firms), *security*, efficient *land and property markets*, *skilled human capital*, reliable and affordable *electricity*, and so on. These fundamentals can enable a broad ecosystem of complementary firms and sectors to flourish, and new comparative advantages to emerge. All cities should focus on these foundations, though they are particularly important for Tier I settlements, the productivity of which derives from broad fundamentals and agglomeration economies rather narrower place-specific advantages.

### **Institutions**

Business environment reforms are the foundation for private sector development everywhere, but particular agendas have elevated importance in Tier I cities. In Tier I cities, it is particularly important to address regulatory barriers that prevent firms and households converting scarce urban land to its most productive uses.<sup>93</sup> Participatory urban planning institutions are also key. For example, evidence from 'Competitive Cities' across the world highlights that 'growth coalitions' – sustained, active, consultative forums between the private sector and city planners to inform policy – are central to shepherding strong and sustainable growth in cities.<sup>94</sup>

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<sup>93</sup> World Bank 2017. Investment Climate Report.

<sup>94</sup> Kilroy, Mukim, and Stefano, 2015. Competitive Cities for Jobs and Growth.

Poorly-managed urbanization can deprive cities of their potential economic dynamism and inclusivity, as well as imposing environmental and social costs. As a complement to policies to grow the urban economy, local governments need to effectively manage congestion forces, to promote good density and urban livability:

- The negative externalities of urban firms and households, such as air pollution, congestion, and waste challenges (including contamination of rivers with sewage, and upgrading landfill and recycling centers), need to be controlled. Environmental risks such as landslides and flooding are major risks for people, private property, and infrastructure in Tier I cities. Infrastructure and the building stock, as well as planning and standards, should be strengthened to reduce susceptibility, and promote and energy and resource use efficiency.
- Urban expansion is inevitable, but good urban planning can ensure Tier I cities are compact and connected. Grid planning and enforcement is a priority to facilitate orderly, dense, urban expansion and avoid costly ‘retrofitting’. This can be supported by zoning to protect vulnerable or hazardous land, laying basic neighborhood infrastructure, and integrated land and transit planning. Mixed use development, and improving public and non-motorized transport, can reduce congestion and help ensure that firms and households are well connected to the opportunities, services and amenities (such as jobs, and health and education facilities) that drew them to the city. These efforts must be responsive to the needs of poor and vulnerable populations, who can benefit hugely from urban opportunities, but who can also most easily become excluded from the jobs and services cities offer, due to high costs versus purchasing power.

More broadly, local institutional strengthening would require the continuation and deepening of municipal planning and capacity-building that has been initiated in Thimphu and Phuentsholing, as detailed in the Municipal Governance and Finance Policy Note.

## **Human Capital**

Human capital development is critical to create opportunities for people everywhere. However, Tier I cities are the most likely destination for highly skilled workers, where the returns to their skills tend to be far higher. Human capital is also particularly *important* to the productivity of Tier I cities, which should host more advanced and specialized firms requiring skilled human capital, and foster innovation through virtuous knowledge spillovers between their firms and residents.<sup>95</sup>

However, the supply of skilled labor for private sector employment in cities is a recurring challenge. S well as national solutions, cities may benefit from human capital interventions tailored to their particular circumstances, such as the mismatch that emerge between the demand for and supply of skills following a rapid influx of formerly rural workers. This may include training for recent adult rural-urban migrants to cities, or supporting small urban firms with business counselling or training vouchers for staff. Much learning within leading cities in fact occurs not through formal institutions, but informal and ‘on the job’ interactions. A key opportunity therefore lies in knowledge transfer from the large and diverse labor markets around Bhutan; addressing restrictions on the hiring of and investment by expatriates may help Bhutanese firms fill short-to-medium term skill gaps, while facilitating knowledge-transfer from immigrant co-workers and business leaders to local people and firms, as well as broader technology transfer.<sup>96</sup>

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<sup>95</sup> E.g. Moretti 2003. “Human Capital Externalities in Cities.” *NBER Working Paper Number 9641*.

<sup>96</sup> World Bank 2017. Investment Climate Report.

