



# Infrastructure Financing Strategies for Sustainable Development in Nepal

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## National Study / Paper

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February 2017

The study was developed under a United Nations Development Account project entitled “Financing strategies for inclusive, equitable and sustainable development in Asia and the Pacific”, which focuses on a few selected countries, including Nepal, and is implemented by the Macroeconomic Policy and Financing for Development Division, ESCAP. The Document was developed with the assistance of the following consultant: Mr. Ashutosh Mani Dixit. The views expressed in this document are those of the authors and do not necessarily reflect the views of the United Nations Secretariat. The study has been issued without formal editing.

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## Executive Summary

Infrastructure gaps present a significant challenge for Nepal's short and longer term development goals. To provide a comprehensive picture of the required investments, the study reviews the period plans, development reports, and updated data from the Ministry of Finance. It also assesses the available resources in the economy, as well as the financing strategies, to fund the infrastructure deficit through domestic and international resources.

In doing so, the study reveals that Nepal has to invest between 8 to 12 percent of GDP until 2020, well over a billion dollar annually, to adequately develop its infrastructure. To meet such burgeoning financial requirement the government has been increasing its budget and expenditure over time. However, this study finds the evidence that jerry-built capital investment can make public spending suboptimal and that project selection and implementation need to be improved.

While assessing the fiscal space in the economy, the study notices that the government has still room to undertake more productive infrastructure investments although fiscal deficits are likely in the coming years. The study also discusses the tax incentives provided to the infrastructure sector, in particular for the hydropower sector, and points that these kinds of tax expenditures, have eroded the revenue base of the country.

The study then analyses the current level of private sector participation in Nepal infrastructure development and sketches the current PPP policy process. Subsequently, the study reviews the bank, capital market, and institutional investor capacity to further finance infrastructure projects. Such review shows that apart from the maturity mismatch and lack of capacity to assess the infrastructure projects, the regulatory norms also restricts these institutions to provide long-term project finance. The study also examines the role of state-owned enterprises in infrastructure development as well as the state policy in this area.

Following this in-depth analysis, the study proposes six financing strategies for infrastructure development in Nepal. It first recommends mobilizing the available domestic resource up to the regulatory limit, then suggests filling part of the gap through further private sector involvement. It also identifies measures to improve public expenditure efficiency by enhancing project prioritization, making the most of the infrastructure assets and streamlining infrastructure project delivery. It also considers ways to mobilize the growing climate finance-related sources of funds as well as the possibility of establishing intermediary institutions for local and urban infrastructure financing. The study also highlights the scope for increasing Non-Tax revenues as another means to free resources for infrastructure development.

Given the amount required, the study concludes by recognizing that all these strategies will have to be considered as none of them can tackle the Nepal infrastructure challenges on its own.

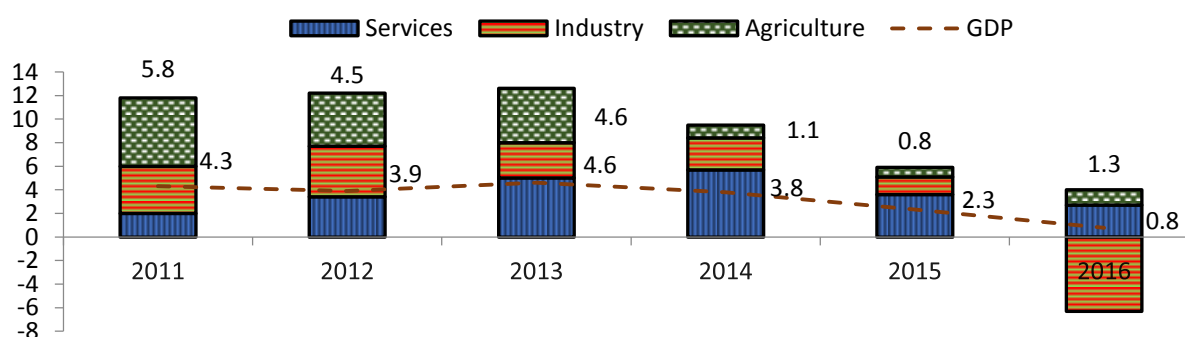
## Acronyms and Abbreviations

ADB	Asian Development Bank
BAFIA	Banks and Financial Institutions Act
BOOT	Build Own Operate Transfer
BOT	Build Operate Transfer
CIT	Citizen Investment Trust
DSAs	Debt Sustainability Analyses
EGW	Electricity Gas and Water
FAR	Financial Administration Rules
GDP	Gross Domestic Product
GoN	Government of Nepal
HIDCL	Hydroelectricity Investment Development Company Limited
ICOR	Incremental Capital-Output Ratio
IDFC	Infrastructure Development Finance Company Ltd
IFC	International Finance Corporation
IMF	International Monetary Fund
Kwh	Kilowatt hour
LDC	Least Developed Countries
MDG	Millennium Development Goals
MoE	Ministry of Education
MoF	Ministry of Finance
MTEF	Medium Term Expenditure Framework
MW	Megawatt
NEPSE	Nepal Stock Exchange
NPC	National Planning Commission
NPPSF	Nepal Public Procurement Strategic Framework
NRS	Nepali Rupees
PPAct	Public Procurement Act
PPMO	Public Procurement Management Office
PPP	Public Private Partnership
PwC	PricewaterCoopers
SBDs	Standard bidding documents
TOT	Training of Trainers
UN	United Nations
USD	United States Dollar
VAR	Vector Auto-Regression

