NEPAL

Needs Assessment, Costing and Financing Strategy

for Sustainable Development Goals

GOVERNMENT OF NEPAL

NATIONAL PLANNING COMMISSION

SINGHADURBAR, KATHMANDU

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Needs Assessment, Costing and Financing Strategy
for Nepal's Sustainable Development Goals

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THE PRIME MINISTER

KATHMANDU
NEPAL

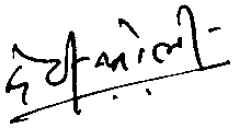
Foreword

The new era of Nepal began in late September 2015 when we promulgated a progressive and democratic constitution through an elected Constituent Assembly. Now, we have three tiers of Government and are on the way to achieve peace and prosperity. We have realized that our efforts must therefore be directed towards sustainable peace, good governance, development and prosperity. The Government of Nepal has set out the strategic development path with a vision of "Prosperous Nepal and Happy Nepali" within a limited time span that seeks to usher in economic growth and personal well-being simultaneously. They are also the overall vision and objectives of the Sustainable Development Goals (SDGs).

The National Planning Commission has undertaken the lead role in implementing SDGs on a national level. Significant accomplishments have already been made like integrating the SDGs into the national planning, budgeting and costing processes, and creating institutions for its easy deliverance at the national level.

This report is one step further to assess the intervention needs for achieving the SDGs, undertaking the costing to assess the investment requirement and to suggest financing strategy for meeting the investment requirement. I believe that this report would be a pathfinder to implement the SDGs and I aspire to achieve all SDGs well before the deadline.

In order to achieve the ambitious goals of the SDGs, consolidated efforts of all tiers of the government as well as the unwavering support of the private sector, civil society, development partners and other stakeholders is pre-eminent and I urge all for a dedicated partnership in achieving this extensive developmental agenda by 2030.



K.P. Sharma Oli
Prime minister and Chair of the High-Level
SDG Steering Committee
Government of Nepal

NATIONAL PLANNING COMMISSION

KATHMANDU
NEPAL

Preface

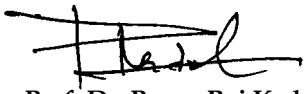
The United Nations introduced a global development agenda of Sustainable Development Goals in September 2015. The 17 Goals of Sustainable Development strive for transformation of the world, in all areas of life encompassing factors like access to education, good health, gender equality, economic growth, clean energy, and more. The SDGs have been introduced with the backdrop of the slogan "Leaving No One Behind" which aims to reach the most vulnerable first and uplift all segments of society. The previous developmental agenda of Millenium Development Goals saw remarkable achievements in areas of poverty reduction, decreased child and maternal mortality, and increasing school enrolment and gender equality.

The National Planning Commission (NPC) is the lead agency of the Federal Government of Nepal for planning and implementation of the SDGs. From our part, we have already started to incorporate SDGs in the planning and budgeting process.

The report on "Needs Assessment, Costing and Financing Strategy for Nepal's Sustainable Development Goals" is a concerted endeavor in assessing the intervention requirements for achieving the SDGs and its pertinent strategies. This report has estimated that a total of annual Rs. 2,025 billion investment is required for achieving the SDGs in line with the 2030 targets. The financing gap for SDGs in public and private sectors is estimated to be Rs. 218 billion and Rs. 367 billion respectively from a total of Rs. 585 billion on the basis of existing trends of resource mobilization and patterns of available resource allocation against investment requirement in major SDG areas. Besides, this report also flags on the policies, institutions and partnerships necessary to carry forward the Sustainable Development Agenda, forge synergy in its implementation, and keep track of the progress made so far in SDGs implementation.

The National Planning Commission would like to extend its appreciation to Dr. Yuba Raj Khatiwada (Team Leader in preliminary work) and his team including Prof. Dr. Govind Nepal (Team Leader in concluding phase), Ashutosh Mani Dixit and Damodar Gnawali for the preparation of the draft version of this report. NPC also acknowledges the members and officials of the NPC, government agencies, private sector, civil society, development partners and team of 'Facilitating the Pursuit of SDGs in Nepal (FPSN) project' for their contribution in the preparation and finalization of this report. NPC also extends its appreciation to the United Nations Development Programme for providing technical support to prepare this report.

Sustainable Development Goals cannot be achieved with a solo attempts of the Government of Nepal. Therefore, I take this opportunity to call upon all national stakeholders, development partners and other international agencies to work together in a coordinated manner to achieve the SDGs by 2030.



Prof. Dr. Puspa Raj Kadel
Vice-Chair


Happy

GOAL 1		**End poverty in all its forms everywhere**
GOAL 2		**End hunger, achieve food security and improved nutrition and promote sustainable agriculture**
GOAL 3		**Ensure healthy lives and promote well-being for all at all ages**
GOAL 4		**Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**
GOAL 5		**Achieve gender equality and empower all women and girls**
GOAL 6		**Ensure availability and sustainable management of water and sanitation for all**
GOAL 7		**Ensure access to affordable, reliable, sustainable and modern energy for all**
GOAL 8		**Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**
GOAL 9		**Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**
GOAL 10		**Reduce inequality within and among countries**
GOAL 11		**Make cities and human settlements inclusive, safe, resilient and sustainable**
GOAL 12		**Ensure sustainable consumption and production patterns**
GOAL 13		**Take urgent action to combat climate change and its impacts**
GOAL 14		**Conserve and sustainably use the oceans, seas and marine resources for sustainable development**
GOAL 15		**Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**
GOAL 16		**Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**
GOAL 17		**Strengthen the means of implementation and revitalize the global partnership for sustainable development**

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Abbreviations and Acronyms

ADB	Asian Development Bank
ADS	Agriculture Development Strategy
AIDS	Acquired Immune Deficiency Syndrome
AIIB	Asian Infrastructure Investment Bank
BFIs	Bank and Financial Institutions
BIMSTEC	Bay of Bangal Initiative for Multi-sectoral Technical and Economic Cooperation
CAC	Community Awareness Centre
CBS	Central Bureau of Statistics
CFUG	Community Forestry User Group
CGE	Computable General Equilibrium
CME	Census of Manufacturing Establishments
CNI	Confederation of Nepalese Industries
CO_2	Carbon Dioxide
CRVS	Civil Registration and Vital Statistics
CSO	Civil Society Organisation
DAC	Development Assistance Committee
DCC	District Coordination Committee
DoR	Department of Roads
EC	Election Commission
ES	Economic Survey
FDI	Foreign Direct Investment
FNCCI	Federation of Nepalese Chambers of Commerce and Industry
FSS	Forest Sector Strategy
FY	Fiscal Year
GDP	Gross Domestic Product
GFSI	Global Food Security Index
Gg	Gigagram
GHG	Greenhouse Gas
GIZ	German Development Corporation
GJ	Giga Jules
GNI	Gross National Income
GoN	Government of Nepal
GPI	Gender Parity Index
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System,
ICOR	Incremental Capital-Output Ratio
ICT	Information and Communication Technology
IFC	International Finance Corporation
IGFT	Inter-Governmental Fiscal Transfer
ILO	International Labour Organisation

INGO	International Non-Government Organisation
IPT	Integrated Property Taxation
LAPA	Local Adaptation Plan for Action
LB	Local Body
LDC	Least Developed Country
LLDC	Landlocked Developing Country
LPG	Liquid Petroleum Gas
LSGA	Local Self-Governance Act
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MFSC	Ministry of Forests and Soil Conservation
MIS	Management Information System
MMR	Maternal Mortality Ratio
MoAD	Ministry of Agriculture Development
MoCTC	Ministry of Culture, Tourism & Civil Aviation
MoE	Ministry of Education
MoF	Ministry of Finance
MoFALD	Ministry of Federal Affairs and Local Development
MoH	Ministry of Health
MoHA	Ministry of Home Affairs
MoHP	Ministry of Health and Population
MoPE	Ministry of Population and Environment
MoPIT	Ministry of Physical Infrastructure and Transport
MoUD	Ministry of Urban Development
MPI	Multi-dimensional Poverty Index
MTEF	Medium-Term Expenditure Framework
MW	Megawatt
MWSS	Nepal Rural Water Supply and Sanitation
NA	National Account
NAP	National Adaptation Plan
NAPA	National Adaptation Program of Action
NARC	Nepal Agricultural Research Council
NAS	National Account Statistics
NDHS	Nepal Demographic Health Survey
NEA	Nepal Electricity Authority
NGO	Non-Government Organisation
NHDR	Nepal Human Development Report
NHSS	Nepal Health Sector Strategy
NLFS	Nepal Labor Force Survey
NLSS	Nepal Living Standard Survey
NMICS	Nepal Multiple Indicator Cluster Survey
NNRFC	National Natural Resources and Fiscal Commission
NPC	National Planning Commission
NRB	Nepal Rastra Bank
NSDS	National Strategy for the Development of Statistics

NSS	National Statistical System
NTA	Nepal Telecom Authority
NUDS	National Urban Development Strategy
NUP	Nepal Urban Policy
NWSSHSP	Nepal Water Supply, Sanitation and Hygiene Sector Development Plan
OBOR	One Belt One Road
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OoP	Out-of-Pocket
OPHI	Oxford Poverty and Human Development Initiative
OSR	Own-Source Revenue
PCP	Public Community Participation
PDNA	Post Disaster Needs Assessment
PIP	Priority Investment Plan
PPP	Public-Private Partnership
PSC	Public Service Commission
Rs	Rupees (Nepali), or NPR
RSMP	Road Sector Master Plan
RTA	Road Traffic Accidents
SAARC	South Asian Association for Regional Co-operation
SDGs	Sustainable Development Goals
SDP	Sector Development Plan
SE4ALL	Sustainable Energy for All
SRN	Strategic Road Network
SSDP	School Sector Development Plan
SYB	Statistical Year Book
TB	Tuberculosis
TDF	Town Development Fund
TEVEC	Technical and Vocational Education Council
TFR	Total Fertility Rate
ToE	Tonnes of Oil Equivalent
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations, Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VGF	Viability Gap Funding
WASH	Water, Sanitation and Hygiene
WB	The World Bank
WHO	World Health Organisation
Yrs	Years

Executive Summary

SDGs have emerged as a globally agreed common development framework for the planet, people, and their prosperity. They are built on Millennium Development Goals (MDGs) and cover a wider range of rights-based sustainable development issues. The ambitious targets of the SDGs and their overarching goal of "Leaving no one behind" call for a well-designed implementation strategy that identifies the right kind of interventions, as well as investment requirements, sources of financing, and partnership mechanisms.

As SDGs encompass a diverse set of outputs and activities, they have to be implemented and financed by multiple actors. These include government, private sector, external development partners, cooperatives, NGOs, and households that can afford and finance them in the form of out-of-pocket (OoP) expenses.

The primary objective of this study report is to prepare an SDG implementation strategy based on needs assessment, to map out financial resource availability and requirements, and draw up a mechanism for implementation of SDGs.

The specific objectives of the study are to:

(i) identify interventions necessary for implementation of SDGs;
(ii) estimate investment requirements in major SDG areas covering social, economic, infrastructure, and environment sectors;
(iii) allocate SDG investment requirements among government, private, and community sectors, including households, cooperatives, and NGOs;
(iv) draw up a partnership strategy to engage all stakeholders in the implementation and monitoring of SDGs; and
(v) suggest policies and institutions necessary for the implementation of SDGs at the national and subnational levels.

At the end, the study describes policies, institutions, organizations, and human capacity, related challenges to implement SDGs, analyses data and resources gaps for monitoring the progress made towards meeting the 2030 targets of SDGs, and provides some of the SDG prioritization issues and way forward.

The primary objective of this study report is to prepare an SDG implementation strategy based on needs assessment, to map out financial resource availability and requirements, and draw up a mechanism for implementation of SDGs.

Methodology of SDG Needs Assessment, Costing, and Financing Strategy

Needs assessment constitutes a major component of the SDG strategy. This study consolidates existing long-term needs assessment and costing work done at sectoral levels, aligns them with the respective SDGs, identifies key interventions for SDG implementation, undertakes costing of those interventions that are not yet costed, estimates investments required for implementing interventions. Then, it also draws up financing strategies for both public and private sectors, and generates macroeconomic scenarios consistent with SDG targets, interventions, and financing strategy.[1] Then, the report

1 Macroeconomic and SDG-investment requirements over the time period (2016-2030) are estimated at 2014/15 year of constant prices of Nepali Rupees and other related data values.

assesses financing gap for meeting the SDG targets, by major sectors of SDGs, resource availability, and drawing up of a mechanism for implementation partnerships.

Need Assessment quantifies the cost to achieve 2030 targets of SDG indicators. This can be done following various methods as listed below.

SDG financing gap has been analysed by comparing the potential investment level with the available investment at any potential point of time.

a) incremental capital-output ratio (ICOR),
b) input-output relations (such as elasticity),
c) computable general equilibrium (CGE), and
d) intervention-based needs assessment.

The study adopts the last method, i.e., intervention-based needs assessment. The cost estimates from intervention-based needs assessment prepared by the respective ministries of the Government of Nepal were adjusted with changes on other parameters, and included for computing investment requirements. Legacy costing tools from MDG process were also used in some sectors, such as gender, transport, and infrastructure.

Several of the key SDG sectors have already been costed, (agriculture, health, education, water and sanitation, energy, road, urban development, and climate change) by the respective line agencies (sectoral ministries), and national targets have been drawn up. In that case, we have taken the costing needs for these sectors based on the unitary costing procedural used for forecasting in each of the sector.

Moreover, interventions necessary for achieving the goals and targets of SDGs related to poverty, gender, inclusive growth (mainly tourism and labor), industry, housing, and governance were costed by the authors own calculation based on reviewed of the sector specific studies and the data sources.

SDG financing gap has been analysed by comparing the level of investment needs with the available investment at any point of time. In fact, the word "investment" in this study implies the spending needed to achieve the SDG targets. The required investment to meet any specific targets means, both recurrent and capital spending, but excludes financing and administrative costs, such as interest for debt repayments. It is estimated that about 75% of the fiscal budget goes to implement initiatives that contribute to the SDGs. Also, in practices, not all the spending by the private, or non-government sectors fully exhaust in directly meeting the SDGs.

Not all the interventions to meet SDG targets are equally important for policy analysis nor possible to put price tags on them. Some of them include inequality reduction, sustainable consumption, and sustainable production, or inclusive growth.

The discussions on SDG financing are divided into four broad sectors. They are: public sector, private sector, cooperatives, communities and NGOs sector, and household sector. The SDG financing gap is calculated by deducting SDG investment requirement from financing resources. Cooperatives, communities and NGOs sector and household sectors are assumed to fully exhaust their income on SDG-related activities. It is assumed that there is no financing gap in these sectors.

The results are derived for three scenarios. They are:

a) **Optimal scenario,** it is aligned with the government aspiration to achieve an average 8.67% annual growth rate of

economy from 2016-2030, and revenue collection to reach 27% of GDP by the end of the SDG period;

b) **Low scenario:** assuming a lower revenue collection of 25% of GDP by 2030, but with continuation to achieve an average 8.67% annual growth rate by 2030; and

c) **Normal scenario:** assuming GDP growth averages 5.2% and revenue collection 27% of GDP.

It is estimated that revenue collection will reach 27% of GDP[2] by 2030, with 63% of that amount will be available for SDG financing. The rest will be spent on non-SDG areas such as defence, debt servicing, national and local administration and constitutional bodies that have no direct impact on the achievement of the SDGs. The study does not elaborate on mechanisms for sharing tax revenue among different subnational governments of Nepal (federal agencies., provincial level government offices), as assessment of these issues is outside the scope of this study designed in 2017. Hence, the results presented in this study are aggregated at national level. The distribution of public and private expenditures across the various tiers of governments vary by the sectoral investment types, and it may also vary over times. Detailed assessments on these issues are to be done in the future study on the topic.

Net domestic borrowings by the public sector is estimated to remain at less than 1.14% of GDP, and ODA is estimated to grow by 10% per annum till 2020, and then it will grow by 5% during 2021-2025, and 2% thereafter in the remaining period.

Financing resources available for private sector are anticipated to encounter (i.e. causal interaction) domestic private equity at 2.5%, bank credit at 6.8%, and FDI at 5% of GDP with provision made for external borrowings.

Funds available to households are estimated by applying various criteria for income brackets (low, middle and high-income groups). The low-income households (22 percent of the total) are exempted from any expectations to contribute to the SDGs implementations in their consumption spending.

SDG-investment requirements are estimated based on the constant prices of the FY 2014/15 with the assumption of inflation rate of 5% per year. The per-capita income is estimated at nominal prices in US$, and all other estimations are done in real prices and in Nepalese rupees (at constant prices of 2014/15).

Needs Assessment and Costing

SDG needs assessment, costing, and financing strategy include broadly three aspects of implementation challenges: They are:

(i) identification of critical interventions to achieve SDG targets;
(ii) estimation of resource requirements, and
(iii) policies and institutions to achieve SDGs targets.

The SDG Status and Roadmap Report (2017) suggest interventions essential to meeting SDG indicators. The key interventions[3] quantified in the report are closely related to the indicators specified for SDGs in the Baseline Report. The sectoral interventions used in this report are also closely linked with the corresponding goals of the Sustainable Development Goals (SDGs).

It is estimated that revenue collection will reach 27% of GDP by 2030, with 63% of that amount will be available for SDG financing.

2 Tax percentage of GDP is interpreted in some literature also as Tax- to – GDP ratio. The two terms are interchangeable. Adopting the public finance literature from India (RBI, NITI Ayog, etc), this study uses tax- percentage of GDP through out the pages.

3 The word "intervention" implies for an intervention where cost is quantified to do a needs assessment exercise.

The estimated investment requirement for poverty reduction related interventions will be on an average of Rs 76.7 billion per year during 2016-19, Rs 134.6 billion per year during 2020-22, Rs 174 billion per year during 2023-25 and Rs 211.8 billion per year during 2026-30. All amounts mentioned for SDGs interventions from the year of 2016 to 2030 are estimated by the study team, which are based on excel-based economic model. The most significant intervention in the fight against poverty has been social protection, which comprises 32 percent of the anti-poverty interventions budget in 2016-19, and it rises to 72 percent during 2026-30.

The average investment requirement for agriculture development and hunger reduction related interventions, as also suggested by Agricultural Development Strategy of MoAD, will be Rs 77.2 billion per year for 2016-19, Rs 99.2 billion per year for 2020-22, Rs 120.1 billion per year for 2023-25 and Rs 141.1 billion per year for 2026-30. The most substantial investment requirement in this sector are in irrigation and the promotion of competitive agriculture value chain. About one-fifth of the agricultural investment is estimated to go on irrigation and other rural infrastructure including rural roads and electrification.

The most significant intervention in the fight against poverty has been social protection, which comprises 32 percent of the anti-poverty interventions budget in 2016-19.

The average investment requirement for the implementation of health-sector interventions will be Rs 56.3 billion per year for 2016-19, Rs 91.3 billion per year for 2020-22, Rs 137.5 billion per year for 2023-25, and Rs 220.1 billion per year for 2026-30.

The estimated average investment requirement for education sector will be Rs 138.8 billion per year for 2016-19, Rs 206.57 billion per year for 2020-22, Rs 316 billion per year for 2023-25 and Rs 493.4 billion per year for 2026-30.

The estimated average investment requirement for gender-related interventions will be Rs 7.4 billion per year for 2016-19, Rs 12.2 billion per year for 2020-22, Rs 16.4 billion per year for 2023-25, and Rs 23.4 billion per year for 2026-30.

The estimated average investment requirement for clean water and sanitation sector interventions during 2016-19 will be Rs 37 billion per year, while it is expected to reach as much as Rs 100.5 billion per year during 2020-22, and gradually decline to Rs 86.4 billion per year for 2026-30. A breakdown by intervention shows that nearly half of the investment requirement would go on enhancing access and utilisation while more than a fifth of the spending would be required for water augmentation and improvement of water quality.

The average requirement for achieving for energy sector would be Rs 69.2 billion per year for the period 2016-19, Rs 132.5 billion per year for the period 2020-22, Rs 239.1 billion per year for 2023-25 and Rs 502.8 billion per year for 2026-30. The most significant component of investment within this sector is on electricity power generation, which demands nearly two-thirds of the total energy-sector investment. The target of reaching an installed hydropower capacity of 15,000 megawatts (MW) by 2030 requires Rs 3136 billion investment.

The estimated average investment requirement for tourism and labor sector will be Rs 28.9 billion per year for 2016-19, Rs 43.3 billion per year for 2020-22, Rs 63.4 billion per year for 2023-25 and Rs 83.6 billion per year for 2026-30. The most significant component of the investment requirement (83.6 percent) in tourism is in the hotel sub-sector.

The investment requirement for transport, industry and ICT[4] sectors related interven-

tions will be Rs 296.3 billion per year for 2016-19, which will rise to Rs 963.3 billion per year during 2026-30.

The average investment requirement for urban development and housing sectors will be Rs 170.3 billion per year for 2016-19, Rs 162.2 billion per year for 2020-22, Rs 154.9 billion per year for 2023-25 and Rs 185.3 billion per year for 2026-30.

The average investment requirement for climate change adaptation and mitigation would be Rs 21.1 billion per year for 2016-19, which will increase to 33.2 billion per year during 2026-30. The largest share (more than 50 percent) of investment would go for climate proofing of infrastructure projects. Building resilience and adaptive capacity, which demands about two-fifths of the total investment requirement in the early years (2016-19), which would gradually reduce to little more than a quarter of the investment requirement by 2030, since most of the interventions in this area are front-loaded.

The estimated average investment requirement for forest and ecosystem restoration related interventions will be Rs 20.6 billion per year during 2016-19, which will increase to Rs 28.6 billion per year during 2020-22, Rs 38.2 billion per year during 2023-25 and Rs 56.1 billion per year during 2026-30.

The average investment requirement for Governance sector would be Rs 48.1 billion per annum during 2016-19, Rs 51.6 billion per year during 2020-22, Rs 54.8 billion per year during 2023-25, and Rs 59.2 billion per year during 2026-30. Most of the investment (46.6 percent) will go towards peace and security, 27 percent for service delivery improvement, while 20 percent will go for capacity development for SDG-based planning, budgeting, implementation, data generation for SDG monitoring, and M&E.

The average SDG financing requirement for achieving the targets set for 2030 will be Rs 1,055.8 billion per year during the entire period of 2016-19, Rs 1,558.5 billion per year during 2020-22, Rs 2,046.7 billion per year during 2023-25, and Rs 3,069.3 billion per year during 2026-30. The average investment requirement for the entire SDG period is Rs 2,024.8 billion per year. As a percentage of GDP, the annual average investment requirements for 2016-19 is 44%, which rises close to 50% of GDP during 2026-30. The annual investment requirement for the entire period of 2016-30 is about 48% of the GDP on average.

The average investment requirement for the entire SDG period is Rs 2,025 billion per year, which is about 48% of the GDP on average.

Of the total investment requirements for entire SDG period, anti-poverty measures account for 7.5%, while inclusive growth and productive employment (mainly labor and tourism), agriculture, health, education, and gender account for 2.8%, 5.8%, 6.6%, 15.1%, and 0.7%, respectively. Water and sanitation and energy account for 3.8% and 12.8% of the total investment requirement, respectively. Physical and industrial infrastructure make up the highest share with 30.3%, while urban development, housing, and reconstruction account for 8.4% of the total investment requirements. With regards to other SDGs, climate change accounts for 1.2%, forestry for 1.8%, and governance for almost 3%.

The composition of annual investment requirement across the sectors changes over time, the investment requirement for agriculture declines from 7.84% of the total

4 The average investment requirement for national road will be Rs. 16 billion per year in 2016-19, which increases to Rs. 22 billion per year for the entire period of 2016-30. The annual yearly investment for railways is Rs 12.4 billion for 2016-19, which rises to Rs 78.1 billion during 2026-30. The estimated annual average investment for airport construction is Rs 24.9 billion per year for the entire period of 2016- 2030..

The public sector is expected to contribute up to 55% of total SDG investment requirement with the highest proportion going for poverty alleviation sector, followed by agriculture, health, education, gender, water and sanitation and others.

investment requirement during 2016-19 to 4.8% during 2026-30. The decline is mainly because of the initial large investments made in the early stage in irrigation and agricultural infrastructure. Investment in health, however, increases from 5.34% of annual investment during 2016-19 to 7.17% during 2026-30.

The share of energy sector investment in total investment requirement goes up from 6.6% of the investment requirement during 2016-19 to as high as 16.4% during 2026-30, as large hydropower projects are constructed during the later years. The share of investment on urban development, housing, and post-disaster reconstruction declines from 16.1% to 6% for the same period. However, the share of investment requirement for transport and industry, forestry, gender, labor and tourism, and climate change will remain almost the same throughout the 15-year period.

SDG Financing Strategy

The public sector is expected to contribute about 55% of total SDG investment requirement with the highest proportion going for poverty alleviation sector, followed by agriculture, health, education, gender, water and sanitation, transport infrastructure, climate actions, and governance improvement sectors. The public investment requirement is expected to be relatively lower in tourism followed by energy, industry, and urban infrastructure sectors than in other sectors of SDG.

Overall, for 2016-2030, the financing gap in public sector will be highest in poverty alleviation and infrastructure development sectors. This includes water and sanitation, energy, transport, industrial and urban infrastructure, which comprises about 59% of the total financing gap, while the social sectors of poverty, health, education, and gender comprise 31% of the total financial gap. Climate change and forestry comprise about 4.5% financial gap, whereas the economic sectors will not have a significant financing gap. Agriculture will close the financing gap in later years of the timeline, after investing in irrigation, rural road, and rural electrification infrastructure in the early years.

Domestic financing (revenue and borrowing) could finance only about 62% of the public sector SDG investment requirement will provide another 20% of financial gap. The annual average financing gap would be about 21%of the public-sector SDG financing requirement.

Domestic financing sources for investment in SDGs is the sum of revenue and domestic borrowing. About two-thirds of the total domestic resources available for public sector is distributed into the SDG areas. And, about 90% of the projected ODA inflow is considered to be available for financing SDGs.

The public-sector financing gap would be 24.8% of the investment requirement until 2020-22 and would gradually decline over the years to 13.5% during 2026-30. It is because several of SDG investment requirements are front-loaded, while state revenue is expected to rise gradually to 27% of GDP by 2030. The average public sector SDG investment financing gap throughout 2016-30 would be 5.9% of GDP.

The private sector is expected to invest in several SDG areas. Its investment is about 60% in labour and tourism sectors.

Given the investment requirement and potential sources of financing for different SDG areas, the financing gap in the private sector would be highest for transport, industry, energy, and urban development

poverty, agriculture, and labor and tourism will not face a financing gap, while education and health will face a shortfall.

The average resource available via private investment for the SDGs is Rs 224 billion per year for 2016-19, Rs 333 billion per year for 2020-22, and Rs 418 billion per year for 2023-25. The average requirement during the entire period 2016-2030 is Rs 373 billion per year. The average yearly financing gap in the private sector would be 38% of private investment requirement, which is about 7% of annual GDP.

The annual financing gap in the private sector is expected to be covered by mobilizing more equity, bank financing, and FDI. An incentivizing and facilitating environment need to be created to motivate more private investment in SDG sectors. Also, a single-window facilitating external borrowing mechanism can be institutionalized to mobilize higher amounts of external resources over the years.

Cooperatives have so far mobilized nearly Rs 300 billion per year in share capital, reserves, and savings. The incremental financing resources available from cooperatives for SDGs sector is estimated at Rs 25 billion annually. NGOs also mobilize about Rs 20 billion annually to fund social and economic activities. On average, the available financing resources for the NGO and Cooperative sector, throughout the SDG period, is estimated at Rs 86 billion annually. The cooperative and NGO sector is not expected to face a financing gap for securing investment in SDG related activities.

The average financing gap for public and private sector combined is Rs 216 billion per year in 2016-19, Rs 391 billion per year for 2020-22, Rs 547 billion per year for 2023-25, and Rs 1,020 billion per year for 2026-30.

The average financing gap is Rs 585 billion per year for the entire period of 2016 to 2030 (i.e., SDG period). With respect to GDP, annual financing gap on average is 8.8% of GDP for 2016-19, 12.3% of GDP for 2020-22, 13% of GDP for 2023-25, and 16.4% of GDP for 2026-30. Overall, the annual financing gap stands at 12.8% of GDP throughout the period of 2016 to 2030.

The initial phase of SDG timeline calls for public investment to set up the basic infrastructure, where the government will face higher funding gap. Gradually the private sector will shoulder the bulk share of the investment, as a result, an increase in private sector investment gap in the later phase of the timeline, which rises up to Rs 816 billion per year in 2026-2030 from Rs 35 billion per year in 2016- 2019.

The cumulative financial gap for the entire period of 2016 to 2030 stands at Rs 8,775 billion, where the investment gap in the private sector is estimated to be Rs 5,502 billion, which comes to 62% of the total cumulative financial gap. The total investment requirement will be Rs 30,384 billion for the entire SDG period, out of which public investment requirement will be about Rs 16,670 billion, and total available public investment, including ODA, will be only about Rs 13,396 billion, with a gap of about 20% of total needs in the public sector.

The average financing gap is Rs 585 billion per year for the entire period of 2016 to 2030.

The financing mentioned above applies to the optimal economic growth scenario, which is 8.7% annual average growth throughout 2016-30. As revenue mobilisation and domestic borrowings is tagged with economic growth, the optimal growth scenario would automatically result in higher domestic-resource mobilisation.

In the normal growth (5% annual average growth) scenario, the financing gap would

Table 1: Annual average requirements of investment for meeting SDGs targets by major sectors*

(Unit: Nepali Rs in billion, at constant price of 2015)

Sectors	2016-19	2020-22	2023-25	2026-30	2016-30
Total SDG Investment Need	1,055	1,559	2,046	3,070	2,025
Total SDG Investment Need (in USD at constant price of 2015)[1]	10.25	15.14	19.87	29.82	19.68
Total SDG Investment Need as % of GDP	43.8	48.8	48.8	49.7	47.8
Private Investment requirement	259	443	736	1,303	739
Private resource available (In FDI)	224	333	418	488	373
Private finance gap	35	110	318	815	366
Public Investment requirement	702	979	1,134	1,505	1,111
Public resource available (including ODA)	521	698	905	1,300	893
Public finance gap	181	281	229	205	218

* Estimates of the study team.
Note 1. The average of daily exchange rate (buying rate) of Nepali currency with US$ in year 2015, as provided by Nepal Rastra Bank (Central Bank of Nepal), is used for converting Nepali Rs. to US$; @ 1 US$ = 102.95 Nepali Rs (in 2015).

add up to Rs 8,761 billion during the 15 years (2016-30), compared with Rs 8,775 billion in the optimal growth scenario. The overall annual average financing gap would be 18% on an average of GDP in normal growth.

The increase in financing gap in normal growth scenario indicates the higher downsize risk, if the economy is not able to pace up the expected high growth. Similarly, if revenue mobilisation, which is targeted to reach 27% of GDP by 2030, if it reaches only 25%, then the financing gap would be as high as Rs 9,020 billion for the entire period, which is Rs 245 billion higher than the case in the optimal growth scenario. These two scenarios illustrate a high sensitivity of the financing gap to the rate of economic growth and degree of revenue mobilisation in the economy.

The macroeconomic outlook of the SDG timeline shows absolute poverty falling to 16.7% during 2016-19, and then 9.6% during 2020-22, 4.2% during 2023-25, and finally 3% during 2026-30. The total level of unemployed labor force would fall, from an average of 3.7 million during 2016-19, to 2.3 million during 2020-2022, 1 million during 2023-25, and 0.4 million during 2026-30.

The government should foster public and private collaboration (or PPP) to fill in the public finance gap for SDG financing.

The revenue mobilisation strategy for achieving the SDGs will have to serve two critical objectives. They are:

(i) mobilizing higher revenue through progressive taxation system, widening of revenue base; and
(ii) incentivizing private and other non-government sectors to allocate their investments and resources toward SDGs.

While undertaking the first objective, due consideration should be on the likely impact of taxes on the poor and on adverse impact on income distribution in the economy. While pursuing the second objective, care should be taken on the revenue forgone when non-government actors avail themselves of tax breaks in support of SDGs.

The key elements of SDG financing strategy in the public sector are:

(i) additional efforts to mobilize revenue through a progressive taxation system to ensure equity and;
(ii) setting prices and user fees for public goods and services that directly help to achieve SDGs. However, in doing so, accessibility of the poor to basic services;
(iii) prioritizing expenditure and allocating higher budgets for the SDGs;
(iv) taking initiatives for debt relief; and
(v) soliciting for more ODA to meet the resource gap in financing the SDGs must be assured.

Local governments may have to mobilise higher levels of resources to finance the SDGs. They can do this through own-source revenue (OSR), inter-governmental fiscal transfers (IGFTs), local borrowing, and partnership with the private and community sectors, or with civil society organisations (CSOs). The level of OSR can be increased through: strengthening the revenue administration system; updating and making functional of the OSR database; revisiting tax and non-tax revenue rates; improving the local tax collection system (institutions); making efficient revenue collection mechanism, exploring alternative avenues for potential OSR; and institutionalizing cost-sharing in project implementation, wherever it is possible.

The government should foster public and private collaboration (or PPP) to fill in the public finance gap for SDG financing. Such a partnership involves providing credible space to the private sector in operations and revenue generation activities such as: (a) contracting out; (b) concessions; (c) franchise; and (d) self-help groups.

Communities are actively engaged in local development activities. In urban areas, they have been contributing between 40% and 80% of the total to costs of development schemes. Project collaboration with communities should be thus institutionalised to mobilise more substantial resources from community in SDG sector implementations.

Some innovative financing mechanisms can be developed to implement SDGs at local level. For instance, Viability Gap Funding (VGF) and land pooling. Land pooling promotes shared infrastructure where communities are motivated to share their land with the incentive that land value shall appreciate after development of transportation access and connecting to modern infrastructure.

Given the low development scenario and the scale of development needs in Nepal, there is less room to create a fiscal space exclusively through expenditure switching and efficiency gains. The public sector needs to partner with the private sector and the cooperatives in SDG financing. Therefore, the non-state actors will have more than a 45% share in financing total SDG investment requirement.

Domestic-resource mobilisation by government will be insufficient to finance SDG investment. Besides, a large chunk of the financing need arises on the non-SDG front of public spending, such as debt servicing and defence spending. Therefore, ODA is important to finance the gap, as the country will not be able to afford to fully fund recurrent expenditures that account for a large share of total costs in health, education, agriculture, and other sectors. Thus, to maintain macroeconomic stability and debt sustainability, a higher proportion of ODA will need to be obtained in the form of grants as opposed to loans.

The public sector needs to partner with the private sector and the cooperatives in SDG financing. The non-state actors will have more than a 35% share in financing total SDG investment requirement.

A mechanism to be developed whereby the private sector could participate in policy formulation, implementation, and monitoring of the SDGs.

Implementation Partnership Strategy

The experience of MDG implementation has shown that localisation of national development goals is critical to properly address the targeted populations, communities, income groups, and geographical areas. Therefore, making a framework for implementing SDGs at the subnational is essential. A two-pronged approach encompassing universal and targeted measures is necessary to address the diverse set of development deficits across gender, social and ethnic groups, and geographically excluded regions.

Strategic partnerships among the government, non-government, private, and community sectors would require that all are part and parcel of the SDG-based plan preparation, implementation, and setting up M&E system. Political institutions including the parliament, political parties, and their entire apparatus should be on board to own and facilitate SDG implementation at the national and subnational levels.

