

Bhutan

Systematic Country Diagnostic

Taking Bhutan's Development Success to
the Next Level



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Table of Contents

Preface	5
Overview	7
I. Introducing Bhutan	11
II. Bhutan's development success story – high growth, great strides in poverty alleviation and, human and physical capital development	13
III. A young and more educated demographic profile presents an opportunity for Bhutan's next stage of development, but lackluster private sector development remains a challenge	17
IV. Hydropower has served Bhutan's development well, but changes in the outlook of the energy sector call for alternative sources of growth beyond hydropower	21
V. Taking Bhutan's development success to the next level	23
(a) Boosting private sector development	23
(b) Strengthening macro-fiscal stability	33
(c) Investing in human capital and improving service delivery	36
(d) Enhancing disaster and climate resilience	39
(e) Addressing implementation gaps	41
VI. Priorities for sustainable and inclusive growth	42
Appendix 1. Poverty in Bhutan	47
Appendix 2. Hydropower in Bhutan	48

List of Figures

Figure 1. US\$3.20 poverty rates vary widely across districts	13
Figure 2. GDP per capita increased almost ten-fold since 1980...	13
Figure 3. ...which was accompanied by an increase in the share of non-manufacturing industry in GDP	13
Figure 4. Poverty headcount declined significantly and is among the lowest among peers.	14
Figure 5. Bhutan performed relatively well in shared prosperity	15
Figure 6. Agricultural productivity has been increasing	16
Figure 7. Labor productivity of agriculture is very low, at 25 percent of overall productivity	17
Figure 8. The labor force is predominantly engaged in agriculture	17
Figure 9. The public sector increased its influence through an increase in SOEs	18
Figure 10. There will be a steady increase in the working-age population	21
Figure 11. Urbanization is projected to continue at a rapid pace	21
Figure 12. Educational attainment improved dramatically in the past decades	21
Figure 13. Bhutan's logistics performance is low and has not improved in the last decade	23
Figure 14. Bhutan's LPI is the second lowest in South Asia.	24
Figure 15. Large hydropower projects have resulted in macroeconomic volatility.	33
Figure 16. Saving-investment gap has resulted in external debt accumulation (% GDP)	34
Figure 17. Hydropower electricity production is affected by weather (annual change, %).	34
Figure 18. Domestic revenue mobilization stalled (tax to GDP ratio, %).	34
Figure 19. There is an acute shortage of health professionals.	37
Figure 20. Quality of services remains highly heterogeneous across the country	37
Figure A2.1. Hydroelectricity accounts for more than a third of exports.	49

Figure A2. 2Hydropower contribution to revenues declined in the 2010s.	49
Figure A2.3. Hydropower debt kept increasing	50

List of Tables

Table 1. The poor are concentrated in rural areas, are less educated and much more likely to work in agriculture	15
Table 2. SOEs under DHI	19
Table 3. Unemployment is concentrated in urban youth (number of unemployed and unemployment rate, 2018)	20
Table 4. Unemployment is concentrated among those with better education	28
Table 5. Summary of priorities	44
Appendix Table 1. Existing and Pipeline Hydropower Projects	48
Appendix Table 2. Delay in hydropower construction	49
Appendix Table 3. Impact of a delay in hydropower construction (one-year delay in Puna I or II project)	50

Abbreviations and Acronyms

BHU	Basic Health Unit
BLSS	Bhutan Living Standards Survey
CAD	Current Account Deficit
CIB	Credit Information Bureau
CPSUs	Central Public-Sector Undertakings
CSIs	Cottage and Small Industries
CSOs	Civil Society Organizations
DGPC	Druk Green Power Corporation
DHI	Druk Holding and Investments
DMEA	Department of Macroeconomic Affairs
DNT	People-Centered and Pragmatic Party
ECB	External Commercial Borrowing
ECD	Early Childhood Development
FDI	Foreign Direct Investment
FYP	Five-Year Plan
GDP	Gross Domestic Product
GHG	Greenhouse gases
GNH	Gross National Happiness
GNHC	Gross National Happiness Commission
GNI	Gross National Income
GST	Goods and Services Tax
G2C	Government to Citizen
ICT	Information and Communication Technology
IFC	International Finance Corporation
IMF	International Monetary Fund
IPPs	Independent Power Producers
LMIC	Lower Middle-Income Country
LPI	Logistics Performance Index
M&E	Monitoring and Evaluation
MIGA	Multilateral Investment Guarantee Agency
MoF	Ministry of Finance
MoLHR	Ministry of Labor and Human Resources
MSMEs	Micro, Small and Medium Enterprises
NBFIs	Non-Bank Financial Institutions
NCD	Noncommunicable diseases
NDC	Nationally Determined Contribution
NEC	National Environment Commission
NSB	National Statistics Bureau
ORC	Out-Reach Clinic
P3A	Public-Private Partnership Agency
PEFA	Public Expenditure and Financial Accountability
PFM	Public Financial Management
PHCs	Primary Health Care Centers
PPAs	Power Purchase Agreements

PPP	Public Private Partnership
PV	Photo Voltaic
RGoB	Royal Government of Bhutan
RMA	Royal Monetary Authority
SCD	Systematic Country Diagnostic
SOE	State-Owned Enterprise
SMEs	Small and Medium Enterprises
TVET	Technical and Vocational Education and Training
UN	United Nations
WDI	World Development Indicators
WHO	World Health Organization

Preface

This Systematic Country Diagnostic (SCD) examines the key constraints to and opportunities for accelerating poverty reduction and enhancing shared prosperity in Bhutan. It builds on a large body of analytical work, evidence gathered in three working sessions within the World Bank Group, and in-country consultations with civil society organizations, the private sector, government, and development partners.

The report was prepared as an Agile SCD, which follows a menu of interventions, among them streamlined peer reviews and collaborative working sessions, to give the country engagement model more impact. As a primary objective, this SCD is expected to inform the next Country Partnership Framework for Bhutan. In addition, the SCD is also aimed at helping align the World Bank Group around a common understanding of the constraints and opportunities in the country and to contribute to the public debate on key development challenges. The SCD team focused on developing a short, self-contained, and accessible report that is a strategic assessment rather than making explicit policy recommendations or attempting to summarize all available evidence (though additional resources are noted throughout).

The report was prepared by a team led by Yoichiro Ishihara (World Bank, Resident Representative and Senior Country Economist for Bhutan), Yeon Soo Kim (World Bank, Economist), Pia Pallavi Trivedi (IFC, Strategy Officer), and Persephone Economou (MIGA, Senior Risk Management Officer). The core team included Mona Prasad (World Bank, Lead Economist), Johannes Hoogeveen (World Bank, Lead Economist), Tenzin Lhaden (World Bank, Operations Officer), Sanjay Srivastava (World Bank, Sustainable Development Program Leader), Tekabe Ayalew Belay (World Bank, Human Development Program Leader), Christian Eigen-Zucchi (former World Bank, Equitable Growth, Finance and Institutions Program Leader), Yutaka Yoshino (World Bank, Equitable Growth, Finance and Institutions Program Leader), John Nasir (IFC, Regional Strategy Manager) and Om Bhandari (IFC, Investment Officer). In preparing the SCD, the team gratefully acknowledges the guidance of Mercy Miyang Tembon (World Bank, Country Director), Qimiao Fan (World Bank, former Country Director), Mengistu Alemayehu (IFC, Regional Director), Robert Saum (World Bank, former Country Director), Martin Rama (World Bank, former Chief Economist), Hans Timmer (World Bank, Chief Economist), Wendy Werner (IFC, Country Manager), Benu Bidani (World Bank, Practice Manager), Manuela Francisco (World Bank, Practice Manager), Sereen Juma (World Bank, Country Program Coordinator), Volker Treichel (IFC, Principal Country Economist) and Juri Oka (World Bank, Senior Strategy and Operations Officer). The team also thanks peer reviewers Genevieve Boyreau (World Bank, Program Leader), Maria Ana Lugo (World Bank, Senior Economist), Daria Taglioni (World Bank, Lead Economist), Thomas Farole (World Bank, Lead Economist), and Zineb Benkirane (World Bank, Senior Private Sector Specialist). Administrative support was provided by Igor Kecman (World Bank, Operations Analyst), Tara Nidhi Bhattarai (IFC, Program Assistant) and Dorji Drakpa (World Bank, Program Assistant).

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Overview

Bhutan is in many respects a development success story. A small, landlocked country nestled deep in the Himalayas between India and China, Bhutan has steep mountains and deep valleys, which generated a pattern of scattered settlement. The country is famous for its unique philosophy — Gross National Happiness (GNH)— which guides its development. Its abundant water resources created ideal conditions for hydropower development, which has spurred economic growth. Fiscal revenues from hydropower have helped finance major investments in human capital that have significantly improved service delivery and educational and health outcomes. Access to electricity is almost universal, and by 2015, 95 percent of Bhutanese had access to functional piped water. These achievements are especially remarkable given Bhutan’s challenging terrain and dispersed population, which elevate the unit costs of providing public services.

In the last decade, Bhutan cut poverty by two-thirds and achieved lower middle-income country (LMIC) status. Since the early 1980s, annual growth of gross domestic product (GDP) averaged 7.5 percent, making Bhutan one of the fastest-growing economies in the world. Gross National Income (GNI) per capita, at US\$3,080 in 2018, is now triple the threshold for LMICs and only 10 percent below the threshold for upper middle-income countries. Between 2007 and 2017 poverty, measured using the US\$3.20 poverty line (in 2011 purchasing power parity (PPP) terms), has dropped from 36 to 12 percent. There has also been good progress in shared prosperity, though in recent years the pace has slowed.

Bhutan possesses the ingredients for continued robust growth. It can continue to reap significant payoffs as two mega-hydropower projects go into operation between 2022 and 2024/25 and Bhutan’s full hydropower generation potential is estimated at 30,000 MW. It is also entering a period of demographic dividend with a young, increasingly educated workforce and declining dependency rates. Moreover, the full potential of tourism has not yet been tapped, and there are possibilities for Bhutan to enter international niche markets with organic and sustainably produced agricultural products.

When the mega hydropower projects become operational, Bhutan will have an opportunity to make the economic realignment and related investments while hydro revenues are still plentiful and in time to reap the demographic dividend. Efforts to design an appropriate incentive framework and make the business and investment climate more efficient will take time to bear results, and Bhutan is fortunate that it will be able to use hydropower revenues during this transition process; realignment could involve short-term costs in terms of lower growth and higher unemployment, but the cushion provided by the hydropower revenues will help ease the transition process. The potential boost in job creation could help Bhutan capitalize on the demographic window of opportunity; a larger, better-educated workforce can be employed in productive jobs, leading to higher income and faster economic growth—the first demographic dividend. Further, their ability to generate savings is enhanced by higher incomes and a lower share of non-working age population, which in turn can contribute to higher growth via greater investment – an effect known as the second demographic dividend. The recent opening of this window leaves ample time to reap the benefits of both effects.

However, even with a rich endowment of natural resources and human capital, realization of Bhutan’s growth potential is not guaranteed. Among the many challenges, the most serious is how best to establish conditions for enough competitive private-sector jobs to be created. Other challenges include managing the macroeconomic volatility that comes inevitably with large hydropower projects; ensuring equal opportunities in a terrain that makes service delivery costly and inefficient; building resilience to natural disasters and climate change; and ensuring well-intentioned policies are effectively implemented.

The creation of internationally competitive private-sector jobs can help Bhutan fuel future growth. So far, government and state-owned enterprises (SOEs) have created most of the jobs for educated workers

in urban areas, providing attractive compensation packages. Queueing for public sector jobs is common, and the labor force skills mix, especially for better-educated young people, leans toward what the public sector requires. However, the public sector and the SOEs can no longer fully absorb the expanding and increasingly educated labor force. SOEs have limited competition and can no longer secure rapid economic growth through innovation and by exploiting new markets. Hydropower still has growth potential but is capital-intensive and creates few jobs. The potential for the private sector to create jobs is likely to be highest in forestry, tourism, and commercial agriculture, based on Bhutan's competitive advantage of vast natural resources, and the potential impact on poverty reduction. There is also significant potential for ICT-enabled services, which would also support regional trade and integration. Economy-wide, ICT connectivity can help firms access the global market and improve access to finance through digital channels that can help improve productivity. Well-paid ICT jobs with potential for good work-life balance could also attract many women into the labor force. To realize its full ICT potential, Bhutan needs to improve both ICT infrastructure and policies.

There is a need to diversify financing sources and export markets for hydropower. A mega-hydropower project can cost up to 80 percent of GDP and results in volatility in aggregate demand, both during construction and when it comes on stream. Since these projects are largely financed by borrowing, they have resulted in high external deficits and debt. The latter is considered largely sustainable owing to an agreement with India that covers financial and construction-related hydropower project risks and that allows for debt service to begin only after projects come on stream. Delays in their construction, maintenance-related production downtime, and lower rainfall can cause steep declines in hydropower generation, adversely affecting exports, growth, and revenues. Moreover, the electricity export market in South Asia is changing fast. India's new framework for cross-border trade of electricity has added to uncertainty for Bhutan about access to its markets and conditions for hydropower export. As a result, for the time being, new mega hydropower projects in Bhutan have been put on hold. In the hydropower sector, efforts are needed to diversify export markets and financing sources beyond India.

Despite remarkable progress on the twin goals, disparities between urban and rural areas and between women and men persist. Poverty rates vary widely by district, and over 90 percent of the poor live in rural areas. They are also much less educated and primarily work in subsistence agriculture, with few opportunities for non-farm diversification. Gender disparities in economic opportunities persist and the quality of jobs is lower among women as they are more likely to work in low-paying sectors such as agriculture. Bhutan's law gives men and women equal rights but traditional perceptions about gender roles are still a major barrier to gender parity.

Given the importance of natural assets for growth and jobs, Bhutan could benefit from developing stronger resilience to natural disasters and climate change. Because it lies in the seismically active eastern portion of the Himalayan Arc, hydro-meteorological hazards heighten the risks to hydropower and other sectors. Urbanization has also changed the country's risk profile because population and assets are now more heavily concentrated in urban areas.

Finally, implementation gaps have reduced the effectiveness of well-conceptualized policies. The gaps are mainly caused by differing interpretations of policy because of capacity constraints, poor coordination within government ministries and agencies, and inadequate monitoring and evaluation (M&E).

Addressing these challenges requires a strategic realignment of Bhutan's development model. Developing a vibrant private sector requires continued investment in Bhutan's asset base of both physical and human capital, and in institutions. Structural reforms are needed to (a) boost private sector development; (b) strengthen macro-fiscal stability; (c) invest further in human capital and improve service delivery; (d) enhance resilience to disaster and climate change; and (e) address the implementation gaps.

1. **Increasing access to finance, improving skills mismatches, developing a startup ecosystem, improving connective infrastructure, and lifting regulatory bottlenecks can support private sector development and job creation.** Financial infrastructure needs enhancement so that firms have more access to finance, and the education system should broaden skills development programs beyond the requirements of the public sector. Additional investments are needed for major connective and ICT infrastructure and the startup ecosystem. In addition, the regulatory environment needs to be more predictable.
2. **Better management of resource rents and fiscal consolidation would enable Bhutan to maintain macroeconomic stability.** The adoption of fiscal stabilization measures will help the government implement counter-cyclical fiscal policies, thereby reducing fluctuations in aggregate demand and building fiscal space. To further consolidate its fiscal position, Bhutan also needs to mobilize more domestic revenues through tax policy reforms, e.g., adopting the goods and services tax (GST) and by improving tax administration.
3. **Greater investments in human capital and service delivery can open up equal opportunities across all of Bhutan, including for people living in remote areas.** Since service delivery is costly and inefficient in a country with Bhutan's geography, the spatial trade-offs in development need to be better understood and reflected in how policies are prioritized and sequenced. Achieving equitable opportunities and high-quality service provision will also depend on support from policies that enable migration from remote areas. A stronger social protection system that carefully targets poverty reduction and offers a tailored package of benefits could do a great deal to heighten the resilience of households.
4. **Greater resilience to natural disasters and climate change can help protect Bhutan's natural assets that are central for the country's growth and jobs.** Improved infrastructure and evidence-based planning is necessary to mitigate Bhutan's vulnerabilities to climate change and natural disasters. The poor and vulnerable, who have few coping options, are disproportionately affected by disasters. Also, natural resources like water need to be carefully managed to ensure that population and production needs can be met.
5. **Finally, while the overall legal and policy framework is relatively robust, stronger implementation can help improve the effectiveness of well-conceptualized policies.** An ambitious and much-needed reform agenda needs support from by effective implementation arrangements and sound capacity for evidence-based policy making. That in turn calls for continuing efforts to improve coordination within the government, address capacity constraints, and keep policy and implementation consistent. High-quality data and robust statistical analysis must inform not only policy formulation but also M&E as the policies are being realized in action.