## Connectivity

Given limited domestic market size, the sustainable and robust growth of Tier I cities will require connectivity to larger external markets. Bhutan's isolated location might make air transport important, but flights to Bhutan remain some of the most expensive in the world despite renovated airports, due to low volumes and technical challenges.<sup>97</sup> Thimphu's connectivity can be enhanced through strengthening linkages with Phuentsholing, and with larger border towns in India like Alipurduar and Cooch Behar. This connectivity can include hard infrastructure, but most important may be complementing existing hard infrastructure with softer measures, like addressing and frictions to border trade, quality certification, encouraging Indian-Bhutanese firm linkages and collaboration, addressing logistics and public transport bottlenecks, engaging in joint planning, and reviewing limits on traveler numbers to enable economies of scale. Specific investment climate reforms that could raise external connectivity of the Thimphu / Phuentsholing corridor include:<sup>98</sup>

- In addition to creating a national single-window system, establishing joint border facilities with India to reduce border queues and clearance times on transit between Phuentsholing and Kolkata.
- Assessing the feasibility of a railroad connection between Phuentsholing and the Indian railway network, to enhance the dry port's potential.
- Automated customs clearance to reduce time and costs in customs processing.
- Considering further investments in the regulatory capacity of the Bhutan Civil Aviation Authority (BCAA) and in the operational capacity of the Department of Air Transport (DOAT).

## Tier II: Secondary Towns (Leveraging Existing Endowments to Unlock Potential)

**Mid-sized towns such as Paro, Wangdue Phodrang, Gelephu, and Samdrup Jongkhar have some density of people, but low economic concentration.** These Tier II settlements are smaller population centers – including clusters of linked settlements –, often along major east-west or north south connections.

**These settlements tend to offer advantages including less expensive land and labor, and local advantages like tourism attractions, borders, or hydropower; however, outcomes are hard to predict or force.** International experience is that lower private sector demand for these locations compared to leading cities makes land and labor relatively cheap in second tier settlements. This can constitute an attraction for private investors, depending on the importance of land and cheap labor (versus market access, skills, and quality institutions) in their production costs.<sup>99</sup> In Bhutan, some also have underlying location-specific economic advantages, such as tourist attractions, hydropower potential, international borders, or proximity to agricultural inputs. This can be seen, for instance, in the case of Gelephu and Samdrup Jongkhar, situated near to quality agricultural land and on borders with the larger Indian market; the Punakha corridor, with its hydropower resources and cultural heritage; or Paro and Wangue Phodrang, which enjoy relative proximity to the capital Thimphu but have key place-based infrastructure features (international airport and hydropower). However, outcomes in such smaller centers are harder to predict, and efforts to force or incentivize firms to spread to secondary centers can come at the expense of national growth and job creation, and lead to large wastage in public expenditure.

**It is important to diagnose and address the bottlenecks to greater private sector dynamism in each Tier II settlement, ensuring investments reflect market demand and consulting well with the business community.** For example, any investment in industrial estates should not be a means to initiate new industries, but should facilitate existing industries and demand. Likewise, emerging tourism hubs may have different priorities, such as

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<sup>97</sup> World Bank 2017. Investment Climate Report.

<sup>98</sup> World Bank 2017. Bhutan Investment Climate Report

<sup>99</sup> Venables and Duranton. 2018. "Place-based policies for development." *NBER Working Paper No 24562*.

improving land management and construction permitting to support development of suitable and sustainable hotels and attractions, or improved town planning to maintain cultural assets and public spaces.

**Networking, branding, and investment promotion, supported by the central government, could help Tier II cities and their connected regions make the most of their potential.** For example, in agribusiness, a recent report finds that Indian and Bangladeshi investors have few channels to interface with Bhutanese producers, which limits their knowledge of suppliers and market potential. This is particularly relevant for border towns such as Phuntsholing which are gateways for logistics and warehousing, but also for settlements of all Tiers with latent investment potential, such as in agribusiness, mining, and tourism.

**Tier II settlement growth can be unpredictable, and local planners should be prepared to accommodate any population growth,** while ensuring equity and efficiency in access to services and labor markets. This means developing capabilities in land management, infrastructure, service delivery, capital investment planning, and financial management.