Even after the process of integrating SDGs into the local governments' periodic plans and annual budgets, there is a need for regular audits of annual budget and programs from the SDG perspective. A framework for a budget audit is already in place since the FY 2016/17 budget. This needs to be improved and critically assessed on a regular basis. Agencies outside the government could also be assigned to carry out the budget auditing task for credibility. A civil society forum for SDGs could be entrusted with the assessment task, and the findings should be taken as a guide for subsequent budgetary works.

There are several areas where the private sector can work as a strategic partner of the government. A mechanism to be developed whereby the private sector could participate in policy formulation, implementation, and monitoring of the SDGs, as well.

Effective implementation of the SDGs demands meaningful participation of non-state actors, namely civil society groups, cooperatives, and media and community groups. They should work in partnership with government and private sector with defined roles and responsibilities. Their participation is necessary for the localisation of SDGs at the provincial and local government levels, and to put strong multi-stakeholder structures in place for monitoring, reporting, and providing feedback to planning and budgeting.

Cooperatives and communities are already on-board regarding SDG implementation and have spontaneously started working in this area. The government intends to make cooperatives complementary to what the public and private sector can do for sustainable development. In doing so, the Government will have to create an enabling environment for them to meet the investment needs.

Youth organisations and other civil society activists can also engage in SDG dialogues and SDG implementations. Media can also effectively disseminate the 2030 Agenda and monitor SDG progress. Partnership with these groups will be critical for effective implementation of the SDGs at national and sub-national levels.

In Nepal, 13 different UN agencies are currently working in SDG implementation and monitoring. A UN agency-level SDG working group has been set up for better coordination and effective support. This type of SDG working groups would be instrumental in building national, provincial,

and local level capacities to integrate SDGs into the planning, programming, and budgeting processes, and to build capacity for their implementation and help strengthen the M&E system.

Partnering with multilateral and bilateral donors is equally important for mobilizing the needed resources for the SDGs. Unless the multilateral and bilateral aid flows enter the public finance and annual budgetary system of the country, and are allocated as per the national priorities, it is less likely that even a larger flow of aid will ensure achievement of the SDGs. Aid coordination among development partners will be critical for increasing efficiencies and effectiveness of level and patterns of expenditure of the external aid in the country.

Nepal is a member of the South Asian Association for Regional Cooperation (SAARC), which has taken up several initiatives in the past to carry forward the MDGs, in collaboration with the United Nations Development Programme (UNDP) and United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). The region will have to work collectively to address SDGs that have cross-border implications such as trade, investment, tourism, capital flows, migrant workers, disasters, and social protection. The Government of Nepal also needs to work and forge collaboration with these regional and international organisations toward achieving the various targets of SDGs within a stipulated time.

BIMSTEC and AIIB are two more Asian development cooperation organisations that could be instrumental in achieving the SDGs, not only for Nepal but for the region as a whole. Other regional cooperation frameworks could be explored to finance public-sector infrastructure projects, such as China's One-Belt-One-Road (OBOR) project, also known as the Belt and Road Initiative. If more external financing in economic and infrastructure projects could be mobilized, more public resources could be allocated to social and environmental sectors investments and ensure also for attaining for SDGs targets

The M&E of SDGs will have to be done through the collective efforts of the government, civil society organisations, and development partners. A stronger and more rigorous institutional and operational mechanism with enhanced capacity will be needed to see whether the country's development programs at all levels are on track to achieve the SDGs. Particularly, as the private sector will be a key player in achieving SDGs, the monitoring process must encompass activities and outcomes in the private sector, as well. In this regard, the government can set up a joint monitoring mechanism with the private sector and civil society organisations, to conduct an annual review of the progress made toward meeting the various targets of SDGs.

In case of Nepal, mapping of SDG data requirements and their quality shows large gaps in data for monitoring SDG indicators at the national level. A rapid assessment of the total data requirement found that out of 479 committed SDG indicators of Government of Nepal, data and definition for 214 indicators are available in Nepal at accepted standard, while those for 105 indicators, availability of data is at moderate scale, but data for 9 indicators are very poor. Whereas, data and further illustrations for about 100 indicators are not available at all. Therefore, a large investment will have to be made in generating and improving data sources, including a partnership among all the development actors will be necessary for compiling data and information on these SDG indicators across various tiers of the government.

SDGs are transformative, hence macroeconomic policies need to reformative activities and to guide and reorient the public and private investment toward this sector.

Policies, Institutions, and Way Forward

Several of the SDG indicators are of a qualitative nature and they cannot be costed to derive the investment requirement in monetary terms. They have to be achieved through policies, regulations, and administrative enforcements. Furthermore, indicators related to inequality, injustice, exclusion, or insecurity have to be addressed through both policies and institutions mandated to work on these issues.

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SDGs are transformative, hence macroeconomic policies need to reformative activities and to guide and reorient the public and private investment toward this sector. They include fiscal, monetary, trade and foreign investment policies. More investment to the SDG areas can be ensured by reforming policies relating to infrastructure and industrial; FDI; technology transfer; labor and foreign exchange; and banking sector institutions.

Prudent macroeconomic policies can promote economic growth and also reduce level of poverty and inequality in the country but they impact differently to different social groups. As such, a high growth can affect gender, social groups; and income groups differently at different period of time. Economic growth will be inclusive when most citizens can participate in the production process and share benefits, or else are covered by social protection. Prudent macroeconomic policies may be able to serve this purpose.

Some of the critical steps for advancing the targets of SDGs through macroeconomic policies include:

(i) audit of existing fiscal and other public policies from poverty, inequality, and exclusion perspectives and reorient them for pro-poor growth;

(ii) audit of financial, monetary, credit, and foreign exchange policies to see if they are consistent with the broader objectives of the SDGs such as inclusive growth, access to productive resources, sustainable production and consumption, and good governance for effective service delivery;

(iii) assessment of foreign exchange and exchange rate policies to see whether they are congenial to investment for both domestic and foreign investors; and

(iv) assessment of the existing trade and investment policies, particularly from the perspective of sustainable consumption and production.

Only keeping in a place proper institutional mechanism among the state and non-state actors can ensure interventions related to SDGs are executed in a coordinated, coherent, and complementary way. For example, the role of parliament would be particularly crucial when it comes to creating and reforming of laws facilitating and governing implementation and monitoring of the SDGs. Parliamentary committees would be instrumental in monitoring progress in implementation and outcome of SDG interventions. Therefore, sustainable development and governance committee has been fored in the parliament.

SDG priorities have to be set against fiscal, financial, managerial, institutional, and other capacity constraints. But they should not be rigidly bound by these constraints; efforts must be made to unlock the tied-up resources and address other capacity constraints.

Sequencing the priorities of SDGs would be necessary when priorities are not implementable at the same time for any of several reasons including implementation capacity of the public and private sector in a country. These include priorities that:

(i) do not require new legislation, new organisation structure or new staffing;
(ii) deliver low hanging fruits of development output; and
(iii) facilitate implementation and delivery of other top priorities.

Nepal faced two shocks during its transition from the decade-long armed conflict toward peace and prosperity. The first shock was the massive earthquakes of 7.8 Richter-scale in April and May 2015, which caused a huge loss of lives, property, and physical infrastructure in Central Nepal. The second shock relates to the four-month-long trade blockade on the border between India and Nepal starting in October 2015. Subsequently, Nepal's priority has increasingly shifted to disaster prevention and preparedness, attaining self-sufficiency in basic goods such as food, medicine, and energy, and moving forward to a sustainable and stable macroeconomic regime.

Prioritisation of budget for SDGs has become a critical strategy for Nepal because many interventions have to be made in scarcity of resources, time, and inadequate capacity of human resources. Prioritisation is necessary also to create institutions and mechanism for SDG implementation, and for fostering synergetic interaction among the targets.

The following criteria could be applied for SDG prioritisation:

(i) SDGs directly related to national pride projects;
(ii) unfinished elements of the MDG agenda, followed by those interventions that have highest impact on multiple goals;
(iii) interventions that create jobs and which are critical for reducing poverty; and
(iv) interventions that reduce disaster risk and ensure human security.

Finally, there is a need to institutionalise the project prioritisation criteria of the government. In addition to revisiting the project and program prioritisation criteria, there is also a need to develop an evidence base for reprioritisation, through wider and deeper evaluation of the ongoing and completed priority projects.

The data and information and improved knowledge-base on needs assessment, costing and financing for SDGs as derived in this study report will be very useful for planning and allocation of public sector budgets (scarce resources) and public finances to targeted sectors of SDG at all three tiers of the government (national, provincial, and local government); and in ensuring economic development, prosperity, and achieving various targets of SDGs in the country.

Prioritisation of budget for SDGs has become a critical strategy for Nepal because many interventions have to be made in scarcity of resources, time, and inadequate capacity of human resources.

Chapter 1

Introduction

1.1 Background

The Sustainable Development Agenda has been in global discussion for more than two decades. The Agenda is structured around three dimensions— economic, social, and environmental, which are envisioned to evolve concomitantly centred on inclusivity and prosperity. Based on the Sustainable Development Agenda, and taking into consideration the unfinished agenda of Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs) have been agreed upon and implemented since January 2016. The SDGs encompass 17 goals with a total of 169 targets covering a broad range of sustainable development issues. As the goals and targets of SDGs were agreed in the UN General Assembly in September 2015, more than 230 indicators for measuring and tracking their progress have also been drawn up.

SDGs are comprehensive, ambitious, and challenging goals and require huge resources as well as the capacity to achieve them within the stipulated timeline. Also, as SDGs are interwoven and do not stand alone, achievement of one goal has synergetic implications for the achievement of others. The mutually reinforcing nature of the goals makes them indivisible and demands complementing implementation. The ambitious targets of SDGs and the overarching goal to "leave no one behind" calls for a well-designed implementation strategy that identifies the right kind of intervention, investment, finance, and partnership.

Nepal, as one of the 193 signatory nations, agreed to the implementation of SDGs from FY 2016-17, the first year of the 14th Plan. The country's Medium-Term Expenditure Framework (MTEF) and the 14th Plan and budget for FY 2016/17 have duly taken SDGs into consideration in prioritizing and allocating resources. The country ownership of SDGs is manifested in the institutional set-up of the Steering Committee chaired by the Prime Minister; below this lies a Coordination and Implementation Committee chaired by the Vice-Chair of the NPC. Thematic Working Groups are formed under the convenorship of Members of the NPC with secretaries of the relevant ministries and other concerned agencies as members of the groups.

Nepal published its SDG National (Preliminary) Report in 2015, which has been updated in 2017 as SDG Status and Roadmap Report. Nepal has also presented its Voluntary National Review of the progress made toward the SDGs. This review report highlighted the enabling environment, institutional mechanism, the system to generate evidence of periodic achievements, challenges ahead, progress and preparation for effective implementation of intervention for achieving SDGs in Nepal.

The SDGs encompass 17 goals with a total of 169 targets covering a broad range of sustainable development issues.

The primary objective of this study report is to prepare an SDG implementation strategy based on needs assessment, to map out financial resource availability and requirements, and draw up a mechanism for implementation partnership.

The SDGs are being implemented at a time when the country has been passing through a state-restructuring process. Furthermore, the 14th National Plan has to inherit several unfinished items from the MDG agenda and leapfrog those to achieve the ambitious SDGs. The MDGs Final Status Report (NPC, 2016) highlights several unfinished agenda of the MDGs, such as absolute poverty, malnutrition, universal school enrolment, maternal mortality ratio (MMR), and access to reproductive health facilities. The report also flags up the national concerns about the quality, inclusion, and equality aspects of the MDGs achieved in quantitative terms, such as in education, child health, and environment. The SDGs have to meet these gaps even before embarking on making further progress.

The 2015 Constitution of Nepal has devolved several of the SDG-related development and service delivery responsibilities to the provincial and local governments. They include some aspects of poverty, agriculture, basic health care, basic and secondary education, water and sanitation, as well as small-scale infrastructure in energy, transport, and urban development and environment. As localisation of SDGs is critical for a universal, equitable, and inclusive outcome, it is necessary to have a political set-up at those levels willing and able to handle the development agenda in an effective manner. It is also necessary to work out the SDG financing strategy at those levels and support capacity development to implement the strategy. The national SDG strategy should provide guidance for local governments to work out their respective SDG implementation strategies.

As SDGs encompass a diverse set of outputs and activities, there is a cost to achieve the outputs and activities which can be financed by multiple sources. The government can finance them through public investment program. Households who can afford it can finance them in the form of Out of Pocket (OOP) expenses. The non-government organisations (NGOs), cooperatives, and community sectors can finance some of the SDGs through resource mobilisation at the community level. The private sector can mobilize equity and debt from domestic market as well as through Foreign Direct Investment (FDI).

All of these issues point to the need for developing an SDG strategy. The strategy that would help the government to align planning process with sustainable development agenda can assess financial, human resource, and other capacity needs for SDG implementation, draw financing strategy as per the SDG financing needs, and forge partnerships for non-government and private-sector agencies to work together.

There are four principal reasons why robust needs assessments covering public, and private investment requirements should be in place. First, needs assessment is important to envision a roadmap for SDGs. Second, it is necessary to understand how the enablers are to motivate private financing and policies to mobilise the scale of investment required to meet Agenda 2030. Third, it delineates domestic public financing, international co-financing needs, and supportive macroeconomic frameworks. Fourth, it supports resource mobilisation plana, which provides an accountability framework.

1.2 Objectives

The primary objective of this study report is to prepare an SDG implementation strategy based on needs assessment, to map out financial resource availability and requirements, and draw up a mechanism for im-

plementation partnership. Further it will reflect on the underlying incentives for collaboration and partnership in pursuit of shared goals between public, private, and communities. The front-or back- loading of the required investment is subjective to the sectoral requirement.

The specific objectives of the study are to (i) identify interventions necessary for implementation of SDGs; (ii) estimate investment requirements in major SDG areas covering social, economic, infrastructure, and environment sectors; (iii) allocate SDG investment requirements[5] among government, private, and community sectors, including households, cooperatives, and NGOs; (iv) draw up a partnership strategy to engage all stakeholders in the implementation and monitoring of SDGs; and (iv) suggest policies and institutions necessary for the implementation of SDGs at the national and subnational levels.

1.3 Scope and Limitations

This report consolidates the existing needs assessment and costing works done at sectoral levels, build on the cost estimated to project the requirements till 2030 to derive the level and mechanisms of financing the targets and

5 This study estimates SDG investment requirement level at national level, its allocation to be done across the three tiers of the government (federal, provincial, and local government level). The exact level of allocation across the three tiers of government widely varies by the sectoral types, and also over time.

The first game-changer is our spatial location between China and India. What is happening among our direct neighbors is a force that is much more powerful than the early days of the Industrial Revolution.

goals of SDG. Following are the specific elements adopted to derive the levels and mechanism of financings, which also sets scope of the study. They are as listed below.

(i) Identification of interventions required for effective implementation of primary SDG targets.
(ii) Estimation of investment requirement in major SDG areas covering social, economic, infrastructure and environment sectors using available tools and calibrating existing costed sector strategies.
(iii) Allocation of SDG investment requirements[5] among government, private, and community sectors (including cooperatives, communities, and NGOs), as well as households.
(iv) Estimation of financing gap in the public sector based on analysis of fiscal space (revenue, aid and domestic borrowing forecasts) and analysis of strategic measures to meet the financing gap.
(v) Estimation of financing gap in the private sector and analysis of strategic measures (including those related to FDI, PPP, and borrowings) to meet the financing gap.
(vi) Estimation of financing to be made by the NGO, community, and cooperative sectors.
(vii) Estimation of household OoP spending for SDGs related goods and services.
(viii) Estimation of the additional external development assistance need for meeting SDG financing gaps.
(ix) Projection of macroeconomic indicators (economic growth, inflation, public debt, domestic saving, and investment, etc.) based on SDG targets set in the baseline report and also in line with the SDG investment requirements.
(x) Review of existing SDG investment against the requirement derived from sectoral needs assessment, and suggestions for reallocation, prioritisation, and sequencing of SDGs.
(xi) Drawing up of a partnership strategy to engage the stakeholders in the implementation and monitoring of SDGs, including local governments and bilateral, regional, triangular, and multilateral institutions.
(xii) Identification of policies and institutions necessary for implementing SDG strategy.

This study report is based on secondary sources of information and builds on them to quantify the cost of interventions needed for agriculture, infrastructure, education, health, and water supply. Also, legacy costing tools from MDG process is used in some sectors, such as gender, transport, and infrastructure. The projections for investment requirements in different areas are made on a linear basis and do not capture the dynamic linkages between interventions. Proxy costing is done for some interventions of qualitative nature (mainly in poverty, gender, and governance) in the absence of proper data and methodology. Some of the SDG targets such as inclusive growth, reduction of inequality, and sustainable production and consumption are not costed, as they are addressed through policy interventions.

Analysis on needs assessment, costings, and financing strategies of SDG interventions are done in the study report by sectoral themes and at country level using aggregate scale of assessment. In practice, large parts of the SDG interventions are done by sub-national governments (i.e., provincial and local governments). However, when this study was commissioned in 2017, vital data and key statistics (and parameters) needed for deriving SDGs costing and financing estimates were not available at sub-national level governments of Nepal. As a result, this study

would not derived information on costing and financing of SDG at sub-national level governments.

Names of many ministries and departments of government of Nepal have changed frequently in the last four to five years, as a process of implementing federal structures and federalism-based constitutions in the country. As a result, the name of the ministry may be differ from the present one. This is specially the case while citing past studies in different chapters. In this context, name of the agency whatever it was in the corresponding years is mentioned in the report.

A comprehensive excel-based tool has been designed to assess the dynamic linkage between macroeconomic variables such as GDP growth, ODA, domestic borrowing, and revenue mobilisation. In the tool, the feedback of SDG investment to economic growth, employment, and poverty reduction is based on parameters such as incremental capital-output ratio (ICOR), employment elasticity, and poverty elasticity. An SDG-consistent macroeconomic framework can further be developed to capture in detail synchronisation and trade-offs. There is scope for refinement in interventions and unit cost through wider consultation.

1.4 Organisation of the Report

The report is organized in six chapters. With the background in the first chapter, the second chapter briefly summarizes key concepts and the methodology adopted for needs assessment, costing and financing of the SDG. This also includes review of the sector strategies of the government and analysis of the costing approaches and results. The third chapter assesses SDGs needs assessment and associated costing level for each goal (grouped by sectors), and estimates requirements and availability of funding for that. The fourth chapter discusses SDG financing gap and outlays financing strategy. The fifth chapter focuses on implementation strategy highlighting the partnership among stakeholders. The sixth and final chapter elaborates policies and institutions necessary for SDG implementation, and the way forward and SDG prioritization related policy issues.

Chapter 2

Methodology of SDG Costing and Financing Strategy

This chapter provides an overview of Nepal's SDG targets and their 2030 outputs along with a detailed analysis of the methodology used for needs assessment and cost. The SDG Status and Roadmap Report makes a comprehensive review of SDG targets, their indicators, and expected output by 2030. Therefore, this chapter briefly recapitulates them to identify the key interventions and estimate the resources required for meeting the 2030 targets.

2.1 Review of SDG Targets and Indicators Plugged in the Costing Exercise

SDG 1. **End poverty in all its forms everywhere.** Targets for year 2030 have been set against the existing poverty situation and the goals the country has set for itself. Nepal proposes to reduce extreme poverty to less than 5%, reduce poverty gap to 2.8%, and raise annual per capita income to US$2,500 in 2030 from US$766 in 2015. The target for nationally defined poverty in 2030 is less than 5%. The multidimensional poverty index is targeted to decline to less than 10% in 2030 from more than 44% in 2015. To address poverty faster at the current rate of average income growth, the consumption share of the bottom 20% of households is targeted to increase to 12% in 2030 from 7.6% in 2015. Social protection expenditure is also targeted to reach 15% of the national budget in 2030 from 11% in 2015.

SDG 2. **End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.** Targets include reduction in prevalence of undernourishment (measured by sufficiency of access to food at country level) to 3% and prevalence of underweight children under five years of age to 5% by 2030. Other targets are: decrease percentage of households with inadequate food consumption to 3% in 2015 from 36.1% in 2030; and reduce prevalence of anaemia among women of reproductive age and children to 10% in 2030.

SDG 3. **Ensure healthy lives and promote well-being for all at all ages.** Targets include reduction of MMR to less than 70 per 100,000 live births by 2030, which is in line with the global target. Child health targets include reduction of preventable deaths of new-borns and children under five years of age to less than 1%. For overall new-born and under-five mortality rates, the target is to reduce them from 23 and 38 per thousand live births to 12 and 20, respectively, by 2030. Other targets include near-elimination of prevalence of human immunodeficiency virus (HIV), tuberculosis (TB), malaria and other tropical diseases, and water-borne diseases. Still other targets for 2030 include reduction of non-communicable diseases to one-third, and the increase in health-care expenditure to at least 7% by 2030 of GDP from 5% in 2015. There are also targets to increase prevalence rate of modern contraceptive methods to 60%, raise proportion of births attended by a skilled birth attendant to 90%,

Nepal proposes to reduce extreme poverty to less than 5%, reduce poverty gap to 2.8%, and raise annual per capita income to US$2,500 in 2030 from US$766 in 2015.

increase institutional delivery to 90% and provide post-natal care for 90% of mothers by 2030.

SDG 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Targets include 99.5% net enrolment and completion of primary education, and 99% gross enrolment in secondary education by 2030. Other targets are: 95% of students enrolled in grade one to reach grade eight; attendance in pre-primary education of 99 % of children; the proportion of working age population who have relevant skills (including technical and vocational skills for employment, decent jobs, and entrepreneurship) to reach 75%; all youth and at least 95% of adults to achieve literacy and numeracy, both men and women; and the ratio of girls to boys enrolment in tertiary education (graduate level) to reach 1 by 2030.

SDG 5. Achieve gender equality and empower all women and girls. Targets include elimination of wage discrimination for similar work, of physical/sexual violence, eliminating of all harmful practices such as child, early, and forced marriage, and chhaupadi (forced isolation of women during menstruation or after childbirth), increasing seats held by women in national parliament to 40%, and increasing women's share in public service decision-making positions threefold to 33% in 2030 from 11% of the total public service employees.

SDG 6. Ensure availability and sustainable management of water and sanitation for all. Targets for the year 2030 include basic water supply coverage to 99% households, and piped water supply and improved sanitation to 90% of households. Other targets are to free 99% of the communities from open defecation, to reach 95% of the households with improved sanitation facilities that are not shared, and to enable 98% of the population to use latrines (including the shared facilities).

SDG 7. Ensure access to affordable, reliable, sustainable, and modern energy for all. Targets include ensuringaccess to electricity for 99% of households. Reduction to 30% – from nearly 75% now – of households who resort to solid fuel as their primary source for cooking; limiting use of liquid petroleum gas (LPG) to less than 40% of households. Developing installed capacity of 15,000 MW of hydropower, increasing per capita electricity to 1,500 kWh, and decreasing the commercial energy use per unit of GDP from 3.20 tonnes of oil equivalent (ToE) per million Rs in 2015 to 3.14 ToE/million Rs in 2030.

SDG 8. Promote sustained, inclusive, and sustainable economic growth, with full and productive employment and decent work for all. Global target for 2030 is to achieve 7% per capita annual GDP growth, which is Nepal's target. Growth is also necessary for graduating from its status as a member of the official group of Least Developed Countries (LDCs) in the near future. Other targets are: to maintain growth of agriculture at around 5% per year and that of construction to 15% throughout the SDG period; reduce material intensity in manufacturing to 60%; lower underemployment to less than 10%; and eliminate the worst forms of child labor. The target is also to increase the number of jobs in tourism industries almost tenfold and to increase direct contribution of tourism to GDP by four times.

SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation. Target is to increase road density to 1.3 km/sq. km, and paved road density to 0.25 km/sq. km. The targets include connecting all the districts and villages by road. At least 50 percent of

the road is targeted to be safe. The target for telephone connectivity is to ensure mobile coverage for the whole population. The target for industry is to increase the share of industry in total national output to 25% by 2030 so as to promote labour-intensive activities and raise employment in manufacturing to 13% of the total employment.

SDG 10. Reduce inequality within and among countries. Targets are to reduce consumption inequality index from 0.33 in 2015 to 0.16 by 2030, income inequality from 0.46 to 0.23 by 2030; the Palma Ratio (income of the top 10% to that of the bottom 40%) from 1.3 to 1, but increasing the share of income of bottom 40% of the population from 12% of national income to 18%, increasing social, economic, and political empowerment indices to 0.70 each, and increasing the ratio of the nominal-wage index to the consumer price index from 2.9 to 3 by the year 2030 to protect the working class from deteriorating real wages.

SDG 11. Make cities and human settlements inclusive, safe, resilient, and sustainable. Target is to reduce the number of households with more than five people to 20%, from 47% in 2015. From a situation of almost non-existent road safety standards, the target is to make at least 50% of the roads safe according to global standards. Other targets for 2030 include doubling proportion of households living in safe houses to 60%, substantially reducing air pollution, as also deaths and injuries due to disaster, and repairing and reconstructing, by 2020, all cultural heritage destroyed by the earthquake.

SDG 12. Ensure sustainable consumption and production patterns. Targets are: land to be available for cereal production to reach at 75% of all cultivated land. Consumption of wood per capita is proposed to be contained at 0.05 m3 per year, compared to 0.11 m3 in 2015. Use of plastic per capita is proposed to be almost zero, from 2.7 gram per day in 2015. Similarly, the post-harvest loss of food is targeted to reduce from 15% in 2015 to less than 1% by 2030. Other specific targets proposed for SDG 12 include limiting water use to 20% of the water resources and limiting fossil fuel consumption to 15% of energy consumption by 2030.

SDG 13. Take urgent action to combat climate change and its impacts. Targets for 2030 include halving the existing carbon dioxide (CO2) emission levels including from transport, industrial, and commercial sectors. Consumption of ozone-depleting substances is targeted to reduce to one-third of the existing level. Climate change adaptation plans are proposed for 120 village councils and 750 communities. The number of climate-smart villages is set to reach 170 from zero to 500 units from zero in 2015.

SDG 14. Conserve and sustainably use oceans, seas, and marine resources for sustainable development. It does not hold any official committed target for Nepal Government.

SDG 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, management of forests, combat desertification, and halt and reverse land degradation, and halt biodiversity loss. Targets are to maintain conservation area at 23.3% of the total land area, increase forest under community management from 39% to 42% of the forest area, halt forest loss and degradation, increase mountain ecosystem covered by the protected area to 70% in 2030 from 68% in 2015, and undertake additional plantation of 5,000 ha per annum.

For the year 2030, revenue collection is set at 27% of GDP, domestic expenditure financed by domestic revenue to reach 80% from 76% in 2015.

SDG 16. **Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build a effective, accountable society and inclusive.** Targets include: ending deaths from violent conflict, violence against women, and violence against children; improving transparency and accountability score from a scale of 3 at present to 5, and good governance scale from –0.78 to 2.0, on a scale of –2.5 to 2.5. The targets also include eliminating marriage before the age of 18 years, 100-percent birth registration, 80-percent voter turnout in elections, and access to justice for all.

SDG 17. **Strengthen the means of implementation and revitalise global partnership for sustainable development.** Targets are: for the year 2030 revenue collection is set at 27%of GDP, domestic expenditure financed by domestic revenue to reach 80% from 76% in 2015, FDI (inward stock) to increase to 20% of GDP from less than 3% in 2015, and volume of remittance is to reach 35% of GDP from 29% in 2015.

Intervention-based tools have been used in this study to derive the SDG costing, which is a more transparent approach to map out investment needs at a high level of disaggregation.

2.2 Review of Costing Methods

This section reviews the generic methodologies for SDGs needs assessment and provides a rationale for the assessment method used in this study report. The commonly adopted methods for deriving costing for SDG interventions are summarized below.

2.2.1 Incremental Capital-Output Ratio (ICOR) estimates and other growth models

The incremental capital-output ratio (ICOR), i.e., the economy-wide relationship between aggregate investments and GDP is obtained through cross-sectoral regressions of outputs to investments. This back-of-the-envelope approach is simple to use, but it suffers from several conceptual and practical limitations. ICORs heavily relies on extrapolation which is a poor guide for the structural changes required in Agenda 2030. Aggregate investment needs do not help in programming public expenditure, understanding the specifics of private investment opportunities, or providing an accountability framework. ICORs are therefore taken not to be suitable for estimating SDG investments needs (Devarajan 2015).

2.2.2 Simple Unit Cost Estimates or Input-Outcome Elasticity

Some studies apply aggregate unit costs, often drawn from dividing government spending by the key output variables. Simple descriptive models that link a level of investments to target variables, such as economic growth, are variants of this approach. There are econometric models which regress economic infrastructure investments on economic growth. The resulting coefficient is then used to target GDP growth rate. Although simple and straightforward, there is a limitation on the use of these methods if the composition of investment needs changes. Similarly, back-of-the-envelope unit cost estimates also do not consider synergies, trade-offs, and other economy-wide effects of investments to achieve the SDGs (Schmidt-Traub 2015).

2.2.3 Computable General Equilibrium (CGE) Models

CGEs consist of aggregate production and utility functions that are combined to depict economy in equilibrium. Changes can then be introduced into the system to estimate the investment needs for various policy options. One widely used CGE model is the World Bank's MDG simulation model which has subsets of critical sectors such as primary education, health, water, and sanitation. It addresses several important questions such as (i) interaction between investments in specific SDG sectors and policies designed

to achieve them; (ii) interaction between investments in SDG outcomes and the broader economy through changes in the price and supply of specific factors, such as skilled labor; and (iii) inter-temporal equilibrium consistency to ensure that financing needs, debt accumulation, and fiscal policies are consistent over time.

However, such tools have several limitations as well. These functions are too stylized to understand the investment needs in individual sectors – particularly if the composition of these investment needs changes over time. The computational complexity and data requirements limit the models' scope to a subset of MDG/SDG sectors. Another structural weakness of CGE models is that they do not adequately account for market externalities.

2.2.4 Intervention-Based Needs Assessment

An extension of unit cost estimates is an intervention-based needs assessment, as employed by the UN Millennium Project (2005). Such intervention-based tools specify the interventions needed to achieve specific outcome objectives and can be disaggregated, which allows them to serve as an accountability framework. They project the required capital and operating to deliver development interventions to the target populations. Unit costs may change with coverage, and the ratio of capital to operating expenditure evolves as countries expand their capital stock. As a result, the marginal investment needed for expanding social services and access to infrastructure services changes over time. Since intervention-based tools are often designed in the form of spreadsheets, they are comparatively transparent and easy to use.

One downside of this approach lies in the lack of dynamic cross-sectoral assessments of synergies and trade-offs. Some intervention-based needs assessments, therefore, assume changes to wages and other vital parameters. Such changes are exogenous and may consequently require iteration with economy-wide tools. An extension of intervention-based needs assessment tools is engineering system models such as MESSAGE, MARKAL or TIMER which provide detailed representations of the respective sectors which can complement dynamic equilibrium and other economy-wide models.

In summary, intervention-based tools have been used in this study to derive the SDG costing, which is a more transparent approach to map out investment needs at a high level of disaggregation, also consistent with medium-term expenditure budgeting. They are particularly well-suited to social sectors and basic infrastructure. This is because replicable interventions in these areas can be specified in significant detail. However, the use of intervention-based tools needs to be complemented by inclusion of economy-wide effects.

It is estimated that about 75% of public spending (including recurrent and capital expenditure) goes to SDGs while only about 40% of the private sector spending through bank financing goes to SDG areas.

2.3 Review of Global SDG Costing Exercise

UN agencies have started to quantify the costing attaining SDGs. The Sustainable Development Solution network estimates the per-capita incremental cost of achieving SDGs for low-income countries in the range of US$404-424 per year at the 2013 prices (Schmidt-Traub 2015). If climate mitigation and adaption costs are included, the investment need reaches US$443-464 per year. About 60% is estimated to be financed from the public sector and the rest from the private sector. In proportion to GDP, SDGs investment need is estimated in the range of 43-45%. If it includes climate change adaptation cost it escalates to 47-49%. The public sector financing need would then be 27-28% of GDP. Since the incremental cost for the public sector alone reaches 28% of

GDP, it is understandable that for a country such as Nepal where budget spending is already more than 30% of GDP, total public spending including non-SDG areas might exceed 60% of GDP. If private investment need is added, then total SDG and non-SDG investment requirement might reach 80% of GDP.

Several countries have made attempts to estimate the financing requirement for SDGs. For Bangladesh, the total unsynchronized cost for SDGs has been calculated at US$1,163 billion, and total additional synchronized cost for implementation of SDGs has been estimated to be US$923 billion. The WHO estimate says that it would require health spending as a proportion of GDP on an average of 6.5% to bring health service costs to US$41 per person by 2030. The estimate is for the 67 low- and middle-income countries accounting for 75% of the world population. It is also highlighted that health spending as a proportion of GDP across all the countries ranges from 5.6% to 7.5%.

Global investment requirement is only an indicative number. Country-specific actual requirement varies because of the different initial conditions of development, country-specific SDG targets, and different unit costs of the targeted output. Hence, an estimate of country-specific SDG costing and investment is necessary.

2.4 Costing Methodology

The cost estimation in this report incorporates the cost quantified in the existing sectoral plans and strategies from the Ministry of Agriculture, Ministry of Health, Ministry of Water and Sanitation, Department of Road, Ministry of Urban Development, Agricultural Development Strategy, Water and Sanitation implementation strategy and Priority Investment plan (part I and II). Review of the existing sectoral plans and strategies reveal that most of the sectoral Ministries have already identified interventions and have estimates of the investment required. However, some of the strategies are yet to be fully aligned with the SDGs aspiration. A brief snapshot of the sector strategies, related goals, and their periodicity highlighted in the box 2.1 below.

Box 2.1 below says that the Agriculture Development Strategy has calculated the cost for SDG 2. Nepal Health Sector Strategy

Box 2.1: A snapshot of the sectoral strategies, related to SDG, and their periodicity in Nepal

SDG Goals	Sector Strategy	SDG Consistence of Interventions	Periodicity	Estimated Investment	Remark
SDG 2	ADS	Yes	2014-2023	Yes	232 activities costed
SDG 3	NHSS	Yes	2016-2021	Yes	Covers all health services
SDG 4	SSDP	Yes	2016-2021	Yes	Doesn't account for higher education
SDG 6	NWSSHSDP	Yes	2016-2030	Yes	Eleven themes covered.
SDG 7	SE4ALL	Yes	2013-2030	Yes	Covers all energy
SDG 9	RSMP, PIP I&II	-	2001-2016	-	Partial costing available
SDG 11	NUDS	Yes	2016-2030	Yes	Detail costing and financing available
SDG 13	NAPA, LAPA	-	-	-	-
SDG 15	Nepal's FSS	Yes	2012-2022	Yes	GoN and the World Bank working on FIP

Source: Compiled by the study team by reviewing various government documents and the related project reports.

Implementation estimated the investment need for SDG 3. The School Sector Development Program has some cost quantification for SDG 4. Similarly, SE4ALL has quantified the cost required for SDG 7. The Road Sector Master Plan and Priority Investment Plan has quantified per unit km cost for strategic and local roads. The National Urban Development Strategy, Municipal Financing Framework have assessed cost interventions related to SDG 11.

Legacy costing tools such as MDG costing tool is rigorously used while calculating the total cost required for road infrastructure, and interventions needed to achieve the Gender-related goal. Further, some of the targets which cannot be costed are addressed through policies. SDG 8 on inclusive growth and decent work, SDG 10 on reducing inequality, SDG 12 on sustainable consumption, and even SDG 16, where several governance-related indicators were achieved through policy interventions, do not require a rigorous costing exercise. Instead, they are addressed by introducing relevant policies and institutions. However, if there is any cost implication of such policies and institutions, they are plugged in during the quantification.