Priorities for Bhutan's Development

Development Challenges	Priority Areas
An embryonic private sector that has not been able to create competitive jobs	Priority area 1: Boost private sector development <ul style="list-style-type: none"> ▪ Increase access to finance for MSMEs ▪ Invest in connective transport infrastructure and ICT ▪ Harness the potential of Bhutan's vast natural resources
Macroeconomic volatility resulting from construction and commissioning of large hydropower projects	Priority area 2: Strengthen macro-fiscal stability <ul style="list-style-type: none"> ▪ Strengthen domestic revenue mobilization ▪ Improve management of hydropower rents

Disparities between urban and rural areas, and between women and men, that have denied equal opportunities to all	Priority area 3: Invest in human capital and improve service delivery <ul style="list-style-type: none"> ▪ Improve access to and the quality of basic services and increase investment in human capital ▪ Strengthen the social protection system
Risk of natural disasters and the adverse impact of climate change, especially given Bhutan's dependence on its natural assets (hydropower, tourism, agriculture) for growth and jobs	Priority area 4: Enhance disaster and climate resilience <ul style="list-style-type: none"> ▪ Promote sustainable management of water resources ▪ Manage and mitigate climate-related vulnerabilities
Weak implementation that has reduced the effectiveness of well-conceived policies	Priority area 5: Address implementation gaps <ul style="list-style-type: none"> ▪ Improve coordination within the government and with key stakeholders and address capacity constraints ▪ Strengthen statistical capacity

Bhutan Systematic Country Diagnostic Taking Bhutan's Development Success to the Next Level

I. Introducing Bhutan

- 1. Bhutan is a small, landlocked country deep in the eastern Himalayas between India and China.** Over a horizontal distance of just 100–150 km, the elevation rises from about 150 meters above sea level in the south to over 7,000 meters in the north. The population of about 735,000¹ is scattered across steep mountain slopes and valleys, many in remote and far-flung hamlets. This makes Bhutan one of the most sparsely populated countries in the world, ranked 182 out of 215 countries.² Nearly half the land area is protected to help preserve biodiversity. With forest coverage exceeding 70 percent, Bhutan is the only carbon-negative country in the world, absorbing more greenhouse gas emissions (GHG) than it produces—and not counting the carbon that its hydropower exports displace in India. Bhutan started opening up to the outside world only in the early 2000s but its political and economic ties are still mainly with India. Despite sharing a long border with China in the north, the formal relationship is limited. Bhutan's independence throughout its history has helped preserve its rich cultural heritage and traditions. As its development policies demonstrate, Bhutan strives to be self-sufficient and to conserve its environment and culture.
- 2. Bhutan's unique development philosophy—GNH—guides its development plans, emphasizing a holistic and inclusive approach to sustainable development.**³ The four pillars of GNH are (a) good governance, (b) sustainable socioeconomic development, (c) preservation and promotion of culture, and (d) conserving the environment. Since 2008, Bhutan has had a development management system guided by the Constitution, with development strategies and annual budgets driven by GNH principles. The GNH Index and the GNH Policy Screening Tool are its main instruments for operationalizing GNH into the formulation of development policies. The GNH Index measures Bhutan's progress toward maximizing GNH; the GNH Policy Screening Tool assesses how a new policy will affect GNH. Many of Bhutan's development achievements can be attributed to this unique development framework, which has been supported by continued efforts to ensure good governance.
- 3. In 2008 Bhutan transitioned from an absolute monarchy to a democratic, constitutional monarchy.** The King is the head of the state, but executive power is vested in the government, headed by the Prime Minister. Since 2008 Bhutan has held three elections; each time a different political party was elected into office. In the 2018 election, the People-Centered and Pragmatic Party (DNT) was elected; its slogan was "Narrowing the Gap." Bhutan performs well on indicators of control of corruption and peace, ranking 25 of 180 countries in the 2018 Corruption Perception Index⁴ and 19 of 163 countries in the 2018 Global Peace Index.⁵
- 4. Bhutan's geography is ideal for hydropower development, which has spurred economic growth and helped establish Bhutan as a lower middle-income country** (see appendix 2). Abundant water resources—Bhutan is among the top five countries in the world for water availability per capita—and the drop-in elevation from north to south creates ideal conditions for run-off-the-river hydropower

¹ National Statistics Bureau (2017), 2017 Population and Housing Census.

² <https://data.worldbank.org/indicator/EN.POP.DNST>

³ The 2008 Constitution mandates that the state "promote those conditions that will enable the pursuit of Gross National Happiness."

⁴ <https://www.transparency.org/cpi2018>.

⁵ <http://visionofhumanity.org/app/uploads/2018/06/Global-Peace-Index-2018-2.pdf>.

generation. Large scale electricity generation for both domestic consumption and export began with the commissioning of the 336 MW Chukha hydropower project in 1988 (construction had begun in 1974). Several more hydropower plants have since come on stream, notably the mega Tala hydropower project in 2007, which tripled Bhutan's hydroelectricity capacity. While the project cost can be the equivalent of 70–80 percent of GDP, the average cost of developing hydropower capacity in Bhutan is about US\$1 million per MW, which is lower than in most other countries. Under the current model, the Druk Green Power Corporation (DGPC, an SOE) serves as developer and then owner of the hydropower project in Bhutan, with India financing and constructing the projects and importing the surplus electricity. Hydropower revenues are essential to financing the government, and are collected through corporate taxes, dividends, royalties (in-kind electricity sold domestically), and one-time profit transfers from a project company in the first year of hydropower operation. Bhutan's full hydropower generation potential is estimated at 30,000 MW.⁶ Of this, 2,326 MW has already been constructed and capacity is projected to rise with the completion of Punatsangchhu (I and II) by 2024/25. These two projects will add another 2,938 MW of generation capacity.

5. Hydropower revenues have enabled Bhutan to invest heavily in physical and human capital and to expand access to basic services. The constitution mandates that the government provides education and health services. Both are free and are predominantly financed and delivered by the public sector.⁷ This has led to considerable improvements in access to formal education and in health outcomes. Access to basic services, such as electricity, water, and sanitation, has also gone up significantly. However, though access has improved in many areas, particularly at primary levels, service quality and inequities in access are still a major concern.

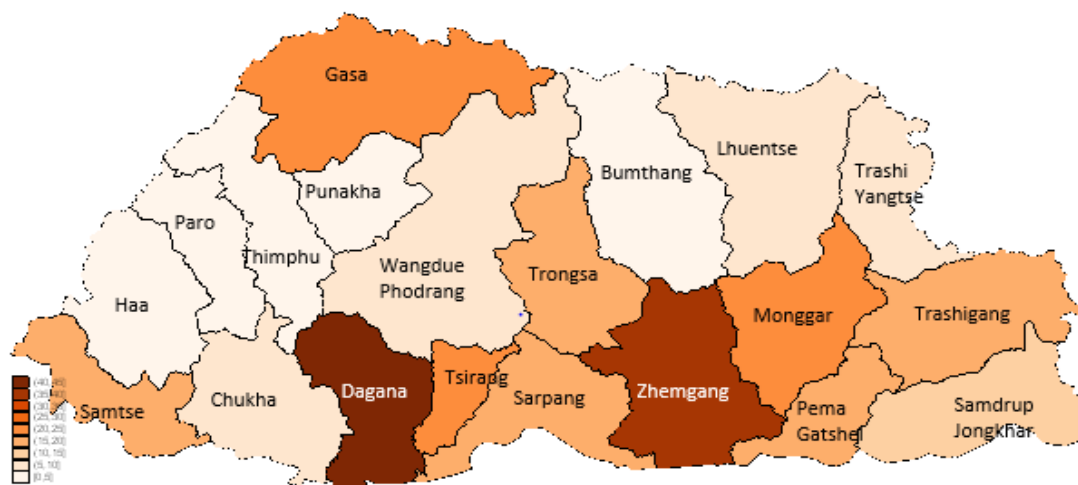
6. Although ideal for hydropower generation, the topography and extreme variations in altitude limit connectivity, especially in remote areas, and thus access to services, markets, and jobs. Sparse settlement patterns and challenging geography steeply elevate unit costs and make it extremely difficult to expand service delivery, especially in remote areas. These circumstances raise questions about how to expand access to services in a fiscally sustainable way. Poverty rates vary widely across districts (figure 1); poverty is concentrated in rural, remote areas where there is little access not only to services but also to non-farm formal job opportunities.

7. Bhutan must deal with substantial risks arising from natural disasters, which climate change will exacerbate—the effects of climate change are especially acute in the Himalayan region. Extreme weather leads to fluctuations in hydropower, the main driver of growth, and affect agricultural production, the main source of livelihoods for the poor. Since Bhutan is in one of the most seismically active zones in the world, it is often threatened by earthquakes, landslides, floods, and outbursts of glacial lakes.

⁶ The Government of Bhutan (2008) "Bhutan: Sustainable Hydropower Development Policy."

⁷ This includes treatments abroad if the service is not available in-country. There are a few exceptions, such as private cabins in government hospitals, cosmetic surgical and dental care, and cost for obtaining a medical certificate (WHO 2017).

Figure 1. Poverty Rates by District at \$3.20/day

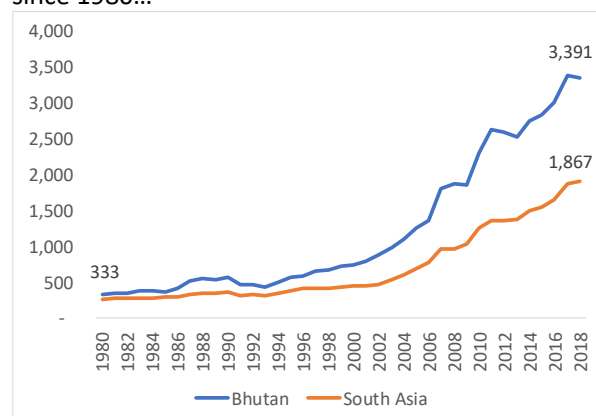


Source: Staff illustration using Bhutan Living Standards Survey 2017.

II. Bhutan's development success story – high growth, great strides in poverty alleviation and human and physical capital development

Hydropower has contributed to rapid GDP growth mainly through elevated investment and export earnings. GDP grew at an annualized average of 7.5 percent from 1981 through 2017, making it one of the top five fastest-growing economies in the world. GDP per capita rose almost ten-fold, from US\$332 in 1980 to US\$3,360 in 2018 (figure 2). Since the early 2000s hydropower exports have quintupled; in 2017 they accounted for 29 percent of total exports, and Bhutan's investment (i.e., gross fixed capital formation) has been exceeding 50 percent of GDP, again one of the highest rates in the world. Hydropower revenues accounted for 18 percent of total government revenues. As hydropower development accelerated, the relative contribution of agriculture to GDP fell from 45 to 13 percent. Over

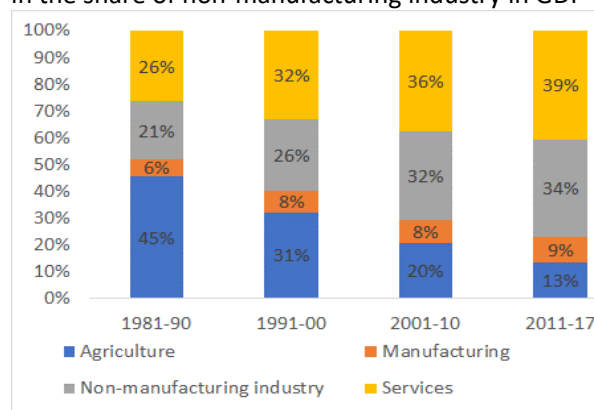
Figure 2. GDP per capita increased almost ten-fold since 1980...



Note. Figure shows GDP per capita in constant US\$.

Source. World Development Indicators (WDI).

Figure 3. ...which was accompanied by an increase in the share of non-manufacturing industry in GDP



Note. Sectoral share, % of constant GDP.

Source. National Statistics Bureau (NSB).

the period the share of non-manufacturing industry, most of which is hydropower, rose from 21 to 34 percent. The share of services also went up, from 26 to 39 percent, primarily because growth in tourism stimulated activity in retail and wholesale trade and hotels and restaurants (figure 3).

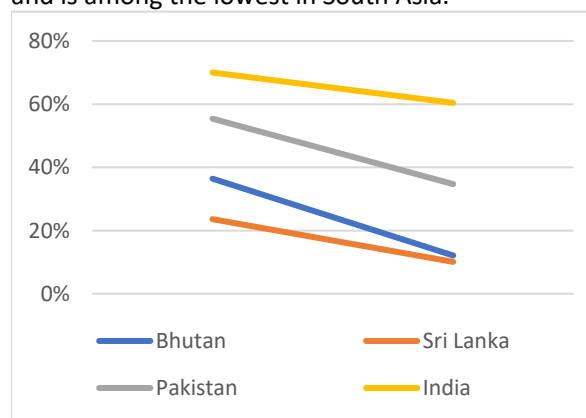
8. Bhutan has judiciously invested its hydropower revenues in human and physical capital with extraordinary success. Infant mortality plunged from about 130 per 1,000 live births in 1980 to 26 in 2017, due to better primary health care and greater access to potable drinking water. Except for Sri Lanka and the Maldives, this is the lowest rate in South Asia. Health outcomes for women also blossomed: the adolescent fertility rate, measured as births per 1,000 women, fell from 109 in 1980 to 20 in 2015, and maternal mortality from 945 per 100,000 births in 1990 to 148 in 2015. As a result of large investments in health facilities and free health care, Bhutan's health care system does well in terms of coverage, affordability and availability: as of 2017, 91 percent of the population lived within one-hour distance from a health facility,⁸ significantly better than the 73 percent in 2007. Most of the remaining gaps are in rural, remote areas. High access to government health facilities has helped keep out-of-pocket expenditure low, at 12 percent in 2014, providing financial protection to households. However, much of health-related out-of-pocket spending is on transport, which likely affects access to services.

9. As of 2017, enrollment in primary education was nearly universal, having jumped 30 percentage points in just a decade. Net secondary enrollment also expanded rapidly, surpassing 70 percent in 2017. Tertiary enrollment is still low, but Bhutan is now emphasizing technical and vocational education and training (TVET) as well as tertiary education.⁹ Enrollment of women at all levels is also higher—significant progress considering that literacy and educational achievement are lower among older Bhutanese. Access to electricity is almost universal, up from just 25 percent in 2000. Public investment in infrastructure has significantly expanded road networks: farm roads expanded from 1,700 km in 2008 to 11,200 km in 2017. All districts and subdistricts are connected by fiberoptic networks that provide the foundation for digital infrastructure.

10. Poverty plunged and there has been good progress in shared prosperity, although in recent years the pace of progress has slowed. Poverty measured by the US\$3.20 poverty line (in 2011 PPP terms) fell from 36.4 percent in 2007 to 17.8 percent in 2012 and then 12.1 percent in 2017 (figure 4).¹⁰ Between 2007 and 2017, an estimated 145,000 people, almost 25 percent of the population, were lifted out of poverty; and extreme poverty, measured at US\$1.90 per day, fell from 10.3 to 1.5 percent. As of 2017, the US\$3.20 poverty rate was 17.4 percent in rural areas of Bhutan but only 1.6 percent in urban.

11. Compared with other economies, Bhutan also performs relatively well in shared prosperity, measured as growth in the per capita consumption of those in the bottom 40 percent of

Figure 4. Poverty headcount declined significantly and is among the lowest in South Asia.



Note. Data points are for Sri Lanka (2006-2016), Pakistan (2007-2015), India (2009-2011).

Source. Staff calculations using Bhutan's Living Standards Surveys, 2007, 2012 and 2017

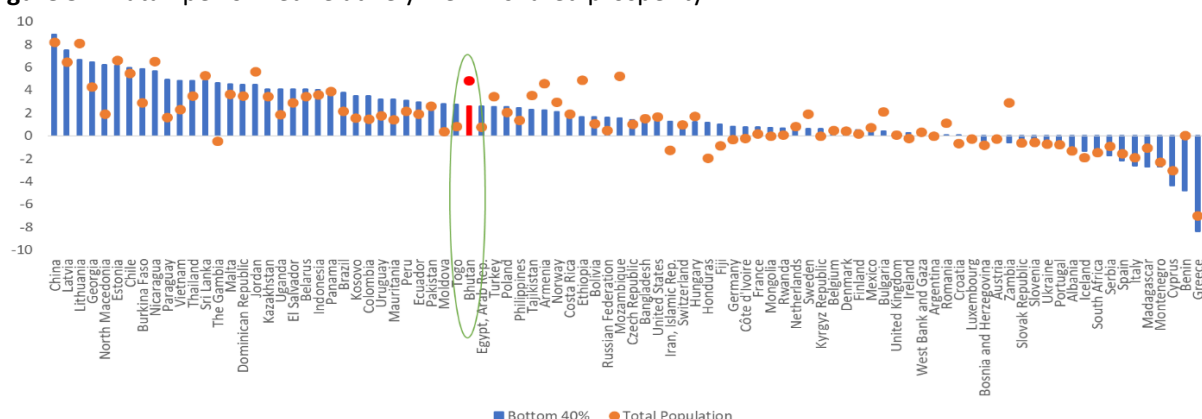
⁸ Out-reach clinics (ORC), basic health unit (BHU,) or district hospital.

⁹ The Ministry of Labor and Human Resources (MoLHR) formulated TVET Blueprint 2016-2026, and the revised Guidelines for TVET Curriculum Development in 2018.

¹⁰ The poverty figures in this report differ from official poverty estimates. See Appendix 1 for a brief description.

the welfare distribution: between 2007 and 2012, growth in the consumption of the bottom 40 grew by an annualized rate of 5.2 percent and between 2012 and 2017 it grew at 2.6 percent. While the latter still compares relatively favorably with other economies (figure 5), the slowing of the pace of progress in this area contrasts with the acceleration of growth in the consumption growth of the total population, from 4.2 percent in 2007–12 to 4.8 percent in 2012–17.

Figure 5. Bhutan performed relatively well in shared prosperity



Note. Figure shows per capita consumption growth of the bottom 40 percent and the total population.

Source. Global database of Shared Prosperity, circa 2010–15. Staff calculation for Bhutan using Bhutan Living Standards Survey (BLSS) 2012 and 2017.

12. Poverty rates vary widely by district, and poverty is almost exclusively rural. While most districts have made steady progress in reducing poverty, as of 2017 it was still above 35 percent in Dagana and Zhemgang. Samtse has the most poor people (13.2 percent), followed by Dagana (12 percent) and Monggar (11.4 percent); together they account for more than a third of Bhutan's poor. Some of these districts are also geographically remote, making access to services and markets difficult.

13. Most of the poor live in rural areas, are less educated, and work in agriculture (table 1). In 2017 the urban poverty rate was only 1.6 percent in 2017, in stark contrast to the 17.4 percent rate in rural areas, where over 90 percent of the poor live. Almost 80 percent of the poor, compared to 60 percent of those not poor, have no education. About 52 percent are literate, compared to 62 percent of those non-poor. About two-thirds of the heads of poor households work in agriculture, compared to only about a third of non-poor household heads. Wage employment remains low and concentrated: 70 percent of urban households but only 21 percent of rural households rely on wages as a primary source of income. Less than 10 percent of urban households draw most of their income from farming, compared to almost 70 percent of rural households.

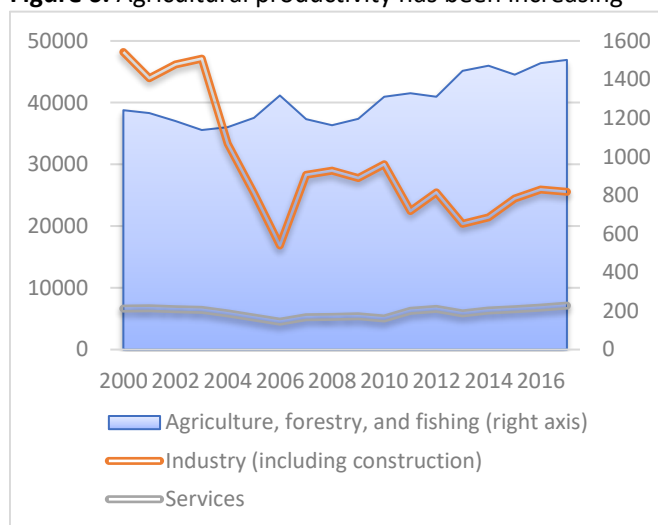
Table 1. The poor are concentrated in rural areas, are less educated and much more likely to work in agriculture

	Poor	Non-poor
<i>Location</i>		
Live in rural area	96%	63%
<i>Education</i>		
No education	79%	59%
Primary incomplete	13%	17%
Primary complete	5%	9%
Secondary complete	2%	8%
Some tertiary	1%	7%
Literate	47%	61%
<i>Employment</i>		
Work in agriculture	66%	38%
Work in non-agriculture	11%	42%
Not working	23%	20%

Source. Staff calculations using BLSS 2017

14. Progress in reducing rural poverty probably occurred because of higher agricultural productivity and better prices for cash crops. Crop agriculture has been growing steadily in recent years. Labor productivity has also been rising, slowly increasing agricultural output (figure 6). With price trends also favorable, earnings from high-value fruits and vegetables have gone up. Cardamom, potato, mandarin, areca nut, and apple have been export success stories. However, growth in agricultural output was mainly driven by more intense use of inputs rather than land expansion or broad-based productivity growth.¹¹ Volatile prices meant volatile earnings.