**Given their smaller market size, and often specialized industrial structure (e.g. Figure 11), connectivity to external markets is critical to the success of emerging sectors such as tourism and agro-processing.** This connectivity not only opens markets for final products, but also to access inputs, and integration into wider value chains. External connectivity can include domestic city clusters (such as Paro-Thimphu-Wangdue) and economic corridors (such as the Punakha Valley- see Box 7 below) that together raise the scale of the local market, urban-rural connectivity, and connectivity to Tier 1 settlements for inputs and customers. Several Tier II cities in Bhutan are in fact better connected to large cross-border markets than other large settlements in Bhutan.<sup>100</sup>

**Box 7. The Punakha Valley: A Multisectoral Valley Approach to a More Balanced Spatial Development in Bhutan**

Located in western Bhutan along the Sankosh River, the Punakha Valley connects Punakha with Wangdue Phodrang approximately 20 km to the south. The valley has immense historic and cultural value, with each settlement containing a large dzong constructed in the 17<sup>th</sup> century, along with many religious sites and monasteries in the surrounding villages. The population of each district has grown rapidly; between 2005 and 2017, Punakha's population grew by 62 percent, while Wangdue Phodrang's increased by 35 percent.

The population levels, connectivity to the East-West highway and Thimphu, and clustering of significant historical and cultural sites suggest that this valley may be considered a Tier II settlement. While the two districts is unlikely to reach the population size and density of Thimphu or Phuentsholing, the corridor may serve as both a regional service center for surrounding rural areas and also as unique cultural heritage hub. However, there are currently no strategic plans to manage land along the corridor and its towns, ensure provision of basic infrastructure, and manage the range of cultural and heritage resources and practices endemic to the valley.

The valley's risk profile is also significant as it has clear vulnerabilities to natural disasters. In 2012 the Punakha Valley was struck by a sudden GLOF (glacial lake outburst flood), which damaged riverside buildings and property. That same year, the dzong at Wangdue Phodrang was severely damaged by a wildfire that reached the town. The RGoB has responded by developing flood and fire warning systems and undertaking more detailed study of resilience options for the valley with the support of the World Bank.

Recent efforts by the government have also focused on site or monument-based cultural heritage and preservation, focused on the dzongs and other significant structures. However, under the Draft Cultural Heritage Bill, the government will begin to take a more expansive approach by enabling districts and municipalities to identify and demarcate cultural landscapes, which consist not only of buildings and structures with particular cultural significance,

<sup>100</sup> Such as Gelephu and Sarpang's connectivity to Bongaigaon, or Nalbari and other border towns in the case of Samdrup Jhonkar.

but also “settlement patterns, land-use patterns, natural settings and ... cultural and natural elements of Intangible Cultural Heritage [such as knowledge, social practices, languages and crafts].”<sup>101</sup>

Recognizing the Punakha valley’s potential, the RGoB has been supporting a series of initiatives, including the mapping of its cultural assets as a basis for improved land use planning by the National Land Commission, as well as the formulation of a Disaster Risk Management Plan for the Punakha Dzong and stewardship plans for the Nobgang and Chimi Lhaxhang villages by the Ministry of Home and Cultural Affairs (MoHCA). These initiatives are fully aligned with the (date) National Human Settlement Strategy prepared by the Ministry of Works and Human Settlement (MoWHS), which calls for the development of regional economic centers – as a counter to the rapidly growing and saturated Thimphu and Phuentsholing.

While relevant, for lasting results, a concerted effort is required bringing all these agencies and initiatives together to ensure the appropriate land use planning, designations and controls are in place, the necessary resilient infrastructure and services are adequately planned and delivered, the cultural landscapes and its assets are properly demarcated and stewarded and income and jobs opportunities attractive particularly to educated youth are realized.

### Tier III: Rural Hubs (Investing in People)

For sparse rural areas and small rural hub towns, it is critical that residents achieve a decent standard of living, and the human capital development needed to access productive opportunities.