Some important qualifiers that need to be understood in the course of reading the report are as follows.

(i) Investment requirements for all the sectors are realigned at constant price and exchange rate of 2015, and the costs estimated in sectoral plans or strategies are linearized up to 2030.

(ii) In this report, "investment" implies the amount required for achieving the targets. Hence, both the recurrent and capital spending are included in the costing exercise.

(iii) Not all the public, private or non-government sector spending goes to SDG financing. It is estimated that about 75% of public spending (including recurrent and capital expenditure) goes to SDGs while only about 40% of the private sector spending through bank financing goes to SDG areas.

(iv) Almost all Ministries have some interconnection with SDGs, grouped into ten clusters. The SDGs clustered for costing are as follows:

Cluster 1 Poverty: This cluster includes targeted pro-poor programs, social protection schemes, micro-finance, labor, tourism, commerce and supplies, and disaster risk reduction. However, labor and tourism, part of SDG 8, are costed separately.

Cluster 2 Agriculture: This cluster includes agriculture, livestock, land reform and management, irrigation and river control.

Investment is broadly defined to include recurrent and capital spending because most of recurrent spending in SDGs delivers output to achieve the outcome.

Cluster 3: Health: This cluster includes nutrition, population, and wellbeing.

Cluster 4: Education: This cluster includes education, skill, youth, culture, and sports.

Cluster 5: Gender: This cluster is exclusively for gender not included in other clusters.

Cluster 6: Water and Sanitation: This cluster is for water and sanitation, and energy (which includes hydro-electricity, solar, micro-hydro, and other alternate sources of energy supply). Petroleum and firewood supply are not costed as they will be gradually replaced by renewable energy. However, energy is costed separately for a better understanding of investment requirement.

Cluster 7: Physical and industrial infrastructure: This cluster includes physical infra-

structure such as transport (road, rail, and air). The sectors of industrial infrastructure, innovation, and ICT are costed separately, and they are clubbed as physical and industrial infrastructure.

Cluster 8: Urban infrastructure: This cluster includes urban infrastructure, housing, reconstruction, and disaster management.

Cluster 9: Climate change: This cluster includes forestry, environment, and climate change. However, climate change is costed separately and then clubbed together.

Cluster 10: Governance: This cluster includes governance, civic security, peace and justice, monitoring, evaluation, and statistics.

2.5 Estimation of SDG Financing Gaps

Revenue projections are assumed to reach 27% of GDP by 2030 and 63% of the revenue to be available for SDG financing.

There are two approaches to arrive at the investment requirement for SDGs. In the first approach, investment requirement is arrived at as the product of expected economic growth and ICOR. For example: Total investment requirement (ΔK) = Targeted Economic Growth (ΔY)* ICOR (dK/dY), where Δ= change, K=capital, Y= GDP, and ICOR= incremental capital-output ratio or Δk= Δy*(Δk/Δy).

In the second approach, the investment requirement for SDGs is calculated through needs-assessment and costing exercise. The investment requirement in SDGs was added to some other non-costed areas (such as public administration and security) to arrive at the total investment requirement. For example:

Total Investment requirement = SDG investment requirement (estimated through needs assessment) plus investment requirement in non-SDG areas. Investment is broadly defined to include recurrent and capital spending because most of recurrent spending in SDGs delivers output to achieve the outcome.

As there are several limitations of the first approach, the second approach is adopted in estimating total and SDGs investment requirement, as follows:

Investment requirement for SDGs = spending needed for achieving SDG targets estimated through costing.

Public sector total investment (spending) requirement = SDGs plus non-SDGs spending requirement. Spending on defence, debt servicing, constitutional bodies not directly serving SDGs are classified as non-SDGs spending area in the public sector.

Financing available for SDGs investment = potential Investment of sum of public, private, cooperative and non-government sectors, and household sectors in SDGs.

SDG financing gap in the public sector = total resources available (revenue, aid, and borrowing) for SDGs minus total investment requirement in the public sector.

SDG financing gap in the private sector = total resources available (private savings or equity capital, domestic bank borrowings, and FDI) minus SDG investment requirement in the private sector.

SDG financing gap in the non-government sectors (cooperatives and communities included) = total resources available (savings, capital, domestic bank borrowings) minus expected SDG investment from these sectors. However, financing gap in non-government sectors is assumed not to exist as these sectors are expected to invest whatever resources they can mobilize.

Some qualifiers that are important to understanding financing gap are:

(i) SDG financing need is categorized into four broad sectors Public, Private, Co-operatives, Communities and NGOs, and Households.

(ii) NGO, cooperative, and household sectors are assumed to exhaust their available resources to meet the investment need; with no financing gap in the sector.

(iii) The public, private, cooperative and NGO, and household sectors are assumed to contribute 55%, 36%, 4.32% and 4.36% of the required SDGs investment, respectively. This proportion is plugged in the investment area, resource availability, and ability to contribute.

(iv) Revenue projections are assumed to reach 27% of GDP by 2030 and 63% of the revenue to be available for SDG financing. The rest is to be spent in areas not directly related to SDGs, falling under defence and police, debt service, and constitutional and administrative bodies with no direct impact on achievement SDG. Domestic borrowing in public sector is projected to remain at less than 2% of GDP while ODA is projected to grow by 10% per annum in the initial years (up to 2020), and gradually declining in the subsequent years.

(v) Financing available for private sector is anticipated to comprise private equity at 2.5% of GDP, bank credit to grow at 8%, and FDI inflow to remain at 5% of GDP, on average.

(vi) Funds available to households were estimated by applying different weights in the income categories. The categories are low-income, middle-income, and high-income groups. The groups were assumed to have different capacities to afford OoP expenses. Low-income households (22% of the total) were exempted from monetary contribution to the SDGs in their consumption. Middle-income group (48%) is expected to partially contribute, and the high-income group (30%) is expected to contribute most of the spending on SDG. This includes recurrent with a small portion of capital spending goods, at least to cover capital depreciation cost.

2.6 Macroeconomic Projections

Several macroeconomic variables are projected to estimate SDG financing gap. They include the projection of nominal and real GDP, consumption, saving, investment, export and import of goods services and capital including FDI until 2030. Data were taken from the Economic Survey and Economic Bulletins.

Macro projections are consistent with the targets set in the SDG Status and Roadmap Report (2017) and other macroeconomic variables such as economic growth, growth rate of agriculture, shares of agriculture, manufacturing, and tourism are projected in line with the GDP. In the optimistic scenario, nominal per capita GDP is projected to grow from US$745 in 2015 to US$4,700[6] by 2030. In the normal growth scenario, the nominal GDP per capita will be US$2,550 by 2030. Poverty elasticity is set at 0.25, and growth elasticity of employment is set at 0.42 for the targeted years.

Inflation is assumed at 5% and is taken into account by the implicit GDP deflator. Nominal GDP and exchange rate depreciation is about 1.8% per annum. Domestic revenue is assumed to cover 27% of public spending, ODA is projected to grow by 6% per annum and will finance almost 20% of the spending. For debt sustainability analysis, 60% of ODA is assumed to be the loan, and the rest grants.

In the optimistic scenario, nominal per capita GDP is projected to grow from US$745 in 2015 to US$4,700 by 2030.

6 The estimates were done in 2017 by the study team with assumption of optimal growth scenario, as noted earlier.

Chapter 3

Needs Assessment and Costing

SDG needs assessment is guided by various issues and challenges that must be addressed if targeted achievements are to be met by 2030. They include not only high economic growth for low-income countries such as Nepal, but also better distribution of income and wealth through restructuring economic growth and reorienting macroeconomic and sectoral policies. Needs assessment also considers factors such as demographic transition, urbanisation, rising threats of shocks and disasters including, rising inequality, changing structure of society, new governance structure following implementation of the federal system, technological innovation, and an increasingly uncertain environment with regards to trade, investment, and aid.

SDG needs assessment and financing strategy has to cover three aspects of implementation challenges:

(i) Identification of key interventions to achieve targets;
(ii) Estimation of resource requirement; and
(iii) Policies and institutions required to achieve goals.

3.1 Key Issues and Interventions Considered in the Needs Assessment

3.1.1 Key Issues to be Addressed

Leaving no one behind means that interventions have to deliver development at the doorsteps of the hard-to-reach people. Eradicating absolute poverty in the next 15 years and reducing all kinds of poverty to at least half calls for 1 percentage point reduction in poverty rate every year. Given the pace of our historical achievements so far, with incidence of poverty higher than the national average, unprecedented efforts would be needed to attain the goal. Increasing the share of the bottom 20% in national income and consumption would require an above average growth in group income. It is contingent upon how effectively restructuring of the production and income-generation process will take hold. The case is similar for social services such as education, health, and gender empowerment. In SDG needs assessment, interventions for addressing such problems have to be identified and sized. This is important, particularly for interventions needed in empowerment of Dalits, marginalised communities, and people left behind in the development.

Leaving no one behind means that interventions have to deliver development at the doorsteps of the hard-to-reach people.

Demographic transition and urbanisation are posing development challenges as they unfold new opportunities. For instance, the youth population, which constitutes a formidable share of the population, is a demographic dividend for the country. But, to reap the benefits of that dividend, it is equally important to accommodate the young human resources through the creation of productive employment. Nepal is rapidly urbanizing, where current urban population grows at 3.4% per annum. The growth is nearly three times the national population growth. Furthermore, urban infrastructure for the newly announced mu-

nicipalities will have to start right from the base. In addition to that, human settlements damaged by the recent earthquake have to be rebuilt. Rendering the context more challenging, at present just more than a quarter of the households live in cement-bonded houses, and less than 10% have underground drainage connection. Rapid urbanisation in one hand and dilapidated infrastructure to start makes the task strenuous. Thus, the agenda of decent and safe housing, along with doubling the basic services in each household requires mobilisation of unprecedented resources, which local communities may have difficulty to undertake given the resources constraints. Thus, the issues of securing federal fund, and/or, international financing in urban development are important. In SDG needs assessment, pace of demographic transition, migration, and rapidly growing urbanisation have also been taken care of while deriving the sectoral parameters.

Along with preparing SDG-based local development strategy at the subnational levels, it is essential to work out its financing strategy and encompass capacity development interventions.

Growing inequality will nullify attempts to reduce poverty and promote equal citizenry. But containing inequality through market-based policy instruments is a formidable task. Unless pro-poor growth policies and strong distributive measures are put in place, it is hard to increase the wealth shared by the bottom 40% in national income. There is no single intervention to address inequality from the front. Several shifts in policies — ranging from macro to sectoral ones — will be indispensable to address inequality and maximize the benefit of economic growth for poverty reduction.

Nepal is prone to shocks and disasters by its geography. Externalities, such as earthquakes, floods, landslides, avalanches, fires, and outbreak of diseases has a probability of dragging back the achievements made in poverty reduction and human development. Achieving SDGs accompanied by better human development outcomes calls for adequate disaster risk reduction interventions. The SDG implementation process and the corresponding strategy will have to be structured in a way that any externalities do not derail or obstruct sustainable development progress.

Mainstreaming SDGs at the local government levels is strategically important for several reasons. First, the federal system of government entrusts many SDG- related service delivery at the province and local levels. They include basic and secondary education, primary health care, water supply and sanitation, agriculture, basic infrastructure, and social security. Second, devolution of revenue and other resource mobilisation authority to Provincial and Local governments along with the contingent fiscal transfer of a larger portion of federal revenue from the Federal government provide subnational governments with a huge amount of resources to foster development aspirations. Third, the level of development being different across subnational units and the priorities of development being subjective, prioritisation and sequencing of SDG interventions could be best addressed through planning and budgeting process at the subnational levels. Fourth, local people's participation and effective service delivery can be best assured when SDGs are implemented at the subnational levels. And fifth, leaving no one behind and ensuring equality in development outcome requires targeting the poor, the deprived, and the underdeveloped. To do so the local governments can be more helpful. It is equally important to have a capable political set-up at sub-national level willing and capable of handling development agenda in an effective manner.

Thus, along with preparing SDG-based local development strategy at the subna-

tional levels, it is essential to work out its financing strategy and encompass capacity development interventions. The notion of "capacity first and devolution later "has to be rejected with devolution of the authority and capacity development agenda at the same time. Excuses on capacity constraint should not be allowed to prevent implementation of SDGs at the subnational level. SDG implementation capacity and financing constraints are to be duly incorporated in the needs assessment and costing work. Good governance, which is synonymous with democratic governance, is possible when democratic values and norms are engraved into the functioning of the state, society, and its institutions. In doing so, strengthening the institutions needed for good governance —particularly those related to law and justice, anti-corruption, and service delivery have to be identified, and the resource required needs to be quantified.

Strong monitoring system with a credible database is crucial to the success of SDGs. Only an effective government with a strong statistical system can measure and incentivize progress across the goals. Global studies reveal that a total of US$1 billion per annum will be required to enable 77 of the world's lower-income countries to put in place statistical systems capable of supporting and measuring SDGs (Sustainable Development Solution Network 2015). While donors must maintain current support to statistical development, recipient countries must commit to filling the gap. This is possible by mobilizing domestic resources into the development of statistics and restructuring of National statistical offices. For Nepal, this implies restructuring the Central Bureau of Statistics (CBS) and enabling it to generate and process a large number of data required for SDG monitoring in federal Nepal. Besides data quality control, standardisation is also necessary because monitoring of SDG indicators of federal, provincial, and local government demands not only granularity of data but also their standard, quality, and availability.

The major data challenges pertain to data disaggregation, standardisation, consistency in method of computation, and open source. There are about 479 indicators to monitor the 169 targets for Nepal, but only for less than 250 Indicators data are regularly or intermittently available at the national level. Also, data for some other 50 indicators are partially available and those for more than 100 indicators are not available at all. Besides, there are sizable qualitative pieces of information that need to be collected such citizen perception on public services, corruption, and wellbeing. Some of the data are globally published but with no country ownership. There is also a huge difference between government-recorded data and those compiled by NGOs. This is particularly the case with violence, crime, human trafficking, violation of human rights, etc.

Nepal requires both external funding and capacity building to ensure data are available for the proposed indicators. Strengthening data system should be a priority of the government. The needs assessment process has to incorporate interventions required for strengthening data and monitoring system and allocate necessary resources for implementation.

Prioritisation has been a critical challenge for SDG implantation. While MDGs contained minimum development targets, they were non-negotiable and did not pose the challenge of prioritisation. The set of SDGs is ambitious development targets for resource-constrained countries such as Nepal and there is a need for prioritisation and sequencing of interventions to achieve the

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There are about 479 indicators to monitor the 169 targets for Nepal, but only for less than 250 Indicators, data are regularly or intermittently available at the national level.

goals. Although SDGs are equally important, indivisible, and common for all countries, their priorities are country-specific, depending upon the level, gaps, and mode of development. For Nepal, where nearly a quarter of people live in absolute poverty deprived of basic needs, the narrative is a very sad one. As poverty is a deeply cross-cutting issue in several areas in this development – deficit country, it is difficult to prioritize the stand-alone goal.

SDGs cover almost every sector, are intertwined, and they are hard to prioritize in a definite way by goals or sectors. Still, prioritisation can be done at target, indicator, program, and activity levels. It is important to note that this is different from the normal planning process whereby sectors are prioritized. And in the absence of proper programming tools, they can hardly be translated into budget allocation and implementation.

Prioritisation will also be guided by financing, resource availability, and donor support to certain SDGs. Global SDG needs assessment and investment requirements flagged thereon suggest that huge financing gaps exist in SDG implementation, particularly in low-income developing countries. The government, private sectors, and development partners will have to agree on prioritisation criteria and adhere to the norms. Sequencing of interventions is imperative to match the fiscal space available for financing aspirations. In doing so, sequencing will have to be based on time, resources, multi-level effects, and capacity required for implementation.

SDG 17 is about enhancing international support for implementing effective and targeted capacity-building in developing countries to support national plans. This is to implement all sustainable development goals, including through North-South, South-South, and triangular cooperation. But international support must be led and reinforced by the national government so that capacity constraints do not impede achievement of SDGs despite commitments, resource availability and willingness to carry forward the agenda. The SDG national development strategy formulation and implementation will thus encompass capacity development as its integral part. The SDG needs assessment should undertake capacity assessment as one of its activities. The interventions identified to implement SDGs must include capacity development programs so that they get adequate budgetary resources. This is because unless capacity development interventions are mainstreamed into the national planning and budgeting process, they will not get enough priorities and resources for expedited implementation.

Implementation of SDGs faces several issues ranging from ownership at different levels of the government and stakeholders, to planning, prioritizing, sequencing, financing, and monitoring. Ensuring country ownership has often been a case with the globally agreed agenda, as witnessed in the past and even in recent years. Even though very active consultations were done with all stakeholders over a period of more than two years, some of the challenges common to certain low-income countries have not been adequately captured in the SDGs and their targets. The challenge for such countries is to adopt goals reflecting the country-specific condition. Nepal also needs to consider the development challenges pertaining to its geography, structure of economy, society, values, and institutions, and work towards achieving the Agenda 2030.

3.1.2 Major Interventions for SDGs

The SDG Status and Roadmap Report (2017) hints on essential interventions, reflected as indicators which lag on achievement. The key interventions for achieving goals discussed in this section are closely related to the indicators specified for each goal in the baseline report.

For poverty reduction, the major interventions include income generation programs (interest subsidy for capital), food for work, SME capital grant, targeted local infrastructure programs, public food subsidy for poor, and prevention of disaster. Another major intervention is social protection, which covers social insurance, social assistance, and labor market interventions. The interventions related to reducing poverty gap, increasing per capita income and share of the lowest quintile in national income are addressed through policy recommendations.

The interventions for zero hunger and malnutrition include food security, food-based nutrition, adequate agricultural production through access to arable land, expansion of irrigation, fertilizers, credit, and technology, change in food habits, and fair public food distribution system. In addition, expansion of rural roads network, promotion of sustainable farming, agroforestry, good veterinary animal husbandry practice, expansion of rural electrification and renewable energies, promotion of competitive agricultural value chains with special focus on the benefit of smallholder farmers, investment on food safety and quality, market infrastructure development have been considered as other areas of intervention. A decentralised extension system responsive to farmers, and agro-enterprises' needs, effective implementation of existing seed policies including Seed Vision 2013-2025 are other interventions in achieving SDG 2.

Interventions related to health and wellbeing range from immunisation to disease control and health insurance schemes. The main interventions have been classified into three broad headings: (i) health system strengthening; (ii) health care services and; (iii) other areas. The first component focuses on development of health infrastructure, rebuilding of damaged health facilities, improvement in management of health infrastructure, availability and management of staff at all levels with a focus on rural retention and enrolment, improvement of human resource education and competencies, procurement system, and supply chain management. The second component includes improvement of health services with quality assurance, improvement of infection prevention and health care waste management, improvement of access to health service, especially for the unreached population and strengthening of health service network including the referral system. The last component covers enhancement of strategic planning and institutional capacity at all levels, making MoHP structure responsive to health sector needs, improvement of governance of the private sector, improvement of development cooperation and aid effectiveness in the health sector, strengthening multisectoral coordination mechanisms, improvement of public financial management, strengthening health financing system and social health protection mechanisms. It also focuses on promotion of healthy behaviours and practices, an improvement on preparedness for public health emergencies, strengthening response to public health emergencies, practices of integrated information management approach, conducting of survey, research, and studies in priority areas; with the results used for evidence-based planning and decision-making.

Interventions related to education include basic education (including early childhood education, development/ pre-primary education, and non-formal education), voca-

Nepal also needs to consider the development challenges pertaining to its geography, structure of economy, society, values, and institutions, and work towards achieving the Agenda 2030.

tional training program of one-year vocational course, and three years diploma with specialised training. Literacy and lifelong learning, teachers' professional development and management program, disaster risk reduction and school safety program and improvement of governance and management are other programs. These interventions aim to improve access and equity; increase school readiness upon enrolment and equitable student learning; increase functional literacy, reading, and learning habits among the youths and adults. Other interventions include improved teaching and management, improved teacher professional development, school facilities resilient to different kinds of disasters, and youth programs (including entrepreneurship development, loans for technical and professional education, financing for self-employment enterprises, and sports for mental and physical fitness.

Gender interventions include awareness of sexual and reproductive health issues, helping girls' transition to work, encouraging political participation, President's women upliftment program, and welfare programs such as social security and social assistance for vulnerable women and children. Gender interventions to be mainstreamed in other goals are specified in the respective areas.

Interventions for universal access to water and sanitation include enhancing access and utilisation, ensuring functionality and sustainability of services, ecosystem/water augmentation and production, governance institutional set-up and strengthening, capacity development, diplomacy around water, sanitation, and hygiene (WASH) initiatives, sector convergence, network communication and promotion, improving water quality, responding to emergency and vulnerability, and supervision and system management.

Interventions for access to modern and renewable energy are hydropower generation, extension, and upgrading of transmission and distribution system, generation of renewable energy at the local level through micro-hydro and solar system, installation of biogas plants, and promotion of energy efficiency.

Interventions for achieving inclusive growth and decent labor market are enhancement of labor-intensive sectors such as agriculture, construction, and tourism; elimination of child labor; and social security for labors. Under tourism, the major interventions include construction of hotel rooms, development of tourism products and small tourism infrastructure, and market promotion. Under the labor market, interventions are related to eliminating child labor, ensuring safety at workplace, creation of labor-friendly laws, and enforcement of labor laws.

Physical and industrial infrastructure-related interventions cover construction of new strategic roads, upgrading of existing strategic roads, construction of bridges, construction and upgrading of international and domestic airports, railway lines, development of manufacturing sector, industrial innovation, and ICT infrastructure.

Interventions identified for urban development, safe transport, and housing include urban roads, storm drainage, and sewerage construction, pipeline water supply and sewage connection, landfill sites, bus parks, and other urban infrastructure. This cluster also includes housing for the poor, reconstruction of houses damaged by earthquake, reconstruction of cultural heritages

and archaeological sites, and provisions for disaster preparedness.

Interventions identified for climate change mitigation and adaptation are building resilience and adaptive capacity, reducing emission through mitigation, strengthening climate data, climate proofing technology for infrastructure projects, and M&E.

Interventions identified for forestry and ecosystem are conservation of national forest/biodiversity, wildlife conservation, herbal development, sustainable forest management and enhancing rural livelihood, training research and development, promotion of community forestry, and M&E.

Interventions related to peace, justice, and governance are manifold. The interventions are related to access to justice, good governance, and strengthening legal institutions and anti-corruption bodies. Interventions related to effective service delivery include capacity development and public accountability. Interventions related to data for SDG requirement include:

(i) production of statistics in quality and quantity that meet the needs of all levels of government for evidence-based policy measures, as also the needs of the wider users in the national and international communities;
(ii) formulation and implementation of policies, practices, and capacities to support statistical operations and development; and
(iii) implementation of statistical operations in a cost-effective manner to avail accurate, relevant, and timely statistics for development requirement including for SDG monitoring. The major reform agendas of NSDS cover development of statistical infrastructure with wider application of IT and equipment, human resources management and development, improvement in data production methodology and data management, dissemination and access. Interventions specifically related to SDG indicator monitoring include identification of SDG-related country-specific indicators, establishment of SDG monitoring unit, capacity development and human resource management for monitoring SDG indicators, and compilation, publication, and localisation of SDG indicators.

Some of the sustainable development goals such as reduction of inequality (SDG 10), sustainable production and consumption (SDG 12), and enhancing domestic resource mobilisation with international cooperation (SDG 17) are addressed through policies (see Chapter 4). SDG 14 is not costed as it does not refer to the landlocked countries.

3.2 Costing of SDGs Based on Their Targets and Indicators

3.2.1 Poverty

Eradicating poverty by 2030 depends on a multitude of factors such as the size or speed of economic growth and its distribution; job-intensity of economic growth and labor market condition; access to productive resources such as land, capital, and technology; access to social services; and social protection. As some interventions are cross-cutting, those not costed elsewhere are quantified in this section.

The timeline for graduating from the group of LDCs has been postponed, but the graduation strategy report prepared in 2014 by the government (National Planning Commis-

Eradicating poverty by 2030 depends on a multitude of factors such as the size or speed of economic growth and its distribution; job-intensity of economic growth and labor market condition; access to productive resources; access to social services; and social protection.

sion 2014) has quantified financial resources needed to raise per capita income. Nepal's graduation strategy reveals that the required investment would rise up to Rs 1,723 billion in 2022 from Rs 428 billion in 2014. The assumption is that investment requirement grows at the rate of 19% per annum. In total, for the entire period, the estimated investment requirement equivalent to Rs 9,697 billion (at a constant price) is needed to increase gross national income (GNI) where the yearly per-capita spending sums up to Rs 43,000 to meet the graduation criteria.

Another area in poverty where cost is quantified is social protection spending requirement until 2034. It is based on universal old-age[7] and disability pension of Rs 2,000 per month, child[8] allowance of Rs 1,000 per month, and birth grant of Rs 5,336 to be paid to women giving birth in health facilities, as well as a scaling-up of essential health care services and basic education for all children aged 6-11. The costs, estimated at 16% of GDP in 2007 would decrease to 8% in 2034. The expenditure would increase over the period in absolute amount, but in relative terms, as a percentage of GDP it decreases. The estimates have been made on the basis that benefits will be indexed with inflation.

The most substantial intervention in poverty has been social protection, comprises in 32.7% of the total cost in 2016-19 that rises to Rs 72.4 billion in 2026-30.

It is notable that the total costs calculated are gross amounts for the overall package of basic social protection benefits, including provisions already put in place by the government. Expenditure on other[9] social security provisions would be in addition to the costs calculated by the model. Expenditure on non-basic social protection is estimated at 2.2% of GDP in 2007. Therefore, the total social expenditure, which includes basic and non-basic provisions, amounted to 18.5% in 2007 and to 9% of GDP by 2034 (ILO 2008). This is higher than the domestic resources that the state could afford.

This assessment quantifies the cost for the following interventions:

(i) income generation activities to directly address poverty of the hard-to-reach poor, particularly Dalits, marginalised communities, vulnerable people, and people residing in geographically excluded areas;
(ii) interest subsidy for credit to small and medium enterprises expected to generate jobs and employment;
(iii) area-based targeted infrastructure and social mobilisation activities;
(iv) prevention and mitigation of disasters that could trigger poverty; and
(v) social protection (social insurance, social assistance, labor market supports, and employment-related cash transfers) for 80% of the population by 2030 (Table 3.1).

The estimated investment requirement per year in poverty interventions averages Rs 76.7 billion in 2016-19, Rs 134.6 billion in 2020-22, Rs 174 billion in 2023-25, and Rs 211.8 billion in 2026-30. The most substantial intervention in poverty has been social protection, comprises in 32.7% of the total cost in 2016-19 that rises to Rs 72.4% in 2026-30. The social protection cost rises because it is a direct function of population growth while the need for other interventions declines due to substantial reduction in the number of poor in the later years. Throughout the period, social protection spending comprises more than half of the investment requirement.

7 Persons aged 65 or above.
8 Children between 0 and 14 years of age.
9 Such as on formal-sector social security; expenditure on secondary and tertiary education; expenditure on health other than basic health care.

Table 3.1: Poverty interventions and annual average investment requirement*

(*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Income Generation Interest Subsidy	3.2	5.4	5.9	3.5	4.3
Food for Work	9.5	16.2	17.8	10.6	12.8
SME Capital Grant	15.8	26.9	29.7	17.7	21.5
Targeted Local Infrastructure for Poverty	11.1	18.9	20.8	12.4	15
Public Food Subsidy for Poor	7.0	13.5	14.8	8.8	10.7
Prevention Disaster	4.7	8.1	8.9	5.4	6.4
Social Protection	25.4	45.7	76.1	153.4	82.3
Total	76.70	134.6	174	211.8	153
Social Protection Spending as percentage of Total Investment Requirement (%)	32.7	33.9	43.7	72.4	53.7

* Estimates of the study team.

3.2.2 Agriculture

SDG 2, which aims to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture, is broadly covered in Nepal's Agriculture Development Strategy (ADS) 2015-2035 of Ministry of Agriculture Development (Table 3.1). Details are in Tables 3.2 and 3.3. The ADS cover several areas of SDG 2 and has quantified the cost for significant interventions. The strategy includes implementation of 232 activities which yield 35 expected outputs. They are estimated at a constant price of 2015 and calculated by the bottom-up method. For example:

(i) farmers' production models (e.g. based on average farm size, cropping pattern, and yield);
(ii) stakeholders' existing plans (e.g. Department of Irrigation plans for surface irrigation expansion);
(iii) stakeholders' aspirations of scale (e.g. agricultural extension services to each VDC and Municipality); and
(iv) statistics of rural population, women, and disadvantaged groups.

Unit costs take the basis from nationally available data, or if unavailable, from a similar context abroad, for example:

(i) historic costs (e.g. cost per hectares (ha) of irrigation in completed or ongoing projects);
(ii) current prices (e.g. agricultural machinery);
(iii) normative costs (e.g. monthly salary for junior technician or government official);
(iv) specialist estimates (e.g. program for breeder seed multiplication); and
(v) generic estimates (e.g. training courses, or the cost to establish a research station).

The ADS approach relies on principles, some of which are:

(i) unit costs are adequate for completion of activity envisaged;
(ii) similar activities and their costs are complementary;
(iii) new initiatives, such as voucher scheme for agricultural inputs, are included as pilot project costs (nation-wide expansion subject to performance assessment and thus not included);

Table 3.2: Targets and indicators on agricultural sector as in ADS (2015) and SDG Status and Roadmap Report (2017)

Indicators	ADS (2015)				SDG Status and Roadmap Report (2017)				
	2015	2020	2025	2035	2015	2019	2022	2025	2030
Growth of Agri. GDP (%)	0.8[10]	5.0	5.0	5.0	4.5	4.5	5.0	5.0	5.0
Land irrigated year-round as a % of total arable land	25.2	35	60	80	25.2	40	50.5	60	80
Rice Productivity (million tonnes/ha)	3.6	4.0	4.3	5.1	3.4	4.1	4.6	5.1	5.5
Prevalence of Underweight Children under five years of age (± 2SD) %	30.1	20	13	5	30.1	20	18	15	9
Prevalence of Stunting in children under five years of age %	37.4	29	20	8	36	32	28.6	20	15
Prevalence of wasting in children under five years of age %	11.3	5	2	1	11.3	8	7	5	4

Sources: Ministry of Agriculture Development, 2015; The National Planning Commission, 2017.

(iv) the output quantities are feasible, based on existing and anticipated improved capacity;
(v) recurrent costs of government operation such as staff costs are not included, whereas it has included incremental staff costs (e.g., increased number of women junior woman technicians); and
(vi) contribution of private sector in agriculture is taken care of to arrive public investment requirement.

The cost of implementing ADS Action Plan for the first ten years (2015-2024) is Rs 501.83 billion at a constant price of 2014. The ADS action plan is taken as the basis to quantify the cost required for achieving SDG 2. In doing so, the annual average growth of 10% is applied to arrive at the total investment requirement for the agriculture sector. Also, the recurrent cost of existing agriculture service is included in the already existing estimate to arrive at the total spending requirement for agriculture.

The SDG costing exercise progresses in three steps. First, the total resources allocated in each output of ADS for 2015-19 have been broken down into annual requirements. The same process is followed to estimate resource requirements for 2020-2022. Second, the required investment on 2026-2030 is based on additional resource need sketched from 2015 to 2024. Third, any existing recurrent cost not included in ADS is quantified and added based on available unit price.

Interventions with the most substantial requirement are irrigation, promotion of competitive agriculture value chain, improving fertiliser supply distribution system, and promotion of organic farming. About one-fifth of agricultural intervention is estimated to go for irrigation and other infrastructure including rural roads and electrification (Table 3.3).

3.2.3 Health

SDG 3 interventions, which aim to ensure healthy lives and promote well-being for all at all ages, are broadly captured in Nepal Health Sector Strategy (NHSS) Implementation Plan 2016-2021 (Ministry of Health 2017). NHSS was prepared by the government and is being implemented. The NHSS cost is quantified and various interventions

10 The low growth was attributed to disasters and a weak monsoon in that year.

Table 3.3: Interventions and annual average investment requirement for agriculture *

(*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average for 2016-30
Improving food and nutrition security of most disadvantaged groups and rights to food	3.3	2.7	3.6	5.2	3.8
Strengthening agricultural education system	0.7	0.3	0.4	0.5	0.5
Expanding and improving irrigation	7.6	5.4	7.1	10.5	7.9
Improving fertilizer supply distribution system, and promote organic farming	4.9	3.6	4.8	7.1	5.3
Expansion of rural road network for agriculture	1.3	1.1	1.5	2.2	1. 7
Promotion of small and medium agro-enterprises	2.1	1.8	2.3	3.5	2.5
Decentralisation and extension system responsiveness to farmers and agro-enterprises' needs	5.6	3.9	5.2	7. 7	5.8
Decentralisation of research system responsiveness to farmers and agro-enterprises' needs	2.1	0	0	0	0.5
Expansion of rural electrification and renewable energies for agriculture	0.8	0.6	0.8	1.2	0.9
Market infrastructure development	0.8	0.6	0.8	1.2	0.9
Promotion of competitive agricultural value chains to increase value added and benefits to smallholder farmers and agro-enterprises	7.6	6.5	8.7	12.8	9.3
Enhancement of food safety and quality	1.8	0.5	0. 7	1	1.1
Other programs[11]	38.6	72.2	84.2	88.8	71.2
Total	77.2	99.2	120.1	141.7	109.4

* Estimates of the study team.

are in line with the SDGs. Review of costing method used in NHSP and main points of the costing of this plan shows that the cost of the NHSS is based on interventions required for broader health sector services such as human resources, drugs and commodities, capital investment and program activities. Using this approach, the estimated total cost of implementation of NHSS is Rs 266 billion for 2016-21, which implies an average annual requirement of Rs 44 billion.

The NHSS aims to improve the health status of all people through accountable and equitable health service delivery system. Ten national-level indicators measure this goal. The results chain of NHSS consists of 26 outputs, quantified under 56 output-level indicators and nine broader outcomes that are measured by 29 outcome-level indicators. The present study has used NHSS as a national guideline to achieve SDG 3. Thus, costing of SDG 3 is builds on the cost estimates made in NHSS implementation plan. The development goals envisioned in Nepal's SDG Status and Roadmap Report (2017) and NHSS were reviewed to assess compatibility which reveals that most of the indicators in both reports have almost the same baseline and targets. Those with different baselines and targets, however, have very close values but varying rates

11 Other programmes include smaller interventions costing less than Rs 500 million per year as identified by the ADS.

Table 3.4: Health indicators included in NHSS and SDG Status and Roadmap Report

	NHSS		SDG					
	2014	2017	2020	2015	2019	2022	2025	2030
MMR (per 100,000 live births)	190	148	125	258	125	116	99	70
Under-five mortality rate (per 1,000 live births)	38	34	28	39	38	28	27	20
Neonatal mortality rate (per 1,000 live births)	23	21	17.5	23	18	16	14	12
Total fertility rate (births per 1,000 women aged 15–19 yrs.)	2.3	2.2	2.1	2.3	2.1	2.1	2.1	2.1
Live births attended by skilled birth attendants (%)	-	-	-	55.6	69	73	79	90
Health worker population ratio (per 1000 pop.)	-	-	-	1.05	4.45	4.45	4.45	4.45

Sources: Ministry of Health, 2017; The National Planning Commission, 2017.

of growth to achieve their targets. Such a similarity allows considering the cost quantified in NHSS to estimate investment requirement for SDG 3. Common indicators identified in the SDGs Baseline Report and NHSS and their corresponding baselines and targets for various years are illustrated on Table 3.4.