Figure 6. Agricultural productivity has been increasing



Note. Value added per worker (constant 2010 US\$)

Source. World Bank

15. With agriculture accounting for 60 percent of employment, uninsured risks from price and weather shocks make households highly vulnerable.

This is especially the case for poor households. Simple simulations show that a 20 percent increase in the poverty line would almost double the 2017 poverty rate, from 12.1 to 20.1 percent. This suggests that while welfare improved and poverty declined, many households are still in a tight cluster at the lower end of the welfare distribution and at risk of falling back into poverty. Moreover, the social protection system is weak, and while opportunities for non-farm diversification could help mitigate the impact of shocks, such opportunities are rare. For almost 80 percent of poor households, every working household member is engaged in agriculture.

16. Gender disparities in economic opportunity persist. In recent years female labor force participation declined, to 56 percent in 2018. Although that is still significantly higher than most other South Asian countries, it still averaged 14 percentage points lower than male participation, and fell short for almost all age groups, suggesting that women's opportunities and career choices are limited throughout their life cycle.¹² Indeed, powerful gender norms still dictate that child care and most household chores are women's responsibility. Women are more likely to work in low-paying sectors like agriculture or are family workers. Women's earnings average only about 75 percent of men's, with some differences attributable to gaps in education and occupational segregation.¹³ The proportion of female managers in cottage and small industries (CSIs) in all sectors is also considerably lower, suggesting constraints on their entrepreneurial activities. While there are no particular gender differences in access to finance, neither are there regulations and provisions to encourage female entrepreneurship. Extension officers are in chronically short supply and female officers are even fewer, despite evidence that female farmers are more likely to consult female extension officers. The low literacy of Bhutanese women, particularly in rural areas, further limits their access to information and market,

¹¹ World Bank, 2019a. Agriculture Policy Note; World Bank, 2019b. Bhutan Poverty, Vulnerability and Welfare: progress and challenges

¹² International experience also suggests that, as country's living standards improve, often female labor force participation drops at first, as some women can now afford to become homemakers.

¹³ NSB (2019) "Economic Census of Bhutan 2018-2019."

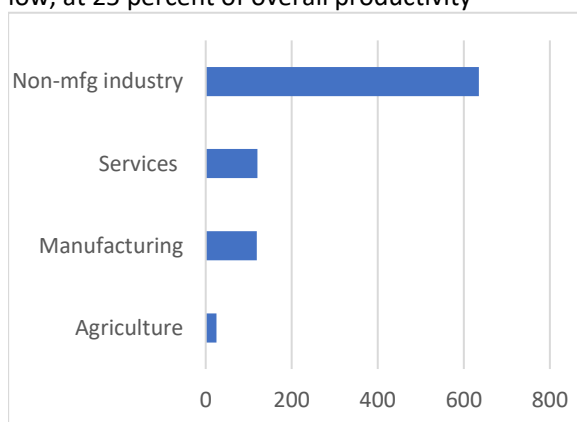
17. The law stipulates that men and women have equal rights to inheritance, but traditional customs determine actual practices. These differ by region: in matrilineal communities in the western and central regions, women traditionally inherit land and property, but in the southern and eastern regions, men tend to inherit. However, even though many women have land registered in their names, the benefits are limited, because land is typically not used as collateral for financing and its sale or rental is difficult. That may also deter migration of women to urban areas in search of better opportunities. Moreover, women have limited agency over their land because husbands still often make the decisions.

18. Although Bhutan's law gives women and men equal rights, perceptions of gender are a major challenge. Bhutan has also ratified the Convention on the Elimination of all Forms of Discrimination against Women, which is being progressively implemented; a Gender Equality Policy is now waiting for cabinet approval. However, social perceptions and behavior related to gender-specific roles vary along regional lines, with the patrilineal system dominant in southern areas. In general, traditional beliefs have not restricted women's involvement in agriculture, household decision-making, and property inheritance, but their activities outside the community are less tolerated, especially in rural areas.¹⁴ Empowering women is not easy: In a 2010 survey, 26 percent of rural women aged 15–49 had experienced domestic violence and 72 percent believed that a man is justified in beating his wife or partner.¹⁵ Few women participate in politics.

III. A young and more educated demographic profile offers opportunities for Bhutan's next stage of development, but private sector development is still lackluster.

19. Hydropower has been the primary driver of growth, but because it is capital-intensive, employment is still dominated by agriculture. Hydropower accounts for less than 1 percent of the jobs, and hydropower construction relies extensively on foreign labor. About 58 percent of Bhutan's labor force are engaged in agriculture, although it accounts for

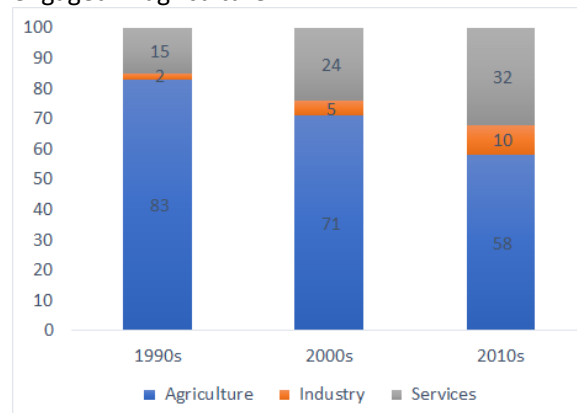
Figure 7. Labor productivity of agriculture is very low, at 25 percent of overall productivity



Note. Figure shows labor productivity (calculated as sectoral GDP/employment) by sector. Total labor productivity=100.

Source. Staff calculation.

Figure 8. The labor force is predominantly engaged in agriculture



Note: Figure shows sectoral shares in total employment

Source. MoLHR.

¹⁴ JICA (2017)

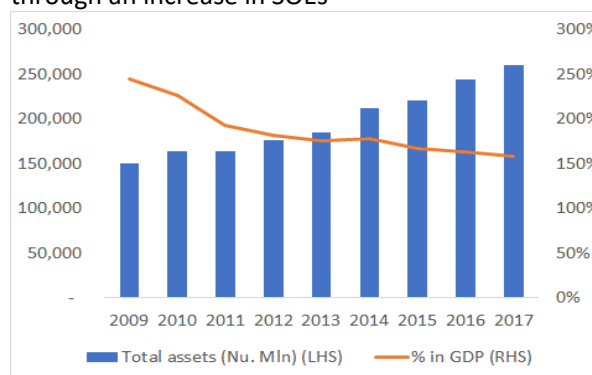
¹⁵ Multiple Indicator Cluster Survey, 2010. National council study on violence against women shows similar results. About 3 in 10 women aged 15-49 are likely to experience at least one physical or emotional intimate partner violence in their lifetime.

only 13 percent of GDP because it is dominated by low-productivity, subsistence farming (figure 7). There is likely also significant disguised unemployment with workers engaged in low-productivity activities. Industry accounts for only 10 percent of total employment and services employ the remaining 32 percent (figure 8). The share of manufacturing in GDP is less than 10 percent and there has been limited development of high-productivity services like information and communication technology (ICT) and finance.

20. Despite government efforts to provide a more enabling environment, the underdeveloped private sector is dominated by small and micro firms, primarily operating informally.¹⁶ Bhutan has implemented a range of regulatory and business environment reforms, but it has only a handful of large companies, and many small firms are struggling to grow. As of June 2017, there were 43,505 industrial establishments, the overwhelming majority in services (14,528) and trade (22,972). Only 2,125 were in manufacturing. Of the 20,000 establishments that are licensed, more than 95 percent are registered under sole proprietorships. Enterprise survey results show that only 3.4 percent of businesses export at least 10 percent of their sales directly, significantly less than the South Asian average of 7.3 percent.

21. Meanwhile, Bhutan relies heavily on SOEs to provide essential goods and services, because the domestic market is small and the private sector embryonic. The increase in budget expenditures following hydropower revenue spikes covered large public sector wage increases and hiring sprees. Public sector employment is comparatively large,¹⁷ accounting for about 20 percent of total employment, of which SOEs alone account for 4 percent. Bhutan has 38 social and commercial SOEs, overseen either by the Ministry of Finance (MoF), the sole shareholder of all SOEs, or by Druk Holding and Investments (DHI), which is 100 percent government-owned. In the past five years, more than 10 SOEs were established. The MoF oversees socially oriented SOEs and DHI those that are commercial (table 2), although several SOEs under the MoF operate in commercial sectors.¹⁸ Although autonomous, DHI has close links with the MoF and provides dividends to the budget at an amount agreed annually. Through dividends and corporate income taxes, in 2017 SOEs accounted for 37 percent of government revenues. Gross revenues of SOEs were equivalent to 30 percent of GDP, and the net profit-to-revenues ratio reached 20 percent. The size of SOEs has also expanded in recent years: between 2008 and 2018 alone, DHI assets more than tripled, from more than Nu 50 billion to more than Nu 180 billion. The combined asset value of SOEs is equivalent to 143 percent of GDP (figure 9).

Figure 9. The public sector increased its influence through an increase in SOEs



Source. MoF and staff calculation.

¹⁶ Estimates of the magnitude of the informal sector are not reliable, but the figure is expected to be high given the predominance of micro firms.

¹⁷ World Bank (2015) "Bhutan – Public Finance Reforms towards Economic Self-Reliance"

¹⁸ Among these are (a) Bhutan Agro Industries Ltd., manufacturing agro-processed products; (b) Bhutan Livestock Corporation Ltd., producing livestock inputs; (c) Food Corporation of Bhutan Ltd., trading essential food and supporting marketing of agricultural products; and (d) Farm Machinery Corporation Ltd., providing farms with mechanized goods and services.

Table 2. SOEs under DHI

Name	Sector	DHI Shareholdings (%)	Net Worth and Market capitalization (Nu billion) ¹
Druk Green Power Corporation Ltd.	Energy and Resources	100	46.0
Druk Green Power Corporation Ltd.	Energy and Resources	100	13.1
Natural Resources Development Corporation Ltd.	Energy and Resources	100	0.6
State Mining Corporation Ltd.	Energy and Resources	100	0.4
Bhutan Telecom Ltd.	Communication & Transport	100	3.8
Drukair Corporation Ltd.	Communication & Transport	100	3.0
Bank of Bhutan Ltd.	Finance	80	5.3
Bhutan National Bank Ltd. *	Finance	11.5	1.4
Royal Insurance Corporation of Bhutan Ltd. *	Finance	18.4	1.8
Thimphu Tech Park Ltd.	Real Estate and Construction	100	0.3
Construction Development Corporation Ltd.	Real Estate and Construction	100	1.0
State Trading Corporation of Bhutan Ltd.	Trading	56.6	0.4
Dungsam Cement Corporation Ltd.	Manufacturing	80	3.1
Wood Craft Center Ltd.	Manufacturing	100	0.1
Dungsam Polymers Ltd.*	Manufacturing	51	0.1
Penden Cement Authority Ltd.*	Manufacturing	40.3	1.5
Bhutan Ferro Alloys Ltd.*	Manufacturing	25.7	0.2
Bhutan Board Products Ltd.	Manufacturing	57.6	0.1
Koufuku International Ltd.	Manufacturing	80	0.0

1/ Net worth is calculated only for DHI's shareholding; market capitalization is reflected for listed DHI Linked Companies (*).

Source. DHI Annual Report

22. The presence of SOEs may have crowded out private firms in some commercial sectors. In principle, SOEs should be created in sectors where there is market failure (e.g., provision of public goods) or that are strategically important (e.g., defense). However, in Bhutan, SOEs are also present in banking, insurance, telecoms, airline, manufacturing, cement, and mining where the private sector could play a more active role. Also, the rationale for having SOEs in manufacturing, agriculture, and real estate is not clear, and they may be crowding out opportunities for the private sector.¹⁹ The profitability of most SOEs is largely driven by those in energy and finance, and by the lack of competition.²⁰ Despite the government's role as regulator, it has reduced competition by granting SOEs subsidies, preferential tax treatment, and exemptions; in-kind benefits; and concessional financing and guarantees. There are no

¹⁹ For example, Bhutan Agro Industries Limited, an SOE established in 1993, develops, distributes, and markets value-added (processed) agricultural goods. World Bank (2017) "Investment Climate Assessment"

²⁰ About 43.5 percent of combined SOE gross revenues in 2016 came from two companies: Druk Green Power Corporation (DGPC) and Bhutan Power Corporation. The financial sector contributed 21.2 percent of total SOE revenues.

competitive neutrality arrangements that would require all firms to be governed by the same rules and policies, and resource allocation is distorted because the prices SOEs charge do not fully cover their costs. This could give them a competitive edge that shifts production away from the most efficient producers.

23. While overall unemployment is low, high youth unemployment necessitates the creation of more and better jobs. In 2018 the unemployment rate of youths (aged 15–24) was a relatively high 15.7 percent (table 3a). Overall unemployment is slightly higher among females. Youth account for about half of all unemployed, with the rates similar for males and females. While more educated youth are not likely to be poor, youth unemployment is symptomatic of the deeper job creation challenge that will worsen as rural-urban migration progresses and as aspirations rise with more access to education and information.

24. Opening of the demographic window presents a unique opportunity,²¹ but so far job creation has not kept pace. The median age in Bhutan is just 26. Between 2013 and 2016, 41,000 youth entered the labor force, but only about 14,000 jobs were created, most of them in low-end services.²² UN projections suggest that Bhutan’s demographic window of opportunity will last from 2015 to 2045, after which the dependency ratio is expected to rise. During that time, every year another 7,000–8,000 individuals are expected to enter the labor market (figure 10) and in less than 20 years the share of urban population is projected to exceed 50 percent (figure 11). Thus, the pressure to create jobs in urban areas will intensify.

Table 3. Unemployment is concentrated in urban youth (number of unemployed and unemployment rate, 2018)

(a) Overall

	Youth	Non-Youth	Total
Urban	2,759 (24.4%)	3,833 (4.7%)	6,592 (7.1%)
Rural	2,162 (10.8%)	1,660 (0.8%)	3,822 (1.8%)
Total	4,921 (15.7%)	5,493 (2.0%)	10,414 (3.4%)

(b) Male

	Youth	Non-Youth	Total
Urban	1,280 (24.5%)	1,242 (2.5%)	2,522 (4.6%)
Rural	1,168 (10.9%)	846 (0.8%)	2,014 (1.8%)
Total	2,448 (15.4%)	2,088 (1.4%)	4,536 (2.7%)

(c) Female

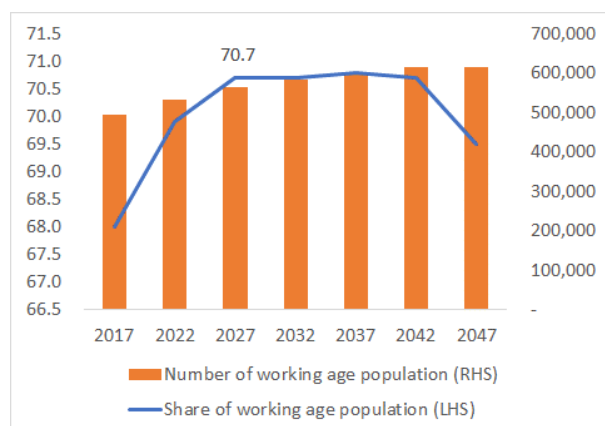
	Youth	Non-Youth	Total
Urban	1,479 (24.3%)	2,591 (8.3%)	4,070 (10.9%)
Rural	994 (10.7%)	814 (0.9%)	1,808 (1.7%)
Total	2,473 (16.1%)	3,405 (2.7%)	5,878 (4.2%)

Source. NSB.

²¹ The United Nations defines the demographic window as open when the proportion of youth in the total population raises above 30 percent and the proportion of the elderly is below 15 percent. Intuitively, as a country’s young bulge reaches working age, a country enters a demographic window of opportunity. An expanding working-age population (those persons aged 15 –64) generates a labor supply effect that, under certain conditions, can propel economic growth and lift incomes.

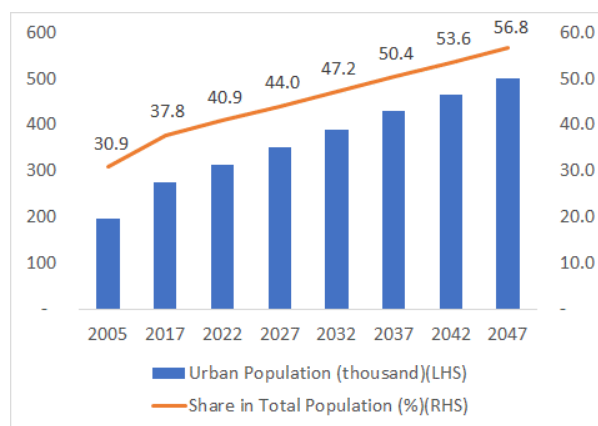
²² Data availability and comparability issues (mainly stemming from a change in the timing of the Labor Force Survey) make it difficult to examine certain trends in employment before 2013.

Figure 10. There will be a steady increase in the working-age population



Source: NSB.

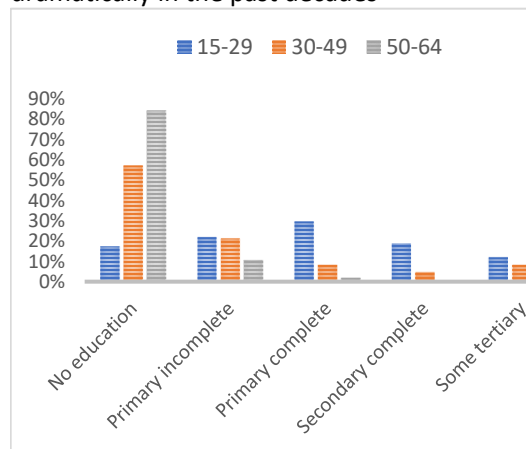
Figure 11. Urbanization is projected to continue at a rapid pace



Source: NSB

25. Significant improvements in education have led to younger cohorts having more skills, which could support growth if enough jobs are created. Educational attainment has shot up in the past few decades. More than 30 percent of Bhutanese aged 15–29 now have secondary education or more; for those aged 30–49 the rate is only 13 percent (figure 12). The share of the population with no education has plunged, though it is still 17 percent among those aged 15–29. The question has become how to absorb increasingly better-educated job market entrants into productive, non-agricultural jobs. If job creation in urban centers accelerates, migration of low-skilled rural people could also speed up, helping to reduce poverty and stimulate economic growth.

