# PROGRAM IMPACT ASSESSMENT

## A. Introduction

1. This section presents the program impact assessment for outputs 2 and 3 under the Bhutan Health Sector Development Program. It reviews the expected impact on Bhutan's economy, and the economic rationale of the policy investments. The total policy investment of $14 million will be towards the Bhutan Health Trust Fund (BHTF) ($10 million) and digital health ($4 million).

## B. Macroeconomic Performance

2. In 2015–2016, Bhutan's gross domestic product (GDP) growth was reported at 6.3%, after the downturn in 2012–2013 due to the Indian rupee shortage crisis, where growth was as low as 3.6%.[1] Growth is projected to accelerate further in the coming years as the economy improves, inflation decelerates, and domestic investments increase. Although Bhutan is one of the smallest economies of the world, with a GDP of $2.3 billion, its growth over the last 10 years has been amongst the 13th fastest in the world at 7.5% from 2005–2015. The success of this is largely due to the governments increased investments in recent years to hydropower construction. However, the economy still lacks diversification and growth is currently heavily reliant on hydropower. Even so, increase in hydropower production is expected to boost the country's electricity exports and increase its growth in the coming years. However, to finance hydropower investments, the country has accumulated a large current account deficit, and high public debt. In 2015, the current account deficit was 29.1% of the GDP due to capital goods imports for hydropower projects, almost all of which were financed through loans from India. Hydropower construction has also been delayed which has projected a slight downward projection in growth from 2017–2019.[2] The country also remains highly dependent on external support which has been declining over the years.

## C. Health Sector Overview

3. The Government of Bhutan is constitutionally committed to providing free access to basic public health services for all citizens. Health care remains the responsibility of the government which plays a central role in service delivery. While there are some services that fall outside the purview of the public sector such as private cabins in government hospitals, and high-end cosmetic surgery, all other services fall under the government including treatment for specialized and complicated cases where services are unavailable domestically and treatment must be sought abroad. The government therefore has a huge role to play in the overall health and well-being of the country. Private sector, while present, is extremely limited and comprises of pharmaceutical shops and few diagnostic centers. General government health expenditure as a percentage of total health expenditure is unsurprisingly high. In 2000, it was 56% but by 2014, it rose to 67%. While private health expenditure was 23% and 25% in 2000 and 2014 respectively, these expenditures have historically been attributed to transportation costs. In 2012, out-of-pocket expenditure was 25% out of which 12% was used for transportation.[3] Table 1 illustrates the trends in health expenditure in Bhutan.

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[1] Bhutan 2016 Article IV Consultation—Press Release; Staff Report for the International Monetary Fund. June 2016. International Monetary Fund Country Report No. 16/206. Accessed at http://www.imf.org/en/Publications/CR/Issues/2016/12/31/Bhutan-2016-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-44036.

[2] Bhutan Economic Update. The World Bank. 2016. Accessed at https://openknowledge.worldbank.org/bitstream/handle/10986/26004/Bhutan12-16.pdf?sequence=1&isAllowed=y.

[3] Government of Bhutan, Ministry of Health. 2017. *National Health Accounts.* Thimphu.

**Table 1: Trends in Total Health Expenditure, Bhutan 1994–2014**

| | 2000 | 2005 | 2010 | 2014 |
|---|---|---|---|---|
| THE as a % of GDP | 6.9 | 5.3 | 5.2 | 3.6 |
| GGHE as a % of THE (excluding external resources) | 56 | 68 | 77 | 67 |
| External sources | 21 | 11 | 11 | 6 |
| Private health expenditure as a % of THE | 23 | 21 | 11 | 25 |
| Voluntary health insurance | | | 1 | 1 |

GDP = gross domestic product, GGHE = general government health expenditure, THE = total health expenditure.
Source: World Health Organization, 2017. *Health System Overview.* Geneva.

4. Evidently, general government health expenditure as a percentage of the total health expenditure has been declining as has the total health expenditure as a percentage of the GDP in most recent years. In 2010 it was 5.2% compared to 2014, where it fell to 3.6%. External resources are also declining. In 2010, it was 11% of the total health expenditure whereas by 2014 it a little more than halved to 6%. In recent years, the share of total health expenditure as a percentage of the GDP has been decreasing for several reasons. Central to this is the increased current account deficit and public debt due to which public spending is being tightened. Given the macroeconomic pressures on the economy, sustaining access to free health care for all citizens will be a challenge. The program investments under Asian Development Bank (ADB) assistance will aim to address these issues and improve fiscal sustainability and sector efficiency under program investments of output 2 and 3.