The difference in MMR targets is explained by the different bases, while aspirations for under-five and neonatal mortality looks more ambitious in SDG 3 compared to those in NHSS. Other targets are close to each other, implying that NHSS can serve as a good base for costing SDG 3 investment requirements. The total costs of NHSS for 2016-2020 stands at Rs 266 billion, an increase of approximately 150% of the budget of the Ministry of Health and Population (MoHP) compared to the preceding five years. Interventions are categorized into three program outcomes:

(i) ***System strengthening:*** Development of health infrastructure as per plan and standards, rebuilding damaged health facilities, improvement in management of health infrastructure, staff availability at all levels with focus on rural retention and enrolment, human resource education and competencies, improvement in procurement system and supply chain management.

(ii) ***Health care services:*** Delivery of health services as per the existing standards and protocols, strengthening of quality assurance system, improvement in infection prevention and health care waste management, access to health services, especially for unreached population, and health service networks including referral system strengthened.

(iii) ***Other programs:*** Enhanced strategic planning and institutional capacity at all levels, improved governance of private industry, development cooperation and improvement in aid effectiveness in health sector, strengthening multisectoral coordination mechanisms, improved public financial management, strengthening health financing system, social health protection mechanisms, promotion of healthy behaviours and practices, improved preparedness for public health emergencies, enhanced response to public health emergencies, practicing integrated information management approach, survey, research, and studies conducted in priority areas

Table 3.5: Major interventions and annual average investment requirement for health and wellbeing

(*Unit: Nepali Rs in billion*)

Interventions /Period	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
System Strengthening	28.2	45.6	68.7	110.1	67.1
Health Care Services	15.2	24.8	37.2	59.5	36.4
Others	12.9	20.9	31.5	50.5	30.8
Total cost	56.3	91.3	137.5	220.1	134.2

Source: Ministry of Health, 2017; estimates of the study team.

and results used, improved health sector reviews with functional linkage to planning process.

The process to quantify the cost for SDG 3 from NHSS is in the following steps (Ministry of Education 2016b). First, the total cost estimated for three broad headings of NHSS for 2016-20 has been segregated into annual investment requirements. Second, the investment requirement from 2021 to 2030 has been estimated based on cost estimates for 2016-2020 reported in NHSS assuming a 10% annual increase in the subsequent years. The average yearly investment requirement for the implementation of health-sector interventions to achieve SDG 3 is Rs 56.3 billion for 2016-19, Rs 91.3 billion for 2020-22, Rs 137.5 billion for 2023-25, and Rs 220.1 billion for 2026-30 (Table 3.5). The most significant component of health-sector investment requirement is strengthening health system.

3.2.4 Education

Interventions need for SDG 4, which intends to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, is partly captured in the School Sector Development Plan (SSDP), 2016/17-2020/21 (Ministry of Education 2016b). SSDP envisages investment in six components of education, namely pre-primary, primary, secondary, higher-secondary, technical and vocational education, and informal education. It has also planned to invest in teacher management and professional development, disaster risk management, governance and management[12], M&E, capacity development, and organisation and management. The SSDP plans for achieving 100% net enrolment in basic education by 2023, and SDG 4 targets 99% by 2030. Other interventions related to quality of education, and vocational and technical training hold similar targets for both the reports.

The cost quantified for education sector builds on cost estimates for the programs of SSDP and indicators mentioned in the SDGs report. In both reports, some indicators have concurrent baselines and targets, and similar interventions (Table 3.6). Given the alignment of baselines and targets, costs up to secondary education have been estimated on the basis of SSDP's output costs. Logistic regression has been used to project resource estimate beyond the SSDP period. Further, costs on higher education have been estimated based on the assumption of 10% of the total costs of secondary education.

The SSDP plans for achieving 100% net enrolment in basic education by 2023, and SDG 4 targets 99% by 2030.

SSDP has estimated Rs 709.7 billion cost from 2016 to 2020 to achieve its program outcomes. Investment requirement beyond 2020, i.e.,

12 At the district level

Table 3.6: Education indicators included in SSDP and SDG Status and Roadmap Report

Indicator	SSDP Targets				SDG Targets				
	2016	2019	2021	2023	2015	2019	2022	2025	2030
Net Enrolment ratio[13]	96.6	97.5	98.5	100.0	96.6	98.5	99.0	99.0	99.5
Gender Parity Index (GPI) (secondary school)	1.0	1.0	1.0	1.0	1.02	1.01	1.01	1.01	1
Primary Completion Rate[14]	69.6	78.5	85.0	90.0	80.6	90.7	93.1	95.5	99.5
Literacy Rate 15-24 yrs.	88.6	92.0	95.0	98.0	87.4	90.5	92.8	95.1	99.0

Sources: Department of education, 2016; The National Planning Commission, 2017.

Table 3.7: Major interventions and annual average investment requirement for education (*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Basic Education Programs, including Early-Childhood Education and Development, Pre-Primary and Non-Formal Education.	74.2	110	141	182.3	130.1
Vocation Training 3-year D Diplomas and 1-year Vocational Courses	8.6	41.2	113.5	229.8	109.8
Literacy and Lifelong Learning	1.9	1.8	2.2	2.7	2.2
Teachers' Professional Development and Management Program	1.5	8.4	12.8	19.7	11.2
Disaster Risk Reduction and School Safety Program	26.7	14.5	7.1	5.2	13.2
Governance and Management Program	2.9	0.972	1.3	1.6	1.8
Youth and Sports	3.6	4.9	6.5	9.7	6.5
Higher Education	13.9	19.2	24.1	31.5	22.8
Others including Day meal, Grants	5.5	5.6	7.5	10.9	7.7
Total Education Cost	138.8	206.57	316	493.4	306.2

Source: Ministry of Education, 2016; Estimates of the study team.

for 2021-30, has been estimated by fitting linear regression based on five-year time series cost estimate reported by SSDP. The cost for higher education calculated at 10% of school sector cost has been summed to obtain total investment requirements for SDG 4.

Furthermore, given the priority of the Government on vocational training, the costs assessed for technical skills include three-year diplomas and one-year technical short courses. From the targeted age group (19-21 years), 70% is assumed to enrol in short courses and the rest in three-year diplomas. Based on SSDP and re-estimation of costing for additional sectors under education cluster, the annual average investment requirement for SDG 4 is Rs 138.8 billion for 2016-19, Rs 206.57 billion for 2020-22, Rs 316 billion for 2023-25, and Rs 493 billion for 2026-30 (Table 3.7).

More than half of the estimated total education spending is on basic and vocational training. Vocational training, which currently comprises 6% of education spending, has been scaled up to 46% to take care of more significant investment in technical education. Interventions for youth and sports, inclusion in education, and school feeding

13 In SSDG – basic education, in the SDGs report- primary education
14 In SSDG it is basic education, instead of primary education

Table 3.8: Major interventions and annual average investment requirement for gender*

(*Unit: Nepali Rs in billion*)

Interventions	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Awareness of Sexual and Reproductive Health Issues	0.9	1.5	2	2.7	1.8
Helping Transition of Girls to Work	2.7	4.2	5.5	7.4	5.2
Encouraging Political Participation	0.2	0.2	0.2	0.3	0.3
The President's Women Empowerment Program	0.3	0.4	0.5	0.8	0.5
Ending Violence against Women	0.9	2.2	3.4	5.4	3.1
Systematic Issues	1.5	2.1	2.7	3.8	2.6
General Administrative Costs	0.9	1.6	2.1	2.9	1.9
Total Gender	7.4	12.2	16.4	23.4	15.6

* Estimates of the study team.

programs comprise about 2% of the total investment requirement.

3.2.5 Gender

Gender-related interventions are segregated in two ways: (i) sectoral programs to address SDGs other than SDG 5 and (ii) programs for SDG 5. This section identifies seven significant areas of intervention: encouraging political participation; helping girls to transition to work; President's women empowerment program; welfare programs; ending violence against women, systematic issues, and general administrative costs directly related to SDGs. These programs, already in implementation, require substantial up-scaling and reorientation toward core SDG areas and are costed accordingly. Overall, average annual investment requirement in achieving SDG 5 is Rs 7.4 billion for 2016-19, Rs 12.2 billion for 2020-22, Rs 16.4 billion for 2023-25, and Rs 23.4 billion for 2026-30 (Table 3.8).

3.2.6 Water and Sanitation

SDG 6 aims to ensure availability and sustainable management of water and sanitation for all. The four pertinent interventions are:

(a) universal and equitable access to safe and affordable drinking water and adequate sanitation and hygiene for all;

The targets are to supply piped water to 90% of households and increase basic water supply and sanitation coverage to almost all households by 2030.

Table 3.9: Targets and indicators of SDG 6 (water and sanitation)

Targets and Indicators	2015	2019	2022	2025	2030
Households with Access to Piped Water Supply (%)	49.5	60.3	68.4	76.5	90
Basic Water Supply Coverage (%)	87	90.2	92.6	95	99
Population using Safe Drinking Water (%)	15	35	50	65	90
Open Defecation Free Area Declared (%)	41	56.5	71.9	83.5	99
Sanitation Coverage (%)	82	86.5	89.9	93.3	99
Proportion of Untreated Industrial Waste water (%)	99	75.3	57.5	39.7	10

Sources: SDG Status and Roadmap Report 2017

Table 3.10: Major interventions and annual average investment requirement for water and sanitation*

(Unit: Nepali Rs in billion)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Enhancing Access and Utilisation	17.9	49.5	45.1	42.5	37.8
Enhancing Functionality and Sustainability of Services	0. 9	2.5	2.2	2.1	1.8
Ecosystem/Water Augmentation and Production	7.5	19.4	17.7	16.7	14.8
Governance Institutional set-up and Strengthening and Capacity Development	0.7	1.8	1.7	1.6	1.4
WASH Diplomacy, Sector Convergence, Network Communication and Promotion	3.1	8.4	7.7	7.2	6.4
Improving Water Quality	0.5	1.5	1.4	1.3	1.2
Responding to Emergency and Vulnerability	1.2	3.1	2.8	2.7	2.4
Adjustment of Cost of Population Growth during SDP period	3.1	8.4	7.7	7.2	6.4
Supervision and System Management	2.1	5.9	5.4	5.1	4.5
Total	37.0	100.5	91.7	86.4	76.7

* Estimates of the study team.

The annual average investment requirement for water and sanitation sectors' intervention for 2016-19 is estimated at Rs 37 billion and is expected to reach as high as Rs 100.5 billion in 2020-22, gradually declining to Rs 86.4 billion for 2026-30.

(b) water quality concerns including wastewater treatment and recycling;
(c) water efficiency to avoid water scarcity; and
(d) improvements in water resource management and protection of ecosystems.

While determining targets by indicators, SDG Status and Roadmap Report (2017) has identified the needs of water and sanitation sub-sector. The targets are to supply piped water to 90% of households and increase basic water supply and sanitation coverage to almost all households by 2030 (Table 3.9).

SDG 6, which intends to ensure availability and sustainable management of water and sanitation for all, is fully captured in the Nepal Water Supply, Sanitation, and Hygiene Sector Development Plan (2016-30) (Ministry of Water Supply and Sanitation 2016). The Sector Development Plan (SDP) covers costs associated with

(i) access, reach, utilisation, and benefit;
(ii) functionality, sustainability, and maintenance of WASH services;
(iii) innovation, R&D, technology;
(iv) ecosystem conservation, river health, source protection;
(v) water governance, institutional set-up, capacity development; and
(vii) networking, M&E, and quality control.

The sector development plan coincides exactly with the SDG period. The first phase (2016-20) covers universal access to basic WASH services and improved service levels and reconstruction; the second phase (2021-2025) covers improved service levels (medium/high), functionality, and sustainability improvement; and the third phase (2026-2030) covers improved service levels and impact assessment. It will be a rolling plan, which will be updated every five years. Unit rate is applied while estimating the cost, and (i) the major construction materials such as stone, aggregate, sand, cement, steel bar, and pipe required are estimated based on the recent requirement in construction works of WASH projects and programs; (ii) the skilled and unskilled manpower need-

Table 3.11: Targets and indicators of SDG 7 (energy) sector interventions

Targets and indicators	2015	2019	2022	2025	2030
Electricity Consumption (kwh per capita)	80	230	542	1,027	1,500
Share of Renewable Energy in total Energy (final) Consumption (%)	11.9	22.1	29.7	37.3	50
Installed Capacity of Hydropower (MW)	782	2,301	5,417	10,260	15,000
Energy Efficiency in Industry (MJ per 1,000 Rs of product)	47.20	45.28	43.84	42.40	40

Source: The National Planning Commission, 2017.

ed for construction work is calculated, with the cost estimates of existing water supply projects being estimated on the basis of the construction of WASH. The total estimated cost of implementing water and sanitation in water and sanitation SDP is Rs 697 billion at a constant price of 2016.

Costing of water and sanitation interventions shows that nearly half of the investment requirement for SDG 6 would go for enhancing access and utilisation, and more than one-fifth of the spending for water augmentation and improvement of water quality. The annual average investment requirement for 2016-19 is estimated at Rs 37 billion and is expected to reach as high as Rs 100.5 billion in 2020-22, gradually declining to Rs 86.4 billion for 2026-30 (Table 3.10). While calculating the required investment the water and sanitation were front-loaded, to achieve critical outcomes in health, as the country aspires to graduate from the status of the LDC in the near future.

3.2.7 Energy

SDG 7, which aspires to ensure access to affordable, reliable, sustainable, and modern energy for all, is also partly costed through various sector plans such as the UN's Sustainable Energy for All (SE4ALL) (The National Planning Commission 2013). The SE4ALL fully aligned to the SDG targets has estimated financial resource requirement in six areas, namely biogas, mini- and micro-hydro off-grid, pico-hydro, grid-connected hydro, grid-connected solar, and solar home systems. The estimation of investment requirements is at 2010 prices and the timeline is until 2030. Another study on water resources (Water and energy commission secretariat 2013) has projected investment requirement in water supply, irrigation, and energy. In three GDP growth scenarios— 4.4%, 5.6%, and 6.5%. Based on moderate-growth scenario, investment requirement for energy from 2011-20 is Rs 260 billion and that for 2021 to 30 Rs 672 billion.

Energy sector annual investment requirement would be Rs 69.2 billion for 2016-19, Rs 132 billion for 2020-22, Rs 239 billion for 2023-25, and Rs 502.8 billion for 2026-30.

National needs for energy services have been assessed on the basis of national requirement and the international commitments to provide access to modern energy for all. The exercise has also considered the requirement for energy efficiency in household, industry, business, and transport sectors.

Based on unit costs and targets set for 2030, energy sector annual investment requirement would be Rs 69.2 billion for 2016-19, Rs 132 billion for 2020-22, Rs 239 billion for 2023-25, and Rs 502.8 billion for 2026-30 (Table 3.12). The most significant component in energy is power generation accounting for nearly two-thirds of the energy sector investment. The ambitious target of gener-

Table 3.12: Major interventions and annual average investment requirement in energy*

(*Unit: Nepali Rs in billion*)

Interventions	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Hydropower Generation	41.1	76.5	139.4	311.5	157.9
Up-scaling and Expansion of Transmission Line	8.8	16.5	30.1	67.2	34.1
Expansion and Strengthening of Distribution line	4.5	8.2	15.1	33.6	17.1
Micro Hydro Development	2.6	5.2	7.5	10.5	6.8
Grid-connected Solar Power Development	5.2	9	9	9	8
Biogas and Other Renewable Energy	2.8	3.9	5.3	7.9	5.2
Operation and Maintenance Cost	3.4	6.6	11.3	24.2	12.6
Securing Energy Efficiency	0.8	6.7	21.4	38.9	18.7
Total Annual Average Cost	69.2	132.5	239.1	502.8	260.4

* Estimates of the study team.

ating hydropower with an installed capacity of 15,000 MW by 2030 requires enormous investment, reflected in energy sector costing.

The following point reflect the processes followed to ascertain energy needs and resource requirements:

Installation targets for grid-connected hydropower and solar energy from SDG Status and Roadmap Report (2017). It is important to note that the baseline report includes values from Demand Forecast Report 2017. In regard to installation cost, the cost of hydropower depends on the site, size, and type of plant (reservoir, peaking poundage, and run of the river). Solar energy is also affected by locational factors. The installation costs of hydropower and solar power calculated are 170 million Rs/MW and 120 million Rs/MW, respectively.

The installation costs of hydropower and solar power calculated are 170 million Rs/MW and 120 million Rs/MW, respectively.

Nepal Energy Efficiency Strategy 2015 estimated that to implement energy efficiency measures in all residential, commercial, transport, industrial, and agricultural sectors, additional investment to the tune of US$37 million would be needed in 2020, US$311.6 million in 2025, and US$666 million in 2030. The added efficiency parameters include adoption of efficient pumping using the same fuel, efficient lighting systems, higher-efficiency appliances, higher-efficiency electrical devices replacing fossil fuel-based ones, and electric vehicles.

Physical targets and per unit costs of transmission line reported from two national documents: the task force for 10-year Hydropower Development Plan published by the Ministry of Energy and the Integrated Master Plan for Evacuation of Power from Hydro projects in Nepal (2016), prepared by a joint technical team of India and Nepal. The Taskforce Report provides figures for inland transmission lines and their estimated resource requirements while the Master Plan provides information and data for proposed cross-border transmission lines for six corridors and their resource requirements. The total estimated cost based on the task force report amounts to Rs 516 billion, the value is then assigned on a pro-rata basis to the total installed capacity. As no document quantifies the cost for distribution of electricity, the financial resource required for dis-

Table 3.13: Major interventions and annual average investment requirement in tourism and labour market*

(*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Tourism Infrastructure (small)	6.8	6.2	5.1	3.2	5.1
Investment Requirement for Hotel Rooms	19.6	33.8	54.2	74.2	47.6
Tourism Product Development Market Promotion	1.2	1.5	1.7	2.1	1.6
Labor (skill development, employment information, child labor, workplace injuries, enforcement of labor laws)	1.3	1.8	2.5	4.1	2.6
Total	28.9	43.3	63.4	83.6	56.8

* Estimation of the study team.

tribution lines has been assumed to be 50% of the transmission-lines cost. Furthermore, the operation-and-maintenance cost of power plants assigned 3% of total investment on energy sources, and energy efficiency and installation cost of micro hydropower is calculated to be Rs 250,000 per kW.

The investment for energy is back-loaded because large hydropower projects will take five to seven years to come to effect. Also, given the readiness of hydropower projects, it is less likely that substantial investment in hydropower will take place in the immediate years.

3.2.8 Inclusive Growth and Labor

SDG 8 focuses on inclusive growth, productive employment, and a decent labor market. Major indicators include creation of jobs in labour-intensive sectors such as agriculture, construction, manufacturing, and tourism. Other indicators include metrics regarding small and medium enterprises and access of small business to financial services. Skill development, employment information, elimination of child labor, protection from workplace injuries, and enforcement of labor laws are other interventions. Under tourism, interventions include construction of hotel rooms and development of tourism products and marketing activities. Details on cost estimates in tourism and labor market requirements are in Table 3.13. Airports and large infrastructures are also costed in SDG 9.

3.2.9 Physical and Industrial Infrastructure

SDG 9 intends to build a resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation. Transportation is the critical infrastructure under this goal. The main transport infrastructure to be costed under needs assessment and costing exercise are road networks, railways, and airports. Extensive data from various departments and organisations such as the Department of Roads (DOR), Tourism Board, Customs Department, Department of Local Infrastructure Development and Agricultural Roads, Electricity Development Center, Nepal Electricity Authority, and National Planning Commission (NPC), have been collected to review the road sector investment and future plans that are costed.

The estimated annual average investment requirement for the roads is Rs 130.6 billion for 2016-19, which increases to 176.6 billion during 2026-30. The average yearly cost of railways is Rs 45 billion.

Some of the highlights of the costing methodology applied in the reports for deriving costs for SDG 9 are Road Sector Master Plan 2001 and Urban Development Strategy, and Municipal Finance Framework for National Urban Development Strategy; prepared by MoPIT, MoUD, and TDF respectively are discussed below.

Road network: The road sector master plan: (i) provides a summary of the expenditure on development and maintenance of roads and bridges; (ii) reveals the trajectory of public spending from Plan I to Plan VIII- a linear sketch of growth rate of government revenue and expenditure in the roads subsector; and (iii) investigates the composition of road sector budget, covering allocation of budget, actual spending, and budget for routine road maintenance.

The road sector master plan also (i) reviews foreign assistance in the road sector, where it performs anticipatory analysis based on historical trend of foreign assistance; (ii) probe future funding opportunities, such as foreign assistance and road funding (charging road users and earmarking revenues), the government's contribution based on current outlay, and private finance. The master plan assumes two scenarios — 10% growth of road fund revenue, and no-growth scenario. Furthermore, the study projects government development budget, first with 2% per-annum increase, and second with a no-growth scenario from the base year. The unit cost of strategic road network is calculated as recommended in the departmental policy document (design standards for feeder roads). The basic rate analyses are based on FY 1999/2000 rates. These rates are increased by 10% per annum up to 20 years.

This report includes the total cost for maintenance, upgrading, and new construction of strategic road network (national highway and feeder roads), and local road network to achieve SDG 9 by 2030. The cost estimation has been aligned with the overall strategy and policies devised for road sector. The costing methodology applied to the total costs incorporated the one used in the following reports: Road Sector Master Plan 2001, Priority Investment Plan (PIP) 2007, and PIP 2015. Some of the highlights of the costed plans are as follows:

PIP 2007 and PIP 2015 analyse the cost and strategy for strategic road network (SRN). PIP 2007 analyses detailed cost and strategy for development of SRN from 5000 km of designated highway in 2005 to 9,700 km by 2016. Most of the priority schemes mentioned in PIP 2007 are either completed or under construction. The plan anticipates that the budget will rise to Rs 13.5 billion by 2012 and, assumes that on an average almost 10% of total outlay will be spent on regular maintenance and 18% on periodic maintenance (total of 28% on maintenance), 33% on upgrading of earth and gravel roads, and 24% on new construction.

The budget forecast and distributions of expenditure follow the pattern in PIP 2015. The allocations between maintenance, upgrading, and new construction, including consideration of strategically important new access routes to Kathmandu from Tarai are same as PIP 2007 and PIP 2015. Both the PIPs include Kathmandu-Tarai fast track as one important investment in transport sector in Nepal. PIP 2015 has given priority to maintenance of existing network of approximately 6,400 km, upgrading from earth or gravel to sealed road for all links to district headquarters, followed by national highway and feeder roads. The latter report has estimated a total of 3,500 km and construction of new 2,000 km roads.

A five-year strategic plan for development of transport sector in Nepal MoPIT emphasizes upgrading of the existing road network, which includes upgrading 4,564 km of road within five years. The plan also considers devastation from earthquakes and includes upgrading a further 400 km of road and 87 bridges. Additionally, PIP 2007 and PIP 2015 also emphasized the im-

Table 3.14: Cost estimation under Priority Investment Plan (PIP) 2007 and 2015

(*Unit: Nepali Rs in billion*)

PIP I: 2007-11			PIP II:2015-21	
Category	**Cost**	**Percent**	**Cost**	**%**
Maintenance	15.57	29	78.36	27
Upgrading	17.81	33	149.25	52
New Construction	14.04	25	60.00	21
Kathmandu Access	3.00	6.5	-	-
Other	3.34	6.2	-	-
Total	53.76	100	287.51	100

Source: PIP 2007 and 2015; DoR, 2007

portance of upgrading and maintenance of roads, relative to the addition of new networks. Following the two lead documents, and as emphasized by national and international studies on the importance of maintenance and upgrading of existing infrastructure (Dixit 2017), the costing method used in this analysis has assigned more weight to increase the number of upgrades, compared to the addition of new roads.

The Excel-based needs assessment tool developed by UN has been used to estimate cost of achieving the desired road network and density targeted by 2030. The needs assessment tool evaluates annual costs of all interventions: new construction of the road, yearly regular maintenance (calculated on a per km basis), periodic maintenance, as well as upgrading from gravel to sealed roads. The assessment model also classifies quality of road into the three tiers good, fair, and poor, and into the three categories of sealed, gravel, and earthen.

Viewed simply, the total cost is the sum of three components:

(i) product of unit cost of periodic operation and maintenance and total km of road output for the year;
(ii) product of unit cost of routine operation and maintenance and total km of road output for the year; and
(iii) product of unit cost of safety measures and number of new roads to be built per year.

The annual increment in the new road to be built is based on the proportion of the additional roads to be built by the end of 2030. The cost assigned to the respective components are economic prices obtained from PIP 2015. These exclude any duty, tax, or subsidy. The shadow exchange rate factor (SERF) and shadow wage rate (SWR) are used to estimate economic cost. Furthermore, the unit cost of upgrading, maintenance, and construction of new roads are matched with prices allocated by PIP 2015, PIP 2007, and Road Master Plan. The estimated need to achieve total road density of 1.3 km/sq. km, (where paved road density is 0.25 and 50% of the roads are safe and has a total 12,494 km of operational roads) is Rs 2321 billion, and the average annual investment required until 2030 is Rs 154 billion.

Status of roads by 2030: To achieve road density of 1.3 km per square km as targeted for SDG2030, a total of 10,902 national highways, 8,559 feeder roads, and 117,369 local roads needs to be built by end 2030. Furthermore, to achieve 21% total sealed density, where at least 90% of all the road types (Sealed, Earth, and Gravity) are of good quality, between 2015 to 2030 annually 148 km of the national highway must be

Table 3.15: Annual average investment on the road sector (*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
National Roads	16	18.3	20.3	22.8	19.6
Local Roads	98.1	109.7	119.6	132.8	116.3
Feeder Roads	16.5	17.9	19.3	21.1	18.8
Total	130.6	145.9	159.2	176.6	154.7

Source: PIP 2015, Calculated from road infrastructure needs assessment tool.

rehabilitated from fair to good status, and 139 km from poor to fair status. For feeder roads, 155 km of fair roads and 93 km of poor roads need to be levelled up from their current state.

The sector-wide road program and PIP study have done a costing of regular maintenance of road from 7,360 km in 2006 to 9,930 km of road in 2016. The program includes the cost associated with maintenance of existing and newly developed road infrastructure as well. In PIP 2015, there is an update of the investment requirement with data for cost per km of road construction and maintenance. This information is used for costing of transport infrastructure.

The estimated annual average investment requirement for the roads is Rs 130.6 billion for 2016-19, which increases to 176.6 billion during 2026-30. The average yearly cost of roads is Rs 154.7 billion (Table 3.15).

Airports: The interventions identified for airports consist of upgrading of Tribhuvan International Airport, construction of Pokhara, Bhairahawa, and Nijgadh airports, and improvement of other domestic airports. The annual average cost for airport construction is Rs 24.9 billion per year until 2030 (Table 3.16).

Railways: Nepal government has emphasized nationwide electric railway network. A recently completed feasibility study for Mechi-Mahakali and Kathmandu-Pokhara routes (total 1,318 km) estimates the total cost of Rs 687 billion, with an annual average cost Rs 45.5 billion for 2016-30. In addition, construction works for Bardibas-Simara section, and Biratnagar and Janakpur are in progress. The network aims to connect five border towns (Biratnagar, Janakpur-Bardibas, Bharahawa, Nepalgunj, Kakadvitta) with the Indian Railway Network (UNCTAD 2014).

Industrial Infrastructure

Investment requirement for industry is assessed based on the target set for industrial output in the SDG Status and Roadmap Report (2017), where the country aspires to raise the share of manufacturing in GDP to 13% in 2030. The real GDP is set to grow by 8.7% on average during the SDG period. Following the growth rate, the value-added requirement for manufacturing is computed from the ratio of manufacturing industry to GDP. In doing so, the ICOR for manufacturing industry is assumed at 6.2, and the investment required for manufacturing is estimated (Table 3.16). The investment requirement in innovation and ICT remains at 5% of the value added in manufacturing. It is understood that the level of investment is necessary for productively and efficiently using productive resources to achieve SDG 12.

The country aspires to raise the share of manufacturing in GDP to 13% in 2030. The real GDP is set to grow by 8.7% on average during the SDG period.

Per annum investment in industry (mainly manufacturing) averages at Rs 119.4 billion for 2016-19 and in innovation and ICT almost Rs 8.9 billion. These two components are estimated to be 41% of total investment requirement for physical and industrial

Table 3.16: Major interventions and annual average investment requirement for transport and industry*

(*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Road (including bridges)	130.6	146.1	159.3	176.6	154.7
Railways	12.4	31.2	49.5	78.1	45.5
Airports	24.9	24.9	24.9	24.9	24.9
Industry	119.4	245.6	350.3	641.8	364.9
ICT and Innovation	8.9	14.5	22.5	41.7	23.7
Total	296.2	462.3	606.5	963.1	613.7

* Estimation of the study team.

Table 3.17: Major interventions and investment requirement for industry and innovation*

(*Unit: Nepali Rs in billion*)

Item	2016-19	2020-22	2023-25	2026-30	Averageover 2016-30
Industry	119.4	245.6	350.3	641.8	364.9
Innovation and ICT	8.9	14.5	22.5	41.7	23.7
Total (Industry innovation and ICT)	128	260	372	683	388
Industry and ICT investment as % of total investment in infrastructure and industry	0.43	0.56	0.61	0.71	0.43

* Estimates of the study team.

infrastructure for 2016-19. The average annual industrial investment requirement is estimated at Rs 641.8 billion during 2026-30 while the investment for innovation and ICT is 41.7 billion. (Table 3.16).

3.2.10 Urban Development

SDG 11 Intends to make cities and human settlements inclusive, safe, resilient, and sustainable. The intervention identified for achieving SDG 11 goal is given in Table 3.17.

The National Urban Development Strategy (NUDS) of the government provides a strong basis to assess the investment required for SDG 11. The strategy exclusively focuses on urban development and aims to create a "balanced and prosperous National Urban System," by making cities and human settlements inclusive safe, resilient, and sustainable targeted by SDG 11.

The six objectives formulated to achieve the NUDS vision are:

(a) develop and elaborate medium- and long-term strategic vision of a desirable and realistic national and regional urban system;
(b) establish benchmarks and standards for urban infrastructure, urban environment, urban planning and management, and urban governance;
(c) identify key issues and prioritized initiatives and required investment projects to achieve the urban standards;
(d) identify key issues in investments to augment urban financing and implementation;
(e) identify institutional framework and legal instruments to facilitate implementation and monitoring of National Urban Policy (NUP) and national urban development strategies; and

The National Urban Development Strategy (2017) has anticipated investment needed to fulfil the existing infrastructure deficit in 58 municipalities at Rs 372 billion over 15 years.

(f) suggest new approaches for urbanisation and urban development in the light of the existing and emerging challenges of sustainability, increased resiliency and mitigation, and adaptation to the effects of climate change.

NUDS adopted five principles of sustainability, inclusiveness, resilience, green growth, and efficiency. The NUDS (2017)[15] has anticipated investment needed to fulfil the existing infrastructure deficit in 58 municipalities at Rs 372 billion over 15 years. Some of the desirable conditions targeted for all cities in Nepal by the end of this strategy period are given in Box 3.1.

Municipal Finance Framework for National Urban Development Strategy (NUDS)

The Municipal Finance Framework for NUDS sketches a financing framework for urban infrastructure that integrates various avenues of fiscal resources, from within the municipality (own resources) and from outside (fiscal transfer and borrowing), to finance sustainable and decent urban development of Nepal (Ministry of Urban Development 2017). It builds on the infrastructure finance gap estimated by NUDS. Given that the number of municipalities in recent years has increased, this report updates the needs assessment of the required resources and maps fiscal sources.

NUDS-Municipal financing framework is devised in terms of three scenarios depending upon the goals of achieving 60%, 75% or 90% of the physical targets. In the first scenario, the projected investment requirement for the next 15 years is Rs 1,398 billion. In the second scenario, the requirement is Rs 1,747 billion. If newly declared municipalities were to be included in the cost and expected to meet 90% physical targets, the total requirement for the next 15 years would be Rs 2,097 billion, which accounts for an average annual investment

Table 3.18: Urban, housing, and reconstruction of cultural and heritage sector targets

Target and Indicator	2015	2019	2022	2025	2030
Population living in slums and squats (000)	500	400	325	250	125
Household units roofed with thatch or straw roof (%)	19	15.3	12.5	9.7	5.0
Planned new cities (number)	10	23.3	33.3	43.3	60
Budget allocated for the protection of natural and cultural heritage (%)	1.15	1.38	1.55	1.72	2
Total number of cultural and religious heritage sites affected by earthquake	2,900	1,450	1,063	483	0
Houses destroyed by earthquake ('000)	499	71	0	0	0
Houses partially damaged by earthquake ('000)	257	37	0	0	0
Health facilities destroyed by earthquake ('000)	4,904	701	0	0	0
Health facilities partially damaged by earthquake ('000)	1,159	166	0	0	0
Central, district, municipal and village structures destroyed or damaged by earthquake (number)	1,711	244	0	0	0
Deaths due to earthquake disaster (number)	8,790	1,256	0	0	0
Injuries due to earthquake disaster (number)	22,300	3,186	0	0	0

Source: Ministry of Urban Development, 2017.

15 A approved in 2017, NUDS was in a draft form since 2015

Table 3.19: Major interventions and annual average investment requirement for urban infrastructure, housing, and reconstruction

(*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
New Roads	54.2	62.1	69.8	81.7	66.8
Upgrading of Existing Roads	20.1	22.9	25.7	30.1	24.7
HH with Piped WS	1.1	1.2	1.4	1.7	1.4
HH with Toilet	0.5	0.5	0.6	0.7	0.6
HH with Electricity	0.2	0.2	0.2	0.3	0.2
Development of Landfill Site	0.08	0.08	0.09	0.2	0.09
Storm Drainage	25.2	28.9	32.6	38.1	31.2
Sewerage	10.1	11.5	12.9	15.2	12.4
Total Urban Infrastructure	111.48	127.36	143.29	167	137.4
Housing for Poor	0.7	1.8	3.8	11.2	5.1
Post-Disaster Reconstruction (houses)	57.7	30.8	3.5	3.6	23.4
Restoration of Cultural and Heritage Sites	0.6	1.8	3.6	2.4	2.1
Total Urban Infrastructure, Housing and Reconstruction	170.3	162.20	154.19	185.3	168

Source: Ministry of Urban Development, 2016; National Planning Commission, 2015.

of Rs 137 billion from 2016 to 2030. Overall, investment requirement estimated for meeting urban standards shows that most of the investment would go for urban road, storm drainage, and sewerage infrastructure. Similarly, a large portion of the investment requirement would go for housing while reconstruction will take a substantial investment until 2022 (Table 3.19).

3.2.11 Climate Change

SDG 13 intends to take urgent actions to combat climate change and its impacts. The 14th development plan of the Government has adopted the concept of green growth and climate- compatible development path. There are several projects under implementation prioritized by the National Adaptation Program of Action (NAPA) and Local Adaptation Plan of Action (LAPA) documents. The Government has also assigned climate change budget code which helps the state to track the committed and disbursed funds in the climate change related areas.

Despite ongoing efforts, responses to climate change to reduce negative impacts and enhance positive impacts remain grossly inadequate. Given the structure of the Nepalese economy, the major investment for adaptation measures will have to go to agriculture, health, road infrastructure, and hydropower subsectors and investments in mitigation measures will have to go to transport and industry sector. As mentioned in Nepal's INDC report 2016 estimates, substantial investment in electric transportation, conversion of waste to energy, replacement of dirty sources of energy (hydrocarbons, firewood, dung) with modern, clean energy, and energy-efficiency projects aimed to reduce greenhouse gas emissions (GHGs).