Figure 12. Educational attainment improved dramatically in the past decades



Source: Staff calculation using BLSS data.

IV. Hydropower has served Bhutan's development well, but changes in the outlook of the energy sector call for alternative sources of growth beyond hydropower

26. Rapid evolution of the electricity export market in South Asia is changing the outlook. Hydropower has driven Bhutan's development success by contributing to GDP growth and enabling investments in physical and human capital. However, the future is less certain. High economic growth in the region will require a steep increase in power supply in coming decades. India alone is estimating that in the next few decades it will need more than 300,000 MW of additional renewable energy capacity. Together with political preferences to reduce carbon growth, this could create opportunities for Bhutan's hydropower as a reliable renewable power source. However, solar photo-voltaic (PV) is driving down the cost for large- as well as small-scale power generation to levels close to Nu. 3/kWh. This is comparable to the cost of hydropower from Dagachhu, which is traded on the open market through Tata Power at a tariff

of 2.96 Nu/kWh.²³ Further, if adoption of battery storage technologies accelerates over the next decade, future development of hydropower will become ever more irrelevant. Even if reliability and provision of peak power and ancillary services are essential benefits of hydropower compared to solar PV, hydropower will find it difficult to stay competitive because of higher costs and environmental and social requirements.

27. There is a need to diversify financing sources and export markets for hydropower. To date, almost all Bhutan's hydropower projects have been financed by India, which takes all its hydroelectricity exports. However, it has become more difficult to raise financing from India for new hydropower projects. In recent years, India has encouraged Bhutan to form joint ventures with Indian Central Public-Sector Undertakings (CPSUs) for financing and constructing new hydropower projects.²⁴ The large size of the hydro projects and contracts makes it difficult for Bhutanese companies to participate. Moreover, India recently adopted a new protocol for cross-border trade in electricity which states that only companies fully owned by the governments of the countries concerned or with at least a 51 percent equity investment by Indian public or private companies may export power to the Indian market.²⁵ While the guidelines aim to promote regulatory transparency, consistency, and predictability in cross-border trade, they have increased the uncertainty of access to markets and conditions for Bhutan's hydropower exports to other countries such as Bangladesh.

28. The changing landscape of the regional hydropower sector prompted the government in June 2017 to assign a high-level committee to review Bhutan's future hydropower development plans. Although the committee has finalized its recommendations, they have not yet been made public. The committee has apparently recommended completing the construction of on-going projects and putting new ones on hold for the time being. Together with the outlook for the regional energy sector, this would have significant implications for Bhutan's development model, which has revolved around hydropower.

29. Uncertainty over the future of hydropower development and the need to gainfully employ a more educated cohort of young Bhutanese calls for realignment of the growth model. Given the developments in the renewable energy sector in South Asia, it will be important for Bhutan to invest in alternative sources of growth. Under the status quo scenario, Bhutan's growth is projected to decelerate abruptly after 2021 and fall below 3 percent in less than a decade.²⁶ For Bhutanese to be able to participate in the growth sectors of tomorrow will require continued investment in building the relevant skill sets and physical and institutional capital—the country's asset base.

30. When the mega hydropower projects under construction become operational, Bhutan will have an opportunity to make the economic realignment and related investments while hydro revenues are still plentiful and in time to reap the demographic dividend. Efforts to design an appropriate incentive framework and make the business and investment climate more efficient will take time to bear results, and Bhutan is fortunate that it will be able to use hydropower revenues during this transition process; realignment could involve short-term costs in terms of lower growth and higher unemployment, but the cushion provided by the hydropower revenues will help ease the transition process. The potential boost in job creation could help Bhutan capitalize on the demographic window of opportunity; a larger, better-educated workforce can be employed in productive jobs, leading to higher income and faster economic growth—the first demographic dividend. Further, their ability to generate savings is enhanced by higher

²³ Current export tariffs for existing hydropower plants in long-term Power Purchase Agreements (PPAs) are 2.55 Nu/kWh for Chukha and 2.12 Nu/kWh for Tala and Kurichhu.

²⁴ Kholongchhu Hydro, a JV with SJVN Ltd. (a CPSU under the Government of India), is one such example but the model has been facing challenges with the concession agreement for Kholongchhu still to be signed.

²⁵ India issued the Guidelines on Cross Border Trade of Electricity in 2016 and revised them in late 2018.

²⁶ The status quo scenario assumes no new hydropower projects and sustaining the same growth rate of human capital and total factor productivity. World Bank 2019, "Bhutan Development Report."

incomes and a lower share of non-working age population, which in turn can contribute to higher growth via greater investment – an effect known as the second demographic dividend. The recent opening of this window leaves ample time to reap the benefits of both effects.

31. The hydropower sector will continue to play a dominant role in the economy, and some modifications in the sector will be beneficial. There is a need to diversify the hydropower export market and identify alternative sources of financing. Investing in small and medium-sized as well as mega-hydropower projects could help reduce the risk of depending too heavily on a few mega-projects. Managing smaller projects could also help build the required capacity in the domestic market and establish vertical and horizontal links. Better management of environmental and social effects and improvements in the design and construction stage could help limit time and cost overruns, which have been frequent and rampant. Such improvements will depend on efforts to build capacity.²⁷ Participation of the private sector in the hydropower sector could be encouraged.

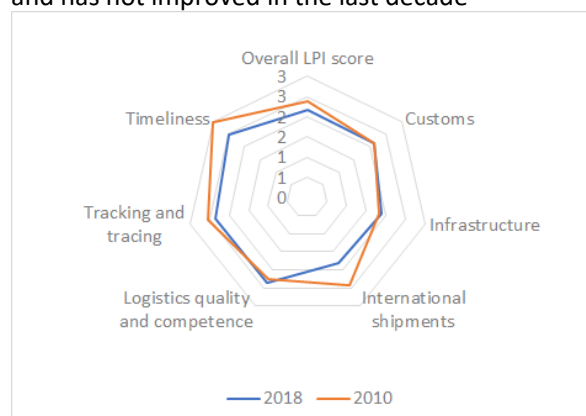
V. Taking Bhutan's development success to the next level

32. This SCD advocates for a realignment of priorities so that Bhutan can achieve long-term poverty reduction and shared prosperity. It first identifies specific areas where bottlenecks can be dismantled. It then identifies cross-cutting themes on which to base further progress. Among the specific areas are (a) boosting private sector development; (b) strengthening macro-fiscal stability; and (c) investing in human capital and improving service delivery. Among the cross-cutting themes are (a) enhancing disaster and climate resilience; and (b) addressing implementation gaps.

(a) Boosting private sector development

33. The key constraints for Bhutan's private sector development are limited connectivity, lack of skilled manpower, low access to finance and regulatory bottlenecks in the business environment. Bhutanese firms enjoy a stable political environment and low corruption, access to reliable and cheap electricity, wide-spread use of English, and easy access to Indian labor. However, that still leaves many other challenges. This section describes the most binding and economy-wide constraints that should be given priority for investment and reform. In addition, a few sectoral deep dives are presented that focus on forestry, tourism, and agriculture/agribusiness. In choosing forestry and tourism, the intent is not to pick specific winners but to fully leverage the comparative advantages granted by Bhutan's vast natural resources and amenities, and the potential for growth and job creation. Agriculture was chosen because of its importance and relevance for poverty reduction and shared prosperity.

Figure 13. Bhutan's logistics performance is low and has not improved in the last decade



Note. (Logistics Performance Index, 0=lowest, 5=highest).

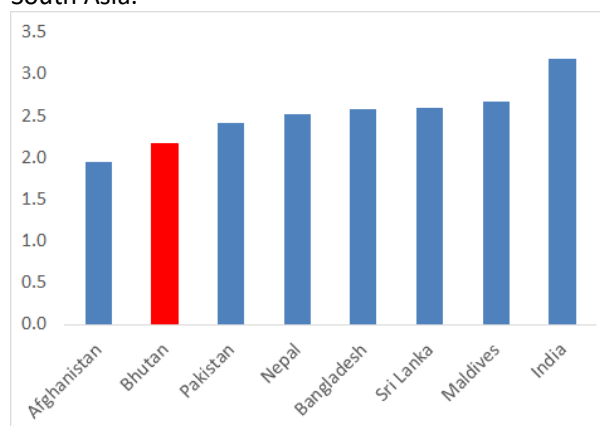
Source. WDI.

²⁷ World Bank 2016.

34. A small landlocked domestic market makes it difficult to exploit economies of scale, and low connectivity makes it difficult for local producers to become part of global value chains.

Large infrastructure investments have led to a significant extension of road networks: Since 1997, the government has built more than 6,920 kms of motorable roads. Together with investments in telecommunication systems, these have improved the physical and digital links between major urban population centers and connected remote areas. While Bhutanese traders enjoy low tariff barriers and increasingly efficient customs facilities, the cost of transporting goods to and from external markets has gone up because of deficiencies in the quality of infrastructure and poor logistics performance, both domestically and along transit corridors. Bhutan's logistics performance is low and has not improved for a decade: it ranks 135th of 160 countries in the international Logistics Performance Index (figure 13). In South Asia, only Afghanistan's LPI is worse (figure 14). Inefficiencies at the Indian Port of Kolkata limit the access of Bhutanese producers to third-country markets. Bhutan has only three domestic airports, and air connectivity is subject to frequent delays and cancellations. Demand for transport services is high: recent surveys found that for households, roads are the top priority for government intervention.

Figure 14. Bhutan's LPI is the second lowest in South Asia.



Note. (Logistics Performance Index, 0=lowest, 5=highest).

Source. WDI.

35. Investing in connective infrastructure could pay high dividends in terms of market access and growth by connecting smaller places to large urban centers. As with other investments, infrastructure investments have also been driven by spatial trade-offs, in this case the cost and benefit of investing in major vs minor roads. The 2006 Road Masterplan gave more attention to construction of feeder roads,²⁸ possibly because of equity concerns, and less to large connective infrastructure. These feeder roads have helped improve mobility of the population in rural and remote areas, where settlements tend to occupy mountain slopes and hilltops. However, major transport infrastructure (e.g., the East-West Highway) is essential to ease economy-wide constraints on connectivity, link producers to markets, and allow Bhutan to take advantage of external opportunities, in the region and globally.

36. Limited connectivity and mobility have also lowered the benefits of agglomeration economies in Bhutan's rapidly urbanizing centers.²⁹ The four municipalities have infrastructure and service delivery backlogs, a shortage of serviced land, water shortages, too little affordable housing, and environmental pollution. For example, Thimphu district, which contains Thimphu municipality, and Chhukha district, with Phuentsholing municipality, have the most households without reliable water, and traffic congestion is a key issue in both. Only 20 percent of households in Thimphu have sewer connections. In leading cities like Thimphu and Phuentsholing, where about 80 percent of private firms are located, efforts should focus on improving livability, reducing disparities in access to services, and leveraging urban agglomerations for deeper and more diverse private investments.

²⁸ "Review of Road Sector Master Plan (2007-2027)".

²⁹ World Bank (2019) "Urban Policy Notes"

37. In the 2010s, the number of vehicles doubled in Bhutan, and half of them are registered in Thimphu,³⁰ where traffic jams are persistent. Thus, there is a clear need to expand the road network and consider a reliable public transportation system—which would significantly enhance livability. For urbanizing areas with locational advantages and nascent economic clusters, such as Gelephu, Samdrup Jongkhar and Mongar, it would be useful to improve conditions for private investment by links to potential markets in emerging sectors such as high-value and organic agribusiness, agroprocessing, and manufacture, and scaling up micro, small, and medium enterprises (MSMEs) and cottage industries by improving connectivity. In sparse rural areas and small rural towns, it is critical that residents achieve a decent standard of living; investment in human capital is necessary if they are to access productive opportunities. The differentiated regional development approach will promote private sector development in leading cities through agglomeration and in rural areas by addressing equity through targeted investments in service delivery.

38. South Asia as a whole trails on regional trade and integration, and Bhutan is no exception. There are four critical barriers to promoting regional integration: (a) border tax distortions, (b) nontariff barriers, (c) connectivity costs, and (d) a trust deficit³¹. For landlocked countries like Bhutan, lack of efficient transit through neighboring countries can push up the costs of transportation and logistics, and thus prices for imported consumer goods, both essential and nonessential, as well as other inputs. Similarly, higher transportation and logistics costs can often render products from landlocked areas uncompetitive beyond local markets, thus confining them to production in volumes too small to reap economies of scale. In Bhutan’s case, those markets are limited to its own territory and to nearby countries³².

39. Diversification of export markets and products remains low. India accounts for 85 percent of Bhutan’s exports, followed by Bangladesh (9 percent) and the United States (1 percent). Besides hydroelectricity, which accounted for 29 percent of exports, the main export commodities are base metals (31 percent) and minerals (19 percent), most of which have little value-added. Few agricultural products other than cardamom are exported. The main export items are thus capital-intensive and create few jobs. The private sector could participate in smaller-scale hydropower projects, which might lead to development of energy-intensive industries and vertical and horizontal links. Digital tools and platforms would allow Bhutanese firms to engage in e-commerce, overcoming physical barriers to trade. Banking, tourism, and retail can be adapted to become highly digitized. Other digitally-enabled innovations, such as 3D printing and drones, could transform traditional sectors like transport and manufacturing, leading to new firms and jobs and access to new markets. The efficiency gains could however also lead to displacement of lagging firms and workers.

40. There is significant potential for ICT-enabled services that could support regional and global trade. The proliferation of digital technologies globally creates opportunities for individuals and businesses in landlocked countries like Bhutan to link with markets and trade flows. These opportunities flow not only from the ICT sector itself but also from use of ICT in sectors across the economy. This creates new sources of growth as transaction costs fall and markets expand. The Internet and digital technologies are reshaping employment globally, expanding opportunities for higher-skilled workers and linking more low-skilled workers to markets, but there may be risks for some, especially the middle-skilled, who might lose out due to automation and other disruptive technologies likely in the next few decades. ICT-enabled

³⁰ Ministry of Information and Communication (2019) “Annual Info-Comm and Transport Statistical Bulletin” <https://www.moic.gov.bt/wp-content/uploads/2019/03/10th-Annual-Info-Comm-and-Transport-Statistical-Bulletin-2019.pdf>

³¹ World Bank (2019) “A Glass Half Full: The Promise of Regional Trade in South Asia”.

³² Ibid.

services provide opportunities in areas where transport connectivity, a key constraint for Bhutan, is significantly binding. Despite having an ICT policy and strategy in place,³³ ICT development has been very slow. The country is ranked 121 out of 176 in the 2017 ICT Development Index, which takes into account access, use, and ICT-related skills. Fast, reliable, and affordable Internet connectivity with the rest of the world is essential for these services to develop. Bhutan's fiberoptic network within the country already provides the infrastructure to promote business incubation and potential startups in the ICT sector. However, costly and low-speed Internet connections and low technical skills have made it hard to build ICT-enabled regional services, e.g., for efficient cross-border trade. Internet backbone redundancy and improved speed and reliability, along with skills development, could greatly help ICT startups. Economy-wide, ICT connectivity can help firms access the global market and improve access to finance through digital channels that can help improve productivity.³⁴ Well-paid ICT jobs with potential for good work-life balance could also attract many women into the labor force.

41. To realize its full ICT potential, Bhutan needs to improve both ICT infrastructure and policies. In the ICT sector, including IT-enabled services, Bhutan has made progress in recent years, for instance, it established the Thimphu Tech Park along with enabling government policies. Nevertheless, the use of IT in the economy is still limited. Only a fifth of Bhutanese older than 15 have made or received a digital payment, compared with a third in Bangladesh and almost half in Sri Lanka.³⁵ Currently, Bhutan has no e-commerce strategy, and e-commerce activities are minimal.³⁶ Skills are also a weakness. And limited digitization of the economy means fewer job prospects for the 300 ICT graduates who enter the workforce every year. Appropriate policies can help Bhutan to take advantage of digital technologies and to use ICT to make its people and its businesses more productive and better connected. High priorities, then, are to (a) improve access to affordable and high-quality Internet across Bhutan so that all individuals and businesses can be part of the digital economy; (b) encourage greater digitization of financial services, tourism, and other key sectors of the economy, building on previous initiatives; and (c) create an environment that enables digital innovations like e-commerce to reach smaller businesses and rural areas so that they can benefit from Bhutan's digital future.

42. Access to finance is the most binding business-related obstacle, and financial inclusion among individuals is among the lowest in the region.³⁷ The three biggest banks and the largest insurance company are state-owned—the public sector controls 90 percent of total financial sector assets. State intervention extends from ownership of financial institutions to priority sector lending and a controlled interest rate regime, restricting competition, the supply of financial products and services, and financial innovation. The financial infrastructure is also poor: there is limited credit information, narrow use of productive collateral, and an ineffective insolvency regime – as well as a lack of financial literacy.³⁸ With shallow capital markets and excess liquidity in the banking system, the financial sector is undiversified.³⁹ Yet, the banking sector faces maturity and concentration risk: credit is concentrated in housing (24 percent) and tourism and services (23 percent) while manufacturing, agribusiness, and other sectors have limited access.⁴⁰ Financial inclusion of individuals is among the lowest in the region; in 2014 only 34

³³ The government is formulating its e-Government policy.

³⁴ The government is formulating e-commerce guidelines to build up the CSI sector.

³⁵ World Bank, Global financial inclusion data, c. 2017

³⁶ UNCTAD, Bhutan rapid eTrade readiness assessment, 2017

https://unctad.org/en/PublicationsLibrary/dtlstict2017d1_en.pdf

³⁷ The Enterprise Survey (2015).

³⁸ World Bank (2017) "Investment Climate Assessment"

³⁹ Sectoral restrictions, shortages of skilled labor, and ad hoc incentive packages repel foreign investment.