**Economic development is challenging in isolated rural areas, due to their distance from major markets and inefficiency of extending quality public services. Development efforts here should put *people* first**, accounting for the preference of many rural households to *migrate* to more major towns and cities, to access the greater employment, educational, and other opportunities. A ‘people-centered’ approach would improve people’s access to these opportunities, addressing rural human capital gaps and challenges for cities to absorb new migrants in concert. Rural-urban migration can benefit remaining rural residents, through opportunities for land consolidation, trade with growing urban hubs, and domestic remittances; in Bhutan, this requires addressing barriers to the sale of rural land by out-migrants, and hard and soft connectivity challenges between rural and urban areas (such as internet connectivity, mobile banking, public transport, and so on). Overall, rural and urban areas should be managed *together* – addressing rural inefficiencies, alongside bottlenecks to rural-urban migration, and supporting the integration of rural migrants in more leading cities. A successful approach is demonstrated by the case of Chengdu (Box 8 **Error! Reference source not found.**).

#### Box 8. Chengdu’s coordinated approach to rural poverty and urban migration.<sup>102</sup>

Following rapid urban growth, Chengdu, China has pursued a model of urban-rural coordination since 2003. The approach emphasizes a combination of (i) support for early rural-urban migrants to succeed in cities, and (ii) “retention effects” that raise the welfare of rural residents who remain in rural areas or move to rural towns.

The model consists of three main pillars:

- **Supporting engines of growth:** Agglomerating firms in industrial areas to encourage the creation of nonfarm jobs. Chengdu’s ‘21+10 Industrial Restructuring Plan’ consolidated 116 pre-existing industrial development areas into 21 areas, and designated 10 major towns with the greatest endowments for new industrial projects.
- **Addressing rural bottlenecks:** Improved rural land exchange has reduced fragmentation of rural land and improved land use efficiency. Key mechanisms included (a) farmers voluntarily giving up land for urban settlement packages, (b) rural land-for-land exchanges to reduce fragmentation, and (c) land-use rights for

<sup>101</sup> Draft Cultural Heritage Bill, Pg. 10.

<sup>102</sup> Adapted from World Bank (2018), “Rwanda’s Future Drivers of Growth”

shareholding, whereby farmers exchange their land for shares in a specialized agricultural enterprise (which reorganizes the land to encourage large-scale production).

- **Supporting rural-urban linkages:** To help rural migrants to find employment in cities, government offered subsidies to urban firms that trained recent rural migrants, micro loans to a small set of migrants to support their self-employment in the city, preferential employment conditions for migrants who gave up their land to become urban residents, and subsidies to firms that provide the same social insurance to rural migrants as to urban workers.

Over the course of these policies, income has grown in Greater Chengdu, while the disparity between urban and rural areas has narrowed at a faster rate than elsewhere in China. The model has been successful in encouraging rural migrants to move to periphery townships and in creating off-farm jobs in these urban areas.

**Rural towns can play an important role in service delivery for the surrounding rural areas, and through their higher amenity and density, as centers for the densification of the rural population through migration.**

While power and water access in more remote rural areas has improved greatly in recent years, there remain important divides in health, education, and poverty outcomes between urban and rural areas – such as the rural-urban divide in secondary school completion, literacy, and piped water and improved sanitation in dwellings. The isolation and small scale of rural settlements often makes public service expensive – from roads, sewage and water pipes, electricity and internet cables, to schools, hospitals, government services, and financial services like banking. Rural towns play a crucial role, as hubs for service delivery to which remote settlements can be connected, and as centers for the densification of the rural population through migration.

**Where barriers to migration and densification in rural hubs are insurmountable, more novel ‘last mile’, non-networked, service delivery models may be necessary.** ‘Last-mile’ models for basic services (such as health, water, electricity and sanitation provision) may require additional investment in technology and capacity building at the local level (**Error! Reference source not found.**).