The cost of adaptation and mitigation measures varies from project to project and from component to component. Without impact assessment of climate change by the major sectors, one cannot precisely assess the re-

The major investment for adaptation measures will have to go to agriculture, health, road infrastructure, and hydropower subsectors and investments in mitigation measures will have to go to transport and industry sector.

Box 3.1: Desirable conditions of cities as mentioned in NUDS

- Water: Consumption of water to reach 100 litters per capita per day in urban wards, 65 in rural wards
- 100 % access to piped water in urban wards, and community water supply system
- Sanitation: All households have their own toilet and sewerage system
- Solid waste management: 100% of urban areas serviced by waste collection, provision of sanitary landfill site, principally and practically applying 3R (reduce, reuse, recycle) system
- Transportation: Road density of 7.5 km/sq./km in urban areas, and sustainable public transport services in cities with population more than 100,000
- Housing: Affordable, adequate, safe, and affordable housing for all
- Energy: All households have a reliable power supply with energy-efficient building design and construction
- Environment: A healthy urban environment (aesthetic, socio-culturally vibrant, inclusive, and ecologically sensitive).

source needs for implementing adaptation and mitigation measures. Nepal does not have an economy-wide needs assessment; as such, the assessment of NAPA (US$350 million) was only for immediate action. National Adaptation Plan (NAP) is not progressing, and until it gains further momentum, the medium-term and long-term adaptation needs will not be precise. Nevertheless, the budget code for SDG 13 provides a reasonable basis for projection of resource requirements. The Government budget includes many components related to adaptation measures, including in part mitigation measures as outlined in the SDG Status and Roadmap Report (2017).

The following methods and sources of information were followed to estimate resource requirement for the goal:

(a) From the Annual Development Program 2017/18, the program/project budgets under SDG 13 category were reviewed to arrive at a sizable allocation for climate change. It covers most of the indicators related to climate actions.

(b) Five per cent of the total estimated resource for infrastructure sector (road, water, and electricity) is calculated as a sum required for climate-proofing. The report by Asia Development Bank (ADB) entitled Meeting Asia's Infrastructure Needs has estimated that about 16% of total infrastructure cost in South Asia is needed to address climate change.

(c) Emission-abatement costs for cement and waste recycling industries and incremental abatement cost in US dollar per tonne of CO2 equivalent (US$/tCO2e) for Nepal is taken from Agriculture Development Bank report "Economics of Reducing Greenhouse Gas Emissions in South Asia Options and Costs" (Asian Development Bank 2012).

Most of the investment will go into implementation of adaptation measures in agriculture, health, road infrastructure, and hydropower. Investment on mitigation measures will be significant for transport and industry sector. As mentioned in Nepal's INDC report 2016, investment for electricity-driven means of transport, conversion of waste to energy, replacement of dirty sources of energy (hydrocarbons, firewood, dungs) with modern, clean energy, and energy-efficiency projects aimed to reduce GHGs, will increase.

Table 3.20: Major interventions and annual average investment requirement for climate change*

(*Unit: Nepali Rs in billion*)

Interventions	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Building resilience and adaptive capacity	7.9	7.3	6.7	5.9	6.8
Reducing emissions through mitigation	1.2	1.1	0.9	0.8	0.9
Strengthening climate data	1.5	1.3	1.2	1.1	1.3
M&E	1. 9	0.9	0.9	0.9	0.9
Climate-proofing technology for infrastructure (revised)	8.6	11.2	14.9	24.5	15.7
Total climate change cost	21.1	21.8	24.6	33.2	25.6

* Estimates of the study team.

At the macro level, the climate change budget code provides a quantitative figure regarding the scale of public resource related to the area. However, this in no way tells us about the resources needed to respond to climate change.

Currently, Nepal allocates 4.52% of the total budget to the directly climate-related projects, which is about 2.3% of the GDP of the year. Furthermore, programs which cannot be directly attributable but command a critical supplementary role take more than 26% of the annual budget. This gives us some liberty to tag the resource estimate to the GDP of the country. The resource need for climate change discourse will range from 3 to 5% of GDP. This budget, among others, will go to fit in climate change-related programs, supporting the private sector to adopt mitigation and adaptation technology, and building the capacity of agencies.

The cost for SDG 13 complements the targets and key interventions identified for achieving the aspirations. The cost estimates show that average annual investment required for climate change adaptation and mitigation would be Rs 21.1 billion for 2016-19, increasing to Rs 33.2 billion for 2026-30. The climate-proofing of infrastructure projects accounts for the largest share which is more than 50% (Table 3.20).

Building resilience and adaptive capacity demands about two-fifths of the investment requirement in the early years of 2016-19 that would gradually reduce to little more than a quarter of the investment requirement by 2030, reflecting the front-loading of major interventions in this area.

3.2.12 Forests and Ecosystems

SDG 15 aims to protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation, and also halt biodiversity loss. The targets include conservation of forest, wildlife, biodiversity and land, and the integration of ecosystem and biodiversity values into national and local planning, development processes, and poverty reduction strategies.

The priority of Nepal is to enhance forest density, conservation of mountain ecosystems, reduction in degradation of natural habitat, handing over forestry management to local communities, and achieving socio-economic and financial benefits from utilisation of forest. Table 3.21 gives the needs assessment by major indicators of SDG 15.

Budgetary allocation the Government's for FY 2016/17 under SDG 15 provides a basis for projection of resource requirement for this sector. Fiscal distribution includes

Average annual investment required for climate change adaptation and mitigation would be Rs 21.1 billion for 2016-19, increasing to Rs 33.2 billion for 2026-30.

wildlife and forest conservation, afforestation, training, herb development, community and leasehold forestry development, and soil conservation programs.

There is considerable investment in the forestry sector by the Community Forestry User Groups (CFUGs). To date (July 2017), 19,361 CFUGs have been formed. A total of 1,813,478 ha of national forest has been handed over as community forests benefitting 2,461,549 households (Department of Forest and Social Conservation 2017). The annual cost for management of community forestry is estimated to be about Rs 119,000 for each community forest user's group. Of the total costs, about 64% is shared by forest user's group households in the form of labor. The donor contributed about 16%, and the Government shared about 13% of the total costs (Bhattarai 2011).

The following process has been followed to estimate resource requirements to achieve the targets of SDG 15.

(a) The budget assigned for forestry in the Annual Development Program 2017/18 of the government is taken as the basis to quantify the cost of forestry sector for SDGs. The budgets for climate action are added to address indicators related to ongoing forest actions.

(b) The CFUGs' annual investment in community forestry is summed in resource estimates for forestry sector.

The annual average investment requirement for SDG 15 (forest and ecosystsm) are on an average of Rs. 37.4 billion for over the period 2016 to 30, which is estimated at Rs 20.6 billion for 2016-19, increases to Rs 28.5 billion for 2020-22, Rs 38.2 billion for 2023-25 and Rs 56.1 billion for 2026-30 (Table 3.22). The conservation of forests and biodiversity would take more than half of the investment requirement for this sector. Similarly, training, research and monitoring will take nearly a quarter of the total investment requirement. The cost accounted for SDG 15, and its interventions target the aspirations set on the SDG Status and Roadmap Report (2017).

3.2.13 Governance

The major interventions costed for SDG 16 (governance and inclusive institutions at

Table 3.21: Targets and indicators of SDG 15 (forestry and Ecosystems)

Targets and indicator	2015	2019	2022	2025	2030
Forest under Community-Based Management (% of total dense forest areas)	39	39.8	40.4	41.0	42
Conservation Area (including forest, in % of total land area)	23	23.3	23.3	23.3	23.3
Conservation of Lakes, Wetlands, and Ponds (number)	1,727	2,599	3,254	3,909	5,000
Handover of Forests to Leasehold Forest Groups (000 ha)	44.6	44.6	44.6	44.6	44.6
Afforestation in Public and Private Lands (ha per annum)	-	5,000	5,000	5,000	5,000
Wild Tigers (number)	198	205	210	216	225
Rhinos (number)	534	600	650	700	783
Rate of Forest Loss and Degradation (%)	1.90	1.39	1.01	0.63	0

Source: The National Planning Commission, 2017.

Table 3.22: Major interventions and annual average investment requirement for forest and ecosystem*

(*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Conservation of National Forest/ Biodiversity Conservation	11.8	16.4	21.8	32.1	21.5
Wildlife Conservation	1.1	1.6	2.1	3.1	2.1
Herbal Development	0.3	0.4	0.6	0.9	0.6
Sustainable Forest Management and Enhancing Rural Livelihood	0.9	1.2	1.6	2.4	1.6
Training, Research and Development	1.2	1. 6	2.1	3.1	2.1
Investment in Community Forestry	1.7	2.4	3.2	4.7	3.1
M&E	3.6	4.9	6.6	9.7	6.5
Total	20.6	26.5	38.0	56.1	37.4

* Estimates of the study team.

all level) include access to justice, capacity building for anticorruption, service delivery improvement, capacity development for planning, budgeting and implementation, electoral awareness, data system development for monitoring SDGs, and strengthening the M&E system (Table 3.23).

The cost of governance is calculated through proximate interventions to achieve the targets set in SDG Status and Roadmap Report (2017) indicators. They include access to justice (reflected in spending under law and justice), perception about corruption (reflected under anti-corruption), direct deaths from violent conflicts and displacements (reflected in spending for peace and security, which includes police), higher voter turnout (reflected in spending for electoral awareness), and quality of public administration (reflected in improvement in service delivery), and M&E. Other indicators are mostly addressed through policies and institutions.

The costing of governance (Table 3.24) shows that investment required for major interventions is Rs 48.1 billion per annum for 2016-19, Rs 51.6 billion for 2020-22, Rs 54.8 billion for 2023-25, and Rs 59.2 billion for 2026-30. The annual average investment requirement for SDG 16 is Rs 53.9 billion (Table 3.24). The largest single category of investment (46.6%) goes for peace and security while 20% goes for capacity development for SDG-based planning, budgeting, implementation, data generation for SDG responsive monitoring and evaluation.

Data system development for SDG monitoring: Monitoring SDG agenda requires substantive improvements in the national statistical capacity. Collecting accurate, relevant, and timely data in various dimensions of sustainable development might be a daunting task for countries with weak statistical systems. It is, therefore, necessary to strengthen the national statistical system to ensure supply of statistical evidence important for monitoring progress and effective implementation of 2030 agenda.

High-quality statistics also help promote transparency and accountability in public resources. Nepal should focus its efforts on strengthening the National Statistical System (NSS) to ensure regular supply of quality statistics for SDG monitoring.

Table 3.23 Targets and indicators of SDG 16 (Governance)

Targets and Indicator	2015	2019	2022	2025	2030
Direct deaths from armed and violent conflict (number)	1,628	-	-	-	-
Transparency, Accountability, and Corruption in public (score out of 6)	3	4	4	4	5′
People's Perception on Corruption (corruption index score)	29	21	15	10	0
Good Governance for Control of Corruption	-0.78	0	1	1	2
Proportion of Decision-Making Positions held by Women in Public Institutions (%)	15	20.3	24.3	28.3	35
Birth Registration (% of children under age 5 whose births are registered)	58.1	66	79	86.9	100

Source: The National Planning Commission, 2017.

Table 3.24: Major interventions and annual average investment requirement for governance and service delivery*

(*Unit: Nepali Rs in billion*)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Law and Justice	3.8	4.2	4.4	4.6	4.3
Peace and Security	22.4	24. 1	25.4	27.3	25.1
M&E	2.4	2.6	2.8	2.9	2.7
Anti-Corruption	0.8	0.9	0.9	1.1	0.9
Data Generation Cost	1.1	4.6	4.8	5.4	4.2
Electoral Awareness	1.1	1.1	1.2	1.3	1.2
Capacity Development for Planning, Budgeting and Implementation, M&E	3.7	3.9	4.2	4.5	4.2
Service Delivery Improvement	11.9	10.2	10.9	11.5	11.3
Total	48.1	51.6	54.8	59.2	53.9

* Estimates of the study team.

The National Strategy for the Development of Statistics (NSDS) Nepal 2016-20 (draft report) has envisioned to strengthen NSS and carry out statistical activities for SDG monitoring and other national development requirements. NSDS has recommended many new surveys and customize some existing surveys to fill the data gap in setting, analysis, and monitoring of SDG outcome targets based on gender, social group, class, and geographical location.

The costing methodology used in NSDS is followed to obtain the investment required to strengthen data system for SDG monitoring. NSDS costing focuses on investment requirement for capacity development of government agencies in collection, analysis, and production of official statistics for development perspectives. NSDS covers major five government agencies of NSS —Central Bureau of Statistics (CBS), MoHP, MoE, Ministry of Agricultural Development, and Ministry of Culture, Tourism and Civil Aviation. The investment requirement of these agencies for data generation has been estimated in NSDS. These agencies cover around 80% of the NSS areas.

Total cost requirements for strengthening data system for SDG monitoring takes 80% of the total cost, whereas other da-

ta-strengthening needs take the remaining 20%. The cost is quantified on the basis of yearly estimates for 2016-2020 reported by NSDS. Data-strengthening costs for years beyond 2020 are based on 2016-2020 cost data using logistic regression. Thus, the total costs of data generation for SDG requirement are estimated to be Rs 63 billion.

3.3 Overall SDG Investment Requirement

The costing of major SDG areas shows that the total investment requirement for achieving the targets set for 2030 is 47.8% of GDP on an average. The average annual investment requirement for 2016-19 is Rs 1,055.8 billion, for 2020-22 is Rs 1,558.5 billion, for 2023-25 is 2,046 billion, and for 2026-30 Rs 3,069.3 billion. Hence, annual average investment requirement for the entire SDG period is Rs 2,024.8 billion.

In optimal scenario, in proportion to GDP the SDG investment requirement is 47.78%. This SDG investment requirement is relatively high compared to the 41% in FY 2014/15., but is achievable with mobilisation of larger financing sources. The annual average investment requirements for 2016-19 is 43.79% of GDP, which rises to 49.78% of GDP during 2026-30 (Table 3.25).

Of the total investment requirement, poverty accounts for 7.5%, while inclusive growth (mainly labor and tourism), agriculture, health, education, and gender account for 2.8%, 5.8%, 6.6%, 15.5% and 0.7% respectively. Water and sanitation and energy account for 3.8% and 21.8%. Physical and industrial infrastructure claims the highest share of 30.3% while urban development, housing, and reconstruction account for almost 8.4% of the requirement. For other SDGs, climate change accounts for 1.2%, forestry for 1.8% and governance for 2.8% (Table 3.26)

Table 3.25: Overall annual average investment requirement for SDG implementation*

(*Unit: Nepali Rs in billion*)

SDG areas	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Poverty	76.7	134.6	174	211.8	153
Agriculture	72.2	99.2	120.1	141.1	118
Health	56.3	91.3	137.5	220.1	134
Education	138.8	206.57	316	493.4	306.2
Gender	7.4	12.2	16.4	23.4	15.6
Water and Sanitation	37	100.5	91.7	86.4	76.7
Energy	69	132.5	239.1	502.8	260.4
Labor and Tourism	28.9	43.3	63.4	83.6	56.80
Transport, Industry, and ICT	296.3	462.2	606.5	963.1	613.8
Urban Infrastructure	170.2	161.8	154.2	185.3	168
Climate Change	21.1	21.8	24.6	33.2	25.6
Forestry	20.6	26.5	38	56.1	37.4
Governance	48.1	51.6	54.8	59.2	53.9
Total SDG Investment Need	1,043	1,544	2,036	3,060	2,025
Total SDG Investment Need as % of GDP	43	48	49	50	48

* Estimates of the study team.

Table 3.26: Composition of total SDG investment requirement* (*Unit: in percentage*)

SDG Area	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Poverty	7.3	8.6	8.5	6.9	7.5
Agriculture	7.8	6.8	6.1	4.8	5.8
Health	5.3	5.8	6.7	7.2	6.6
Education	13.1	13.2	15.4	16	15.1
Gender	0.7	0.7	0.8	0.7	0.7
Water and Sanitation	3.4	6.4	4.4	2.8	3.8
Energy	6.6	8.5	11.6	16.4	12.8
Labor and Tourism	2.7	2.7	3.1	2.7	2.8
Transport, Industry, and ICT	28	29.6	29.6	31.3	30.3
Urban Infrastructure	16.1	10.3	7.5	6	8.4
Climate Change	1.9	1.3	1.1	1	1.2
Forestry	1.9	1.8	1.8	1.8	1.8
Governance	4.7	3.6	2.9	2.1	2.8
Sub- total	100	100	100	100	100

* Estimates of the study team.

The composition of investment required is different for different periods because of the front - or back-loading of investment requirements. For example, the investment needed for agriculture declines from 7.8% in 2016-19 to 4.8% in 2026-30. It is mainly because of the initial large investments made in the early stage in irrigation and agricultural infrastructure such as road, electricity and market infrastructure. Investment in health, however, increases from 5.3% in 2016-19 to 7.2% for 2026-30 because of the huge investment needed in health infrastructure to cover better health services for the growing population, health insurance coverage, and improvement in service delivery over the years. The share of energy in total investment requirement goes up from 6.6% of requirement in 2016-19 to a high of 16.4% as large hydropower projects are implemented in the later years implying huge resource need at that stage. The share of urban development, housing, and reconstruction declines from 16.1% for 2016-19 to 6% for 2026-30 because most earthquake-related reconstruction, housing for poor, and basic urban infrastructure for the newly announced municipalities would be over after 2022 (Table 3.26). However, the share required for transport and industry, forestry, gender, labor, tourism, and climate change would remain almost the same throughout the 15-year period. A swing is observed in the share of water and sanitation in total requirement due mainly to prioritizing this sector for the earlier years of SDG implementation.

Overall, the needs assessment and costing of major SDG areas have captured the targets set for 2030 by SDG Status and Roadmap Report (2017). The investment requirements are reasonable, the financing fuelled with some additional efforts by mobilizing them through public, private, and other non-government sectors, as also external development partners (to be discussed in Chapter 4).

Chapter 4

SDG Financing Strategy

One of the critical challenge in implementation of SDGs is mobilisation of financial resources, as noted in earlier chapters. As the SDGs are ambitious, financing their achievement calls for upscaling of both domestic and external resources. The low per capita income and relatively high tax do not allow the country to depend on internal resources for financing SDGs solely. On the other hand, external funding through private sources or commercial borrowing by the private sector also has its limitations. Thus, support from international organisations in the form of ODA and relaxation in international trade is essential considering the scale of the required investment. However, given that several commitments in trade, aid, investment, and financing for developments of LDCs have not materialised on a meaningful scale, it is too optimistic to envision that global commitment will be fully materialized. Furthermore, lack of quantifiable indicators for periodic assessment of ODA targets set for SDG 17 indicates a possible disconnect in global support monitoring.

The financing gap will have to be analysed at the disaggregated level as the SDG investments demand synergetic efforts from public, private, and development actors. The following sections intend to assess SDG financing resources, analyse financing gaps, and identify the key strategies to meet the need.

4.1 Household Financing

Household expenditure on basic social and economic services is considerable. Historically remittance has enhanced the affordability of household sector. They can still contribute to some of the areas that overlap with SDGs. There is strong evidence that direct and indirect user fees for primary education and essential healthcare are a barrier to access for the poor. Ending user fees requires increased aid to make up for government revenue shortfall. Therefore, formulating household contributions for financing SDGs needs policy coherence, and incentive effects of well-designed user fees must be compatible with policy objectives. Besides, it is essential to estimate household contributions based on ability to pay across all sectors. Following points serve as a guiding principle in understanding provision for household OoP spending in the report:

(i) Restrict private OoP contributions to those areas where the incentive effects of well-designed user fees are compatible with overall policy objectives.

(ii) User fees should not be plugged in to contribute to cost of universal social services such as primary school education, adult literacy programs, improving gender equality, basic health care, nutritional interventions, and transport infrastructure.

Support from international organisations in the form of ODA and relaxation in international trade is essential considering the scale of the required investment.

(iii) In financing strategy, include the fact that more affluent households can bear some of the interventions costs.

Nepalese households are clustered into three income segments based as reported in the living standard survey (Central Bureau of Statistics 2011):

a) The first segment consists of households whose per capita income is below national poverty line. These households are unable to contribute to capital or operating costs because their incomes are insufficient to meet food and other basic needs. They comprise about 22% of total households. For baseline scenario, this proportion is throughout 2030. For alternative scenario, this would be 13%.[16] Since these households will not be able to pay any fees or charges for SDG services, they are primarily exempted from contribution other than labor.

b) The second segment of households has levels of per capita income above poverty line, but compared with national poverty line they are twice as below. These households account for about 48% of population in baseline scenario and are estimated to be about 45% in the alternative scenario.[17] They are expected to partially cover operating costs as well as capital costs of SDG goods and services.

Table 4.1: Proposed household financing criteria (in percent of the SDG investment requirement by categories of income group)

Sectors/ Type of HHs	HH1	HH1	HH2	HH2	HH3	HH3
Proportion	0.135	0.085	0.24	0.24	0.15	0.15
	Rural	Urban	Rural	Urban	Rural	Urban
Poverty	0	0	0	5	10	10
Labour and Tourism	0	0	0	0	5	5
Agriculture	0	0	5	5	15	15
Health	0	0	5	5	10	10
Education	0	0	5	10	10	15
Gender	0	0	0	1	1	1
Water and Sanitation	1	1	3	3	10	10
Energy	1	1	1	1	5	5
Transport, Industry, and ICT	1	1	3	4	5	6
Urban Infrastructure	1	1	5	6	8	10
Climate Change	0	0	1	1	2	2
Forestry	0	0	5	5	5	5
Governance	0	0	1	1	2	2

Source: CBS (2011) and Estimates of the study team.

HH = Households

16 In 2015, 21.6% of households were in absolute poverty. However, by 2030, households in absolute poverty would be less than 5%. The average of these two ratios is taken for alterative scenario of the first group of households.

17 The per capita income in 2011 as per NLSS 2010/11 was Rs 19,261. Twice this per-capita income at Rs 38,542 is taken as the threshold for the second group of households. The per-capita incomes of households in the 3rd to 7th deciles are within this band. So they belong to middle group of households and comprise about 48% of households. As national per capita income growth is expected to reach 7% by 2030, some households from absolute poverty will graduate to this group while some more households might graduate to the third group. Thus the proportion of households with this income group in the alternative scenario is assumed at 45%.

Table 4.2: Projection of household financing (in percent of the SDG investment requirement by categories of income group)*

Items/Year	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Per capita income average (Rs)	97,444	149,280	218,084	370,557	222,977
Household Income (Rs)	438,499	671,761	872,337	1,482,230	891,909
OoP Expenses (Rs)	47,475	68,885	89,776	131,477	88,218
SDG Investment Need (million Rs)	1,055	1,559	2,046	2,931	2,025
HH OoP Spending as % of SDG Investment Need	4.5	4.4	4.4	4.5	4.4
HH Spending as % of per capita income	10.8	10.3	10.3	8.9	9.9

* Estimates of the study team.

c) The remaining (30%) households are assumed to be able to pay for a significant share of operating and capital costs. In the alternative scenario when income growth lifts more households to this group, the richest household group is assumed to reach 42%.[18]

As the proportion of poor households in rural areas is higher than in urban areas, they are further classified by location. Among rural households, the lowest-income group (households in absolute poverty) are 27%. However, similar categorical information is not available for higher income groups. Besides, the new administrative set-up has reclassified rural and urban areas, and population distribution is symmetric. So, the same proportion has been applied to estimate income levels of rural households vis-a-vis urban households in the second and third groups (Table 4.1).

More affluent households are expected to contribute to financing poverty through a contributory social protection system, paying for recurrent or operation-and-maintenance costs for public utilities and services designed for addressing poverty, and also contributing labor for targeted anti-poverty programs. They are also expected to cover some recurrent expenses in agriculture and irrigation. In health, too, more affluent households can pay for health insurance and a part of the recurrent cost of health services. Similarly, they are expected to pay the service charges of water and sanitation, energy, transportation, and ecosystem services. However, poor households are not expected to contribute through out of pocket expenditure, and they are expected to make minimal payments for basic services. This is to prevent misuse of freely available goods and services.

Among rural households, the lowest-income group (households in absolute poverty) are 27%.

The rural-urban classification of households becomes esential for two reasons. First, urban households have higher affordability and pay for most of the utility service. Second, urban facilities to some extent are delivered by private sector and households are compelled to make OoP spending.

One crucial aspect in the household financing of SDGs is the risk of double counting of

18 This is the residual group that may comprise 42% of households in alternative scenario after assuming that 13% of households will be in income group one and 45% of households in income group two.

household contribution (fees) as a source of financing public investment. When we account household contribution as one source of SDG financing, it should not be clubbed again under government revenue. Instead, if some of such charges are already a component of non-tax revenue of the government, they should be adjusted while estimating direct household contribution to financing SDG investment. It is important to specify which layers of the fees in electricity, water, sanitation, school, and hospital go to government revenue. If they are to be included in government revenue, the proposed fee and charge structure need inclusion in the projected government revenue.

Based on the household financing criteria mentioned in Table 4.1, OoP spending of households for financing SDGs investment requirement is estimated. As Table 4.2 shows, households will be contributing about 5% of the total investments required for achieving SDGs.

Overall households are expected to contribute about 11% of their per capita income in financing SDG investment through OoP expenses. Given the growth of household's income projected in the SDG Status and Roadmap Report , this expense is affordable and does not restrain access to basic services, especially for the poor. Globally, households are contributing between 5 to 10% of the SDG financing requirement; this estimation is in line with the global per capita OoP spending expected during the implementation of MDGs.

Table 4.3: Public sector SDG investment requirement, financing sources and financing gap (optimal scenario)*

(*Unit: Nepali Rs in billion*)

SDG Area	Total investment requirement	Share of public investment in total investment	Public investment requirement	Available public finance (domestic)	Available public finance (ODA)	Financing gap in public sector
Poverty	2,295.0	87.8	2,015.0	948.7	162.4	903.9
Labour and Tourism	853.2	35.5	302.9	236.5	56.0	10.4
Agriculture	1,768.3	69.9	1,236.8	1,233.9	261.2	(258.3)
Health	2,012.1	64.0	1,286.8	844.6	319.2	122.9
Education	4,593.8	72.4	3,326.8	2,705.6	344.4	276.8
Gender	234.1	83.4	195.1	80.5	33.2	81.5
Water and Sanitation	1,155.4	82.3	950.7	525.6	230.1	195.0
Energy	3,906.0	48.3	1,887.5	633.9	464.1	789.5
Transport, Industry, and ICT	9,207.7	32.9	3,030.7	1,899.8	288.7	842.2
Urban Infrastructure, Housing and Reconstruction	2,554.2	35.4	903.7	531.8	268.5	103.4
Climate Change	372.0	88.9	330.8	69.2	198.9	62.7
Forestry	561.8	84.1	472.2	309.7	86.2	76.3
Governance	870.4	83.9	730.5	377.6	286.0	66.9
Total	30,384.0	55.0	16,669	10,397.6	2,998.0	3,273.1
Financing Sources % of Total Investment Need				62	18.0	19.6

* Estimates of the study team.

4.2 Public Sector Financing

The needs assessment exercise reports the combined investment requirement for federal, provincial, and local governments. Likewise, the financing strategy discussed in this report is for all layers of government.

The public sector is expected to invest around 55% of SDG investment requirement. Of this, the proportion of requirement for SDGs is substantial for poverty, agriculture, health, education, gender, water and sanitation, transport infrastructure, climate actions, and governance. Public investment requirement is expected to be lowest in tourism, energy, industry, and urban infrastructure (mainly housing). The table 4.3 shows highest public financing gap in infrastructure. Also, water and sanitation, energy, transport, industrial and urban infrastructure comprise 65% of the financing gap followed by social sectors including poverty, health, education, and gender. Climate change and forestry sectors comprise about 4.5% of financing gap whereas economic sectors will not have a significant financing shortfall. Financing gap in agriculture will cease to exist after investments in irrigation, rural road, and electrification infrastructure materialise in early years (Table 4.3).

In the optimal scenario, domestic financing (revenue and borrowing) could finance only 62% of public-sector SDG investment requirement while ODA would finance another 18% assuming that the growth of ODA would be 10% in 2016-2020, falling to 5% in 2021-25, and 2% thereafter. The net financing gap would be about 19.6% of public sector financing requirement. ODA inflow will have to be doubled from the projected inflow if it is to fill in the financing shortfall.

Revenue of the federal government stood at 19% of GDP in FY 2014/15. Revenue system is buoyant over the recent years as it stood as high as 23% of GDP in FY 2017/18. The SDG Status and Roadmap Report targets revenue of federal government to grow up to 30%, however, to remain at the conservative estimate, this report limits the revenue to GDP at the 27% by 2030. Gross domestic borrowings is targeted at less than 5% of GDP assuming that net domestic borrowings will hover around 2% of GDP.

The public sector is expected to invest 55% of SDG investment requirement.

Table 4.4: Sources of financing of public sector investment requirement, annual averages (optimal scenario)*

(*Unit: Nepali Rs in billion*)

Item	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Revenue and Domestic Borrowing (available for SDG areas)	377.5	508.5	688.7	1,059.2	693.2
ODA (available for SDG areas)	143.6	189.2	216.7	241.4	199.9
Total Available Public Resources	521.1	697.7	905.4	1,300.5	893.1
Total Required Public Investments	701.8	978.9	1,133.6	15,04.9	1,111.3
Public Finance Gap	180.7	281.2	228.2	204.4	218.2
Public Financing Gap as % of Public Investment Requirement	24.8	28.7	20.1	13.5	20.9
Public Financing Gap as % GDP	7.37	8.81	5.44	3.31	5.92

* Estimates of the study team. Figures may not be perfectly add up due to rounding.

Domestic financing sources for investment in SDGs are the summation of revenue and domestic borrowings. About two-thirds of the total domestic resources available for public sector is channeled into SDG areas. Similarly, 91% of projected ODA inflow is available for financing SDGs. For bridging the financing gap, most of the ODA must be targeted for SDGs along reorienting domestic financing toward them.

The average public sector SDG investment financing gap would be about 6% of GDP annually over 2016 - 2030

The resource allocation pattern followed by the Ministry of Finance in the annual budget from FY 2014/2015 to FY 2016/2017 is taken as a basis to allocate the potential domestic resource available for financing SDG. The periodic breakdown of sources of financing of public sector investment requirement shows the gap would be as high as 28% of investment requirement until 2020-22 and would gradually decline over the years to as low as 13.5% in 2026-30. (Table 4.4) gap gradually subsides because several of the SDG investment requirements are front-loaded, while revenue is expected to rise to 27% of GDP by 2030.

The public sector financing gap, which increases from 7.4% (on an average) of GDP during 2016-19 would rise to 8.8%in 2020-22. Thereafter, it would gradually decline to 5.4% in 2023-25 and further down to 3.3% for 2026-30. The average public sector SDG investment financing gap would be about 6% of GDP annually over 2016 - 2030, given that: (i) revenue mobilisation and ODA inflows would follow the projected path; (ii) private sector would invest the proposed proportion of the projected SDG investment requirement; and (iii) domestic borrowing would be mobilized to the tune of 5% of public sector investment requirement. Any shortfall in either or all of them would result in higher financing gap as a percentage of GDP.

4.3 Private Sector Financing

The required investment in SDGs demands change in levels of both public and private investment. A country like Nepal where finance gap is more pronounced requires mobilizing private sector capital and innovation to meet the 2030 Agenda. Public investment, though central and fundamental to achieving SDGs, is not sufficient and justifiable to meet SDG-implied demands for financing. The need for massive investment requirement and pressing public needs means that that the role of the private sector is more significant than before. The private sector cannot substitute the big public sector push needed to mobilize investment in SDGs. However, productive investment from private sector can capitalise interlinkages and bring in positive spill over effects to accelerate the pace in achieving SDGs. For instance, the private sector investment in technology means, in the long run, transfer of knowledge. Transfer of expertise ensures low-cost technology. It means they are not only involved as a direct contributor in the share of required investment concerning liquid investment but also helping bring efficiency. Moreover, the way the private sector can contribute to the financing of SDGs lies where they invest in their business model, which is a considerable change from previous philanthropic practices.

The private sector can play a genuinely crucial role in investing in most of the SDGs' investment requirement. However, sustainability is generally understood in three dimensions (economic, social and environmental), which in turn have interlinkages with how private investment is made (Sustainable Development Fund 2016). The following section provides a quick highlight the role private sector can play and the interlinkages:

For SDG 1, private sector can work to accelerate pro-poor growth by mobilizing domestic resources towards value-creating activities. Investing in value-adding activities can help in job creation and enterprise development.

Furthermore, the sector can partner with government by bringing out innovative solutions for social security and working toward social protection floors. Additionally, private sector can directly engage in financial services including microfinance and mobilisation of external financial resources. The positive spill over effect of overall private sector-led interventions could help government in reducing poverty.

For SDG 2 private sector can contribute through investment in responsible production and supply. It means supplying safe, nutritious, and sufficient food. Such an investment is essential also in promoting sustainable agricultural by introducing new technology to market. Private sector can help foster the market of small-scale food producers by commercially engaging in supply of agro-inputs. Also, private sector-led innovations in the value chain can, moreover, broaden market for agriculture. Additionally, involvement in agro-financial services including crop and livestock insurance will ensure supply and reduce vulnerability.

Regarding SDG 3, private sector can contribute through investment in specialised hospitals, labs, teaching hospitals, and production and distribution of medicines and equipments. Leading innovation in health insurance services and financial risk protection can ensure access to quality essential health care services, and affordability of medicines and health facilities.

For SDG 4, private sector can complement public sector through investment in education by increasing access to quality vocational and technical training. It can invest in industry that matches the skill of human resources with the job in demand for employment and entrepreneurship. Private sector investment in scholarships for poor, disabled, indigenous, and children in vulnerable situations is also important.

Private sector is the primary actor of economy and the largest creator of employment. It can contribute to achieving SDG 5 by ending all forms of discriminations against women and girls in the private sector jobs. It can provide leadership space for women, and at all levels of decision-making in business. Furthermore, it can honour universal access to sexual and reproductive health through affordable market-based approach. Establishing a gender-friendly working condition is another area for its intervention along with promoting women's ownership and control over land through investment in supporting campaigns.

In SDG 6, private sector can complement public and community sectors by improving water quality, first through sustainably investing in a business model that uses water resources available in the nation and makes it affordable; second, through investment in reducing emission polluting water, eliminating dumping and minimizing release of hazardous chemicals and materials. In addition, it entails sustainably managing and decreasing the proportion of untreated wastewater.

Private sector can invest in helping the government to protect and restore water-related ecosystems. It mainly entails innovation and strengthening technology to achieve the goal. The private sector can also help support and enhance participation of local communities in improving water and sanitation management as a corporate social responsibility.

Sustainability is generally understood in three dimensions (economic, social and environmental), which in turn have interlinkages with how private investment is made

In SDG 7 private sector can be a significant contributor, as it can profitably invest in modern and renewable energy generation. It also entails sustainable investment in transmission and distribution. Private sector can, moreover, invest in Innovative practices that help foster energy efficiency and innovation. The spill over effect of investment in energy, efficiency, and innovation transmits to all the goals.

In SDG 8 private sector investment is essential in gaining productivity through diversification, technological upgrading, and innovation. It also means investing in high value-added and labor-intensive sectors. Decent job creation is another area which can shoulder public burden. Yet, another aspect is equal pay for work of equal value and decent working condition. It means adhering to equal pay, and fairly tagging payment to productivity which helps to reduce the wage gap vertically and horizontally across the structure.