⁴⁰ Agriculture accounts for 17 percent of GDP, but in 2017 received only about 6 percent of total credit.

percent of adults had a bank account.⁴¹ Access to banking is even lower among those living in rural areas (31 percent), those in the bottom 40 (25 percent), and women (28 percent).⁴² The difficult terrain and the scattered population make it commercially unviable for banks to open branches in many rural areas. The government has made MSME development a priority; it provides viable opportunities for private sector growth and job creation. Despite actively pursuing payment systems solutions and high mobile phone penetration, however, the use of mobile banking remains nascent.⁴³ With liquidity in the domestic market limited, external commercial borrowing (ECB) from non-resident lenders in the form of bank loans or suppliers' credits may be a way to expand access to finance. In 2012 the MoF formulated ECB guidelines to facilitate borrowing by Bhutanese businesses,⁴⁴ but they do not serve this purpose because of issues with (a) eligible lenders, (b) all-in-cost ceiling, (c) debt-equity ratio, (d) end use of funds, (d) administrative process and (e) threshold on automatic approval. In addition, the ECB guidelines do not allow banks to borrow externally.⁴⁵

43. Financial sector development, existing rules and regulations and financial infrastructure remain a challenge. Key legislation, rules and regulations are underdeveloped in banking and have yet to be established in insurance, pensions, and payment systems. This deters not only prudential supervision and regulation but also development of a fair, competitive market. A rudimentary Financial Intelligence Unit, credit bureau, central registry, and stock exchange have been established but are not far along, and there is little use of movable collateral and credit information. On average collateral must cover 179 percent of the loan amount, and the prevailing practice is to accept only fixed assets. Managing asset liability is also challenging, so long-term funding is rare. Though Bhutan began issuing Treasury bonds in 2009, as yet there is no active market, so the government borrows directly from state-controlled banks. Insurance companies and pension funds are engaged in retail lending but lack alternative assets.

44. The shortage of skilled labor is another key challenge for firms. Despite rapid improvements in access to education, the general skill level is low: 17 percent of Bhutanese aged 15–29, and 57 percent of those aged 30–49, have never attended school; only 30 percent have completed secondary education. To improve basic competencies, non-formal education programs have helped raise the literacy and numeracy of more than 200,000 individuals who had no opportunity to participate in formal schooling.⁴⁶ However, the labor market relevance of these programs remains a concern. Secondary enrollment has been rising but the transition to post-school opportunities (e.g. TVET) is not smooth. Though industry demand for TVET graduates is growing, few students pursue it. Vocational training institutes have limited capacity and there is a mismatch between the curriculum and labor market needs. Vocational institutes are also not certified and lack awareness on the requirements of the employers. Access to tertiary education has improved but intake capacity is low; as a result, a large number of students pursue tertiary education abroad. Moreover, jobs in the public sector are so attractive that, because of its compensation and benefit packages, many students major in general subjects like commerce, which has contributed to the shortage

⁴¹ In Sri Lanka 83 percent of adults have an account, followed by 53 percent in India.

⁴² Global Findex database, 2018.

⁴³ Bhutan is beginning to establish a digital-based payment platform, wallet services, mobile check deposit, mobile application and point-of-sale service providers.

⁴⁴ Ministry of Finance (2012) "Revised ECB Guidelines" <https://www.mof.gov.bt/wp-content/uploads/2014/07/ECB03122012.pdf>

⁴⁵ The MoF has been revising the ECB to address the key bottlenecks.

⁴⁶ Non-formal education programs provide alternative educational programs for individuals who missed the opportunity to participate in formal schooling or training, by improving basic literacy and numeracy skills. From 1992 to 2017, the programs benefited 203,471 learners, 71 percent of them women. The government has recently adopted a non-formal education equivalency framework which provides a formal basis for evaluating alternative educational credentials and offers flexible pathways to achieve education and obtain relevant skills.

of the technical and socio-emotional skills private employers seek. The small pool of skilled labor is primarily absorbed by the public sector. Notably, the largest number of unemployed are individuals with middle or higher secondary education, or people in the “squeezed middle” (table 4). These are mid-skilled individuals who are better-educated than those

Table 4. Unemployment is concentrated among those with better education

	Employed		Unemployed		Of which Youth	
	Number	Share	Number	Share	Number	Share
No education	156,130	52%	804	8%	110	2%
Primary / lower secondary	49,065	16%	1,251	12%	584	12%
Middle / higher secondary	53,493	18%	5,468	53%	3,268	66%
Bachelor's degree	18,761	6%	2,719	26%	934	19%
Master's degree	3,099	1%	90	1%	0	0%
Religious professionals	5,599	2%	25	0%	25	1%
No formal education	14,111	5%	31	0%	0	0%
Total	300,422	100%	10,414	100%	4,921	100%

Source: NSB.

employed in the rural, agricultural, and forestry sector, and thus not likely to take on manual jobs, but who do not have the competencies the public sector requires. Prudent use of migrant workers could help fill critical labor shortages. Also, employers could benefit from more flexibility in recruiting skilled labor. Immigration flows could be managed to align with market demand, while recognizing the need for different types of migrants and minimizing any negative impact immigration may have on Bhutanese workers.

45. Low technical and noncognitive skills are often serious concerns of employers. About 60 percent of nonfarm private sector employers believe their workers have insufficient ICT skills, and 35–40 percent believe they have insufficient teamwork, leadership and problem-solving skills.⁴⁷ An extensive international literature shows that the foundations for these types of skills are laid early in life. There is increasing emphasis on early childhood development (ECD) but in Bhutan access is still low, and since most ECD centers are in urban areas and operated by private providers, they are unaffordable for low-income households. For adults, interventions could focus on education and training opportunities to develop the core technical and soft skills in demand in the private sector.

46. The presence of a large public sector with an attractive compensation package has made it difficult for the private sector to attract skilled labor. Although the pay gap between private and public sector workers is mainly attributed to differences in qualifications, public sector workers enjoy job security and a better compensation package with such benefits as a contributory pension. In a survey of unemployed youth, 50.3 percent said they would prefer to work for the government and another 32.4 percent aspired to work in an SOE.⁴⁸ Anecdotal evidence confirms that unemployed individuals often do not take up private sector job offers and instead choose to wait, hoping to get public employment.

⁴⁷ World Bank (2017) “Investment Climate Assessment”

⁴⁸ MoLHR and United Nations Development Programme (2013) “Youth Unemployment in Bhutan”

Queueing for public jobs is common, especially among educated youth, reflecting high reservation wages that contributes to the youth unemployment. In the absence of formal unemployment support, these youth tend to be supported by the extended family network. However, the government has limited capacity to absorb all of them.⁴⁹ The preference for public sector jobs creates incentives to accumulate skills that cater to the public sector, with more students opting for general university level education rather than specializing in different fields through university or vocational training. In effect, the public sector reduces the pool of qualified workers available for the private sector, for which finding skilled labor is the second biggest constraint after access to finance.

47. Accelerating reforms to improve the business climate is critical. Bhutan's ranking in the World Bank Doing Business report slipped from 70 in 2014 to 89 in 2019; clearly, there has been little progress. Although Bhutan's politics are stable, corruption is low, and electricity is cheap, there are serious difficulties in doing business. For example, approval of the Movable and Immovable Property Bill and the Insolvency Bill has been delayed for years. The recent appointment of the private sector development committee is commendable, but policy and practice have not been responsive to the needs of the private sector.⁵⁰ There are several areas where Bhutan has made progress but more is needed: (a) Credit is improving due to expansion of collateralizable assets and deepening of the credit bureaus; this process needs to continue. (b) The National Land Commission has made progress in land registration and online portals; this process should be accelerated. (c) Finally, recent attempts to reform the laws and institutions, especially as they relate to registering and setting up businesses and protecting minority investors, need to be intensified. Moreover, a comprehensive suite of services beyond regulatory reforms is needed to support the growth of MSMEs and also improve labor market outcomes for women, who are more likely to be self-employed. Small enterprises often lack support in such areas as training on basic skills to help them grow or use new technologies, formulate business plans, cultivating market links, and applying good business practices.

48. Reviewing the role of SOEs and their impact on competition and markets could help redefine the state's role as a facilitator. In 2019 the government issued Corporate Governance Guideline for State Enterprises⁵¹ and started reviewing the roles of SOEs and their implications for private-sector-led development. Bhutan could consider a range of different reform options: (a) increasing the role of the private sector, for example, in manufacturing and agribusiness; (b) reducing the role of the state to minority shareholder; (c) further corporatizing government functions; (d) improving corporate governance; and (e) divestment and privatization of SOEs. Where necessary, the state could reduce its role in the market and establish itself as a facilitator rather than a participant, which would promote growth of the private sector.

49. Targeted reforms to attract foreign direct investment (FDI) will be crucial.⁵² FDI is important to Bhutan as a source of capital, innovation, and management expertise, and in enabling access to external markets. Yet FDI inflows to Bhutan have been less than US\$20 million a year since 2010 and much lower as a share of GDP than in other South Asian countries.⁵³ Also, FDI to Bhutan is concentrated in tourism (42

⁴⁹ Competition among similarly qualified individuals is also high as the number of students enrolled in tertiary education was less than 700 in 2002 but had increased to more than 17,000 in 2018. In 2018, only 1,287 civil servants were recruited⁴⁹.

⁵⁰ World Bank (2019) "Bhutan Development Report"

⁵¹ <https://www.mof.gov.bt/wp-content/uploads/2019/01/Corporate-GovernanceGuidelines.pdf>

⁵² World Bank (2019, forthcoming) "Policy Notes: Attracting Foreign Direct Investment", World Bank (2019, forthcoming) "Bhutan's Integration with the Global Economy: International Investment Treaties and Conventions"

⁵³ In 2016, South Asia attracted US\$54 billion in FDI, consisting of India (US\$44 billion), Bangladesh (US\$2.3 billion), Pakistan (US\$2.0 billion), Sri Lanka (US\$898 million), Nepal (US\$106 million), and Afghanistan (US\$100 million).

percent of total) and ICT (15 percent) and in a few districts, mainly Thimphu, Paro, Punakha, and Chukha. However, there are equity restrictions, which differ for nonpriority sectors. The 2010 FDI policy (amended in 2014) used a “negative list” approach to entry barriers. However, some equity restrictions might need to be revised to ensure that desirable investments are not inhibited. One example is the minimum investment threshold in the hotel sector. The purpose of the restriction is to attract high-value, low-impact tourism, but investment size is not necessarily the best tool to achieve this objective. Minimum project size, prohibitions of specific projects, access to convertible currency, and a long list of submissions needed for registration of FDI projects have deterred rather than attracting FDI.

50. A recent revision to the 2010 FDI policy is expected to attract increased foreign investments. Some of the key improvements include the following: (a) streamlining of the approval process with a single window for FDI investors at the Ministry of Economic Affairs; (b) opening of select small scale production and manufacturing activities to FDI; (c) removal of the minimum investment size for the IT sector and an increase in the maximum foreign ownership in the sector to 100 percent; (d) opening of select infrastructure sectors to FDI through public private partnership arrangements; (e) facilitation of business visas for foreign investors; and (f) provisions allowing local joint venture investors to purchase convertible currency from the RMA to meet the initial capital investment requirements.

51. While the legal and policy framework for private sector development is relatively robust, implementation gaps reduce their effectiveness. Various past business environment reforms were not carried out properly. For example, the licensing policy intended to create a level playing field for companies and encourage them to participate in the formal economy has not yet been applied. Private sector development has been a priority for more than a decade, as expressed in past Five-Year Plans and Economic Development Plans but these initiatives have not been effective; there have been few opportunities for policy dialogue between the government and the private sector, and the continued creation of SOEs in commercial sectors has crowded out private sector activities. An ambitious but much-needed reform agenda must be supported by adequate implementation arrangements to give it full effect and strong statistical capacity to inform evidence-based policy.

52. These constraints partly explain why potentially lucrative sectors have been underexploited. Bhutan’s rich natural resources provide opportunities for growth, job creation, and poverty reduction beyond hydropower that could help diversify the economy. Relaxing regulations that heavily favor conservation over judicious utilization could promote growth and reduce poverty without compromising the preservation of natural resources, the environment, and cultural values. Bhutan’s endowment of natural assets has the potential to support economic growth and productive livelihoods. Using those natural assets more effectively for forestry, tourism, and agriculture is not incompatible with achievement of GNH, which places high value on conservation.

53. Properly managed, forests are a renewable resource that can make significant and sustainable contributions to growth without compromising the environment. Proper management implies that conservation and sustainable use are compatible—the latter does not have to come at the cost of the former. About 72 percent of the country is covered by forest, far exceeding the constitutional mandate of 60 percent, and 33 percent of the forest area is suitable for sustainable management. However, only 6 percent is currently under commercial management. An annual increase of wood harvest from 0.39 million m³ to 1 million m³ could generate revenue of Nu 10 billion (US\$149 million), which is almost half of the revenue produced in 2016 by hydropower. This volume would still be below the Annual Allowable Cut is of 1.2 million m³ established in 1991, which suggests that the production levels are sustainable. In 2017 forestry and wood-based industries contributed only 2.2 percent to GDP. Moreover, Bhutan has a substantial trade deficit in wood and wood products, with imports six times higher than exports. There is potential to develop forest-based enterprises without compromising Bhutan’s conservation agenda, but

exploring sustainable management options is deterred by overregulation and limited access to technology and finance, and limited business capacity makes it hard for medium and small enterprises to operate in the market.

54. The growth and job creation potential of tourism are limited by a current model designed to prevent unregulated price competition and social and environmental disruption from large foreign inflows. Since Bhutan opened to international tourists in 1974, it has seen a significant increase in the number of tourist arrivals, which reached 274,000 in 2018, far above the 100,000 or so in 2012⁵⁴. Tourism is the second largest economic sector, generating more than US\$150 million annually in visitor spending, and accounting for about 20 percent of non-hydro export income. Despite growing rapidly in recent years, tourism in Bhutan ranked 78 out of 136 countries in the 2017 World Economic Forum Travel and Tourism Competitiveness report.⁵⁵ Although arrivals of more lower-spending tourists from the region are not fully consistent with the “high-value low volume” policy,⁵⁶ it has helped smooth the bunching of arrivals; for instance, visitors from India come to Bhutan to escape the summer heat. The current model requires all foreign tourists to travel on fully-guided, all-inclusive, packaged tours designed and purchased from local tour operators; it is not well aligned with global travel trends and demand for more customized and immersive experiences. Because of the limited tourism-related offerings, less than 10 percent of Bhutan’s arrivals are repeat visitors. This has led to a decline in the demand for pre-packaged sightseeing holidays, the mainstay of vacations in Bhutan.

55. The continued growth in the size and spending power of the global middle class is an unprecedented opportunity for Bhutan if connectivity can be improved and visitor demands can be met as they evolve. Global spending on tourism and travel has been growing steadily for decades, most recently driven by demand from the emerging middle class in developing countries. The number of Chinese tourists visiting Bhutan went up from 500 in 2007 to 9,400 in 2015, though it slipped to 6,900 in 2018. Tourism is already a crucial backbone for Bhutan’s economy and its contribution to the economy, especially in rural areas, could be much more significant. Its job creation potential could be particularly valuable to youth and women because tourism tends to employ low-skilled labor and requires relatively little investment. Promoting the growth of tourism and managing it sustainably requires easing connectivity constraints, better meeting the evolving demands of visitors, and ensuring that growth is sustainable: (a) Poor domestic connectivity has prevented the benefits of tourism from spreading more widely; of Bhutan’s 20 districts, more than 70 percent of tourists visit only three, Paro, Thimphu, and Punakha, which are all western. Having only one international airport as the main entry point and the associated high travel cost limit tourist mobility. (b) The mystique of Bhutan, though still powerful, is facing increased competition from other destinations, such as Myanmar, which are better attuned to global travel trends and have a better value proposition. Bhutan could benefit from diversifying its tourism offerings to respond to the country’s inherent advantages, such as educational and eco-tourism that builds on Bhutan’s environmental, religious, and cultural heritage. (c) Tourist arrivals are concentrated in spring and autumn; and about 90 percent of tourists come to Bhutan to visit religious and cultural sites and festivals, leading to overcrowding. Better use of untapped carrying capacity across the country could help maintain the long-term sustainability of assets.

56. Making agriculture more productive and promoting agribusiness will be critical to achieve poverty reduction and shared prosperity. Given the shortage of productive jobs, the dependence of the

⁵⁴ Tourism Council of Bhutan (2019) “Bhutan Tourism Monitor, 2018”. This includes international tourists (72,000) and regional tourists, mainly from India and Bangladesh (202,000).

⁵⁵ http://www3.weforum.org/docs/WEF_TTCR_2017_web_0401.pdf

⁵⁶ In the past five years, annual average growth of tourist arrivals has risen by 20 percent, but spending per tourist has fallen by 16.5 percent.

poor on agriculture, and their limited skills, poverty reduction and shared property cannot be achieved unless agriculture becomes more productive. That means both increasing yields and diversifying from low- to high-value crops. Most farming activities are subsistence-related; that is why the majority of agricultural land is devoted to cereals, most of which are grown for household consumption rather than sales or exports. This is particularly true for the poor, 80 percent of whom report farming mainly or solely for family consumption. Subsistence farmers lack basic agricultural skills and the knowledge to improve production. Raising the earnings of rural agricultural households will therefore require a broad-based shift toward commercial farming or an increase in agricultural productivity through technology adoption, training, and mentorship. However, the sector is facing increasing challenges to raising productivity: rural to urban migration has led to loss of arable land and acute labor shortages, including a feminization of agricultural labor; and mechanization and irrigation are minimal, compounding the issues of land and labor scarcity. In Bhutan only about 8 percent of the land, about 277,000 acres, is cultivated arable land, and only about 23 percent of it is currently irrigated. Expanded irrigation would enhance rice yields, helping to improve food self-sufficiency—in 2017 Bhutan imported 90,000 MT of rice.

57. Within the larger agricultural value chain, agribusinesses need better access to finance and markets.⁵⁷ Agribusinesses, which are primarily microenterprises operating as sole proprietorships, suffer from low access to finance and lack of skills.⁵⁸ They are less likely to innovate than firms in other sectors and make less use of ICT. Transportation costs are high because of poor road access. Exporting agribusinesses tend to be poorly networked with external markets; most farmers and traders sell to Bangladeshi or Indian merchants operating within Bhutan or at border markets rather than at the end markets in destination countries. Supporting farmers to cultivate high-value crops, build agri-businesses, and take advantage of proximity to large external markets could help raise their incomes.⁵⁹ The benefits to Bhutan’s rural population of developing high-value niche agricultural products can be realized through investments in trade infrastructure, reform of subsidies, and better marketing. Ecotourism could leverage denomination-of-origin schemes for both agri-products and manufactured goods. Local farmers, agribusinesses, and producers could supply fresh produce, livestock, and manufactured goods to hotels, thus creating a market for Bhutanese farmers and reducing the heavy reliance on imports of goods for hotels.⁶⁰ Farmers can pool together in cooperatives, leading to contract farming and possibly to links with FDI. Increased urbanization and the development of competitive agricultural value chains connecting urban hubs with smallholder rural producers could provide an opportunity for the rural population to gain from spatial agglomeration as more profitable markets are created. Availability of land is a serious constraint, but current policy and laws do not encourage small land holders to lease their lands to enable consolidation, though the 2018 Land Lease Rules and Regulations are an important step in this direction.⁶¹

58. In addition to programs and subsidies for production, government support is also needed for activities downstream in the value chain, such as aggregation, distribution, marketing, and export. There is scope to better target current subsidies and to deploy more efficient instruments, such as fertilizer vouchers. It may be useful to reorient public support to help de-risk agribusiness investments. Moreover, much government support for marketing and value-addition comes through public agencies that perform clearly private sector functions. These agencies may be creating distortions in the factor and

⁵⁷ The difficult mountain terrain and the scattered population makes it commercially unviable for banks to open branches in many rural areas. Mobile phone penetration is high, but mobile banking is nonexistent. Less than 20 percent of farmers have access to credit from financial institutions. The share of agriculture in total loans amounted to just over 5 percent. A new commodity exchange has yet to develop by-laws, rules and regulations.