## D. Definition of the Problem

5. The governments constitutional commitment toward free health care puts immense pressure on the financial sustainability of the sector. Strategic financing and sustainably maintaining existing resources is critical. In addition, improving overall health sector efficiency through improved processes can also generate cost-savings in the long-run and contain costs. Given these considerations, additional financing mechanisms and efficiency gains within the sector need to be identified. Challenges to the health sector are explained in this section.

6. **Bhutan faces a rising and costly noncommunicable disease burden.** Bhutan is currently undergoing an epidemiological transition with a rising disease burden of noncommunicable disease (NCD). According to the most recent National Health Accounts, NCDs accounted for 35% of all current health expenditure in 2015–2016 (footnote 3). This transition is manifested in higher rates of health care utilization, particularly among the elderly, who often require specialized care (including overseas care) and more expensive medications over an extended period. It is reported that expenditure on drugs has increased by 15%–20% annually during the past 3 years. The further rise in NCDs will lead to an increase in demand for essential drugs, all of which are constitutionally mandated to be provided by the government through the BHTF. However, the BHTF, which was set up in 2000 to provide consistent and reliable funding for drugs and vaccines, reached its capitalization target of $24 million in 2015, but has since not developed a sound and self-sustaining investment strategy for its capital. Furthermore, future demand analysis suggests that the BHTF will face a growing financing gap of $2.77 million by 2027 without ADB support.[4] Contribution of the BHTF as a percentage of the total government health budget is in Table 2.

[4] Bhutan Health Trust Fund (BHTF). Forthcoming. *Review of the Financial Sustainability of the Bhutan Health Trust Fund.* Thimphu.

**Table 2: Domestic Financing Sources as a Percentage of Total Government Health Budget, 2010–2015**

| | 2010–2011 | 2011–2012 | 2012–2013 | 2013–2014 | 2014–2015 |
|---|---|---|---|---|---|
| Health contribution | 4.59 | 4.45 | 4.94 | 5.29 | 5.5 |
| User fees | 1.58 | 1.64 | 1.31 | 1.17 | 2.21 |
| BHTF | 0.042 | 0.067 | 0.096 | 0.152 | 5.14 |
| Other sources of government tax and non-tax revenue | 93.7 | 93.8 | 93.6 | 93.4 | 87.1 |

BHTF = Bhutan Health Trust Fund.
Source: World Health Organization. 2017. *Health System Overview.* Geneva.

7. **Inequity in the distribution of public health benefits.** Public health expenditure in Bhutan disproportionately favors populations in upper income quintiles. A recent study of the benefit-incidence of public health expenditure using data from 2010–2012 found that the distribution of benefits is marginally pro-poor and that the poorest 20% of the population only receives 11% of total public benefits for health care, compared to the richest, which receives 20%. The study also found that location and household income interact to produce inequity in the Bhutan health care system and the rich, regardless of location, still access a higher share of their public benefits relative to the poor, for whom location plays a central role in their utilization of health care. Hence, due to the large distances, the poor are often less able to access services.[5] In 2014, out-of-pocket expenditure accounted for 25% of total health expenditure, of which almost half was attributed to transportation costs reported by patients.[6] The benefit-incidence analysis also suggests a need to redistribute public resources from the tertiary to primary levels and to potentially subsidize transportation costs for the poor so that access to health care is more equitable (footnote 5). Studies from other countries also demonstrate that community-based care that is designed to enhance local capacity and reach individuals at the peripheral level are cost-effective and particularly useful when monitoring diseases such as tuberculosis and HIV which require compliance and adherence with strict treatment regimens.[7]

8. **Inefficient health information systems.** Currently in Bhutan, the health information system is the web-based District Health Information System 2 (DHIS2) which includes both household and facility data. However, there are six other health information databases not yet linked to the DHIS2 (footnote 6). It is currently not possible to share data captured by one system and pass it along to another system, all of which are currently managed by individual departments in the Ministry of Health (MOH).[8] Although the DHIS2 has been set up and staff have been trained throughout the country, there is poor connectivity in the remote areas and persistent poor data quality.[9] Interoperability of existing information systems is not possible at this time due to lack of data standardization and because systems run on different platforms, leading to wasteful duplication of data collection. The current patient information system is paper-based, leading to wastage and inefficiency in medical record-keeping.