Given the investment requirement and the potential sources of financing, the financing gap for the SDG investment in the private sector would be the highest for transport, industry, energy, and urban development.

In SDG 9 private sector can invest in developing quality, reliable, and resilient infrastructure. Shifting to less energy-intensive industries, clean fuel and technology can reduce carbon-intensive production. Private sector should lead deployment of clean technology and maximum investment in research and development, thereby fostering innovation and concomitantly increasing access to ICT and striving to provide universal and affordable access to the internet.

Reducing inequality within and among countries (SDG 10) is primarily the responsibility of the respective states. However, private sector can also conduct socially responsible business and thus help achieve the goal. Inequality can be addressed through fair and non-discriminatory pay to workers. Investment in equal opportunities for employment and national resources which complements enterprise development is another area where the sector can contribute. Private sector can also shoulder public-sector burden by supporting progressive taxation system, and widening of revenue base. Additionally, by promoting social insurance and social assistance by investing in financial services and economic activities, private sector can help the goal of financial deepening.

Private sector can invest in making cities and human settlements inclusive, safe, resilient, and sustainable (SDG 11) which means venturing into affordable housing and basic services. There is also a space for private sector in developing accessible and sustainable transport services, mass transportation, and integrated settlement. Partnering with government in sustainable urbanisation, and support to protect and safeguard the world's cultural and natural heritage are another area of investment.

Private sector can contribute to SDGs 12 through sustainable management and efficient use of natural resources. It is directly complemented by the action in the SDG 6, 8, and 11. Investing in the improvement of an end to end value chain of food production and distribution helps reduce food losses. In addition, investing in environmentally sound management of chemicals and wastes in their business-as-usual (BAU) is another facet of partnership. This means abiding with agreed international frameworks and significantly reducing toxic release to air, water, and soil to minimize their adverse impacts, and ultimately making them part of their organisational culture, reporting systems, and operations.

SDG 13 is mainly state responsibility at the policy and international negotiations level. Still, private sector can play an environmentally responsible role to achieve this goal

through reduction of GHG emissions and other gases that add to global warming. This means strengthening resilience and adaptive capacity to climate-related hazards and natural disasters and developing mitigation actions and transparency on implementation.

Achievement of SDG 15 is dependent on private-sector activities. The sector can contribute to this goal through environment-friendly investment programs, helping the government to reduce and stop degradation of natural habitat, loss of biodiversity, and internalizing environmental costs. It also means investing in treatment of wastewater flows, emissions, solid waste disposals, and other air pollutions from private and households' sector.

In SDG 16 private sector investment is essential to adhering to the rule of law at the national and international levels. It means stopping illicit financial and arms flows, substantially reducing corruption by not being part of social crime and promoting effective, accountable, and transparent practices in private institutions and companies. Private sector should invest in a system that honours human rights and good governance in the workplace and ensures the protection of the fundamental freedoms of workers and employees.

Strengthening the means of implementation and revitalizing global partnership for sustainable development (SDG 17) is the responsibility of all including the private sector. Strengthening domestic resource mobilisation, helping to improve internal

Table 4.5: Private-sector SDG investment requirement, financing sources and financing gap*

(*Unit: Nepali Rs in billion*)

SDG Area	Total investment requirement	Share of private investment in total investment (%)	Private investment requirement	Available private finance (inc. FDI)	Available private finance (FDI)	Financing gap in private sector
Poverty	2,295.0	5.0	114.8	195.6	0.0	-80.8
Labour and Tourism	853.2	61.0	520.5	700.8	27.0	-180.3
Agriculture	1,768.3	18.2	321.0	395.6	5.3	-74.5
Health	2,012.1	27.6	556.3	185.2	9.6	371.2
Education	4,593.8	17.2	791.5	319.6	4.8	471.9
Gender	234.1	6.0	14.0	2.8	0.0	11.3
Water and Sanitation	1,155.4	8.1	93.1	56.6	4.8	36.6
Energy	3,906.0	45.5	1,776.4	480.0	98.1	1,296.3
Transport, Industry and, ICT	9,207.7	58.5	5,389.7	2,937.7	91.0	2,452.0
Urban Infrastructure, Housing, and Reconstruction	2,554.2	54.1	1,380.7	275.4	9.6	1,105.3
Climate Change	372.0	5.0	18.6	5.5	0.0	13.1
Forestry	561.8	5.0	28.1	8.4	0.0	19.7
Governance	870.4	10.0	87.0	25.9	0.0	61.2
Total	30,384	36.5	11,091	5,589	250	5,503

* Estimates of the study team.

capacity for tax and other ways of revenue collection, mobilizing foreign investment, engaging in PPPs, and participating in policy formulation, implementation, and monitoring of the sustainable development goals is imperative for its achievement.

Currently, private sector comprises about 55% of the total investment requirements for generating economic growth of more than 8%. But it is unlikely that most of the private investment would flow toward SDGs unless policy incentives and enabling environments are created. Private sector may be assumed to contribute to several SDGs in their investment needs. Of the total investment requirement in SDG 8 (labor and tourism), private sector is expected to contribute 61%, and for industrial and transport infrastructure it is expected to contribute 58.5% of total investment requirement (Table 4.5). A substantial proportion (54.1%) of total investment requirement for urban development, housing and reconstruction could also be financed by private sector. It needs to be reiterated here that while we talk about liquid investment, there are intangible spill-over effect from private sector investment.

Given the investment requirement and the potential sources of financing, the financing gap for the SDG investment in the private sector would be the highest for transport, industry, energy, and urban development. Combindly, these sectors account for 89% of total financing gap in private sector. Given the current resource allocation pattern, the sectors of poverty, agriculture, labor, and tourism will not face financing gaps, while education and health will face the gaps in a moderate way (Table 4.5).

The sources of private finance are equity generated through domestic savings, and foreign equity mobilized through FDI, debt financing through domestic and foreign banks, and resources shared with public sector through PPP and VGF mechanism. The periodic breakdown of estimated resources availability for private-sector financing of SDGs is given in Table 4.6 which shows the largest financing gap in the private sector arises in the infrastructure sector comprising industry, transport, urban development, and energy. Some SDG areas such as poverty, gender, agriculture, tourism and labor will not face serious financing gaps, given the existing pattern of resource allocation in the SDG areas. Par-

Table 4.6: Sources of financing private sector investment requirement, annual average*

(*Unit: Nepali Rs in billion*)

Source	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Domestic Equity Financing	67	96	127	188	125
Bank Credit	146	216	262	288	231
FDI	11	21	29	11	17
Total Available Financing (Private)	224.3	333.2	417.8	487.7	373
Private Investment Need	259.4	443.4	735.9	1,303.3	739
Private Financing Gap	35.1	110.1	318.2	815.5	367
Private Finance % of SDG Investment Need	21.3	21.4	20.4	16.1	19
Private Sector Finance Gap % of Private Sector Investment Need	13.6	24.8	43.1	61.9	38
Private Sector Finance Gap % of GDP	1.46	3.5	7.6	13.1	7

* Estimates of the study team.

ticularly, the issue of bank financing is important because almost 50% of bank credit is assumed to flow in to the SDG areas. If there is a structural change in bank financing pattern, the financing gap scenario will also change. Currently, banks and financial institutions are directed to invest 25% of their resources in directly productive areas such as agriculture, energy, small and medium enterprises, tourism, and some manufacturing industries. Assuming this directive will adheres, a significant portion of bank financing would be available for several SDGs. Similarly, banks and financial institutions are directed to invest 5% of their credit to the deprived sector, which serves for financing poverty reduction investment. It is another crucial area that supports meeting SDG investment financing requirement through private sector contribution.

Given the existing pattern of domestic equity financing and allocation pattern of bank credit and FDI in SDG areas, the total financing by private investment in SDGs are Rs 224.3 billion for 2016-19, Rs 332.2 billion for 2020-22, Rs 417.8 billion for 2023-25, and 487.7 billion for 2026-30. The annual average financing available for the entire SDG period is Rs 373 billion. Thus, financing gap in private sector would be on and average of 19% of SDG investment 7% of GDP for entire SDG period 2016 to 2030 (Table 4.6).

Financing gap in private sector will have to be met through reorienting non-SDG investments towards SDGs, mobilizing more equity, bank financing, and external (FDI) financing for SDG areas with large financing gaps such as industrial and physical infrastructure. An incentive and facilitating environment needs to be created to motivate private investment in these areas. As coercive measures will not work in a liberal market economy, reorientation will be possible through taxation, subsidy, PPP, market-based pricing of goods and services provided through private sector, VGF, and other support measures such as industrial infrastructure for financing desired in the SDG areas.

Two forms of partnership between private and public sectors are important in SDG financing: PPPs and VGF. The main constraint in Nepal's infrastructure sector is the lack of source for finance. More than the overall difficulty of securing funds, some projects may not be financially viable for private sector though they are economically justified. This is the nature of several infrastructural projects that are long-term and development-oriented. For successful completion of such projects, the government has to design Viability Gap Finance (VGF) which means a grant to support projects economically justified but not financially viable for private sector investment. In such projects, the government can offer a grant under VGF as a capital subsidy to attract private sector players to participate in PPP projects that are otherwise financially unviable.

VGF grants have to be available only for infrastructure projects where private sector sponsors are selected through a process of competitive bidding. VGF grant can be disbursed at the construction stage itself but only after the private sector developer makes equity contribution required for the project. The usual grant amount can be set at not more than a quarter of the total capital cost of the project. Funds for VGF will have to be provided from the government's budgetary allocation. The project agreements must also follow the best practices that would secure value for public money. Regular M&E should be done by the lead

Financing gap in private sector would be on and average of 19% of SDG investment 7% of GDP for entire SDG period 2016 to 2030.

Most cooperatives do multi-purpose activities including financial services such as saving, credit, remittance, and semi-formal insurance.

financial institutions for disbursal of grants. The lead financial institution for the project is responsible for regular monitoring and periodic evaluation of project compliance with agreed milestones and performance levels, particularly for the purpose of grant disbursement.

Providing some financial security to private sector should draw more private investment into this critical sector in Nepal and, in doing so, reduce pressure on government finances.

4.4 Financing from Cooperatives, Communities, and Non-Government Sectors

The cooperative movement in Nepal has grown significantly and has been resilient to internal conflict and financial crisis. With promulgation of the Constitution in 2015, which recognized cooperatives as one of the three pillars of Nepalese economy, this movement is regarded critical for socio-economic transformation of post-conflict Nepal. There are about 33,000 cooperatives with a reported 6 million members. These cooperatives are involved in diverse facets of Nepalese economy including agricultural production, dairy, manufacturing, financial services, communication, energy, education, health, and consumer service businesses. Most cooperatives do multi-purpose activities including financial services such as saving, credit, remittance, and semi-formal insurance. They have mobilized Rs 70 billion as share and reserve capital, collected Rs 180 billion as savings, provided loan worth Rs 200 billion and create jobs for hundreds of thousands of Nepalis. They have collectively insured a significant amount of agricultural business and health. Also, their participation in infrastructure creation in agriculture, energy, health and education is encouraging.

They are becoming instrumental to the empowerment of women by organizing them, linking them to gainful economic activities, and bringing them to leadership. They have been critical in financial inclusion with their service to unbanked and hard-to-reach people. Additionally, they have been instrumental in transforming the rural social and economic structure. Furthermore, they are regarded as helping hands during crises, as evidenced by their vigorous forms of engagement in post-disaster relief work.

There are several channels through which cooperatives and communities can support SDGs. Some of them are through creation of jobs in community-led initiatives such a construction of housing, food security through community agricultural production, community health services, environment security such as community forest management, and engagement in governance of financial safety nets to name just a few. The Government of Nepal vows to ensure decent housing for citizens. Cooperatives can create housing cooperatives in such areas to build houses in a cooperative way. Housing cooperatives have an opportunity to work in this area with initiatives for safe housing technology, access to construction material, pooling labor force, and managing financial resources along with utilizing government grant and subsidy.

Housing is a key component of human security in earthquake-affected areas as it is linked to physical protection from adverse weather condition. Community-led model would also ensure availability of basic amenities such as water, latrines, and sanitation facilities. Reporting and accountability are more granular in these kinds of initiatives.

Cooperatives involve members in income generating activities. Collectively they work on construction of houses. As a result, they are directly contributing to availability of housing for the poor. In a post-disaster scenario, cooperatives can exercise direct role in developing community housing for their members and promoting decent housing in the rural areas. They can take up this responsibility on a larger scale in coordination with the state and the private sector.

About two-thirds of the families in Nepal are food-insecure.Likewise, only 40% of the agricultural households are fully food-secure, and the intensity of insecurity is higher in the earthquake-affected areas. There is also a huge regional variation in food production and food availability across the regkons and across the 77 countries of Nepal. Out of the 77 districts[19], 53 are food-insecure. Likewise, out of the severely earthquake-hit 18 districts, as many as 15 suffer from conventional food-deficit.

There are about 7,230 cooperatives in core agriculture production related activities, alone. In addition, several cooperatives are engaged in dairy, vegetable, fruit, horticulture, and herbal production. Put together, as of January 2014, agriculture-related cooperatives numbered to 9,758, which account for 33% of the total cooperatives in the country.

These saving cooperatives can readily extend their services to food-deficit areas and also link farmers to production and marketing sector activties, which will ensure smooth supply of food grains within a crop cycle.

Agricultural cooperatives have evidently been responsible for introducing exchange economy in the remote rural areas, facilitating food trade and ensuring better food security. As the earthquake has destroyed market centers and delinked agriculture production from market cooperatives can create market centers with some basic infrastructure in place.

Cooperatives also involve their members in income generating activities. Collectively they work on construction of houses. As a result, they are directly contributing to availability of housing for the poor. In a post-disaster scenario, cooperatives can exercise direct role in developing community housing for their members and promoting decent housing in the rural areas. They can take up this responsibility on a larger scale in coordination with the state and the private sector.

Environment matters greatly to human security, more so in a disaster-prone country such as Nepal. People's well-being in several quake-hit districts is strongly related to environment. Externalities such as glacier breakdown, landslides, loss of natural habit, and loss of forest make victims more vulnerable. Cooperatives are socially and environmentally responsible businesses, can help also ensure the environmental security of citizens in disaster-affected areas, in partnership with the state.

Creating gainful employment and ensuring decent jobs is the best way to prevent people in quake-affected areas from falling below the poverty line and empowering these people. Cooperatives, in principle, have been successful in creating self-employment in several sectors of the economy and their roles are more expected in the quake-affected areas. This can be done through their support to members for starting business, helping reintegrate them into farming, and raising livestock. Appropriately designed cooperative enterprises and micro-finance schemes will be particularly helpful for women, indigenous people, and

Appropriately designed cooperative enterprises and micro-finance schemes will be particularly helpful for women, indigenous people, and vulnerable communities in the quake-affected areas.

19 Now, 75 districts have been revised to 77 districts in Nepal since late 2015

Table 4.7: Sources of financing of cooperatives and non-government sector investment requirement in optimal scenario (in annual average basis)*

(*Unit: Nepali Rs in billion*)

Item	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Cooperative and NGO					
Savings Mobilisation	30.1	41.3	51	73.9	51.12
Equity/ Borrowings	9.6	13.2	16.3	23.7	16.4
Grant/ Transfers	5	6.9	8.5	12.3	8.51
Annual Average Available Financing	46.5	67.9	87.1	125.7	86.63
SDG Investment Requirement of Cooperative and NGOs	46.5	67.9	87.1	125.7	86.63
Financing gap in Cooperatives and NGO Sectors	0	0	0	0	0
Cooperative Financing as % of SDG Investment Need	4.4	4.4	4.3	4.2	4.31

* Estimates of the study team.

vulnerable communities in the quake-affected areas. Considering the employment-generation capacity of cooperatives, it becomes imperative to consider ways and means of mainstreaming the contribution of cooperatives to meet the employment challenge of the disaster-prone areas.

Cooperatives are also instrumental in distribution practices. The distribution of relief money coming from domestic and international transfers can be effectively challenged through cooperatives, given the banks' limited outreach. Rapid expansion of cooperative organisation in the last decade has deepened access to cooperatives. It is plausible to expect cooperative financial services to reach the people in the quake-affected areas to cater to financing need, and facilitate transfer of government relief.

NGO financing for SDGs is crucial as many of them are already working in its implementation at the grass-roots level. Currently, off-budget ODA comprises about Rs 40 billion per annum (as of FY 2015/16), most of it spent through NGOs for income generation, social mobilisation, and empowerment of marginalised communities. NGOs have also mobilized annually about Rs 20 billion for spending in social and economic activities. Their potential contribution in SDG financing throughout the SDG period is based on the past trends.

The annual average financing available for the cooperative and NGO sector is 44.7 billion for 2016-19, Rs 61.5 billion for 2020-22, Rs 75.1 billion for 2023-25, and Rs 109.9 billion for 2026-30. On average, the annual availability of financing resources for the cooperative and NGOs sector throughout the SDG period is Rs 76 billion for the SDG period (2016-2030) (Table 4.7). Thus, the cooperative and NGO sector is not expected to face a major financing gap because they would finance SDGs sector investment from resources available from for them.

4.5 Overall SDG Financing Gap

The analysis of SDG investment requirement and various sources of SDG financing shows on SDG financing gap to be met through added efforts. The average financ-

Table 4.8: Overall SDG financing gap across the period (in optimal scenario, annual average)*

(*Unit: Nepali Rs in billion*)

Overall SDG Finance Gap	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
Public Sector	180.7	281.2	228.2	204.4	218.2
Private Sector	35.1	110.1	318.2	815.5	366.8
Cooperative and NGO Sector	0	0	0	0	0
Household Sector	0	0	0	0	0
Overall SDG Finance Gap	215.79	391.37	546.38	1,019.90	585.06
Overall Gap as % of GDP	8.8	12.3	13.01	16.4	12.8

* Estimates of the study team.

Table 4.9: Total public finance requirement by the major sectors (normal growth scenario, 5% GDP growth)*

(*Unit: Nepali Rs in billion*)

SDG areas	Total Investment requirement	Share of Public investment in Total Investment	Public Investment Requirement	Available public finance (Domestic)	Available public finance (ODA)	Financing gap in public sector
Poverty	2,295.0	87.8	2,015.0	743.6	162.4	1,109.0
Labour and Tourism	853.2	35.5	302.9	185.4	56.0	61.5
Agriculture	1,768.3	69.9	1,236.8	967.1	261.2	8.5
Health	2,012.1	64.0	1,286.8	662.0	319.2	305.6
Education	4,593.8	72.4	3,326.8	2,120.5	344.4	861.9
Gender	234.1	83.4	195.1	63.1	33.2	98.9
Water and Sanitation	1,155.4	82.3	950.7	419.7	230.1	300.9
Energy	3,906.0	48.3	1,887.5	486.2	464.1	937.1
Transport, Industry, and ICT	6,649.5	34.5	2,291.3	1,489.0	288.7	513.7
Urban Infrastructure	2,554.2	35.4	903.7	416.8	268.5	218.4
Climate Change	372.0	88.9	330.8	54.2	198.9	77.6
Forestry	561.8	84.1	472.2	242.7	86.2	143.3
Governance	870.4	83.9	730.5	296.0	286.0	148.5
Total	27,825.9	57.2	15,930.1	8,146.2	2,998.0	4,785.0
Financing percentage of total Investment	-	-	-	51	18.8	30.0

* Estimates of the study team.

ing gap will be Rs 585 billion per year for the entire SDG period from 2016-2030. The annual average financing gap for various period, as noted earlier, are illustrated in Table 4.8, which increases over the years.

In proportion to GDP, the financing gap is on an average 8.8% for the period of 2016-19, 12.3% for the period of 2020-22, 13.01% for the period of 2023-25, and 16.4% for 2026-30. Overall, annual average financing gap stands at 12.8% of GDP throughout the SDG period. Given the ambitious targets of SDGs and their investment intensity, available resources in the public and private sectors along with cooperatives, communities, and

NGOs sectors, financing gap as estimated in eachsector is quite expected, and this can be met with additional efforts in mobilizing resources by all of these sectors. Large part of the financial gap (level and scale of funding both) lies with the private sector.

The financing gap for or "optimal" economic growth scenario is an average 8.67% throughout 2016-30. As revenue mobilisation and domestic borrowings are linked to economic growth, a high-growth scenario would automatically result in higher domestic resource mobilisation. However, if economic growth follows a "normal" path of 5% (i.e., below rate of growth than the expected optimal growth rate), it will reduce also size of domestic resource mobilisation than assumed earlier. As a result, financing gap would increase by Rs 1,512.

In the scenario where revenue mobilisation, targeted to reach 27% of GDP[20] by 2030, but if it reaches only 25% by then, then the public financing gap would be Rs. 3,627 billion for the entire period, Rs 354 billion higher compared with the same period in an "optimal" growth scenario. As the economic transformation takes place, the tax base will get widen from non-taxable agriculture to taxable industry and service sectors. However, tax rates could also be realigned to

Table 4.10: Total public finance requirement by the major sectors (low revenue mobilisation scenario)*

(*Unit: Nepali Rs in billion*)

SDG Area	Total Investment requirement	Share of Public investment in Total Investment	Public Investment Requirement	Available public finance (Domestic)	Available public finance (ODA)	Financing gap in public sector
Poverty	2,295.0	87.8	2,015.0	909	162.4	942
Labor and Tourism	853.2	35.5	302.9	243	56.0	3.7
Agriculture	1,768.3	69.9	1,236.8	1199	261.2	-224
Health	2,012.1	64.0	1,286.8	810	319.2	157
Education	4,593.8	72.4	3,326.8	2,594	344.4	387
Gender	234.1	83.4	195.1	77.2	33.2	84.8
Water and Sanitation	1,155.4	82.3	950.7	505	230.1	215
Energy	3,906.0	48.3	1,887.5	612	464.1	810
Transport, Industry, and ICT	9,207.7	32.9	3,030.7	1,854	288.7	887
Urban Infrastructure	2,554.2	35.4	903.7	510	268.5	125
Climate Change	372.0	89.0	331.0	66.4	198.9	65.5
Forestry	561.8	84.1	472.2	297	86.2	89
Governance	870.4	84.0	730.5	362	286.0	82.3
Total	30,384.0	55	16,669.0	10,043	2,999.0	3627
Financing % of Total Investment	-	-	-	60	18.0	21.8

* Estimates of the study team.

20 In this case, GDP growth rate is same as in the "optimal scenario"; the only difference from the optimal scenario is tax to GDP which decreases to 25% from 27%

such that private sector would encourage to invest more in SDG sector areas, as well. Thus, overs the years till 2030 there is a risk that revenue may also fall short of the target assumed in optimal scenario. In that case, the public-sector financing gap would be higher than assumed in the "optimal" growth scenario (Table 4.9 and Table 4.10)

4.6 Domestic Resource Mobilisation Strategy at the National Level for Financing SDGs

The revenue mobilisation strategy for achieving SDGs should serve two critical objectives: (i) mobilizing higher revenue through progressive taxation system; and (ii) incentivizing private and other non-government sectors to allocate their investments and resources toward SDGs. While undertaking the first objective, due care must be given to the likely impact and incidence of taxes on the poor and in income distribution. While undertaking the second objective, due care should be given on the forgone revenue, and widening of tax base showing the SDGs-led broad-based growth. The important issues related to SDG financing strategy in the public sector are: (i) Ensure equity through additional efforts to mobilize revenue and tax through a progressive taxation system, and widening of revenue base; (ii) set prices, user fees, and charges for public goods and services that directly contribute to achieve SDGs, however, without jeopardizing access of the poor; (iii) prioritize expenditure and allocate substantial budget for the SDGs; (iv) take initiatives in debt relief; and (v) solicit more ODA to meet the resource gap in financing SDGs.

A comprehensive mapping of the potential sources of finance in Nepal indicates that there is room to mobilize more resources from public sources. The main avenues for securing public finance for the SDGs are mobilizing (i) domestic revenues (tax, non-tax); (ii) ODA (on-budget including grants, concessional loans, and debt relief); (iii) reprioritisation of expenditure and increases in its efficiency; and (iv) deficit financing through public borrowing (domestic and international).

For the last two decades, the Government of Nepal has successfully mobilized domestic resources through tax measures. Traditionally, Nepal has relied heavily on imports and their tariff-based revenue as the major source of domestic resource mobilisation. The government has beefed up tax revenues through introduction of value-added tax and expanded coverage of income tax since 2001/02. Since then, domestic resources have been nearly able to cover recurrent expenditures, thanks to the growth of imports and enforcement of income tax.

Government revenue should comprise the most substantial chunk of financing for infrastructure and social and environmental areas where private sector is reluctant to invest. But as the government has to finance other areas besides SDGs (such as defence, internal security, and unplanned shocks), it is difficult to apportion revenue exclusively in the area. One option would be to make an audit of the proportion of revenue spent on SDGs and continue the same portion for future projection of resources available for SDG financing.

Overall, annual average financing gap stands at 12.8% of GDP throughout the SDG period.

Even if domestic resource mobilisation follows the current trend, Nepal shall face a severe financial crunch to meet the SDGs. There are many downside risks such as (i) slowing GDP growth in the long run; (ii) difficulty in full adjustment of prices, fees, and charges for public goods and services, given that the capacity of the local govern-

ment to enforce fees is limited; (iii) chances of reduction in the tax rates in the absence of sufficiently compensatory measures to widen the base and improving tax compliance; and (iv) change in the aid environment.

The structure of the tax system also plays a role in determining the progressivity of tax and transfer policies, where progressive tax can foster inclusive growth through redistribution.

Fiscal volatility is another challenge to the young republic that arises from two factors. First, on the spending side, there is a demand for higher recurrent expenditure to finance the new administrative set-up under federalism. Second, in the absence of capacity and motivation to mobilize additional revenue, local governments may fall into perpetual deficit. Moreover, the dependency of sub-nationals on budgetary transfers from federal government, coupled with local pressure for the expansionary budget, may result in fiscal stress.

Because of the shortage of financial resource and fiscal volatility, there is a need for a set of revenue broadening measures. The following section suggests possible strategies to mobilize domestic sources for achieving SDGs.

The government can enhance fiscal space for SDGs through an effective tax and expenditure policy. Although public revenues as a proportion of GDP averaged nearly 21% in FY 2016/17, it is quite low if measured in terms of gross disposable income. Tax policy reform to enhance fiscal space for SDGs needs to weigh benefits of incremental financing for transfers and public goods provision against the economic distortions of the tax the government can expect to collect. The structure of the tax system also plays a role in determining the progressivity of tax and transfer policies, where progressive tax can foster inclusive growth through redistribution. However, there are studies which highlight that it should be the expenditure side of the budget, not tax policy as a primary redistributive tool (Tanzi 1998). Furthermore, studies which investigated redistributive effects of tax policy in 36 countries suggest that tax policy is not a useful instrument for fostering inclusive growth, and a comprehensive analysis of taxation is critical to minimizing the burden of incremental taxation over the long run (Rao, Seth, and Rinzin 2009).

Also, given the importance of domestic revenues in financing public expenditure, a key policy issue that needs to be in a discourse of SDG financing strategy is the apportioning of public expenditure between SDGs and non-SDGs. One option is to estimate revenue financing of SDGs in the same proportion as SDG share in total spending. For instance, if SDGs comprise three-quarters of the total public expenditure, SDG-related spending will get the same proportion of revenue over time.

In light of this discourse, it is important to highlight some critical interventions to support fiscal cushion:

i) Integrating off-budget operations into a comprehensive budgetary framework. Although the budget system in Nepal has covered most of the public operations, several funds are being operated outside the budget, i.e. special funds for labor, environment, and other trust funds. All of these off-budget operations using public resources are subject to budgetary management and monitoring. Integrating these funds into a comprehensive fiscal-budget framework will not only increase budgetary comprehensiveness and strengthen public finance management, but will also help in prioritizing resources for SDGs.

ii) Expanding coverage of user fees. User fees are levies on quasi-public goods/services, based on the "Beneficiary

Pays" principle. It is commonly used in market economies and has proved useful in promoting market mechanism. As Nepal is gaining pace in its private sector development, user fees will become indispensable. The following areas have the potential for collecting user fees: water supply and wastewater treatment, electricity, healthcare, and tertiary education.

iii) Involving private sector in public service provision: PPPs are arrangements between government and private sector entities. It serves the purpose of financing public infrastructure, community facilities, and related services. Such partnerships feature sharing of investment, risk, responsibility, and reward among the partners.

iv) Private sector can be involved in providing public goods and services in various modes of arrangement, including operations and maintenance; build-operate-transfer; build-transfer-operate; or build-own-operate. These modalities will promote not only private sector development but also conserve scarce public resources to finance other vital public goods and services in the economy.

4.7 Strategy for Resource Mobilisation at the Local Level for Financing SDGs

Local governments are facing ever-increasing funding and financing gaps due to:

(i) low volume of fiscal transfer systems from central government;

(ii) very low level of local revenues from taxes and fees;

(iii) burden of unfunded responsibilities; and

(iv) limited access to loans and other forms of debt financing.

In most Local Government Units (municipalities and village municipalities), the tax base of local authorities is minimal, and tax revenue is entirely inadequate to meet their expenses, where most local governments depend largely on IGFT, incomes derived from Integrated Property Taxation (IPT), royalties, and service charges. Besides, the central government controls for natonal marked linked more revenue generating sources such as customs, income taxes, VAT, and excise revenue. Therefore, most local governments have to depend on allocations from the central government, which are generally quite inadequate to meet all demand for SDG related local investments.

Despite investments made in capacity development of Local Government Units (municipalities and village municipalities), following issues remain in gearing up sustainable financing at local level:

(i) shortage of qualified staff and lack of technical and administrative capacities to plan, implement, operate, and maintain urban infrastructure facilities;

(ii) inefficient delivery due to overlapping/unclear implementation mandates of implementing agencies;

(iii) insufficient legal and administrative frameworks for PPP;

(iv) lack of capacity for transparent and reliable planning and procurement process as well as improved/accrual accounting system; and

(v) eroded accountability image due to lack of elected councils for more than 15 years in local government level (Ministry of Urban Development 2017).

Local governments should encourage project implementation through Users' Group and PPP model.

Impediments to improving local development financing include:

(i) most of the municipalities and villages are small and financially weak;
(ii) there is lack of strong domestic capital markets and there are not many municipal credit institutions except for TDFs. However, there are institutional, and policy impediments to the development of municipal credit institutions; and
(iii) the mechanism for mobilizing funds for maintenance of existing infrastructures is poor.

The following sections discuss the strategies needed to mobilize resources for development financing in general and SDG financing in particular (Ministry of Urban Development 2016).

Increase in demand for local capital stimulates innovative approaches to expanding local government access to private credit markets.

4.7.1 Own-Source Revenue (OSR):

Nepal's constitution empowers municipalities in raising internal revenue from taxes, service charges, fees, penalty, and fines. However, due to deficiencies in revenue administration, some municipalities are lagging behind in generating sufficient amount of internal revenue. The implementation of SDGs at the local level calls for more resource mobilisation, for which the following strategies need to be followed:

i. ***Revenue administration system needs strengthening:*** Local governments need to review the revenue management system and strengthen the role of Revenue Advisory Committee (RAC). It also requires reviewing staffing requirements in revenue sections. Along with that regular interaction program with various sections of the municipality and the private sector have to be held to distil suggestions on revenue enhancement. Local governments have to prepare revenue implementation plans to improve revenue management system and establish a follow-up mechanism to measure the achievements made against the action plan.

ii. ***OSR database must be updated and functional:*** Local governments need to make the best use of information technology in revenue collection front. In doing so, they have to digitize OSR data, collect, and update data on all properties in the municipality including properties not liable to pay taxes. Furthermore, it is important to update records of the taxpayers on a regular basis. Such data have to be linked with other sections of the municipality while providing services to households. The government can also use the technology available such as GIS system for mobilizing revenue, urban planning, and for building permit. GIS could be linked with revenue data while revenue system needs integration with other sections of the municipality.

iii. ***Tax and non-tax revenue rates need revision, and the system has to be effective:*** Local governments will have to make surveys of the tax base and revise tax and non-tax rates to capture prices and trends. Municipalities should introduce the IPT system.

iv. ***Revenue collection has to be made efficient and effective:*** Local governments will have to introduce a billing system that provides information to taxpayers about their dues at the beginning of each year. Introduction of penalty to defaulters at the progressive rate (say 10% for the first year, 20% the second year, and 30% for the third year), and banking system should be integrated into the revenue system.

v. ***Alternative avenues for potential OSR can be explored and enforced so that local governments can outline the cost-recovery policy of the infrastructure systems operated by the municipality.*** They must recover at least the recurrent cost and part of the capital cost incurred while providing basic services, e.g. sewerage, water supply, and electricity services. But they should ensure that the revenue collected from a particular service is used for maintaining the quality of the function.

vi. ***Local governments should encourage project implementation through Users Group and PPP model:*** People's participation in development will ensure several benefits, including transparent and efficient use of resources. Therefore, local governments need to implement projects through user groups. In doing so, they have to prepare guidelines for selection of projects to be implemented. However, while selecting the projects, it is essential to take note of the financial sustainability aspect. This means the project should fetch financial support and ensure community ownership. Local governments can also implement projects under the PPP model, for which they have to form a PPP promotion committee. The committee identifies and implements commercially viable projects under the PPP model, and while doing so, it has to consider PPP policy 2003 and PPP Guidelines 2004. In the PPP model, the governments can partner with the private sector in solid waste management, maintenance of roads, operation of bus parks, children's and other amusement parks, and convention halls.

4.7.2 Intergovernmental Fiscal Transfers (IGFTs)

The Constitution of the Federal Republic of Nepal states following norms for IGFT.

(i) The government shall make necessary arrangements to equitably distribute revenue between the federation, province, and local level entities;
(ii) NNRFC shall recommend the fiscal transfer that the province and local level entities are to receive;
(iii) The Government of Nepal shall distribute fiscal equalisation grants to province and local level entity on the basis of their need for expenditure, their capacity in generating revenue, and the efforts made by them;
(iv) The province shall distribute fiscal equalisation grants received from the Government of Nepal and the revenue generated from its sources to local level entities under it on the basis of need for their expenditures and their capacity to generate revenue, in accordance with the provincial law;
(v) The Government of Nepal shall make arrangements regarding conditional grants to be provided through the Federal Consolidated Fund, complementary grants, or special grants for other purposes; and
(vi) Distribution of revenue between federal, provincial, and local level entity shall be transparent.

As such, a clear and objective-oriented inter-governmental fiscaltransfer system has many benefits, some of them are listed below.

a) predictability that helps cities plan long-term investments;
b) providing a creditworthy base of cash flows that can be leveraged,
c) balancing differences in financial capacities of cities; and

Private sector participation modalities can take various forms and provide opportunities for local government to expand their scope of operations and revenue generation.

d) ability to design credible incentives to encourage cities to meet policy goals.