⁵⁸ About 90 percent of agribusiness is microenterprises compared to 68 percent of other firms.

⁵⁹ World Bank, 2018. Increasing Agribusiness Growth in Bhutan.

⁶⁰ World Bank, 2019. Bhutan Development Report

⁶¹ Chapter 6 of Lease for Commercial Agriculture defines the procedure.

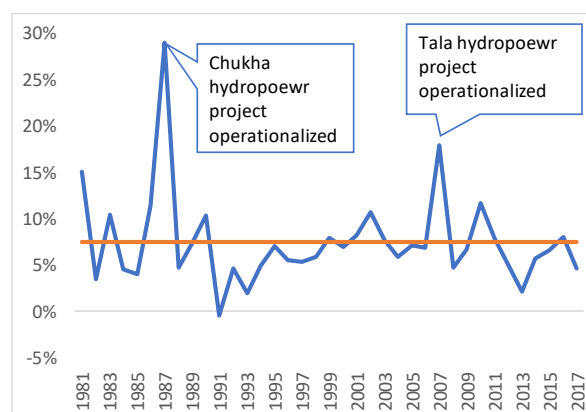
production markets that limit the growth of private agribusinesses. For example, Farm Shops were meant to support the local rural economy but instead may be crowding out the few emerging rural enterprises by competing with local shop owners and private input suppliers. Domestic agribusinesses could seize opportunities arising from fast urbanization and growing urban demand for higher-value and processed foods—the recent expansion in agribusinesses occurred in the Thimphu/Paro area, where labor and skills are concentrated, and along the Indian border, where there are trade points.

(b) Strengthening macro-fiscal stability

59. Hydropower is expected to continue its significant role in Bhutan’s economy for the foreseeable future, with continuing payoffs in growth, revenues and exports, but the associated macroeconomic issues need to be managed. When Puna I and II come into operation by 2024/25, Bhutan’s hydroelectricity generation capacity will double, with sizable impact on the economy through growth, fiscal revenues, and export earnings. Massive hydropower investments generate large fluctuations in aggregate demand, during both the construction and the commissioning phases, and introduce considerable volatility in Bhutan’s small economy, where in 2017 GDP was an estimated US\$2.5 billion. For example, when the Tala hydropower project was commissioned in 2007, GDP growth spiked to 18 percent (figure 15). Delays in hydropower construction, production downtime for scheduled maintenance, and less than normal rainfall can all reduce growth, exports, and government revenues. For example, the 2017 delay in construction of Punatsangchhu I and II is estimated to have reduced GDP growth by 3–4 percentage points.

60. Though hydropower investments have caused a large external deficit, external debt is still sustainable.⁶² The current account deficit (CAD) to GDP ratio rose to 28 percent in 2016 but has since fallen. The CAD has primarily been financed by borrowing from India, raising the external debt to GDP ratio from 81 percent in 2006 to 113 percent in 2017 (figure 16). Hydropower projects are carried out pursuant to an agreement between Bhutan and India in which India covers both financial and construction-related project risks and buys surplus electricity at a price reflecting cost plus a 15 percent net return. This arrangement, together with the agreement that debt service begins only after the projects come on stream, has kept Bhutan’s debt

Figure 15. Large hydropower projects have resulted in macroeconomic volatility.

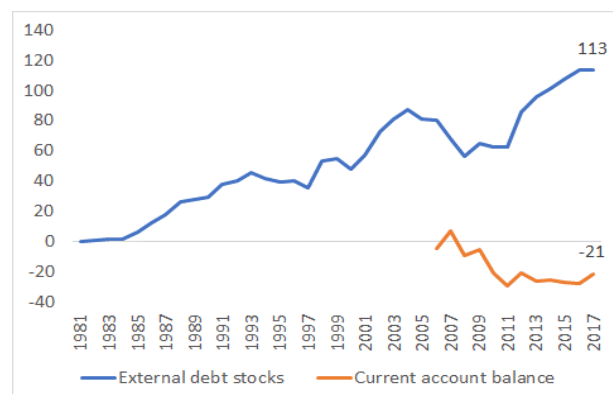


Source: NSB.

⁶² To manage public debt, the government adopted the 2016 Debt Policy which sets ceilings for various debt indicators; its approval was a major step forward in ensuring debt sustainability. The ceiling for non-hydro debt is set at 35 percent of GDP as an average in a 5-year period. It also mandated formulation of a Medium-Term Debt Management Strategy and regular analyses of debt sustainability. To support implementation of the debt policy, the Debt Management Unit was formally transferred to the Department of Macroeconomic Affairs (DMEA), which coordinates all policies relating to macroeconomics. The DMEA is responsible not only for ensuring that public debt is sustainable but also that it is contracted at low cost and the risk is reasonable. It also recommends debt thresholds, prepares the medium-term debt management strategy, and advises the government on on-lending, loan guarantees, public private partnerships (PPPs), dividends, and divestment proposals.

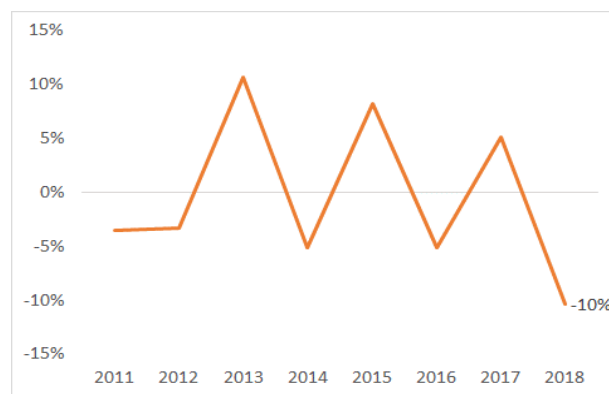
sustainable.⁶³ Once a project is commissioned, Bhutan bears the risks related to generation of electricity, which can be affected by rainfall shortages and maintenance issues (figure 16 and 17).

Figure 16. Saving-investment gap has resulted in external debt accumulation (% GDP)



Source: WDI.

Figure 17. Hydropower electricity production is affected by weather (annual change, %).

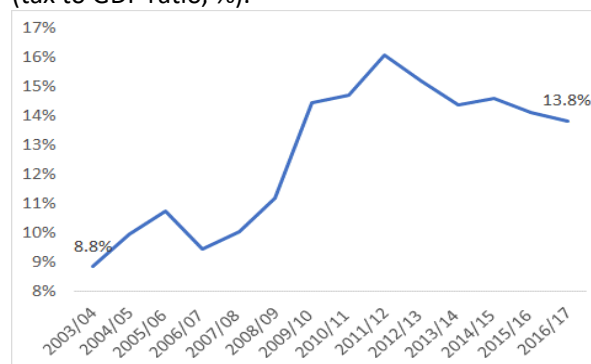


Source: Royal Monetary Authority (RMA).

61. Large revenues from hydropower generation have led to procyclical fiscal policies. Revenues jump when a mega-hydropower project comes on line. For example, when Tala was commissioned in 2007, government revenues doubled and spending went up about 25 percent. Although the Public Finance Act (2007) stipulates that recurrent expenditures must be met from internal resources, there is no limit to recurrent spending when there is a spike in revenues. Spikes happen whenever a large hydropower project comes on stream, generating a procyclical fiscal policy. Between 2005/06 and 2017/18 government spending quadrupled. However, because debt repayments begin one year after commissioning, there is a need to lean against the procyclical effects of hydropower revenues. Historically, commissioning of a hydropower project has produced a fiscal surplus for just one or two years before deficits again emerge, demonstrating the need to ensure that spending is sustainable. Adopting fiscal rules will help the government to keep fiscal policies countercyclical, which will both reduce fluctuations in aggregate demand and help build fiscal buffers.

62. To consolidate its fiscal position, Bhutan needs to strengthen domestic revenue mobilization. In 2017/18 total revenues were about 20 percent of GDP. Income tax, indirect taxes, and duties constituted 72 percent of revenues (14.3 percent of GDP), with the rest coming from non-tax revenues like dividends, interest on loans from corporations, and other sources. Bringing in more domestic revenues will not be easy. Delays in completion of large hydropower projects could lead to foregone revenues of 2 percent of GDP. Tax expenditures through fiscal incentives such as tax holidays and zero rates for goods and services account for another 2.6 percent of GDP. Enhancing and

Figure 18. Domestic revenue mobilization stalled (tax to GDP ratio, %).



Source: MoF.

⁶³ World Bank and International Monetary Fund (IMF) (2018) "Debt Sustainability Analysis"

consolidating the tax base to collect revenue beyond the hydropower sector has not been easy.

63. A comprehensive review of tax policy and administration, followed by wide-ranging reforms, would help mobilize more domestic revenues. Bhutan has not made any major tax policy or administration reforms for a while. The plan to introduce GST in 2020 will be important for raising more revenues. On tax administration, the 2016 Fiscal Incentive Act streamlined all previous incentives, concessional rates, and relevant regulations. Yet in 2017 revenues foregone amounted to Nu. 2.8 billion, equivalent to 10 percent of domestic revenues or 2 percent of GDP. A comprehensive review of tax policies, including tax incentives, could help identify priority areas where reforms could help raise domestic revenues. A comprehensive financing strategy could also cover better use of concessional financing, development of the capital market, and identification of sources for innovative financing, such as public-private partnerships (PPPs). The government adopted a PPP policy in 2016, managed by the Public Private Partnership Agency (P3A), to finance infrastructure. However, there have been few actual projects using PPPs.⁶⁴

64. Public financial management (PFM) can be improved. Bhutan was the fifth country in the world to receive the Public Expenditure and Financial Accountability (PEFA) CHECK⁶⁵ but further improvements in PFM are needed. According to the 2016 PEFA report, the three areas that need reinforcement are transparency; predictability and controls in budget administration; and accounting and reporting. The government has updated its PFM strategy based on the PEFA. A cross-cutting theme was that enhanced use of ICT can help make Bhutan's PFM more efficient. Improvements in PFM will depend on reliable and timely data on fiscal performance. Good accounting and reporting give government decision-makers and other stakeholders accurate information on the use of public funds and on public assets and liabilities. However, the shortage of accounting and auditing capacity in Bhutan complicates effective and efficient use of public funds. Moreover, the budget has not yet been made sensitive to climate change and gender equality. The annual budget call notification⁶⁶ for the 2019/20 budget requested all budget agencies to mainstream gender, environment, climate change, and disaster preparedness, but specific mechanisms have yet to be established.⁶⁷

65. Good coordination between fiscal and monetary policies requires appropriate institutional arrangements and information-sharing. Some arrangements are already in place. For example, the Secretaries of the Ministry of Finance and the Gross National Happiness Commission (GNHC) are members of the RMA Board of Directors; and the Macroeconomic Fiscal Coordination Committee and the Macroeconomic Framework Coordination Technical Committee have been functioning as a coordination platform on macroeconomic issues. However, the shortage of timely data, particularly on fiscal performance, is a barrier to effective coordination and execution of macroeconomic policies.

⁶⁴ Even before the establishment of the framework, a PPP model was used for the Information Technology Park in Thimphu in 2012 and an IFC- advised parking facility.

⁶⁵ PEFA CHECK was instituted by the PEFA Secretariat to confirm the adequacy of the quality assurance processes used in planning and implementing a PEFA assessment. The objective is to increase user confidence in the findings of a PEFA assessment and confirm that the assessment contributes to a pool of reliable information on how a PFM system performs.

⁶⁶ https://www.mof.gov.bt/wp-content/uploads/2019/01/budgetcall2019_20.pdf

⁶⁷ The government has been piloting gender responsive budgeting since the early 2010s, but the results have been few.

(c) Investing in human capital and improving service delivery

66. Inequities in access to and the quality of services are a key challenge in all areas of service delivery, although there have been broad-based improvements in access, especially at lower levels.

Efforts to improve service delivery need to continue as an investment in the productive capacity of the population and to ensure equal opportunities for all. Although education is free, schooling is not compulsory. That could be a detriment to the achievement of the poor and girls, especially in lower secondary and beyond. Past efforts have focused on improving educational inputs but there has been relatively little attention to the efficiency of the system or to learning outcomes. Despite nearly universal primary enrollment, a high proportion of students complete the primary cycle without acquiring basic literacy and numeracy skills.⁶⁸ Results from the 2013 National Education Assessment for Class X showed that just over half of the students achieved minimum competency in math and just less than half did so in English. Recent pre-tests in Thimphu for the PISA-D (developing countries edition) found that, on average, students scored below level 1 for reading and mathematical literacy and level 2 for scientific literacy (1 is the lowest and 6 the highest achievement level).

67. Inequities in educational outcomes between areas and socioeconomic groups is a major concern. The increase in primary enrollment has led to classroom overcrowding and pressure on teachers and on other resources. The school privatization policy eased admission pressure in secondary schools but widened area disparities because most private schools are in urban areas. The recent decision to waive the cut-off for admission into class XI in public and private schools is expected to improve access to higher secondary education. Schools in rural and remote areas, and those with higher proportions of students from minority language backgrounds have difficulties recruiting and retaining qualified teachers. Major reasons for students dropping out of school are geographic remoteness and poverty: the transition from lower to middle secondary school often entails relocating, a cost many parents are unable to bear; for example, 20 percent of secondary students in rural areas are in boarding schools. The lack of gender sensitivity in school infrastructure is also a concern, especially provision of toilets and water.

68. Health services have been built around primary health care, but the quality of services and socioeconomic disparities in health outcomes urgently require attention. Primary health care centers (PHCs) cover most of the population, and because populations in catchment areas are low, health workers can provide individualized services and if necessary provide house visits. With cancer cases on the rise, many Bhutanese are referred for treatment abroad, as are those with other conditions that cannot be treated domestically. Specialized care is limited to 27 referral hospitals. Bhutan's health outcomes are among the best in South Asia after Sri Lanka, but socioeconomic and spatial disparities are significant: 1 in 5 children are stunted, and stunting is correlated with poor access to safe drinking water and poor infant feeding and caring practices, characteristics more likely to be found in poor households. Infant and under-5 mortality is higher in the eastern region than in the western and central regions and under-5 mortality in rural areas is twice that in urban areas. There are also signs that health care, though free, is underutilized: for example, 9 percent of women who had given birth in the previous 12 months received no antenatal care, and 13 percent received no postnatal care. Only 26 percent of pregnant women reported completing the recommended number of antenatal visits. Very few home births are attended by a skilled health professional.

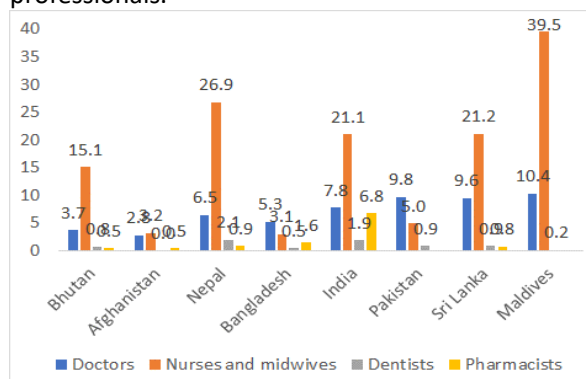
⁶⁸ Ministry of Education 2014

69. Meanwhile, an epidemiological transition is heightening the burden on the health care system. New health challenges are emerging because of significant changes in lifestyle. Non-communicable diseases (NCDs) are surging, and the burden of communicable diseases is still heavy.⁶⁹ This pushes up the risk to the health of Bhutanese in their productive years. Mental health problems, especially alcoholism and suicides, are on the rise, caused by sociocultural changes, growing urbanization, migration, and unemployment. Nearly 29 percent of adolescents used a tobacco product in the previous month and 27 percent drank enough alcohol to be drunk. Rising drug abuse among adolescents and youth is a major concern—illicit substances are easily accessible through Bhutan’s porous borders. About 12 percent of adolescents currently use marijuana, among the highest rates in the region.

70. The health system is not well-equipped to cope with the emerging challenges. Although the government continues to invest heavily in health infrastructure, with just 3.7 doctors (300 total) and 15.1 nurses per 10,000 population in 2017, there is an acute shortage of health professionals, particularly specialists (figure 19). The shortage of specialists and sub-specialists is expected to persist. Retaining health workers has been difficult, partly because of dissatisfaction with the pay scale. Other critical issues are the lack of targeted nutrition interventions for low-income and marginalized populations and limited geographic access to secondary care.

71. The quality of basic services (electricity, water, sanitation) varies greatly across Bhutan. Almost every Bhutanese now has access to electricity, but service quality varies substantially: the share of households that suffered a power outage in the previous 7 days ranged from 11 percent in Tsirang to 95 percent in Dagana, with the average just below 60 percent. Similarly, although access to water has improved, almost 90 percent of the population treat the water (e.g., boiling) before drinking it, and by district the

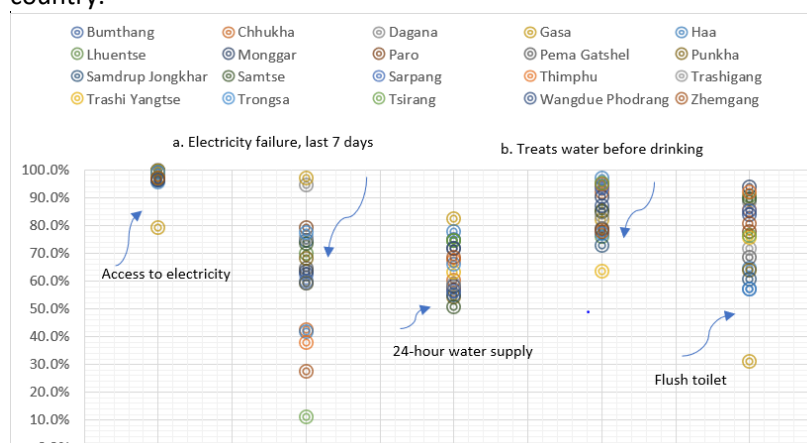
Figure 19. There is an acute shortage of health professionals.



Note. Figure shows number of health professionals per 10,000 population in 2017.

Source. WHO Global Health Workforce Statistics.

Figure 20. Quality of services remains highly heterogeneous across the country.



Source. Staff calculations based on BLSS 2017.