## Background

Nepal aspires to graduate from the LDC status by 2022 (NPC 2013)<sup>1</sup>- a medium term goal- and has framed vision to become a middle-income country by 2030 (NPC 2013)<sup>2</sup>. Moreover, the challenges are to make the country's inclusive, and central to sustainable development goals to be achieved by 2030. But, the country faced a dent in its growth trajectory rattled by devastating earthquake in 2015 which was further worsened by agitation in the southern border of Nepal. As per Economic Survey (2015/2016) in FY2015/16<sup>3</sup> the GDP growth rate was 0.8 percent, one of the lowest growth rate in 14 years. In FY 2015/2016, Nepal's agriculture output grew by an estimated 1.3 percent, whereas, service sector which accounts for more than 53 percent of the GDP and is the key driver of the economic growth grew by an estimated 2.7 percent, 0.1 percent point lower than 2015. The worst hit was manufacturing industry which experienced negative growth of -6.3 percent (Figure 1).

*Figure 1 Supply-side contribution to growth (Figures in percentage points)*



*Source: Ministry of Finance (2015/2016), (Asian Development Bank, 2016), Author's calculations,*

To achieve its graduation goals and not risk slowing down – inclusive growth and poverty reduction achievements as evident in MDG report<sup>4</sup>– it is essential to make closing its huge infrastructure gap a priority<sup>2</sup>. It is estimated that one percent growth in GDP requires at least one percent of the GDP invested in infrastructure (telecommunications, energy, transport and water)<sup>5</sup>. Under the right condition, infrastructure development can play a major role in promoting the growth and equity-and, through both channels, help reduce poverty and create economic activity.

In this context, the study provides an in-depth description of investment needs in Nepal, available resources of funds and financing strategies for infrastructural development while highlighting a wide array of infrastructure sectors in Nepal ranging from transport, energy, telecommunication, and power. The study objective is to foster understanding among policy makers and stakeholders of financing needs, awareness of financial sources and modalities for achieving sustainable infrastructure development.

<sup>1</sup> NPC (2013), LDC graduation strategy paper

<sup>2</sup> NPC (2013), Vision 2030 paper

<sup>3</sup> In Nepal, fiscal calendar is from July to July. 2015/2016 means: July 2015 to July 2016. The places where only single year is written represents the latter year.

<sup>4</sup> MDG Terminal Report (2015)

<sup>5</sup> Cited by Bhattacharya, A., Romania, M., Stern, N. (2012)

The study is structured as follows: the immediate section presents the methodology, the second section provides an overview of infrastructure need/ gaps in Nepal, the third section presents an in-depth analysis of the sources and availability of the funds, fourth and fifth section inquiries about regulatory environment and feasible financing strategies respectively, sixth provides recommendation and concluding comments.

## 1. Methodology

This research is based on periodic Three-year plans, MDG reports, SDG reports, and updated data from Central Bank of Nepal, Ministry of Finance, Office of comptroller general (MoF) and Ministry of Physical Infrastructure. The periodic national surveys including Economic Survey Reports, Publications from NPC, NRB, and various government agencies related to infrastructure and development were also reviewed.

Furthermore, relevant Financial Acts and Policies, reports and studies from research institutions and development partners (such as ADB, World Bank, and UN agencies) were studied. To obtain deeper insights, key stakeholders were consulted individually and collectively.

The study also includes quantitative analysis with the use of Vector Auto-Regression (VAR), which is an ordinary least square regression where each variable is regressed on lag value of itself. Through VAR, the paper explores the relationship between the following variables: capital expenditure, recurrent expenditure, efficiency ratio, public capital stock and GDP. The naive estimate is based on 34 years' annual data spanning from 1974 to 2011. The methodology is presented in Annex.

## 2. Assessment of Infrastructure Need / Gaps in Nepal

### Infrastructure Gaps

A majority of the population in Nepal does not have reliable and adequate access to adequate infrastructure services. For example, even though an estimated 83 percent of population has access to basic water services, only 16 percent of the population has access to higher/medium quality water services. The Terai region has comparatively good access to water, but in the case of improved sanitation, the service is clustered around the Western hill region (Andres, et al., 2014). Rural households are even more deprived of highly capital intensive infrastructure services like sewerage or piped water and electricity. Regarding fixed telephone lines, only 3 percent have access to fixed telephone subscription for 100 people in Nepal. Although number of subscription for fixed telephone has been decreasing in the world, replaced by mobile/cellular services, fixed-telephone subscriptions are still a critical infrastructure indicator because they remain essential for voice traffic and provide a basis

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