In this regard, the strategies recommended for IGFT as per the infrastructure investment requirement are as listed below:

Socially mobilized groups carry out developmental activities by engaging themselves in planning and oversight and link their effective demands to the supply side governance agencies.

i. ***The federal government should set a transparent and predictable fiscal transfer system established to promote autonomy:*** The National Natural Resources and Revenue Fiscal Commission (NNRFC) should develop a formula for appropriate and fair grants to the local governments and needs to consider OSR situation while designing mechanisms for transfer of unconditional capital grants. More importantly, the federal system should make IGFT predictable by making decisions on the size of transfers to municipalities on time, including informing municipalities of their annual budget ceiling, allocating grants to municipalities on time, making internal and external audit mandatory and on time, and tying-up release of upcoming municipal grants to the use of social accountability tools from municipalities.

ii. ***Equalisation grant from IGFT system needs to be enhanced to promote equity in fiscal transfer:*** IGFT should facilitate legitimate grants to implement SDGs by introducing a combination of unconditional and conditional grants. In this regard, the introduction of special infrastructure investment grants may be necessary. To allocate grants systematically and equitably, NNRFC can conduct study of expenditure needs and requirements. Further, it should also assess their capacity in generating and raising revenues, and allocate fiscal equalisation grants contingent on their need, and existing revenue base. The federal government can also establish funds for local infrastructure development, in this regard, grants for the implementation of SDGs.

iii. ***Performance-based grant system of the past can be continued and strengthened through IGFT process:*** The federal government can allocate formula-based sectoral unconditional grants to municipalities. It has to develop an umbrella formula to allocate sectoral capital grants from government; it has also to make mandatory arrangements for sectoral unconditional grants to local governments. It moreover, needs to provide technical backstopping to local governments, which includes observation of progress made by programs under the conditional grants.

iv. ***Transformation of local governance to e-governance system is necessary.*** Local governments have to develop an e-governance master plan and upgrade the operational effectiveness of municipalities. It would prevent sectoral ministries from arbitrarily withdrawing resources provided to local governments.

4.7.3 Local Borrowings

The mapping of financing requirement and available resource at local levels has shown that the existing sources of local income are not enough for meeting the rising growing local infrastructure investment demand. Hence, borrowing would be necessary, but this should be done by issuing local government bonds.[21] For the municipalities, local borrowing through the TDF is advisable.

21 In 1996, Ahemdabad Muncipal Corporation (AMC) of India had rating for its municipal bond issue for water and sewerage expansion. Ahemdabad water and sewerage were financed through proceeds from bond. The municipal learned how to use bonds as a financial tool to raise financial resources for the capital investment. The World Bank case mentioned in (Ministry of Urban Development 2016)

Local borrowing is needed to enhance the flexibility of long-term infrastructure investment planning. Given that the central government holds municipalities mostly responsible for creation of basic infrastructure facility, local government borrowing becomes indispensable. This is believed to provide strong incentives for project design improvements, improving financial management, along with sound cost-recovery practices, and budget transparency. Also, increase in demand for local capital stimulates innovative approaches to expanding local government access to private credit markets (Ministry of Urban Development 2016).

The Town Development Fund and BFIs are two windows that municipalities can use for borrowing. Municipalities can opt debt financing as their financing need is much higher than the present income. In doing so, the commercial infrastructure should be designed in such a way that the principal and interest of investment could be recovered from user fees, charges, or local taxes raised from facility users (Ministry of Urban Development 2016).

Some of the local level financing strategies could be:

i. Commercial borrowings and public offerings: Addressing project-specific needs to issue shares of commercially viable infrastructure projects, bonds, and consortium financing. Commercial borrowings, PPP, and use of public land as equity in infrastructure projects can provide a strong framework to finance capital investments.

As for municipal financing in Nepal, current borrowing comprises only 0.85% of the total municipal revenue. However, given the huge infrastructure financing, and the prospect for commercially viable infrastructure projects at the municipal level, it is advisable to assess their borrowing capacity in the context of their projected internal revenue generation for the next 20 years.

Furthermore, given the very limited borrowing powers of the local government, coupled with the inability to develop bankable projects and lack of creditworthiness, there is a need for more comprehensive regulation and striking the right balance between the need and ability to absorb loan. The purpose of municipal borrowing, the amount and conditions, timing, procedures for handling borrowing, sources of borrowing and other technicalities should be properly delineated in the regulation aligning the local context (Ministry of Urban Development 2016).

In order to make municipalities eligible for more commercial borrowing from banks and financial institutions there is a need for a set of reforms. The selection of commercially viable projects, pre-determined user-fees or charges to be collected from users of infrastructure, expansion of internal revenue base and its effective collection, effective provision of loan recovery through legal actions including acquisition of collaterals pledged for loan and central government incentive mechanism such as topping the loan by matching grants for social type of infrastructure projects are some of the areas of reform (Ministry of Urban Development 2016).

ii. Borrowings from TDF: There is a need for a comprehensive implementation plan to enhance the borrowing capacity of municipalities and evolve TDF as a financial intermediary with strong capital base and management. In this regard, some of the options listed below may also serves as a brief guideline to help foster the same.

a) TDF should be evolved as a financial intermediary institution by special legislation for the operation of TDF as an autonomous financial institution.

The Viability Gap Funding (VGF) model will help municipalities to mobilize private investment and save public resources from being held up in the limited number of projects that they would otherwise have to invest in.

b) TDF's capital base has to be restructured and scaled up.
c) The mechanism to borrowing capacity assessment of municipalities has to be revised to enable easy access to such funds.
d) Tax and fee system for municipal utilities have to be designed and enhanced by establishing a mechanism for updating of financing data of clients.
e) Appraisal system for borrowing eligibility of the municipalities needs to be revised so that qualified local governments have access to TDF resources.
f) The financial operations of TDF have to be strengthened through better organisation structure and staffing. TDF should open offices in each province to widen financial services. Restructuring staffing and developing specialised cadres in project appraisal, establishing SCROW Accounts in selected projects, and building consortium with other financial institutions is also necessary.
g) The borrowing capacity of TDF should be strengthened by undertaking credit rating of TDF, strengthening staffing and business model, innovating proper instruments for borrowing (bonds, certificates, etc.), and approaching international financial institutions for soft loans.
h) A financing window for innovative projects and areas has to be set up. For this, the PPP law has to be enacted, and the government should promote the PPP model of financing commercial projects.

Financial intermediaries outside the realm of the Banks and Financial Institutions Act are necessary to finance municipal infrastructure projects that are commercially viable, or that could be made viable through the VGF mechanism.

4.7.4 External borrowing of local governments

The existing financing gap of local governments cannot be met without external assistance (grant or loan) mobilized for infrastructure financing. Of the two ways of mobilizing assistance – directly by the central government and allocating the resources to local bodies or approving the local bodies' proposal to mobilize external resources – the latter is a more accountable way of financing. There are several international donor programs at both the international and local levels as mentioned above. International development agencies such as the World Bank, IFC, ADB, and UN agencies are actively supporting development of urban infrastructure and human resources to effectively and efficiently deliver local public services. They are also providing a range of technical assistance facilities focused on addressing policy and regulatory constraints to private sector participation in infrastructure service delivery. USAID, UN Habitat, and other agencies are also working on slum upgrading and infrastructure creation in developing countries. Nepal can very much use those opportunities as well. Along with infrastructure development, the donor-sponsored facilities have a role in supporting capacity building in local government in our country.

The Constitution of Nepal allows external borrowing only at the provincial level, and it is based on approval from central government.Local governments are not directly allowed to mobilize external grant or loan. However, the local bodies including municipalities can take initiatives to mobilize external resources for infrastructure through the central or provincial government, which has already been in practice, as well. The Municipal Infrastructure Improvement Project (MIIP) in Kathmandu Metropolitan City from ADB assistance is an example in this respect.

4.7.5 Public Private Partnerships (PPP) for local infrastructure financing

PPP refers to contractual agreements formed between a public agency and pri-

vate sector entity. This allows greater participation in delivery of infrastructure and social projects. PPP is a situation where the private sector harnesses its financial and managerial resources to provide social amenities and infrastructure on behalf of the government or public sector agencies. To promote PPP at the local level, PPP policies and strategies are in place for subnational government units, known in Nepal as local bodies (LBs).

Private sector participation modalities can take various forms and provide opportunities for local government to expand their scope of operations and revenue generation. Some of the modalities are:

a) contracting out[22];
b) concessions[23];
c) franchise; and
d) self-help groups[24].

There are institutional frameworks for the private sector to build active partnership at the central and the local levels. In one of the frameworks developed by MoFALD there are private sector representatives in central level commissions and their respective committees such as LBFCs and revenue recommendation committee as also revenue mobilisation advisory committees at the local level. Private sector partners function through investment and by building, operating, and managing projects. Further, they also partner by collecting revenues such as business taxes at the municipal level. To foster private and public partnership, the Government has envisioned a PPP center which is proposed to be established under the NPC. A seven-member regulatory committee can be formed under the chairpersonship of the secretary of NPC to

(i) systematize the functions of PPP;
(ii) provide guidance to the center; and
(iii) facilitate coordination among implementing agencies (Ministry of Urban Development 2016).

Some of the important functions of PPP center, which to be established in NPC, are as listed below.

(i) to conduct feasibility study, appraise independently the procurement and agreement documents related to model projects submitted by the project executing agency;
(ii) to facilitate public and private entities in project preparation, construction, and management;
(iii) to conduct capacity development programs for all organs, entities and mechanisms on PPP;
(iv) to conduct studies on the best practices of PPP followed within or outside of the country and to make action points to replicate and promote them.

MoF may establish a fund Viability Gap Funding (VGF) to make viable financially unviable projects to be undertaken by the private sector. The policy has provisioned for preparation of a detailed guideline to get finance from VGF (Ministry of Urban Development 2016).

PPP policy approved in 2015 provides a comprehensive policy framework, however, its related supporting legal acts, rules, and sector-specific guidelines are yet to be developed. The institutions as provisioned in PPP policy 2015 must be established and

22 Through competitive bidding to private sectors.
23 Selected private operator is awarded a licence to provide specified services over a certain period of time.
24 Self-help programmes are designed so that individuals or neighbor hoods provide services for themselves.

the center has to work on legal and regulatory frameworks with close coordination of the concerned PIUs. No limit on budget or maximum ceiling is provisioned for local projects. However, in case local projects require VGF or a central grant they have to take approval of the steering committee. Furthermore, local authorities can consult and take advice with the PPP center for technical and implementation details (Ministry of Urban Development 2016).

4.7.6 Public Community Participation (PCP) for Local Infrastructure Financing

Community dwellers are looking for grounds to participate in the local infrastructure projects that benefit them by sharing their human and financial resource and management expertise. The end-to-end presence of community people and organisations not only helps to meet the infrastructure financing gap but also ensures efficiency and effectiveness in the use of resource. However, municipal administration hurdles and their reluctance to work with community people may often curbs the potential for resource mobilisation and hinders creation of social and economic infrastructure. As such, municipalities that have developed and maintained strong tie-ups with communities are efficient and have benefited by improved infrastructure.

It is the communities which are actively engaged in developmental and social promotional activities. The engagement in the program cycle happens right from the start of the project to implementation, monitoring, and oversight of developmental activities.

LSGA has also provided legal and institutional framework to engage communities in developmental activities. These communities are engaged as an organized facet of the unorganized institution such as user's groups, Tole Level Organisations (TLOs), associations, cooperatives, and supervision committees. The following types of groups are more active, as listed below:

i. Users' groups;

ii. Socially mobilized groups: saving and credit groups, targeted community groups formed for highly marginalised and deprived communities (women, Dalit, ethnic, CACs and TLOs, etc);

iii. cooperatives: federated from saving and credit groups such as women development cooperatives and small farmer's cooperative societies;

iv. associations: community forestry groups, specialised associations such as consumers', transport, water users, etc;

v. construction committees which play an oversight role on contractors; and

vi. unorganized groups: organized for only certain purpose and dismantled after the completion of projects (Ministry of Urban Development 2016).

In the municipal areas, communities are engaged in pooling of resources. The resources shared from communities cover 40 to 80% of the total estimates. Majority of the projects are related to the construction of road, and sewerages including their maintenance. Communities are also engaged in construction of social infrastructures such as school buildings, health posts, and hospitals. Individuals, too, are engaged in sharing their resources in alternative energies such as solar, biogas, and cook stoves (Ministry of Urban Development 2016).

Socially mobilized groups carry out developmental activities by engaging themselves in planning and oversight and link their effective demands to the supply side governance agencies (Government of Ne-

pal), LBs, DPs, and I/NGOs). Many of the social mobilizers, voluntary workers such as Female Community Health Workers (FCHWs), and School/health Management Committees are engaged to carry out the process.

4.7.7 Other sources of local government financing

There are several instruments such as PPPs, public community partnership, FDI, and commercial borrowing for urban infrastructure financing. Some of the innovative financing strategy and tools are as follows:

(i) Value Capture: Land and house taxes, most commonly known as IPT, do not completely capture the changes in land value wrought by the investment made by the state in roads, bridges, public offices, universities, and hospitals. The taxes normally capture the value to a minimum level. However, the valuations remain unchanged for several years. Hence, value added or betterment levies, land pooling in areas adjacent to an infrastructure for resale, and land development schemes need to be used as tools to reflect the property value in parts of cities where new infrastructure investment takes place. This helps raise the internal resource base of municipalities, enabling them to invest in other infrastructure projects[25] (Ministry of Urban Development 2016).

(ii) Viability Gap Funding (VGF): Not all infrastructure projects can be financed by public sources, nor will all the projects be commercially viable. Therefore, the projects which can be materialised as PPP should be explored within the VGF framework. The VGF model will help municipalities to mobilize private investment and save public resources from being held up in the limited number of projects that they would otherwise have to invest in. The special purpose vehicle (SPV) in VGF not only mobilizes private sector resources but also benefits from the knowledge and technology that private sector can bring. However, there should be an objective mechanism for VGF. No municipal subsidy should be available on the purely commercial urban infrastructure projects where projects are bankable or qualify under the PPP criteria (Ministry of Urban Development 2016).

(iv) Land Pooling: Communities engage in pooling their land for infrastructure development, commercialised settlement planning in urban, and integrated settlement in rural/semi-urban areas. Increase in the value of land after development of the infrastructure creates a win-win situation for the community members (Ministry of Urban Development 2016).

4.7.8 Role of Town Development Fund (TDF) as a Local Financing Institution

TDF is the only organisation in the public sector for urban financing which has financed several urban infrastructure projects such as urban roads and city bus terminals through

The efficient SDG financing strategy, in this regard, would be to secure more than 35% share of the non-state actors in financing the total SDGs investment requirements.

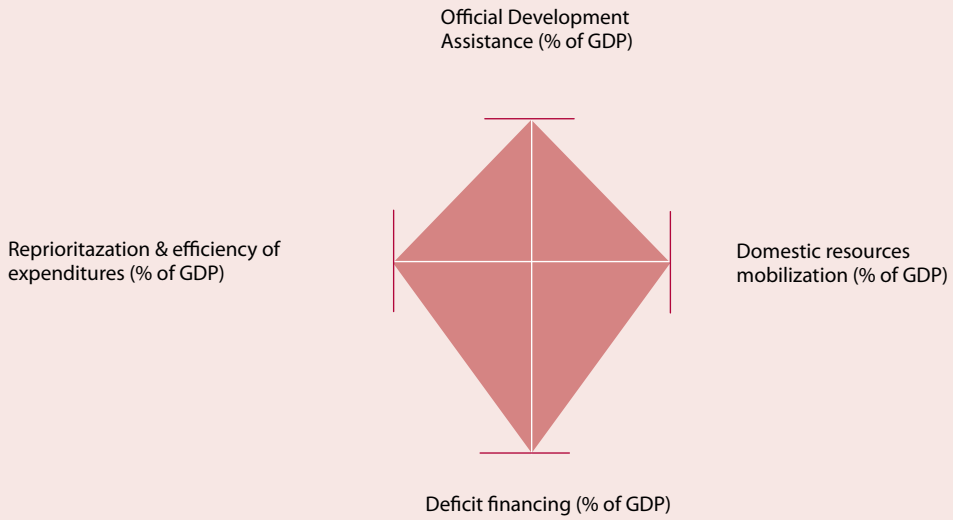
25 There are some examples of "Land for Infrastructure" Project Implementation (Road Construction & Urban Development) as per the BT scheme in Vietnam. Under these projects, road construction is executed and funded by these companies that are granted concession rights by the GOV, with roads transferred to the government upon completion. The companies receive land development rights in return for bearing the cost of road construction, and construct residential properties and commercial buildings. The revenue realised from sale of these properties is used to recoup the cost of construction (World Bank 2013)

long-term financing. In doing so, municipal borrowing capacity is assessed against the ability to repay through internal revenue mobilisation, and the municipality qualifies to enlarge its borrowing capacity if it enhances revenue performance. However, given the limited revenue involved, the municipal demand for loan from TDF is very low. Also, the unsustainable financing framework of TDF evidence grants topping the loan, interest rates charged far below market rates, excessive risk taking, limited loan loss provisioning, and lack of a direct right to confiscate public sector collaterals in the case of default has limited its effectiveness.

On the other hand, Nepalese commercial banks lend for commercial infrastructure projects for a period of up to 12 years, that too on a floating-rate basis. However, due to the nature of their sources of the fund which is mostly parked for short run, banks and financial institutions cannot put invest in long-term projects. They also cannot go below the market interest rate. In addition, the credit policy guideline of commercial banks does not allow them to go for municipal financing framework.

There are also other technical and non-technical issues limiting their outreach capacity to cater to the demand for large borrowings for infrastructure projects. They need to operate above the cost of capital and cannot serve investment demand in infrastructure projects which are long-term nature and of a low rate of return. BFIs would require support of VGF from other agencies such as the government, municipality or the TDF. Also, BFIs interest is limited in the public sector projects because of the political risk. Lastly, they leave behind an impression that financing municipal infrastructure projects incur loan recovery hassles unlike in the case of the private sector projects (Ministry of Urban Development 2016).

Figure 1: Fiscal Space Diamond illustrating major options of fiscal space available for the government



Source: (Rao, Seth and Rinzin 2009)

Although TDF has long-term funds, it has not been able to scale up municipal infrastructure financing. This implies that financial intermediaries outside the realm of the Banks and Financial Institutions Act are necessary to finance municipal infrastructure projects that are commercially viable, or that could be made viable through the VGF mechanism. The financial intermediary would have both the roles of promoting urban infrastructure and financing them on its own or in consortium with other financial institutions. As TDF has already got the mandate to function as a financial intermediary, and has a long experience of working with municipalities and their infrastructure development financing, it is logical to restructure TDF as a full-fledged financial intermediary through legislation that provides this institution with clear autonomy, mandate, and responsibility to finance urban infrastructure projects. The objectives, functions, and rights of the restructured TDF as a financial intermediary need to be enshrined in the TDF Act (Ministry of Urban Development 2016).

The Central Government should finance municipalities based on the nature of efforts and outputs delivered. This means efforts made toward mobilizing local revenue resources and approaches toward borrowing and mobilizing resources available from TDF. Care has to be taken to that the central government funding through conditional grants or transfer. A proper mix of financing opportunities that strategically utilizes OSR, grants, borrowing (loans and bonds), and equity could be leveraged together to finance priority projects. In sum, the practice of municipalities overly relying on federal and provincial government in terms of transfers should be curled for promoting a more sustainable approach (Ministry of Urban Development 2016).

4.8 Public Finance Efficiency, Expenditure Switching and the Fiscal Space

The gains in expenditure efficiency and expenditure switching are often suggested as the primary instruments to enhance the fiscal space to finance development goals (Rao, Seth, and Rinzin 2009). The fiscal space is normally contingent on ODA, reprioritisation and efficiency of expenditure, domestic resource mobilisation and deficit financing (Figure 1), where it is argued that efficiency-enhancing reforms can create fiscal space through reallocation of resources from higher priority to lower priority areas.

The potential for additional fiscal space is directly linked to the development of the country for the following reasons: first, the scope of expenditure switching is correlated to the size of the public sector, and the size of the public sector is a direct function of the stage of development. Second, gain in efficiency is contingent on long-term capacity development programs. This limits the developing countries' ability to actively switch expenditure in the short run (Rao, Seth and Rinzin 2009).

Nepal has a plan to graduate from the LDC group in the near future. As an LDC, it has severe financing and capacity deficits.

Given the scenario and the scale of development needs in Nepal, there is less room to create fiscal space exclusively through expenditure switching and efficiency gains. The public sector needs to partner with the private sector, cooperatives, and international organisations in SDG financing. The efficient SDG financing strategy, in this regard, would be to secure more than 35% share of the non-state actors in financing the total SDGs investment requirements.

Overall, SDG financing with larger fiscal space calls for freezing spending growth in

real terms in the areas of (i) defence; (ii) areas not directly linked with service delivery to SDG; (iii) public utilities; and (iv) transfers not linked to SDGs.

4.9 Official Development Assistance (ODA)

Even substantial increases in domestic resource mobilisation by the government will be insufficient to finance SDG investment requirements of Nepal. Besides, a large chunk of the financing need arises on the non-SDG front (such as debt servicing and defence). Whereas a higher amount of official development assistance (ODA) is needed to finance SDG gap, it is important to note that no distinction should be made between funding the capital and operating costs through ODA, also that the country cannot afford to fully fund operating expenditures, which account for a large share of the total costs in health, education, agriculture, and other sectors. A more significant portion of ODA will thus need to be provided in the form of grants, rather than loans to maintain macroeconomic stability and increase the fiscal space.

Most incremental aid needs to be provided in the form of budget support or sector-wide approaches to help to scale up national programs under the SDG-based poverty reduction strategies. Also, ODAs for the SDGs fincnaing should be better targeted to the changing needs and requirements of the country than the practices followed so far.

Nepal has a plan to graduate from the LDC group in the near future. As an LDC, it has severe financing and capacity deficits. The shortfall on finances for implementing the MDGs was nearly one-third. This tender the implementation of SDGs an uphill task from the perspective of managing financial resources internally. We will need a considerable amount of external support, but to do so, we need to promote and integrate partnership at global, national, and local levels.

Although the volume of ODA has increased now by more than three times before FY 1999/00, in FY 2014/15 it has declined in proportion to GDP. The fall is from 4.8% of GDP in FY 1999/00 to 2.6% in FY 2014/15. The share of ODA in total government expenditure has also fallen gradually from 68.8% in FY 1999/00 to 62.5% in FY 2014/15. If the current trend and level of ODA are maintained, it will not help meet the requirements of SDG financing. The risks associated with such underfunding are twofold: (i) negotiation on SDGs and targeting lower outputs; and (ii) government resorts to high domestic financing and risks heading toward fiscal unsustainability. Since neither of these two risks appear at acceptable level, hence development partners will have to scale up their effort in filling up the financing gap.

The SDG concept is based on the assumption that the primary strategy for facilitating "development" is the transfer of resources (through ODA, FDI, and trade routes). However, the notion does not get sufficiently addressed within the global framework of SDGs. As in the case of MDGs, where the target for global cooperation under MDG 8 was not successfully met, SDGs also runs a similar risk in the perspective of the tense international situation. ODA is a vital source of financing Nepal's budget spending that provides sufficient leverage for enhancing fiscal space. Furthermore, it is needed to address the issues of predictability and earmarking of aid resources by donors. While discussing the need for an increase in the scale of ODA, it is equally important to note that disbursement and utilisation will have to be more robust, more importantly,

because the country envisions to shoulder 18% of the SDG financing need with ODA.

On the other hand, if public expenditure boosts up domestic borrowing, it might raise a host of complex issues on macroeconomic stability crowding out the private sector. Thus, it is essential to bring in discourse some sector-specific financing strategies, and the extent to which the public can leverage partnership from other sectors.

4.10 Strategies for Sector-Specific Financing

Poverty: Financing interventions related to poverty mainly falls to the government. However, the private sector should primarily deepen microfinance and insurance services which are an essential enabler to help the poor out of the poverty trap. The role of the government should be limited to ensuring interest subsidy on credit and cover the insurance premium to be paid by the poor.

Agriculture: Public sector financing should invest in agriculture infrastructure, while households can contribute to the recurrent cost of services, except for critical inputs such as fertilizers and extension services. The poor can benefit from relief in terms of targeted subsidies, sometimes getting covered for the recurrent cost. An enabling environment becomes here essential to encourage private investment in agriculture to reduce public investment requirement.

Health: Basic health is primarily a public sector responsibility. Still, a market-based approach such as health insurance would significantly reduce health expenditure liability in the public sector. Introduction of community and cooperative investment in the health sector would further help to strengthen financing.

Education: Basic and secondary education are also significant imperatives for public sector investment. But Nepal already has a large component financed by the private in education. The best strategy to finance education sector would be to cross-subsidize public schools from charges applied in private schools.

Gender: The investment in gender-related interventions are mainly the public sector's responsibility. However, NGOs and cooperatives can also contribute some resources in this area. The government policies on NGOs and cooperatives can guide their investment.

Water and Sanitation: The financing source envisaged for Water and Sanitation is through the central government transfers coming from the sector ministry and other line ministries (such as Ministry of Education (MoE), MoFALD and MoH) as per their WASH plans, where they get operation and maintenance cost from water tariff. Additionally, support from bilateral and multilateral organisations will be essential. International non-government organisations (INGOs), charity foundations, and personal trusts can finance in this sector through SDP (Ministry of Water Supply and Sanitation 2016).

Energy: It is expected that the share of government sector financing for hydropower projects will remain around one-third of the financial requirement, the rest shared by the private sectors (domestic as well as foreign). The Nepalese private sector might involve itself by investing less in transmission and distribution line. There are a few examples of distribution lines built by power producers, as in Andhikhola hydro proj-

The challenge for policymakers lies in determining how best to manage and calibrate stabilisation concerns without compromising the longer-term objectives of growth and poverty reduction.

ect in Syangja, and by community electricity users. Nonetheless, almost all the responsibility of expansion and maintenance of distribution lines rests with the Government (NEA). The hydropower sector will gradually adopt adaptation measures to address the potential impact of climate change. The government will have to partner with the private sector to jointly invest to make power plants climate-resilient.

Inclusive Growth, Tourism, and Labor: The objective of inclusive growth requires a major policy reorientation from government, while tourism-related investment would mostly come from the private sector. Similar is the case with labor; the private sector can be instrumental in contributing to the social security system.

Growth theories recognize that the public expenditure plays a larger role in determining an economy's growth rate.

Physical and industrial infrastructure: Roads and railways are public sector responsibilities while airports and other transport infrastructure can be shouldered with the private sector. The private sector can, however, mostly finance industrial infrastructure and investment.

Urban development, housing, and reconstruction: Reconstruction is primarily a public sector responsibility; however, considering the communities' involvement in housing reconstruction post-earthquake, it would not be appropriate to exclude them. Certain components of urban infrastructure are taken as community and private sector activities while local governments are expected to mobilize more resources to finance local urban infrastructure.

Climate change: The country's commitment toward a green economy has been apparent from the three-year plans which consistently aim to minimize the impacts of climate change on its natural resources. There are approaches like LAPA which targets to channel 80% of the funds to support local adaptation through a bottom-up approach. With regards to multilateral financing, there are sources like climate investment funds, pilot program for climate resilience (PPCR), UN funding on Climate Change sectors, LDC fund, forest fund, the development banks, multilateral donor agencies, and so on. Likewise, there are various bilateral funding also available on this sector. regards to bilateral funding from developed nations. Moreover, South-South Cooperation is also increasingly getting increased in the recent past, such as increasing support from China (Ministry of Population and Environment 2016), India, and other BRICS nations. Nepal also has space to access finance for climate-related interventions under the United Nations Framework Convention on Climate Change. Projects such as the Adaptation Fund (AF), Green Climate Fund (GCF), and LDC fund are examples.

Nepal has also attracted financing on carbon-offset projects under the UN's Clean Development Mechanisms (CDM). Climate Finance Section in the Ministry of Population and Environment (MoPE) and the National Designated Authority (NDA) of the Green Climate Fund in the Ministry of Finance must be institutionally strengthened with a dedicated structure, office, and human resources to facilitate international climate finance into the country.

It is essential to strengthen the capacity of national stakeholders, including government institutions, private sectors, and NGOs in accessing and utilizing international climate finance from the Green Climate Fund, Adaptation Fund, and other sources. Identification of a dedicated national institute which serves as an implementing agency of the GCF is essential. This would not only deepen access to finance through direct access modality, it would

also enhance the country's internal capacity, strengthen national institutions, and make the country self-reliant in future climate financing (Ministry of Population and Environment 2016).

On the other side, it is also essential to sensitize and encourage the private sector in climate-friendly investment in energy, transport, and infrastructure sector, which is lagging in the climate finance realm (Ministry of Population and Environment 2016).

Forestry: Government treasury is the primary source of financing for the forest sector in Nepal, which also includes donor support. The Government should innovate policies on Payment for ecosystem services (PES), and promote sustainable business models with public, private, and community partnership, which ensures equitable benefit sharing mechanisms.

4.11 Fiscal Space for SDG Financing

Low-income countries such as Nepal must resort to deficit financing because capital constraints would otherwise hinder economic growth and perpetuate low-investment-low growth-low saving-low-investment cycle. The reason for scepticism with deficit financing is macroeconomic stability concerns. It is argued that scaling up public expenditure (reflected in high levels of fiscal deficit) can jeopardize macroeconomic stability (leading to inflation and potential balance-of-payment problems) and undermine growth over the long term. This view, however, relies on the assumptions that (i) the short or medium term is an appropriate window to assess SDG financing needs; and (ii) what is being financed through borrowing and the way the deficit is financedare not adequately proved.

Earlier, it was noted that sustaining high levels of economic growth will be critical for underpinning a strategy for financing the SDGs. Indeed, it is widely accepted that for too long, concerns with stabilisation have led to undermining the growth objective. Although macroeconomic stability is a necessary condition for growth, there is also a widespread conviction that the design of stabilisation programs should be improved to enhance growth prospects. Both the speed and composition of fiscal adjustment during stabilisation may impinge on growth and the durability of stabilisation itself. The financial crisis of 2007-08 and deeper recession in countries of the Organisation for Economic Cooperation and Development (OECD) after that has defined the reservation over deficit financing, seen as the only effective instrument to come out of deep recession. Although this is not the case for Nepal, the low growth equilibrium of Nepalese economy leads neither toward faster reduction of poverty and unemployment, nor toward achieving the SDGs.

In short, the challenge for policymakers lies in determining how best to manage and calibrate stabilisation concerns without compromising the longer-term objectives of growth and poverty reduction. All too often though, the overriding concern of policymakers has been with the short term: An expansion of public expenditures is only desirable when it does not compromise macroeconomic stability. In other hands, in the short run, policymakers will possibly face a trade-off: incurring higher deficits and more employment in the short run, or higher levels of domestic revenues and growth and more employment in the long-run. Some of the options to be considered while financing SDG are as listed below:

Nepal requires to develop a financing framework to implement the 2030 Agenda. The agenda requires not only a significant increase in resources but also a change in the way such resources are used and prioritised.

i. Encourage the private sector (foreign and domestic) to invest in energy, infrastructure, and tourism;

ii. Analyse the potential cost recovery from households, and lower SDG public investment;

iii. Switch the resources from non-SDG sectors to SDG sectors;

iv. Encourage grant financing from donors (if foreign grants are considered to be government income, it will help narrow deficit from the beginning).

There is a heavy share of industrial and infrastructure investment in the total SDG public financing need. Any lag in infrastructure developed could pile up the cost as the timeline progresses and inviting significant macroeconomic consequences (fiscal deficit). Therefore, if investment flows smoothen over the period, the macroeconomic consequences would be less severe.

The recent literature on public expenditure and economic growth has emphasized that some kinds of investments/expenditures can be growth enhancing. In such cases, borrowing to spend (deficit financing) may be justified. Typically, the literature argues that the decision to borrow (deficit financing) depends on whether borrowing is for "productive" growth-enhancing expenditure. Growth theories recognize that the public expenditure plays a larger role in determining an economy's growth rate. However, the discourse that public spending may have a positive effect largely hinges upon whether such expenditure creates outputs and services that directly or indirectly give high economic returns (IMF and The World Bank 2007).

Nepal's low indebtedness and concessional nature of external borrowing indicate the country can resort to external borrowing. Additionally, as the government has been able to repay domestic loans in recent years due to underspending in the development arenas, further space has been created for domestic borrowing. The deepening of financial market, captive investments made by banks and financial institutions in government securities, adequate foreign exchange reserves, relatively low-interest rate regime (except for recent years), all indicate there is fiscal space for the government to scale up spending in the SDGs.

4.12 Integrated National Financing Framework

Nepal requires to develop a financing framework to implement the 2030 Agenda. The agenda requires not only a significant increase in resources but also a change in the way such resources are used and prioritised. It calls for an effective integrated approach to manage public, cooperative, and private finances. An Integrated National Financing Framework mentioned in the Addis Ababa Action Agenda can help Nepal to develop a holistic fiscal planning and management to transcend the public financial management system identifying the incentives to align private and cooperative sectors toward SDGs.

The Integrated National Financing Framework can include the following building blocks (MoF/ADB/UNDP 2016):

(i) A national development strategy or plan, with a well-articulated set of priorities and results, including costed targets and indicators

(ii) Integrated planning and budgeting process that enable linkages to national priorities and results with MTEF and budget frameworks and monitoring mechanisms
(iii) A resource mobilisation strategy to meet the costs of the national development strategy
(iv) A financing management system that allows the government to harmonise domestic and international public finance better, as well as to leverage the private financing sources
(v) Institutional arrangements in place that facilitate coherence among various policy areas and coordination across government for resource mobilisation and prioritisation of policy and institutional reforms
(vi) An enabling environment in which a range of stakeholders can engage in the debate over the effectiveness and impact of finance in delivering the SDGs.

4.13 Macroeconomic Outlook Consistent with SDG Investment and Financing Requirements

An assessment of the macroeconomic outlook for the entire projection period reveals the following:

(i) Given the poverty elasticity of growth at 0.25, and assuming GDP growth to be 8.6% on an average, absolute poverty on an average will be 17.26 4% in 2016-19, 9.6% in 2020-22, 4.23% in 2023-25, and 3% in 2026-30.
(ii) Given the employment elasticity of growth at 0.42, the number of effectively unemployed (including labor underutilisation) labor force would average at 3.7 million in 2016-19, 3.1 million in 2020-22, 2.3 million in 2023-25, and 0.8 million in 2026-30.

(iii) Given the revenue performance, external financing needs for the SDGs, and the size of public expenditure to be financed by external debt, the outstanding external debt would comprise, on an average, 14.5% of the GDP in 2016-19, which will decline to 8.8%, on average, in 2026-30. Domestic debt would average at 8.2% of GDP in 2016-19, drop to 4.6% in 2026-30. The SDG investment requirement in public sector as estimated for achieving the SDGs is therefore consistent with debt sustainability of the country.


Resilient Communities through Building Back Better

Chapter 5

Implementation Partnership Strategy

There is a role for all development stakeholders in the implementation, financing, and monitoring of the SDGs and their targets. While the role of the public sector was predominant in the implementation of the MDGs, the roles of the private sector and other non-state actors are equally crucial for the implementation of SDGs. Even within the public sector, the role of local and provincial governments would be equally essential to localise SDGs for effective implementation.

A strategic partnership among the government, non-government, private, and community sectors requires that all are part and parcel of the SDG-based plan preparation, implementation, M&E process. A political process including parliament, political parties, and their entire apparatus should be on board to own and facilitate SDG implementation at the national and subnational levels. The following sections elaborate on the partnership of national government with local governments, private sector, cooperatives and NGO sector, other civil society organisations, and external development partners.

5.1 Partnering with Local Governments

Localisation of SDGs at the subnational levels is strategically essential for several reasons, as listed below.

a) The federal system of government entrusts many SDGs-related service deliveries at the province and local levels.
b) Devolution of revenue and other resource mobilisation authority to subnational governments along with large transfers from the federal government provides subnational governments with resources to attain the SDGs.
c) The development challenges are different at different tiers of governments and across the geographic regoins, and the stage of development is grossly unequal across the provinces. These issues are best addressed through subnational level planning and budgeting. and
d) People's participation and effective service delivery can be best assured when the SDGs are implemented at the subnational level and at coumunity level development perspectives.