⁶⁹ NCDs including ischemic heart disease, cerebrovascular disease, hypertension, diabetes, and cancer now account for more than 70 percent of diseases reported.

share of households that have a 24-hour water supply varies between 51 and 83 percent. Finally, around 81 percent of households have a flush toilet at home, but in three districts, the percentage drops below 60 percent (figure 20).⁷⁰ The lack of safe drinking water and basic sanitation likely contributes to stunting (21.2 percent) among children under 5. Waterborne diseases, such as diarrhea and dysentery, are among those with the highest incidence in Bhutan.⁷¹ While most service gaps are in rural areas, continued rural to urban migration is increasing pressure on the quality of services in urban areas. For example, since 2005 Thimphu's population has increased nearly 40 percent. Deficiencies in water supply, sanitation, and waste management create challenges for livability and national competitiveness.

72. Together, these trends suggest that the spatial trade-offs in development need to be better understood in order to inform policy prioritization and sequencing. Bhutan's unique geography, characterized by its rugged terrain of deep valleys and steep mountains, and an urbanization rate of 40 percent mean that more than half of its people are still dispersed across the countryside, often in very small, very remote hamlets. Getting services to them is costly and inefficient. Reliance on evolving technology and the use of alternate modes of delivery, such as mobile clinics, can help reduce the unit cost of certain services but that does not change the need for serious decisions about which services can be made available to whom and where. Proper policy prioritization and sequencing could help. Further migration, possibly stimulated by consolidation of villages or households into small clusters, could help improve service efficiency, quality, and equity of access. Building on the current Government to Citizen Service initiative (G2C),⁷² ICT technologies like mobile, digital-based education and health services, could address some of the trade-offs.⁷³ Better management of public investment, e.g., in roads, would both help address trade-offs and ensure sustainability by incorporating future operation and maintenance costs into the budget.

73. Though private sector participation in service delivery could help improve its quality and efficiency, the incentives must be carefully aligned. Private sector participation in health care is in its early stages and limited to a few diagnostic centers, private retail shops in major towns, a small insurance market, and off-hour services (WHO 2019). In education, as yet there are only a few private secondary schools and one private college. While private sector participation could help improve service quality and efficiency, the public sector could give more attention to providing services in remote areas where profitability is too low to interest the private sector.

74. This raises the question of the extent to which provision of public services can remain free. In 2017 Bhutan's expenditure on education was 6.7 percent of GDP, higher than in neighbors Bangladesh (1.9 percent, 2016), India (3.8 percent, 2013), and Nepal (3.7 percent, 2015). However, a significant share is funded by external grants and the projected funding gap in coming years is large. Total health expenditure as a share of GDP is low, 3.6 percent as of 2014, and there is little access to individual health insurance. The financing of service delivery has become more worrisome in the context of (a) shrinking donor aid, which Bhutan has relied on heavily for infrastructure, health, and education investment; (b) geographic remoteness, which lowers the feasibility and cost-effectiveness of investments, and (c) a population rapidly shifting to urban areas, which lowers the return on investments in rural areas.

⁷⁰ All figures are population-weighted estimates.

⁷¹ Bhutan Ministry of Health - Annual Health Bulletin 2018. Online: <http://www.health.gov.bt/wp-content/uploads/ftp/annual-health-bulletins/Annual%20Health%20Bulletin-2018>

⁷² <https://www.citizenservices.gov.bt/home>.

⁷³ World Bank. 2018. Speech by World Bank Group President Jim Yong Kim at the GSMA 2018 Mobile World Congress (<https://www.worldbank.org/en/news/speech/2018/02/26/speech-by-world-bank-group-president-jim-yong-kim-at-the-gsma-2018-mobile-world-congress>).

75. Finally, poverty has declined but vulnerability remains high, and a social protection system that targets poverty reduction and offers an appropriate package of benefits could relieve the vulnerability.

A high share of the population is tightly clustered at the poverty line, and simple simulations suggest that a 20 percent increase in the poverty line would almost double the poverty rate, from 12.1 to 20.1 percent. A 50 percent increase would push the poverty rate up to 31.7 percent. Clearly, many Bhutanese households are just a small shock away from falling back into poverty. Price and weather shocks lead to volatile farm earnings, along with wildlife predation, which results in crop losses. Non-farm diversification could help mitigate the impact of shocks, but almost 80 percent of poor households indicate that all their working household members are engaged in agriculture—they have few other opportunities. The lack of a formal safety net despite uninsured risks means that most farmers must deal with these shocks on their own. Social assistance is limited to *kidu*, a royal prerogative, which by design is directed to relieving hardships rather than alleviating poverty. Pensions are an entitlement reserved mainly for public sector jobs. A full-fledged social protection system that targets poverty reduction, investment in human capital, and building resilience at the household and community level can both enhance the livelihoods of beneficiaries and give households more resilience against shocks. Such a system can also form the basis for integrated interventions, provide links to other sectoral policies, and help address the imbalance between public and private sector job benefits.

76. As decentralization continues, strengthening service delivery will depend heavily on better intra-government coordination and greater subnational implementation capacity. The budget allocation for delivery of public goods and services by districts and subdistricts is expected to double in the 12th FYP period from the 11th FYP. The government has been drafting the National Decentralization Policy⁷⁴ to (a) establish a coherent policy and legal framework; (b) improve the operating environment for local governments; and (c) lay the foundation for a Decentralization Implementation Plan. The policy clearly states that devolution rather than delegation will be the main mode of decentralization.⁷⁵ Thus it is of utmost importance that subnational governments have adequate capacity to deliver services effectively. Since provision of some important public services, such as water supply, can cut across several subnational governments, close coordination will be critical to ensure that resources are used effectively.

(d) Enhancing disaster and climate resilience

77. Environmental sustainability is critical in Bhutan, where natural assets are central to growth and access to jobs. The country is highly vulnerable to natural hazards like floods, landslides, earthquakes, glacial lake outbursts, and droughts. Although there have been no major earthquakes recently, Bhutan is at high risk because it is located in the seismically active Himalayan belt. Heavy seasonal monsoon rains and glacial melt are the most common causes of flooding and landslides; and over 70 percent of settlements and most infrastructure and fertile agricultural lands are located along the main drainage basins, where floods are a constant threat.⁷⁶ Recurrent flash floods and landslides cause major road-related damage—a serious problem because roads are the only transport mode by land and a lifeline for Bhutan, particularly for isolated communities. Unfortunately, although such damage occurs often, record-

⁷⁴ <https://www.gnhc.gov.bt/en/wp-content/uploads/2019/05/Draft-NATIONAL-DECENTRALIZATION-POLICY.pdf>

⁷⁵ The draft National Decentralization Policy defines (a) *deconcentration* as the process in which a central organization transfers some responsibilities to a lower level unit within its jurisdiction; (b) *delegation* as assignment of any responsibility or authority from a manager to a subordinate or from central to local government; and (c) *devolution* as transfer of power to a lower level especially central to local governments.

⁷⁶ <https://www.gfdrr.org/en/bhutan>

keeping on damage and losses has been poor, so that the impact of natural disasters on the Bhutanese economy and on the well-being of its people is underestimated. Extreme events, although less frequent, further illustrate the risks from weather, water, and climate hazards; for instance, Cyclone Aila in 2009 cost US\$17 million in damages, and extensive floods during the 2016 monsoon resulted in a loss of US\$8.1 million from damage to critical infrastructure like roads and bridges, the water supply, and homes. With most of the rivers confined in narrow gorges, landslides can form artificial dams that pose a great danger to downstream settlers and hydropower plants due to outburst floods. The prolonged and extreme droughts that have become common in some parts of Bhutan heighten the risk of forest fires, loss of biodiversity, and crop loss. Urbanization has also changed the country's risk profile as population and assets are more heavily concentrated in towns and cities.

78. Weak infrastructure, dispersed settlement patterns, and a lack of information for evidence-based planning exacerbate Bhutan's vulnerability to natural disasters. Nearly 18 percent of the country's highways are in bad condition and the widening of another 17 percent has raised the risk of falling boulders and landslides. There is little information specific to important economic sectors like agriculture and hydropower, which intensifies the exposure and vulnerability of the economy to natural disasters and climate change. Geospatially tagged information could facilitate multi-hazard risk assessments to inform disaster-related planning and decision-making.

79. Climate change will have a profound impact on water resources, which need to be actively managed to meet production and population needs. Over the long term, the rise in temperature is projected to be much greater in the Himalayas than the world average, posing significant risks for Bhutan. Changes in temperature and variations in rainfall may deeply affect the seasonal availability of water, which would clearly affect hydropower and agriculture. As most current hydropower plants are run-off-the-river, electricity production inevitably fluctuates with seasonal variations in river discharge. Irregular rainfall leads to fluctuations in hydro production and therefore government revenues. Though plentiful in the monsoon season, water is scarce in the winter months, and there is little capacity to store it between seasons. It is estimated that more than 13,700 rural households have seasonal shortages of drinking water. With climate change, local water stress may become even worse. Heavier rainfall could result in more water runoff and less retention in the soil, making landslides more frequent. Erratic water supply will impact irrigated agriculture and food production. Climate change will also affect forest conditions and the health of Bhutan's ecosystems. These climate-related vulnerabilities need to be managed proactively so that water resources can meet production and population needs.

80. The poor and vulnerable are disproportionately affected by disasters because they have little room to cope and must therefore deplete their assets or put their human capital at risk. A sound social assistance system can deliver more efficient responses and help build household resilience. It could also be scaled up to expedite efforts to recover from natural or economic shocks.

81. Activities directed to enhancing disaster and climate resilience have been hampered by the fragmented implementation arrangements. Currently, almost all ministries and agencies are engaged in this area, prominent among them are GNHC; the Ministries of Home and Cultural Affairs, Agriculture and Forests, and Works and Human Settlements; the National Environmental Commission; and the National Center for Hydrology and Meteorology. Although a coordination mechanism has been set up and key policy documents like the Disaster Risk Management Strategy⁷⁷ are in place, execution has been suboptimal. In addition to the fragmented allocation of responsibilities, there is a lack of data available and little sharing of information. With technical assistance from the World Bank, Bhutan is establishing the Bhutan Climate Fund to monetize emission offsets from hydropower exports to India, which will be

⁷⁷ [http://www.ddm.gov.bt/download/Final_NDRMS\(NDMA\).pdf](http://www.ddm.gov.bt/download/Final_NDRMS(NDMA).pdf).

invested in Bhutan's Nationally Determined Contribution (NDC). Bhutan submitted its NDCs to the UN Climate Change Secretariat in September 2015, reaffirming its commitment to remain carbon-neutral for all time and to ensure that GHG emissions do not exceed the sink capacity of its forests. The net sequestration capacity of Bhutan's forests is 6.3 million tons of CO₂ (tCO₂) annually. Also, every year Bhutan offsets 4.4 million tCO₂ through hydroelectricity exports. Moreover, Bhutan has potential to offset up to 22.4 million tCO₂ annually by 2025 through hydroelectricity exports in the region. Among mitigation strategies specified in the NDC are improving mass transport and reducing emissions from existing vehicles, upgrading waste management infrastructure, promoting hydropower development with support from climate market mechanisms, promoting climate-smart livestock and agricultural practices, and promoting green industries and buildings.

(e) Addressing implementation gaps

82. While the overall legal, policy and development management framework is sound, implementation gaps reduce the effectiveness of well-conceived policies. These gaps mainly stem from (a) interpretations of policy that vary because of capacity constraints; (b) poor coordination within government ministries and agencies; (c) lack of coordination with non-governmental stakeholders; (d) lack of evidence-based policy formulation; and (e) minimal M&E. While these are common challenges world-wide, its small size means Bhutan is in a good position to address them.

83. Better coordination within government and with other stakeholders, addressing capacity constraints, and keeping policy direction and implementation consistent could effectively further the reform process and achieve impact on the ground. The Constitution provides for only 10 ministries and autonomous agencies, such as the GNHC, the National Commission for Women and Children, and the National Environmental Commission. Despite the small number of ministries and agencies, there is not much coordination within the government, especially on cross-cutting issues. Decentralization is a complication because it brings in different levels of government. For example, the division of responsibilities and coordination for service delivery between the central and subnational governments are not clear. Although the public sector is large relative to the size of the economy, technical capacity to design, conduct, and monitor reforms is low. This is particularly relevant as more financial resources are devolved to subnational institutions. Inadequate subnational capacity can undermine effective delivery of services.⁷⁸ Also, there are limited coordination with key stakeholders in policy formulation. For example, the private sector claims suboptimal engagement in policy formulation in private sector development policies.

84. Stronger statistical capacity, and more and better data, are critical to support evidence-based policy formulation. Despite progress in advancing data standards and the wealth of statistics now being produced, there remain areas with large gaps. For example, Bhutan's education statistics are not harmonized and there are no data on internationally comparable learning outcomes. Trends in the labor market have been difficult to establish due to data quality issues, although since 2013 the data are more reliable. The household surveys used to produce and analyze core socioeconomic indicators still do not elicit certain critical information. For example, in a country where agriculture is the largest source of livelihoods, the main household survey has no detailed agriculture module that could help to clarify which rural households moved out of poverty, and why. Nor has there been a recent comprehensive survey of Bhutanese health outcomes. There is no regular sample survey of businesses, though one could be

⁷⁸ Less than half of respondents believe that the capacity of local government staff and elected official match the responsibility of local government (Helvetas 2016) "Local Governance Assessment Study".

introduced with a sampling from the new Economic Census. Annual national accounts are published with a 9–10-month lag. Information in the 11th Five-Year Plan (FYP) Final Report was not able to include the most updated information. Although the 11th FYP set the target for exports in 2017–18, the most recent data were from 2016⁷⁹. Bhutan's score of 60 in the 2018 Statistics Capacity Index is lower than the South Asia average of 76.⁸⁰ Support for better statistical capacity, including more and better data and data literacy, will be of utmost importance to advance evidence-based policy making, through, e.g., a more systematic approach to building statistical capacity and initiatives supported by sufficient resources.

85. Better M&E can help ensure that policies are effective, improve program design, and provide the evidence base for efficient allocation of public resources. Bhutan's recent National Monitoring and Evaluation Framework defines the scope of and assigns responsibilities for M&E activities.⁸¹ However, the government has not yet applied it, not only because it lacks quality data, but also because of (a) the disconnect between policy and M&E; (b) the lack of implementing capacity; and (c) underutilization of available resources. In practice, few policies have been rigorously evaluated against the new M&E guidelines; nor has the GNH screening tool been used for M&E.⁸² Development partners evaluate jointly with the government most projects they fund, but the government rarely uses the outcomes to inform its policies.

VI. Priorities for Sustainable and Inclusive Growth

86. Building on hydropower development, Bhutan has made tremendous progress in expanding access to services and reducing poverty. There have been remarkable improvements in access to education, health, and basic services, but major challenges remain, and unless there is action, they may prevent further progress in poverty reduction and sustainable shared prosperity.

87. The selection of priority areas for action was primarily guided by the recognition that achieving the next level of development requires lifting economy-wide constraints on growth, poverty reduction and job creation. While Bhutan has many achievements to be proud of, challenges remain in many areas. As the SCD is intended to prioritize among the competing challenges, the main filter that was applied was the impact of a particular measure on improving the prospects for growth, job creation and poverty reduction.

88. Priorities were set based on a review of the evidence, consultations with stakeholders, and team discussions. The starting point was the evidence and analysis presented in this report, which was used to identify the main challenges for growth, inclusion, and sustainability. A first round of consultations was then held with the government, development partners, civil society, and the private sector on the main problems and opportunities identified.

89. Next, both external and internal consultations were conducted to understand the binding constraints to achievement of the twin goals. Consultations were facilitated by a short presentation on the themes of macroeconomic vulnerability, private sector development and job creation, and spatial equity and sustainability. This helped define crucial questions related to Bhutan's development challenges. Several sessions were held with stakeholders that included the government, civil society, development partners, and representatives from the private sector. Within the WBG three working

⁷⁹ World Bank (2018) "Bhutan Development Update"

⁸⁰ <http://datatopics.worldbank.org/statisticalcapacity/CountryProfile.aspx>

⁸¹ The Government of Bhutan (2019) "The 12th Five-Year Plan Volume 1". Section 3.11.4 explains M&E of the 12th FYP.

⁸² The draft 2017 Development Evaluation Policy of Bhutan does not refer to the GNH screening tool.

sessions were held with contributions from the entire country team; these sessions helped build a consensus among different teams on Bhutan's development priorities. This approach elicited substantive inputs from a large country team while maintaining a collaborative process and a focus on the evidence base for this report. A final round of consultation was conducted in October 2019.

90. There was wide agreement among stakeholders, both external and internal, on the binding constraints for Bhutan to achieve the twin goals. While Bhutan has made tremendous progress in the past, many critical development challenges remain, such as low connectivity, limited access to finance, shortage of skilled labor, and regulatory gaps, all of which have been discussed extensively in this report. A number of stakeholders also emphasized the need for Bhutan to build up sectors other than hydropower and the importance of addressing implementation challenges. Highlights from the internal working sessions were recognition of the importance of spatial trade-offs in development, their implications for service delivery, and identification of sectors that could be sources of future growth and jobs. Data and knowledge gaps were also identified.

91. As a result of this comprehensive process of diagnosis and prioritization process, this SCD has identified five priority areas for Bhutan to achieve the twin goals. Within each, priorities are highlighted that can support progress toward the goals. Priorities were identified based on their impact on the twin goals and on their complementarities. The twin-goals filter assesses the impact of each area on reducing poverty and boosting shared prosperity. In addition, resolving some constraints will have complementary beneficial impacts on more than one domain (growth, inclusion, and sustainability). An example is investment in connective infrastructure, which would have positive impacts on both private sector development and service delivery. In setting priorities, the strength of the evidence base was assessed. Table 5 presents the priorities and the time horizon for their implementation. Stakeholders reached broad consensus on the priorities.