[5] Government of Bhutan, MOH. Forthcoming. *Benefit Incidence of Public Health Expenditure in Bhutan.* Thimphu.
[6] World Health Organization. 2017. *Bhutan Health System Overview.* Geneva.
[7] Farmer P. Community based approaches to the control of multidrug resistant tuberculosis: introducing "DOTS-plus". 1998. BMJ 317:671.
[8] A. Marcelo. 2017. "Draft Assessment of Health Information System under the Proposed Bhutan Health System Development Program." Consultant report under TA-9352 BHU: Preparing the Health Sector Development Program. ADB, Manila.
[9] For example, a facility cost study conducted in 2011 found that some of the DHIS2 data were reported twice. Government of Bhutan, MOH. 2011. *The Cost of your Healthcare: A Costing of Healthcare Services in Bhutan*. Thimphu.

## E. Fiscal and Economic Impact of Program Investments

9. Under output 2, ADB will provide $10 million to the BHTF in two tranches ($5 million in each tranche) to capitalize its fund further to meet the rising health care needs for vaccines and essential medicines in the future based on a set of conditions that must be fulfilled. The share of the BHTF contribution toward the total health budget has been increasing. In 2013–2014, it was 0.15% and by 2014–2015, it increased considerably to 5.14% (see Table 2). The BHTF contribution toward funding for drugs and vaccines is projected to continue increasing in the coming years due to decreasing external resources (see Table 1) and increasing demand (footnote 4). The importance of the BHTF as a strategic financing instrument for health care in Bhutan is therefore increasing. Sustaining its capital and securing a certain percentage of reinvestment income every year is critical to ensure fiscal sustainability of the fund mandate to provide free essential drugs and vaccines to all. In addition, from an economic perspective, the benefits of ensuring a consistent and uninterrupted supply of drugs and vaccines is immense. A study by the United States Agency for International Development in the Philippines evaluated the economic costs resulting from drug stock outs for tuberculosis medicines and estimated that for only 2,663 tuberculosis patients who may be affected by a one-month drug stock out, the total economic cost would be $21 million.[10] The tranche conditions are linked to improvements in the governance and management of the BHTF and its assets, and tied to development and implementation of a strategic investment strategy for the funds existing capital and ADB contribution. ADB tranche conditions will therefore ensure improved governance, management, and investment of the fund and its resources to improve fiscal sustainability of a critical health sector financing instrument in Bhutan.

10. Under output 2 is another condition (to be fulfilled by 2020) related to health financing equity. This condition relates to a National Health Bill that must be submitted for approval to the Parliament. The bill will improve health financing equity, efficiency, and sustainability by taking into consideration evidence from the benefit-incidence analysis conducted by the MOH. The policy changes in the bill will directly improve health financing equity and further improve access to health care for the poor.

11. Under output 3, ADB will provide $4 million budgetary support to the 12th 5-year plan for electronic health system efforts. Under the e-health sector strategy, the government has estimated a need of $17 million, out of which $4 million will be through ADB support and the remaining will be fulfilled by the government. E-health investments are particularly critical to improve efficiency within the health sector. Studies on digital health investments in other countries demonstrate better patient care and engagement, reduction in human error, and operational efficiency due to an elimination of redundant processes. Other studies also show that investments in digital health can reduce patient waiting time, average length of hospital stay, and data entry errors, as well as improve clinical outcomes and improve disease surveillance and prevention.[11] A review of digital health systems in developing countries has also found that patients are better tracked and fewer are at risk of loss for follow-ups. Furthermore, compliance to medicines and treatment regimens are reportedly better. Better communication between institutions and reduced errors in reporting laboratory data and samples were also positive results of improved e-health

[10] United States Agency for International Development, Systems for Improved Access to Pharmaceuticals and Services. 2016. *Economic Cost of Non-Adherence to TB Medicines Resulting from Stock-Outs and Loss to Follow-Up in the Philippines.* Arlington, VA.

[11] PricewaterhouseCoopers. 2017. *Digital Health: Challenges and Solutions to Measuring Return on Investment.* Singapore.

systems.[12] This output addresses the constraint of an under-developed information system and will improve overall efficiency of the health sector and reduce the risk of serious outbreaks of disease through better interoperability and system tracking.

12. Program investments under output 2 and 3 will address health financing equity, financial sustainability, and improve overall efficiency of the health sector through investments in e-health. The resulting impact will be on overall efficiency, sustainability, and equity of the health sector in Bhutan.

[12] Blaya JA., Fraser HSF., Holt B. 2010. E-health technologies show promise in developing countries. Health Affairs Vol 29 No. 2.