**Box 9. Long Distance Services: disruptive technologies for the hard-to-reach**

**Disruptive technologies can overcome physical distances through ICT, saving costs of delivery to reach the last mile of citizens.**

One example is community health workers and mobile-based health services, which together have greatly improved the reach of medical services into remote ‘last mile’ areas. Community health workers can use mobile and tablet devices for data collection, decision support, sending reminders for follow-up appointments, and so on. Remote diagnosis via telephone conversations, or even automated services, have also improved access to medical care for people in very remote areas and drastically reduced costs of hospital visits and treatment. In Bangladesh, these savings could amount to the equivalent of US\$1 billion a year, or 5 percent of 2025 expenditure; in India, the sum could be US\$7 billion, or 2 percent of 2025 expenditure; while in Pakistan savings are estimated at US\$1 billion, or 4 percent of 2025 expenditure.<sup>103</sup> A similar program is Telemedicine, which allows patients in remote areas to access specialty doctors, such as an eye doctor, from a more basic local health centre. Research showed that only 25 out of 100 patients needed to physically see a specialist after a telemedicine consultation. The other 75 people were saved a referral to a specialist.<sup>104</sup>

**Disruptive technology can also improve access to education in hard-to-reach communities.** This includes professional training and networking for teachers, as well as direct learning opportunities for individual, such as through online information (like Wikipedia), and online courses such as university accredited Massive Open Online Courses (MOOCs) or flexible online training in languages or coding.

<sup>103</sup> Boston Consulting Group. 2012. The Socio-Economic Impact of Mobile Health.

<sup>104</sup> World Bank. 2018. Reaching the Last Mile: Social Enterprise Business Models for Inclusive Development.

Mobile technologies have also supported cash transfer programs for rural populations lacking easy access to banking services.

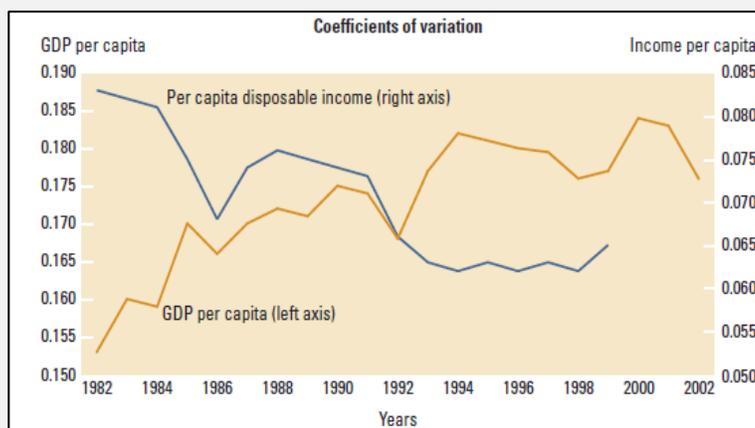
**National social policies are particularly important for Tier III settlements, and should be calibrated to address poverty and service access disparity.** Universal policies not designed with a spatial lens – like progressive national taxes and transfers, pensions, social assistance, insurance, and education policy – can have powerful impacts on poverty reduction in rural locations, by redistributing wealth and incomes across places to ensure a basic level of security and standard of living, and funding local basic infrastructure and social programs. This is reflected by the ‘scissor effect’ in France, depicted in Box 10. Such programs can particularly elderly people less likely to migrate from rural areas, and children by raising their human capital through nutrition, health, and education. The case of Colombia illustrates how applying a spatial lens to national planning can support convergence in living standards across the country. Building on this, **Error! Reference source not found.** in the Annex provides an example ‘gap analysis’ of each district or municipality’s performance against key service delivery metrics and development outcomes, against national averages.

**Box 10. France’s Scissor Effect for Unity, not Uniformity.<sup>105</sup>**

In France, progressive tax and transfer policies have reduced regional disparities in consumption, while allowing production to concentrate in the most competitive locations to ‘grow the pie’ of national growth.

From 1982 to 2002, regions were becoming more disparate in the value of their *production*, which concentrated in the most competitive regions and major agglomerations. However, despite this concentration, disposable *incomes* were becoming much more equal across regions.

How was this achieved? Progressive social, tax, and transfer policies redistributed the gains from productive regions and households to the less productive. These policies were not *designed* with spatial goals in mind and demonstrate how ‘universal’ institutions have an important bearing on spatial outcomes. France’s outcomes have been depicted as the ‘scissor effect’ shown in the graph below, where disparity in (NUTS 2) regional incomes (blue line) has fallen while disparity in (NUTS 2) regional production rose with agglomeration and concentration (orange line). This exemplifies ‘unity, not uniformity’.