Table 5. Priorities for Bhutan's Development

Development Challenges	Priorities	Time Horizon	Impact on Twin Goals	Complementary Effects
	Specific Priority Areas			
An embryonic private sector that has not been able to create competitive jobs	Priority area 1: Boost private sector development			
	<ul style="list-style-type: none"> • Increase access to finance for MSMEs by improving the regulatory framework, expanding financial inclusion to underserved segments, supporting development of microfinance and digital financial services, and promoting entrepreneurship by providing more avenues for risk capital, incubation support, and capacity building. 	Short to medium term	High	Yes
	<ul style="list-style-type: none"> • Invest in connective transport infrastructure and ICT to reduce transaction costs and support regional trade and integration. 	Medium to long term	High	Yes
	<ul style="list-style-type: none"> • Harness the potential of Bhutan's vast natural resources to support alternative sources of growth and jobs, particularly in forestry, tourism, agriculture, and high-value and organic agribusinesses. 	Short to medium term	High	Yes
Macroeconomic volatility resulting from construction and commissioning of large hydropower projects	Priority area 2: Strengthen macro-fiscal stability			
	<ul style="list-style-type: none"> • Strengthen domestic revenue mobilization by improving tax policy and administration such as the introduction of GST. 	Short to medium term	Medium	Yes
	<ul style="list-style-type: none"> • Improve management of hydropower rents to avoid macroeconomic volatility and to build fiscal space through the improvement of the stabilization fund. 	Short to medium term	Medium	Yes

Disparities between urban and rural areas, and between women and men, that have denied equal opportunities to all	Priority area 3: Invest in human capital and improve service delivery			
	<ul style="list-style-type: none"> • Improve access to and the quality of basic services and increase investment in human capital to enhance the productive capacity of the population and provide the skills (e.g., TIVET) demanded by the private sector. 	Medium term	High	Yes
	<ul style="list-style-type: none"> • Strengthen the social protection system to reduce poverty by careful targeting and a package of benefits that promote livelihoods and build household resilience against shocks. 	Medium term	High	Yes
Cross-cutting Areas				
Risk of natural disasters and the adverse impact of climate change, especially given Bhutan's dependence on its natural assets (hydropower, tourism, agriculture) for growth and jobs	Priority area 4: Enhance disaster and climate resilience			
	<ul style="list-style-type: none"> • Promote sustainable management of water resources to support population and production needs related to irrigation, hydropower, water supply, and sanitation. 	Short to medium term	High	Yes
	<ul style="list-style-type: none"> • Manage and mitigate climate-related vulnerabilities by increasing access to hydromet information and promoting climate-resilient agriculture and infrastructure. 	Short to medium term	Medium	Yes
Weak implementation that has reduced the effectiveness of well-conceived policies	Priority area 5: Address implementation gaps			
	<ul style="list-style-type: none"> • Improve coordination within the government and with key stakeholders and address capacity constraints to maintain consistency between policy direction and implementation. 	Short to medium term	High	Yes
	<ul style="list-style-type: none"> • Strengthen statistical capacity to support evidence-based policy-making. 	Short to medium term	High	Yes

92. A number of knowledge gaps were identified in preparing the SCD. Among them were (a) an in-depth assessment of how SOEs affect markets, SOE governance, competitive neutrality issues, and detailed reform options for SOEs to support private sector growth; (b) the implications of decentralization for service delivery given limited subnational capacity; (c) the role of geography in service delivery and job creation, and the implications for poverty reduction and shared prosperity; (d) the effectiveness and efficiency of public expenditures; (e) alternative business models in the tourism sector, with possible revision of the tariff structure and projections of yield and visitation levels; (f) how to change gender norms and improve female labor force participation in economic activities and (g) mapping the potential of high-value products in agriculture given requirements related to, e.g., quality, certification, and volumes.

Appendix 1. Poverty in Bhutan

Poverty is measured as the share of the population that falls below a set poverty line. Poverty figures in this report differ from the official poverty headcount rate for two reasons. First, there were inconsistencies in how the official consumption aggregate was built over time, which can lead to estimates that are not strictly comparable across years. Second, given issues with the consumption distribution, instead of the national poverty line this report uses the World Bank's US\$3.20/day poverty line for lower-middle-income countries (in 2011 PPP terms) as the cut-off line to define the poor. Despite these methodological differences, the revised trend presented in this report is broadly similar to the one based on the official consumption aggregate. More details on the calculation of the poverty indicators are described in World Bank (2019) "Bhutan poverty, vulnerability and welfare: progress and challenges".

Appendix 2. Hydropower in Bhutan

1. Bhutan has significant untapped hydropower potential. It is drained by the watershed of the Brahmaputra river basin; the 2014 Power System Master Plan estimates its total hydropower potential at 30,000 MW. To date, the government has identified individual projects with projected installed capacity of more than 25,000 MW, of which 2,326 MW has already been constructed and another 2,938 MW is scheduled for completion by 2024/25 (table A2.1). The favorable conditions, steep mountains and plenty of water resources, make the average cost of hydropower about US\$1 million per MW, which is lower than in most other countries.

Table A2.1. Existing and Pipeline Hydropower Projects

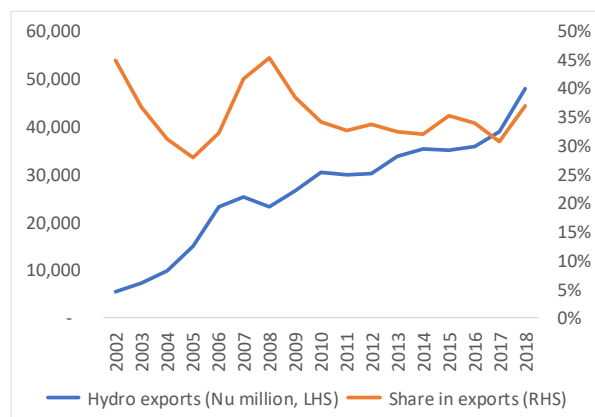
Project Name	Construction Start	Commissioning Year	Capacity (MW)
Chukha	1974	1988	336
Tala	1997	2007	1,020
Kurichhu	1995	2002	60
Basochhu	1997	2005	64
Dagachhu	2009	2015	126
Mangdechhu	2010	2019	720
Subtotal			2,326
Punatsangchhu I	2008	2024/25 ¹	1,200
Punatsangchhu II	2010	2022 ¹	1,020
Nikachhu	2014	2020	118
Kholongchhu ²	2016	2023	600
Subtotal			2,938

Note. 1/ Latest projection; 2/ construction has started, however the progress is very slow.

Source. RGoB

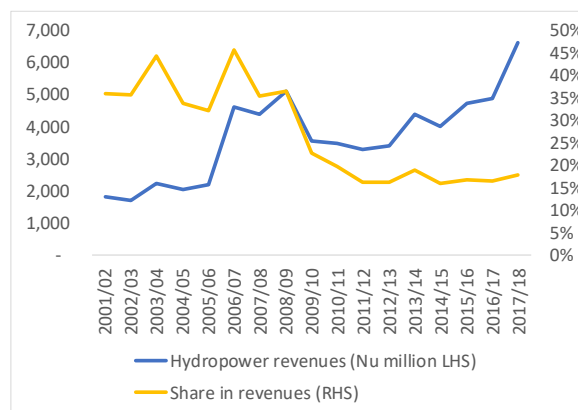
2. Hydropower became significantly more important in the early 2000s. Hydropower contributes to the economy mainly through three channels: GDP, the balance of payments, and government revenues. Hydroelectricity production rose from 1,958 million units in 2002 to 7,266 million units in 2018. Other than for domestic consumption, all hydroelectricity produced is exported to India. Hydroelectricity exports went up from Nu 2.5 billion in 2002 to Nu 17.7 billion in 2018, when they accounted for 37 percent of total exports (figure A2.1), in addition to the hydropower contributions to GDP and domestic revenues. The non-manufacturing industry, which includes hydropower during and after construction, accounts for more than a third of GDP. Hydropower contributes to domestic revenues through both tax revenues (corporate tax from state-owned DGPC) and non-tax revenues (profit dividend from DGPC, royalty revenues, and profit transfer from projects). Although its share in total revenues has fallen from over 40 percent in the early 2000s to 18 percent in recent years, the absolute value of hydropower revenues increased from Nu 1.8 billion in 2002 to Nu 6.6 billion (figure A2.2).

Figure A2.1. Hydroelectricity accounts for more than a third of exports.



Source: RGoB

Figure A2.2. Hydropower contribution to revenues declined in the 2010s.



Source: RGoB

3. However, the share in the economy in the economy has declined, while hydropower debt kept increasing. Since Dagachhu (126 MW) was commissioned in 2015, no major hydropower projects have gone on line; the planned completion of Punatsangchhu I and II has been postponed several times (table A2.2). Hydropower projects are large complex infrastructure that require years of preparation and planning. Several of Bhutan's hydropower projects are larger than 1,000 MW, of which there are not many in the world (neighboring India has only constructed four conventional hydropower plants above 1,000 MW, the largest being 1,500 MW). Bhutan's hydropower projects have been complicated by unexpectedly complex geology and other technical challenges that have caused significant cost-overruns and construction delays.

Table A2.2. Delay in Hydropower Construction

Project	MW	Planned completion year				
		In 2015/16 Budget	In 2016/17 Budget	In 2017/18 Budget	In 2018/19 Budget	Latest Projection
Punatsangchhu I	1,200	2019	2019	2021	2022/23	2024
Punatsangchhu II	1,020	2018	2018	2019	2020/21	2023
Mangdechhu	720	2018	2018	2018	2018	2019 ¹

^{1/} Commissioned in August 2019.

Source: MoF.

4. Delay of hydropower projects has a severe impact on the economy. Any large hydropower project has a sizable impact on the economy; for example, the construction cost of Punatsangchhu I is estimated at US\$1.5 billion, about 55 percent of projected GDP in 2017/18. A one-year delay can reduce GDP growth by 3–4 percentage points, exports by US\$250–300 million (about 50 percent of current exports), and revenues by 0.5–1.0 percent of GDP (table A2.3).

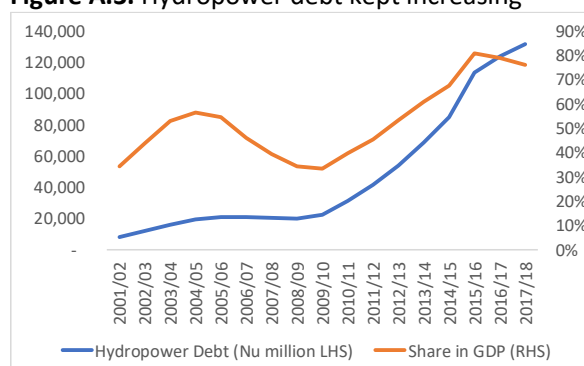
Table A2.3. Impact of a One-Year Delay in Construction of Puna I or II Project

Subject	Source of Impact	Net Impact	Remarks
GDP (production account)	Decline in forecast growth of the electricity subsector	About 3–4 percentage points of GDP growth	Possibly offset in part by Increase in construction subsector growth
Exports	Decline in forecast growth in exports	About US\$250–300 million a year (about 50 percent of actual 2015 exports)	—
Government revenues	Decline in forecasts for corporate taxes, dividends, and royalties	About 0.5–1 percent of GDP	Sum of corporate tax, dividend, and royalty revenues

Source: World Bank staff estimates.

5. Delay in completion and cost overruns have pushed up hydropower debt, which went from Nu 8 billion in 2002 to Nu 132 billion in 2018, with its share in GDP rising from 34 to 76 percent (figure A2.3). Hydropower projects are implemented under an intergovernmental agreement in which the Government of India covers both the financial and construction risks of the projects and buys surplus electricity at a price reflecting cost plus a 15 percent net return. Therefore, the 2018 World Bank-IMF joint debt sustainability analysis confirmed that Bhutan’s risk of debt distress remains moderate.

Figure A.3. Hydropower debt kept increasing



Source: RGoB

6. Diversification within the hydropower sector is critical. Hydropower financing and markets have not yet been diversified. Bhutan’s hydropower development has been almost all financed by India through grants and loans, and hydroelectricity is exported only to India. Financing from India for new hydropower projects is becoming ever more difficult. In recent years, India has encouraged Bhutan to form joint ventures (JVs) with Indian Central Public-Sector Undertakings (CPSUs) for financing and constructing new hydropower projects. Kholongchhu Hydro, a JV with SJVN Ltd., would be one such example but the concession agreement for it is still to be signed.

7. Diversification of markets has potential to tap the larger regional market. High economic growth and suppressed demand in the region will likely result in a steep increase in power demand in coming decades. Together with the general political preference for low carbon growth, this will create opportunities for hydropower development as a reliable renewable power source—India alone is estimating the need to install more than 300,000 MW of renewable energy capacity. On the other hand, solar photo voltaic (PV) is driving down the cost for both small- and large-scale power generation to levels close to Nu.3/kWh.⁸³ Even if reliability and provision of peak power and ancillary services are among the advantages of hydropower compared to solar PV, hydropower in South Asia will find it difficult to stay competitive as costs and environmental and social requirements all go up. Furthermore, India has just put

⁸³ Current export tariffs for existing plants under long-term PPAs are: Chukha – Nu 2.55/kWh, Tala and Kurichhu – Nu 2.12 /kWh. Power from Dagachhu, which is traded on the open market through Tata Power, has currently a tariff of Nu 2.96 /kWh.

in place a new structure for cross-border trade in electricity, key aspects of which have raised concerns (which India is understood to be addressing) in other South Asian countries about how it will apply. This has added to the uncertainty on access to markets and conditions for hydropower exports from Bhutan.

8. Hydropower could contribute more to job creation. Construction of large hydropower projects normally takes 4–6 years and at peak involves up to 10,000 workers. It requires vast amounts of materials like cement and steel and a considerable amount of equipment for excavation, tunneling, etc. Normally 25–30 percent of the cost is related to electro-mechanical and hydro-mechanical equipment that has to be imported, and about 65–70 percent of the cost is related to civil works. About 5–10 percent of the costs are for project management, engineering design, and supervision. Hydropower creates few jobs directly. Although construction requires thousands of workers, these are normally unskilled, and large international contractors often import them. However, higher-level jobs are created in project management, engineering, and operations. The DGPC has about 1,700 employees, many of them with higher education. Another 2,100 are employed on active projects in project management and engineering. With commissioning of mega-hydropower projects, there is potential to directly create a few more thousand jobs, and more jobs indirectly for construction and services. DGPC has successfully built up a Bhutanese cadre of hydropower experts; staff at the Chukha and Tala plants, mainly Indian at first, have now been replaced with Bhutanese employees.

9. However, as more hydropower projects are commissioned, operational issues need more attention. In the short term, variations in rainfall and snowmelt from year to year lead to fluctuations in production. Although hydropower plants are technically designed to be sustainable and withstand major floods, glacial outbursts, and earthquakes, extreme events may temporarily disrupt operations for one or more projects; and some hydropower plants are located on the same river. If this occurs for major schemes, such as Tala Hydropower Project, which today produces 60 percent of the power, government revenues may also be disrupted. This calls for development and implementation of a regulatory framework for maintenance, dam safety, regulations and inspections of hydropower plants to ensure that they are resilient to extreme events.

10. The government in 2017 set up a high-level committee to review future hydropower development plans. Although the Hydropower Committee has already completed its recommendations, they have not been made public; it has been decided that after the elections the new government should review the recommendations and decide on next steps. Informally, it is understood that the committee has recommended completing construction of current projects and putting any new plans on hold. This may have significant implications for Bhutan; if adoption of battery storage accelerates over the next decade or so, hydro may become irrelevant. Any new developments should in any case be preceded by detailed technical studies, update of the Power Sector Master Plan 2004, and basin level studies⁸⁴ in order to define an informed roadmap for hydropower development.

⁸⁴ A potential cumulative impact assessment for Kuri-Gongri basin has just been completed, but similar assessments are needed for other basins.

References

- Bhutan Electricity Authority. 2017. "Bhutan Power Corporation 2016-2019: Tariff Review Report." Thimphu: BEA.
- Bhutan Statistics Bureau. 2017. *Bhutan Poverty Analysis Report*. Thimphu: World Bank Group.
- Helvetas. 2016. *Local Governance Assessment Study*. Thimphu: Helvetas
- Institution for Economics & Peace. 2018. "Global Peace Index 2018; Measuring Peace in a Complex World." Sydney. <http://visionofhumanity.org/app/uploads/2018/06/Global-Peace-Index-2018-2.pdf>.
- Jolliffe, D., M. A. Lugo, B. L. Briere, M. Felsenthal, J. Friedman, I. Gaddis, V. Gopalakrishnan, et al. 2018. *Poverty and Shared Prosperity 2018*. Washington, DC: World Bank.
- Ministry of Finance. 2019. *Corporate Governance Guidelines for State Enterprises*. Thimphu: Ministry of Finance, Royal Government of Bhutan. <https://www.mof.gov.bt/wp-content/uploads/2019/01/Corporate-GovernanceGuidelines.pdf>.
- Ministry of Health. 2018. "Annual Health Bulletin." Thimphu.
- Ministry of Information and Communication. 2019. *Annual Info-Comm and Transport Statistical Bulletin*. Thimphu: Ministry of Information and Communication, Royal Government of Bhutan.
- MOLHR & World Bank. 2013. *Bhutan's Labor Market: Toward Gainful Quality Employment for All*. Washington, DC: World Bank Group.
- National Statistics Bureau. 2017. "2017 Population and Housing Census." Thimphu: NSB.
- National Statistics Bureau. 2019. "Economic Census of Bhutan 2018-2019." Thimphu: NSB
- Royal Government of Bhutan. 2008. "The Constitution of the Kingdom of Bhutan." In *Article 9: Principles of State Policy*, 26. Thimphu: Royal Government of Bhutan.
- Tourism Council of Bhutan. 2018. "Bhutan Tourism Monitor." Thimphu.
- UNDP. 2013. *Millennium Development Goals (MDG) Acceleration Framework: Youth Employment in Bhutan*. MOLHR & UNDP. <https://www.undp.org/content/dam/bhutan/docs/MDGs/MAF%20-%20Youth%20Employment%20in%20Bhutan%2030%20Dec%202013.pdf>.
- WHO. 2013. *Adolescent Pregnancy: A Review of the Evidence*. New York: UNFPA.
- WHO. 2017b. "The Kingdom of Bhutan Health System Review." *Health System in Transition* 7 (2):
- World Bank. 2015. *Bhutan – Public Finance Reforms towards Economic Self-Reliance*. Washington, DC: World Bank Group.
- . 2016. *Managing Environment and Social Impact of Hydropower in Bhutan*. Washington, DC: World Bank Group.
- . 2017a. *Investment Climate Assessment*. World Bank Group.
- . 2018a. *Bhutan Development Update*. World Bank Group.
- . 2018b. *Bhutan - Joint Bank-Fund Debt Sustainability Analysis*. Washington, D.C: World Bank Group. <http://documents.worldbank.org/curated/en/551711545410951966/Bhutan-Joint-Bank-Fund-Debt-Sustainability-Analysis-2018>.
- . 2019a. *Agriculture Policy Note*. World Bank Group.
- . 2019b. *Bhutan Poverty, Vulnerability and Welfare: progress and challenges*. World Bank Group.
- . 2019c. *Bhutan Development Report 2019: A Path to Inclusive and Sustainable Development*. World Bank Group.

- . 2019d. *Bhutan Policy Note; Harnessing Spatial Opportunities in Agriculture for Economic Transformation*. Washington, D. C: World bank Group.
- . 2019e. "A Glass Half Full: The Promise of Regional Trade in South Asia
- . 2019f. *Urban Policy Notes*. World Bank Group.