**Box 11. Colombia’s National Planning with a Spatial Lens**

Colombia<sup>106</sup> has introduced a differentiated approach to *national* planning, based on *regional* characteristics. For the first time, it’s National Development Plan spatializes every sectoral priority, identifying the gaps in each region with respect to national standards and goals, to identify priorities for national convergence. It also, for the first time, features regional chapters, which provide a vision for each region and outline priority projects to deliver this vision.

<sup>105</sup> Adapted from WDR 2009, with original data from Martin, P. (2005) ‘The geography of inequalities in Europe’. Paris: The University of Paris-I. Pantheon Sorbonne.

<sup>106</sup> Dorado (2018), “Rethinking Territorial Development.” Unpublished PowerPoint presentation by the National Planning Department (DNP) of Colombia, October 2018.

These were later translated into 8 regional pacts, which form a commitment (and detailed action plan) between the central and local government for delivery of these projects and outcomes.

## Summary

**In recent years, Bhutan has made great strides in reducing poverty and enabling more equitable access to basic services, though there remain a number of challenges to achieving the goal of balanced regional development.** It is important to ensure that policy and investment plans are based on a spatially-informed approach reflecting specific local demands and economic conditions in each place. As this note has detailed, the country’s urbanization presents a critical opportunity to support structural transformation toward a service-based economy with higher levels of growth and a more competitive private sector. Population and economic activity are likely to continue to concentrate in only a few large cities – Thimphu, and second-tier cities and corridors with the strongest market access or economic advantages, such as Phuentsholing. These need to be planned and managed effectively to provide infrastructure and basic services to the rapidly growing population, support stronger private sector job creation informed by private-sector-government consultation, uphold environmental protection and connectivity (avoiding congestion challenges), and strengthen connectivity to external markets.

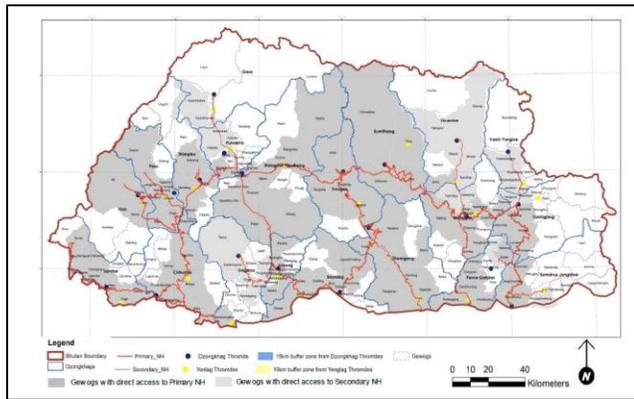
**At the same time, it is important to ensure that there is continued convergence in quality of basic infrastructure, human capital, and well-being across the country.** There continues to be persistent inequality between urban and rural areas in terms of income, education, and health indicators. An equity-based approach to investments in schooling, healthcare, improved water and sanitation and so forth in rural and remote areas can provide residents in these areas with better health outcomes and skills for entry into the service and manufacturing sectors. These investments can be complemented by a more spatially-informed targeting of transfers, subsidies and other welfare programs to poor households. Smaller regional cities and towns can serve as hubs for rural service provision, densification, and off-farm income, supported by rural-urban connectivity, connectivity to external markets, and addressing institutional and human capital bottlenecks to growth. This will contribute toward both increased overall economic growth and reducing spatial inequalities.

**Table 5. Summary of Policy and Investment Needs by Settlement Type**

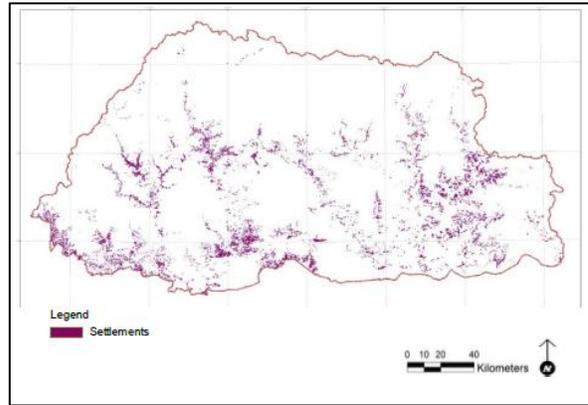
Agent	Institutions	Basic Infrastructure	Human Capital	Connectivity	Local Economic Development
<i>National</i>	Harmonize regional development and other policies; Business climate; Spatialize national planning and data.	Monitor, and develop standards and targets, for local service provision; Asymmetric decentralization of selected services to capable local governments.	National education policy; FDI and backwards linkages.	Strategic capital investments in roads, highways, power, and communication to connect cities and overseas markets; Regulation to improve air transport, public transport, traffic management.	Spatialize national economic policies; Coordinate local development activities to avert wastage/ enhance synergies.
<i>Tier I Cities</i>	Fluid property and land markets;	Effective Urban land management;	Tailored skill development;	Public transport and traffic regulation/ management;	Tailored actions informed by Growth Coalitions



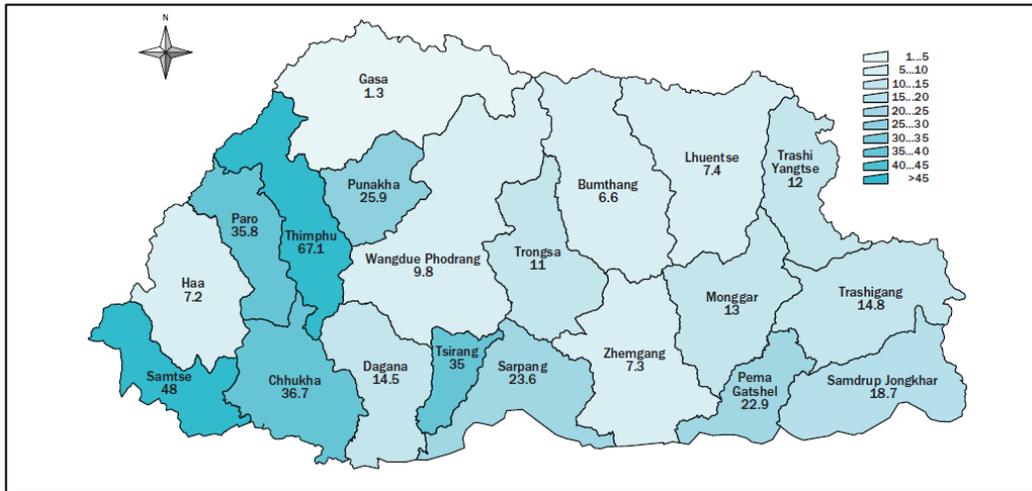
**Figure 18. Access to Primary and Secondary Roads by Geowog**



**Figure 19. Developed Land for Urban or Agricultural Purposes**



**Figure 20. Population Density by District, 2017**



*Source: Bhutan Census, 2017*

**Table 6. Example ‘Gap Analysis’ for Access to Basic Services and Basic Outcomes, by District and Municipality**

Dzongkha	Population Share (%) (PHCB 2017)	Access to Services										Outcomes				
		Human Capital							Connectivity			Welfare			Economic	
		Literacy Rate (% Population Aged 6 and Above) (BLSS 2017)	Middle Secondary Net Attendance Rate (BLSS 2017)	Higher Secondary Net Attendance Rate (BLSS 2017)	Child Survival Rate (PHCB 2017)	Improved Water (% households) (PHCB 2017)	Improved Sanitation (% households, PHCB 2017)	Electrification (% households) (BLSS 2017)	Internet Penetration (% households) (BLSS 2017)	>30 Minutes from Road Head (% households) (PHCB 2017)	Unhappy or Very Unhappy (% of Population)	Poverty Rate (BLSS 2017)	MPI	Unemployment Rate	Labor Force Participation Rate	Old Age Dependency Ratio
Bumthang	2.5	85.3	35.5	43.6	94.7	99.2	71.5	99.6	2.7	1%	6.3	2.1	0.017	1	58.3	10.6
Chukha	9.5	66.3	44.7	30.5	94.6	97.8	74.6	99.6	10	9%	10	3.5	0.031	2.9	58.4	6
Phuentsholing Thromde	3.8	83.2	63.3	40.5						2%	11.7	0.9		5.38		3.3
Other than Phuentsholing Thromde	5.7	58.3	37.3	23.8						14%	6.1	4.8		1.8		8
Dagana	3.4	65.8	22.7	12.4	93.6	98	59.8	100	2.1	9%	10.9	33.3	0.036	0.6	69.2	10.2
Gasa	0.5	64.1	24.5	20.4	89.9	95.3	55.1	99.4	0.6	46%	13	12.6	0.125	1.6	70.7	8.7
Haa	1.9	59.6	43.9	19.8	94.8	97.7	67.2	95.7	2.1	12%	5.4	0.9	0.045	1.3	61.1	8.3
Lhuentse	2	62.6	32.4	70.7	93.2	99.2	75.5	99.4	2.3	11%	8.2	6.7	0.017	0.5	65.4	13
Monggar	5.1	61.4	47.4	36.2	92.1	98.5	81	99.3	4.3	8%	3.8	17.1	0.018	1.4	60.4	11.4
Paro	6.4	64	35.8	41.2	95.9	99.1	75.1	99.8	6.7	4%	5.4	0.3	0.008	2.1	61.3	8.5
Pema Gatshel	3.2	64.8	66.4	26.8	93.1	99.1	78	99.6	2.9	8%	0.7	13.7	0.007	1	67.8	15.6
Punakha	4	60.8	43.5	29.1	94	98.5	64.6	99.6	4.5	4%	7.1	2.6	0.02	2	67.4	9.4
Samdrup Jongkhar	4.8	68.1	37.5	28.1	91	98.2	82.7	99.4	4.8	14%	5.5	6.2	0.022	0.7	58.3	9.4
Samdrup Jongkhar Thromde	1.3	78.5	50.1	33.9						0%	2.2	0.3		1.03		4.2
Other than Samdrup Jongkhar Thromde	3.5	64.6	33.5	25.7						19%	6.8	8.3		0.58		11.4
Samtse	8.6	61.1	36.8	16.7	95.2	98.5	71.8	97.6	6.9	16%	5.2	12.3	0.035	0.9	61.1	9.7
Sarpang	6.3	68.1	32.8	28.9	94.1	99.1	75.7	98.3	4.7	8%	9.6	12.1	0.027	1.1	63.2	8.1
Gelephu Thromde	1.4	85.4	54.5	50.5						0%	2.6	1.1		0.33		5.1
Other than Gelephu Thromde	5	63.9	28.8	24.1						10%	11.9	14.7		1.2		9
Thimphu	19.1	80.2	47.9	49.5	96.9	99.4	84	98.7	26.7	2%	3.9	0.6	0.009	5.5	56.3	5.3
Thimphu Thromde	15.8	84.2	49	54.1						1%	3.9	0.4		6.8		4.9
Other than Thimphu Thromde	3.3	66.3	44.1	34.8						9%	3.6	1.1		1		7.1
Trashigang	6.3	58.4	46.2	43.5	91.2	98.8	71.4	99.1	5.5	9%	10.8	10.7	0.029	0.5	55.3	11.4
Trashigang Thromde	2.4	60.3	47.7	23.2	90.4	98.9	64.6	99.8	0.8	21%	5.8	11.9	0.032	1.3	57.6	11.6
Trongsa	2.7	66.3	44	30.7	94.2	98.3	66.8	99.8	2.4	8%	3.9	14	0.027	0.5	68.2	7.5
Tsirang	3.1	63.2	38.1	7.7	94.7	98	68	99.6	2.2	10%	6	4.8	0.034	0	72.8	12
Wangdue Phodrang	5.8	45.7	27.8	26.9	93.9	98.1	73.4	99.8	6.2	6%	4.6	5.4	0.026	1.5	64.2	8.2
Zhemgang	2.4	73.7	42.5	23.1	91.6	97.8	67	95.6	1.7	22%	6.2	25.1	0.017	0.8	60.4	14.2