Even within the public sector, the role of local and provincial governments would be equally essential to localise SDGs for effective implementation.

As the localisation of SDGs at the subnational and local levels is critical for a universal, equitable, and inclusive outcome, it is equally important to have a political set-up at those levels that are willing and capable to effectively handle the development agenda. Along with the preparation of SDG-based local development strategies at the subnational levels, it then become essential to work out the financing strategies and encompass capacity development interventions. The notion of "Capacity First, Devolution Later" should be avoided through

The notion of "Capacity First, Devolution Later" should be avoided through the simultaneous devolution of authority and capacity building of the local bodies.

the simultaneous devolution of authority and capacity building of the local bodies. Capacity constraints should not come in the way of the implementation of the SDGs at subnational and local levels. Through the NPC, the federal government can partner with local governments to envision SDG-based planning and budgeting.

Localisation of SDGs implies that actors and institutions at the sub-national level have a fundamental role to play in formulation, implementation, and monitoring of SDGs if they are to improve people's lives. Adaptation of SDGs to fit local realities will ensure that the national development goals are realised at national and subnational levels. The experience from MDGs shows that national development goals have to localise for higher, more equitable, and inclusive outcomes. Implementation of SDGs should build on filling the gaps of MDGs, and an articulated strategy needs to be developed to localise SDGs at the provincial and local levels. The experience of MDG implementation also suggest that localisation of national development goals is critical for adequately addressing targeted populations, targeted groups, and remote geographical areas. A two-pronged approach – with universal as well as targeted aspects — would be necessary for treating the diverse sets of development deficits across gender, social and ethnic groups, and geographically excluded regions.

Both external and domestic development partners are willing to work at the local level in partnership with local governments. A framework for coordination and resource pooling has to be in place to harmonize their activities and to create synergy in their supports. The national government will have to develop appropriate laws, regulations, and guidelines to facilitate such initiatives so that there is consistency across local governments so far as the mobilisation of development partners for implementation of SDGs at the local level is concerned.

The ongoing state restructuring process has devolved much of the state revenue sources to the subnational governments along with large transfers from the federal budget. Also, the Constitution of Nepal 2015 entrusts subnational governments with delivery of several SDGs at the local level. Thus, unless resource sharing and transfers are conditional or tied up with SDGs, there is a high risk that subnational level planning and budgeting will become imbalanced undermining SDG priorities. Revenue sharing and inter-governmental transfers will have to be scientifically linked with incentivise structures and functions of implementing agencies locally, with local resource allocation to achieve SDGs.

5.2 Partnering with the Private Sector

As discussed in the SDG financing strategy, there are several areas where private sector can work as a strategic partner of government. Achieving SDG 1 (on poverty) and 2 (on hunger) requires active role of private sector as engine of output growth, employment, and tax contributor. In achieving SDG 3 (health) and 4 (education), public sector responsibilities are high. But higher education, professional and vocational courses, and pieces of training and health insurance, are to be provided by the private sector. Achieving SDG 5 (gender) requires the government to introduce enabling laws and implement them in the public domain. But several agendas of gender equality and empowerment of women fall under the realm of the private sector, given that more than two-thirds of the economic activities fall under the private sector. As such,

matters related to equal rights, achieving wage parity, and promotion of women's leadership in decision-making becomes the responsibility of the private sector.

SDG 6 (water and sanitation) and 7 (energy) are achievable within given timeframe, only when the private sector also is conscientious in protecting water sources, managing household solid waste, investing in renewable energy production, and partnering with the government in transmission and distribution system. Moreover, the private sector has to play a significant role in promoting and using energy efficiency technologies, as it is equally a huge consumer of the costly energy. On SDG 8 (labor and economy), the gravity of private sector role is higher as it is the primary job provider and growth promoter. Private sector in the country comprises nearly 85% of formal labor market, and almost 100% of the informal market, hence introduction and enforcement of decent work condition and incentiwise social security to labor forces can bring this sector on board in achiving SDG sooner.

Assuring the necessary physical infrastructure for achieving SDGs is the Government's responsibility SDG 9 (infrastructure, industry, and innovation). But the private sector is the key to industrialisation and innovation, as it comprises more than 90% of industrial production and is the sector with an appetite for research and development. On SDG 10 (inequality), a joint effort of the private and public is imperative. The major private sector roles include fair distribution of profits among the domain of production such as capital and labor, making adequate provisions of social security, fair pricing of FDI goods and services, and promoting corporate social responsibilities.

Achievement of SDG 11 (cities) and 12 (sustainable consumption and production) are mostly related to private and household sector activities. As the government accounts for less than one-third of total consumption, private sector must be responsible for achieving this target. Besides, housing and urban transport are mainly private sector ventures, and they have to work closely with the public sector to realise the targets.

There is also a responsible role for the private sector in achieving SDGs 13, 14, and 15 (climate change, life below waters, and life above waters). Household and private sector activities mostly affect these goals, e.g., through disposal of industrial wastewater, industrial and other greenhouse gas emissions, and disposal of hazardous matters and chemicals. There is a possibility of externalisation of environmental costs by the private sector for excelling in competition and maximizing profits. There is also a risk of excessive exploitation of natural resources such as land, water, forest, and fresh air as the private sector sometimes becomes myopic. Many of these responsibilities cannot be simply legally enforced. Motivation and a sense of responsibility are the determining factors on how the private sector can serve these goals.

SDGs 16 and 17, which aim at peaceful societies, access to justice, protection of human rights, zero tolerance of corruption, and international cooperation can be achieved through vigorous efforts of the public and private sectors. Corruption is generally looming in an unhealthy nexus between the private and public sectors. Partnership in maintaining transparency, accountability, and abiding rule of law would help in good governance and reduction in corruption at both levels. Facilitating international cooperation, negotiating access, and inviting capital flows and technology transfer should be one agenda of the Government here, Promotion of exports and fair-trade regime are equally responsible roles of the private sector (SDG 17).

Revenue sharing and inter-governmental transfers will have to be scientifically linked with incentivise structures and functions of implementing local agencies with local resource allocation to achieve SDGs.

The Governmental efforts to invite, encourage, and pursue the private sector to engage in the SDGs remain at a slow pace. The private sector, too, has not been pro-active in SDG initiatives because there is no defined responsibility or incentive offered by the government. The apex-level arrangement in Nepal (a Steering Committee chaired by the Prime Minister and the Coordination and Implementation Committee headed by the Vice Chair of NPC) for SDG implementation should be pro-active on this front. The milestones for private sector for SDG implementation will have to be assigned through an action plan based on proper incentivise strategy, with roles and responsibilities of the private sector properly articulated and incentivised.

5.3 Partnering with Cooperatives, Communities, Civil Society Organisations, and NGOs

Effective implementation of SDGs also demands meaningful participation of non-state actors – civil society groups, cooperatives, and media and community groups.

Effective implementation of SDGs also demands meaningful participation of non-state actors – civil society groups, cooperatives, and media and community groups – working together in partnership with the government and private sector. Such a participation is necessary for localisation of goals and targets at the sub-national levels, and to put strong multi-stakeholder structures in place to monitor, report, and provide feedback for planning and budgeting.

Partnering with CSOs: Nepal is rich in vibrant and proactive Civil Society Organisations (CSOs) engaged in empowering people on the economic, political, social as well as environmental fronts. CSOs have made significant contributions to Nepal's socio-political and economic changes, and are important institutions for transforming society. CSOs in Nepal have formed a common platform named Nepal SDGs Forum to engage collectively in the SDG processes. As the main aim of this forum is to engage CSOs on the sustainable development process, the government can strategically partner with this forum and foster collective action among the CSOs and governments.

The SDG Forum is making efforts to improve the effectiveness and accountability of CSOs. It has also played a useful role in promoting CSOs in implementation processes and engaging with governments and other stakeholders. NGO Federation of Nepal (NFN), another such platform is coordinating and facilitating the forum on behalf of the associated CSOs and individuals. This forum has identified 23 constituencies and 19 thematic areas with one focal organisation for each constituency and thematic area. Some CSOs have also been working on SDG 5, adopting diverse strategies such as advocacy, awareness, capacity development, and network building. They have been advocating for meaningful engagement of women in the political processes as well as for promotion of "50:50 leadership"- which means working for equal numbers of men and women in the leadership position by 2030. A civil society working group on SDG 5 has already been formed to strengthen network and capacity building.

There is thus a deep involvement of CSO in the SDGs process, playing a pivotal role in SDG implementation in Nepal. They generally represent the need of marginalised communities and regions which makes them important partners in SDGs implementation. They ensure that SDGs interventions target the needs of all segments and make the agency accountable. This is because CSOs engage actively with the targeted groups and have sound knowledge about the local context (NGO Federation of Nepal 2017).

The CSOs also get significant support from the INGOs in Nepal, as they mobilize about 10-15% of the international development cooperation annually. Community organisations have expressed their commitment to successfully implement SDGs adopting five principles — redistributive justice, economic justice, social justice, environmental justice, and downward accountability. From formulation to adaption and localisation they are becoming rigorously involved the various stages of SDGs process, supporting the state at different levels. A substantial number of community organisations are, moreover, working as service providers to implement development activities to contribute to the achievement of the SDGs (NGO Federation of Nepal 2017).

Some of the CSOs are also promoting youth engagement in the SDGs and have formed the SDGs Youth Alliance. They have prepared a comprehensive capacity strengthening plan for young people with particular focus on Goals 3, 4, 5, 8, and 16. Others are working with the Ministry of Education, actively engaging in policy forums, and participating in setting up a national framework for SDGs. They have raised awareness and ownership of educational stakeholders in the targets and indicators set out in Goal 4. Some CSOs are working in remote districts to promote access to quality education for all, school governance, and reduce educational wastage. Others are at work to unleash social and economic leadership of adolescent girls through year-long mentorship and capacity development in the earthquake-affected areas, while still others are conducting school enrolment program in districts with large gaps in school enrolment.

Some of the CSOs are also working to boost up employment and livelihood opportunities by creating farm and off-farm jobs and initiating alternative agriculture options, while others are engaged in creating employment and livelihood opportunities for single women and older adults. They are providing agriculture-based skills training and seed money support to groups for income generation purposes. Some are involved in improving health and nutrition of women and children, as also the marginalised people. They provide regular health camp services to improve the health and nutrition status of women, children, and elders. CSOs are also working closely with the MoHP on universal access to health, where they regularly monitor health services rendered by the state at the district level. Some of the CSOs have organized school-based workshops with youths on menstrual hygiene management. As a result, the silence and shame about menstruation have been shattered as adolescents, in general, have started to speak about it. More importantly, CSOs are advocating for promoting non-discriminatory practices at all levels, where they have organized training on gender and social inclusion issues. They also help in increasing the practice of gender-responsive programming at local and district levels to achieve gender equality.

Working as service providers to implement development activities to contribute to the achievement of the SDGs.

Some CSOs have conducted urban-specific livelihood support package programs for several households of home-based workers, to ensure food security of urban working poor. They are implementing a safe-city campaign in alliance with the Nepal Police, and Kathmandu Metropolitan City. They work for the construction of women-friendly health post buildings to ensure better and quality health services for the urban working poor, especially women, help to build ward offices, health posts, and school toilets.

To promote decent work for home-based workers, CSOs are working on the issue of workplace safety, and related policy advocacy, providing safety nets to the home-

based workers and construction-sector workers, and are advocating for decent work for women working in the entertainment sector. To eliminate or reduce the existing inequalities amongst the working poor in the informal sector, CSOs have conducted education and reflection circles, as well as awareness-raising programs for workers and entrepreneurs, done inclusion audit of SDG implementation, and worked on the issues of minorities.

Given the breadth and depth of involvement of CSOs, robust institutional arrangements would be necessary to harness their full potential.

Some CSOs work for protection and promotion of the rights of children specifically at risk and from vulnerable backgrounds, address child poverty and their social security, child protection in education for quality education, deliver protection services for children, provide skills and vocational education, life skills education, financial and social literacy, career and counselling and economic empowerment for young people at risk for self-reliance. Some of them are forming and mobilizing child clubs, providing trainings and organize interaction with club members, parents, and teachers on child rights, child-friendly schooling, and are creating a better environment in schools, help schools with repair and maintenance support, and providing educational support for children from poor socio-economic background. CSOs are also engaged in preparing a country report on SDG implementation with civil society perspectives, monitoring and review the implementation of SDGs, and have also prepared a detailed report of national monitoring and review of the implementation of SDGs in the country.

Given the breadth and depth of involvement of CSOs, robust institutional arrangements would be necessary to harness their full potential. Some of they include:

a) The high-level SDG coordination must be functional and inclusive to make the partnership and roles of CSOs visible and well defined.

b) There should be well-articulated roles and responsibilities for the CSOs in implementing specific SDG targets.

c) The government should put in place a credible policy and effective mechanism to further incentivize CSO activities in the SDG areas, including through resource sharing and partnership in implementation and M&E.

d) An active oversight and monitoring mechanism to track their activities, financial flows, and outputs to get feedback for policies and planning should be in place. Such active participation of CSOs in SDG implementation and monitoring provides a solid ground for the government to partner in the implementation of several SDGs.

e) Likewise, NPC, as the focal agency of SDG imlementatoin in the country, also must engage CSOs in each stage of SDG implementations and share space of implementations and resources wherever possible with CSOs and other non-state partners, as well.

Partnering with cooperatives: Cooperatives are already on board on SDG implementation, and have spontaneously started working in the realm. The global forum on cooperatives has already taken steps to gear all the cooperatives of the world toward SDGs. The Cooperative Societies of Nepal's slogan for the year 2017 was "Cooperatives for Sustainable Development." Nearly half a million people participated on the Cooperative Day (2nd April 2017) with slogans of "Cooperatives for Sustainable Development" and "Cooperatives for Inclusive and Just Society" to show their solidarity with stakehold-

ers in SDG implementation. The National Federation of Cooperatives and District Federations of Cooperatives are arranging pieces of training and orientation programs on SDGs and their relevance for cooperative movement. Thousands of co-operators have participated in such events.

The Government of Nepal intends to make cooperatives complementary to what the public and private sector can do for sustainable development. The new cooperative act would be a milestone in this regard. As the 14th plan has already assigned to cooperatives the size of investment they have to make for plan implementation, the SDG Status and Roadmap Report also calls for cooperatives to work together with the government to meet several SDG targets. The SDG investment requirement estimated in the previous chapter has already highlighted the magnitude of resources to be mobilized through the cooperatives to invest in the SDGs, and the government will have to create an enabling environment for them to meet those investment needs.

To enhance effectiveness on funding of cooperatives, the national and local governments can partner with the cooperatives on various fronts such as:

(iv) implementing targeted interventions for poverty, hunger, energy, tourism, industry, housing, climate change, and forestry;

(v) mobilizing domestic resources for bridging the SDG financing gap;

(vi) enhancing access to financial services such as saving and credit, crop, livestock, and health insurance (member protection);

(vii) achieving the goals of inclusive growth, decent work and productive employment, reduction in income inequality, sustainable consumption and production patterns, and distribution, and

(viii) making effective public service delivery (such as distribution of agro-inputs, distribution of subsidized food, delivery of relief materials for disaster-affected people, and delivery of public subsidies and grants).

Partnering with other actors: Various civil societies and their apex organisations are also engaged in SDG dialogues and in finding their roles in their implementation. A series of such discussions are held around social protection and achievement of SDGs through labor market interventions. Youth organisations are also engaged in SDG process with their roles being defined and ensured in the accomplishment of several SDGs. The media are also now coming on board regarding their role in dissemination of the 2030 Agenda and monitoring of their progress. Partnership with these groups will be critical for effective implementation of SDGs. There should be a mechanism of state recognition of the contributions they are making to the society and an avenue for partnership to implement some of the SDG interventions such as social mobilisation and public audit of outputs and outcomes.

5.4 Partnering with International Development Agencies

Partnering with UN agencies: Of the 19 different UN agencies currently working in Nepal, 13 agencies are involved in SDG implementation and monitoring. A UN agency-level SDG working group has been set up for better coordination and active support. This working group is to provide consistent support to the government by

coordinating among all UN agencies and serving as "One UN." Also, UN agencies are supporting various line ministries in implementation of SDGs in Nepal. Some of the areas of direct support are:

(ix) raising awareness on SDGs through supporting civil society groups including NGOs and media;

(x) providing technical assistance to NPC for preparing SDGs national report, SDG Status and Roadmap Report report, and SDGs needs assessment, and financing strategy;

(xi) supporting the government for aligning national M&E system with SDGs through strengthening NPC's capacity; and

(xii) collecting SDG-relevant data (through secondary source) and developing a baseline of all the Provinces (and districts, major urban city, or at sub-national level units) and clustering them in terms of vulnerability and resilience (NGO Federation of Nepal 2017).

The UN communication team has also developed SDG awareness materials that demonstrate interconnectedness among the goals and needs of a holistic approach to addressing the interrelated problems collectively.

Implementation of SDGs at the provincial and local government levels is a challenging task because of financial and capacity constraints. UN agencies would be instrumental in building national, provincial, and local level capacities to integrate SDGs into the planning, programming, and budgeting process, build capacity for implementation and help for strengthening the M&E system. The next cycles of UNDAF should be instrumental in putting in place an effective partnership mechanism among the government at all levels and UN agencies. However, a space for policy dialogue and implementation needs to be created at the state level to give a visible role for them in SDG implementation.

Partnering with UN LDC Forum: Nepal can only reach the global community with a strong voice on the concerns of LDCs through the LDC forum. The unfinished aid and cooperation agenda set for LDCs through the Brussels Program of Action in the past and now through the Istanbul Program of Action is a mechanism for countries such as Nepal to solicit global commitment of higher ODA. It is important for financing SDGs, prioritizing financial flows (mainly through FDI) to the LDCs, and offering a concessional window for trade and technology transfer.

As LDCs suffer from severe resource and capacity constraints for carrying forward the SDGs, it is logical for Nepal to expect external cooperation through trade, investment, and development assistance in the country's aspiration. The Millennium Declaration had amply recognized the situation and had made a call to develop further an open, rule-based, predictable, non-discriminatory trading and financial system, to address the special needs of the LDCs. It includes tariff- and quota-free access for exports from LDCs', enhanced program of debt relief for the Heavily Indebted Poor Countries, cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction in targeted time and with focus agendas. The Declaration also called for a comprehensive deal on the debt problems of developing countries through national and international efforts and making available the benefits of new technologies, especially information and communications with the involvement of the private sector. The global community committed net ODA at 0.7% of the GNP

for member countries of the OECD Development Assistance Committee (DAC) and 0.15% for the LDCs. There was a call for a large proportion of unconditional ODA to be allocated for basic education, primary health care, nutrition, safe water, and sanitation. However, the latest data show that there has been a significant shortfall from the commitments.

Nepal does not have a loud voice at the international level to influence global policies on financing for development. It is in part because several policies are initiated outside the UN system (such as through G20) where countries like Nepal don't represent. Thus, the UN is the only forum for Nepal to table its concern on financing and technology transfer on SDGs.

Partnering with multilateral financial institutions: Most of Nepal's development financing comes through multilateral financial institutions such as the World Bank and ADB. There is no doubt that these institutions are working with national governments toward mobilizing funds for SDG implementation. However, the frictions of national priorities and donor interests will have to be managed through an agreed framework of SDG implementation and financing strategy. While aid absorptive capacity has always been a challenge for Nepal due to weak development and aid governance, aid conditionality and delayed disbursements are no less responsible. A credible program-based fungible financing mechanism on the part of development partners and fiscal and fiduciary discipline on the part of government would be critical to ensure that SDG financing gaps get comprehensively addressed through multilateral sources.

Partnering with bilateral donors: Bilateral donors such as DFID, USAID, EU, Japan, India, and China contribute almost 20% of aid financing in Nepal. While some portion of their financing goes on-budget, a large part flows in through the off-budget system with a little aid-tracking capacity of the government. Country priorities and donor interests are often in conflict over allocation of bilateral aid flow – some donors even absurdly insist that the government reset national preferences based on the intended aid flows. Unless bilateral aid flowed integrate with country system and are allocated as per the national priorities, it is less likely that even a more substantial assistance flow could ensure the achievement of the SDGs.

There are global commitments made through SDG 17 toward supporting the developing countries in aid, trade, investment, technology transfer, and capacity development. However, a global mechanism for financing for SDGs has not yet taken concrete shape. In this context, while more ODA would have to be committed by OECD/DAC countries and more concessional assistance has to be offered by multilateral financial institutions, measures to enhance the capacity of aid utilisation remain equally vital. In federal Nepal, the government needs to facilitate and coordinate aid flow to provincial and local governments for SDG implementation because local resources would be insufficient to finance SDG investment need.

Implementation of SDGs at the provincial and local government levels is a challenging task because of financial and capacity constraints.

Nepal does not face a debt serving problem at present as its external and domestic debts accounted for only 16.7% and 10.3% of the country's GDP in 2016, respectively. As such, the total debt of the government declined from more than 60% of the GDP in 1995 to 53.3% in 2005 and further to 27% in 2016. This was partly because of the underperformance of the government in the development plan and budget implementation. The government has remained in net budget surplus in the last few years, as the

actual budget expenditure of government was far below the resource generation. The saving in the fiscal account not only prevented the government from additional domestic borrowings, but also enabled the government to repay some of its long-term as well as short-term loans. In addition, underutilisation of foreign loans due to poor project implementation, following the frequent changes of the government and lack of public accountability for aid realisation, led to slow accumulation of foreign public debt in some years. As a result, the amount spent on debt servicing has been more than the loans mobilized for development activities. However, as there is a large gap between SDG investment requirement and available financing, substantial ODA will have to flow in, which requires a higher level of partnership in mobilizing resources from bilateral donors as well.

Unless bilateral aid flowed integrate with country system and are allocated as per the national priorities, it is less likely that even a more substantial assistance flow could ensure the achievement of the SDGs.

Channelling of ODA through the government budget system has been an issue that needs to be resolved. Of the total ODA received in FY 2015/16 and FY 2016/17, only one-third was disbursed through government budget system while one-third was spent through off-budget projects. Even for on-budget projects, 26% was spent through direct payments (on-budget but off-treasury), further increasing the share of off-budget spending (NGO Federation of Nepal 2017). More assistance through off-budget projects raises risks of uncoordinated spending leading to overlaps and gaps in SDG financing. Development partners will have to respect the country system and country process in line with the Paris Principles of Aid Effectiveness and its subsequent outcomes. Aid coordination through SWAps (Sector-wide Approaches) mechanisms would be important when multilateral and bilateral aid agencies intend to work at the subnational levels.

Learning from the past, external financing of the SDGs must take into account the following measures. First, global aid commitment should be an integral part of the SDGs implementation strategy. Bilateral and multilateral aid agencies will have to scale up their resources to fund the SDG financing gap. Second, aid will have to be well coordinated avoiding overlaps and will have to be made fungible enough to finance the programs of national priority. The priorities will, of course, have to be guided by SDGs and their targets. Third, aid will have to be channelled through national budget, and any subnational level aid will have to be tailored to local priorities and programs. Funding to be given through NGOs will have to be coordinated with federal and local governments. Fourth, aid coordination among development partners will be critical for its effectiveness. UN country support requires robust integration as ONE UN in practical terms. Existing SWAp could be extended to capture more SDG areas so that aid coordination is better observed in implementation. Fifth, low exports and loss of competitiveness have been a concern for external sector and foreign exchange in the balance of payments. It is crucial that aid for trade is scaled up and effectively implemented.

Finally, support has to be mobilized for the country's capacity development at the national and sub-national levels, and in areas where the social rate of return is immediately visible compared to the economic rate of return. Several SDGs fall in this category.

5.5 Partnering with Regional Cooperation Organisations and Forging South-South Cooperation

Nepal is a member of SAARC, established to reduce poverty and enhance the welfare of the peoples of this region. This organi-

sation has taken up several initiatives in the past to carry forward the MDGs, in collaboration with the UNDP and UNESCAP. The region will have to work collectively to address SDGs that have cross-border implications such as trade, investment, tourism, capital flows, migrant workers, and bilateral as well as bilateral relations. The organisation can put up regional targets and forge collaboration to achieve them.

BIMSTEC and AIIB are two more Asian development cooperation organisations that could be instrumental not only for Nepal achieving the SDGs, but for the region as a whole. While infrastructure financing of SDGs through AIIB could be explored in the public sector, other development banks such as ADB and IFC can also work with the private sector to meet the SDG financing requirement.

Other regional cooperation frameworks such as China's One Belt One Road project could be explored to finance public-sector infrastructure projects. Besides, considerable public resources could be channelized toward other pressing needs in the social and environmental sector if more external financing in infrastructure is available.

5.6 Partnership for Monitoring, Evaluation and SDG Progress Reporting

Monitoring and evaluation can deliver results only if the capacity of monitoring institutions is strengthened and a strong database is in place to make monitoring truly result-based.

A result-based M&E system should be made an integral part of every program, beginning at the early stages of formulation. Further, it should provide the necessary data and information for public plans and programs. Regular and systematic M&E has to be in place to keep track of projects in implementation of the sub-national level agencies. Strengthening the M&E process would require that it reports in a timely and cost-effective manner. It should also ensure the accountability of agencies involved in the process.

Many surveys will have to be rolled out in the next few years to fill in the data gaps. Existing surveys should update questionnaires and collect data required for SDG monitoring. Furthermore, a single widow should serve the purpose of collecting administrative data for SDG monitoring.

A rapid mapping exercise of data requirement and their quality shows large gaps in data on monitoring SDG indicators. Of the total data requirement, those on 217 indicators are good while others on 106 indicators are moderate, but data for ten indicators are distinctly poor (details in the Annex). Data for 98 indicators are not at all available. Substantial investments will have to be made. Therefore, in generating and improving data sources, for which partnership among all the development actors would be extremely necessary.

Existing surveys should update questionnaires and collect data required for SDG monitoring. Furthermore, a single widow should serve the purpose of collecting administrative data for SDG monitoring.

The M&E of SDGs has to become be a collective effort of the government, civil society organisations, and development partners. A stronger and more rigorous institutional and operational mechanism with enhanced capacity is essential to see whether the country's development programs at all levels are on track to achieve the SDGs. Mainly, as the private sector will be a key player to help reach the SDGs, the monitoring process must encompass activities and outcomes in this area. In this regard, the government can set up a joint monitoring mechanism with the private sector and civil society organisations and make an annual review of the progress.

Chapter 6

Institutions, Policies, and Way Forward

Several of the SDG indicators that are of quantitative nature are costed accordingly to derive the investment requirement. But for some SDG indicators, which are largely qualitative in nature and quantification is not feasible, the costing can be materialised through policies, regulations, and administrative enforcement. Besides, indicators related to inequality, injustice, exclusion, and insecurity have to be addressed through both policies and institutions with mandate to work on these issues. This chapter describe policies and institutions necessary for achieving those goals and targets, and also SDG prioritizations and way forward for some of the urgent actions to be taken for ensuring the country meets the SDG targets within time.

6.1 Reorienting Macroeconomic Policies for the SDGs

As Nepal progresses towards 2030 agenda, government needs to reorient macroeconomic and sectoral policies towards generating growth that is built-in-distributive, inclusive, higher-job-intensive, and at the same time resilient to global shocks. Furthermore, it needs a renewed focus on economic development and environment management, which is complemented by a broad-based economic growth that balances growth aspiration with distribution needs of the mass population and underlying environmental factors to sustain a long-run growth and development.

The key features of a broad, coherent, and integrated macroeconomic policy framework that will be able to support sustainable development going forward include:

(i) renewed focus on real economy and environment;
(ii) rebalancing of growth and distribution aspects; and
(iii) reoriented international development policy toward fair and equitable access to resources and opportunities for all.

Macroeconomic policies will have to target real variables such as the level of output and employment to support in achieving sustainable development goals.

Macroeconomic policies will have to target real variables such as the level of output and employment to support in achieving Sustainable Development Goals. Indeed, this may require shifting emphasis from intermediate targets such as low inflation, external balance, and low fiscal deficits to growth and employment. But, moving away from intermediary targets does not mean discounting macroeconomic stability; rather growth and stability should be reinforcing each other. The primary purpose of macroeconomic policies in the context of SDGs should be to reorient productive resources toward real growth and ingrain a process for ending poverty and moving toward prosperity.

Higher economic growth is not enough unless it creates jobs. Research has shown

One fundamental problem of recent economic growth in Nepal is slow structural transformation.

that even during the growth spurt by LDCs from 2002 to 2008, when their GDP expanded by 7.5% annually on average, employment growth was only 2.9% (United Nations Conference on Trade and Development 2014). Generating decent employment on the required scale is indispensable for poverty reduction and reversing inequality. Thus, there is a need to formulate macroeconomic policies that would create employment and also support broad-based economic growth and prosperity.

One fundamental problem of recent economic growth in Nepal is slow structural transformation. The share of manufacturing sector in GDP has gone down from 17% in 2001 to 6.6% in 2015, while that of agriculture has stagnated at around 35%. Instead of economic diversification and structural transformation, the country is experiencing deindustrialisation. Macroeconomic policies have to complement industrial policy and promote structural change to reverse deindustrialisation, and spur broad-based growth.

Agenda 2030 demands transformative changes, so there should be structural transformation of the economy leading from low-value agriculture-dominant economy to high-value industry and services. Macroeconomic policies should encourage private investment in manufacturing industries. Starting with reform in taxation, monetary, trade, and foreign investment policies, the government will have to gear itself toward improvement of systems that promote private investment. However, domestic policies are not formulated in a silo, so policy coherence between the national and international level is becomes imperative. Such a coherence provides the country with the kind of policy space needed to implement its national development strategies and to achieve Sustainable Development Goals.

There is a strong view that redistribution is the most effective way for poverty eradication and sustainable development. However, experience shows that distribution alone is not sustainable, and growth is critical for enabling the state to redistribute income and wealth. But, while aspiring for growth, the impending inequality in the economy shouldn't get widen further in this process of development.

The financial architecture of Nepal is still overly concentrated on stability and profitability, despite the lesson that the world has to offer from two big financial crises — 1990s and that of 2007-08. Financial exclusion is still depriving the resource starved people of productive activities. In Nepal, initiatives for financial inclusion and orientation of banking resources toward productive sectors have picked up some momentum in the recent past. Likewise, microfinance programs are also supporting poverty reduction goal, which mark a good step in the right direction in terms of providing broad-based access to financial resources.

Continuously improving the existing economic policies and reorienting financial institutions for deeper inclusion are essential. This would help meet commitments in SDGs by increasing access to finance to mass population, sustainable production, and consumption.

The taxation, subsidy, and spending policies of the government are either gender-unfriendly or remain biased against women. The financial and credit policy of the banking and the financial system also reflects gender biased in several elements. Their collateral-based lending practices make it difficult for women to secure banking credit, without entitlement of property to pledge a collateral. It is necessary that gender audit of macroeconomic policies be

carried out at the national level, and possibly also to be practices at regional level by regional organizations, or UN agencies. There should be a review of good practices of international financial institutions for the purpose of helping to create a gender-friendly financial architecture in Nepal.

Overall, achieving SDGs implies needing a reorientation toward pro-poor macroeconomic policies. In that context, some of the critical steps for advancing pro-poor macroeconomic policies as listed below.

i. Audit of existing fiscal and complementing public policies that directly help in reduction of poverty, inequality, and exclusion. Reorienting these polices for pro-poor growth requires a comprehensive review of public finance policies and institutions. Introduction of a progressive taxation system with low-tax burden for the low-income group along with direct cash transfers for the poor is a right step in this process. Besides, formulation of a taxation system that would influences the resource-allocation pattern of the private, household, and cooperative sectors for pro-poor economic growth.

ii. Audit of financial, monetary, credit, and foreign exchange policies to assess if they are consistent with the broader objectives of SDGs such as inclusive growth, access to productive resources, sustainable production and consumption, and good governance. As the financial and monetary policies must help the transformation process, these policies require re-structuring. For instance, financial inclusion should not be tokenistic; instead, it should establish linkages to production and broad-based job creation in the economy. Monetary policy, too, has to be designed to balance economic stability and high per capita income growth, and creation of broad-based employment in the economy.

iii. Assessment of the foreign exchange and exchange rate policies to see whether they are suitable to investment for both the domestic and foreign investors. Particularly when the private sector requires a huge scale of FDI injections to meet the financing gap in industrial and physical infrastructure, foreign exchange policy also needs to be commensurated with the investment requirement in the economy.

iv. In-depth assessment of the existing trade and investment policies, particularly from the perspective of sustainable consumption and production. The "free trade" philosophy and "trade liberalisation" policies would often result in unsustainable consumption and production in the economy. The national government and global community have to work together toward negotiating and making the international trade and investment regimes work for the SDGs, particularly in reducing inequality within and among the countries.

v. Review of macroeconomic and sector policies to see their coherence with the national objective of moving toward the socialist economy and achieving SDGs in between. This will require a better understanding of policy interactions and how they can accelerate or drag the progress toward the SDGs. Fostering collaborative work across all stakeholders and government agencies can help recognize potential conflicts and redesign policies consistently with the broader national goals.

Agenda 2030 demands transformative changes, so there should be structural transformation of the economy leading from low-value agriculture-dominant economy to high-value industry and services.

vi. Diversification of risks associated with over-concentration of trade, finance, investment, and employment opportunities. As disasters and global shocks have often retarded the achievements made in poverty reduction, macro and sectoral policies, and institutions related to their implementations need to be resilient to such shocks. It is essential to develop economy resilience from global and national shocks, and insulating the economy from trans-boundary impacts such as trade blockades, extremely volatile trade regime or exchange rate regime.

vii. A holistic social approach in policy formulation with the understanding that such policies may have been disoriented in terms of poverty, gender, environment, and other social issues. In fact, some economic policies remain biased against the poor, women, environment conservation, and social groups. These have to be reformulated.

Overall, achieving SDGs implies needing a reorientation toward pro-poor macroeconomic policies.

The government cannot achieve the transformative SDG agenda through direct government action alone. Local governments, business communities, academics, civil society organisations, and citizens all have a stake and a role to play, in adopting the locally sustainable development solutions, and shifting to sustainable business models. Inventing smart technologies and adopting sustainable consumption habits are further strategies. Overall, the implementation of SDGs calls for various policy reforms and new initiatives.

6.2 Policy Reforms to Achieve Specific SDGs

Poverty, unemployment, and inequality are deeply rooted not only in the sectoral public policies but also in the macroeconomic policies underlying the output, price, trade, investment, and income distribution pattern. Eradicating poverty requires launching a two-pronged strategy – putting credible macroeconomic policies in place for higher economic growth and affecting the distribution of income through policy interventions in the labor market. Doing so also ensures social protection. Unlocking the economic growth potential requires that enabling fiscal, monetary, external trade, investment, and labor market policies are in place and provide the environment needed for private investment.

Economic growth will be inclusive when most of the citizens can participate in the production process, or are at least, covered by minimum level of social protection, and/or, threshold level of social protection is established. For inclusive growth process, while macroeconomic policies will have to be pro-poor, labor-intensive sectors will have to be promoted by state interventions.

The conditions of the domestic financial market, taxation system, and trade and foreign exchange regulations would be critical for promoting domestic investment as well as FDI. Both are highly essential to building an infrastructure that drives the growth process. A stable macroeconomic condition with credible and predictable fiscal as well as financial policies would be necessary to meet the huge financing gap foreseen in SDG implementation. The international community should work closely to implement the country strategy for pro-poor growth. Unlocking the constraints for pro-poor economic growth requires enabling global trade, increasing investment, and expanding labor market opportunities.

Agriculture in Nepal is marred by lack of competitiveness, because of the growing

monopoly on seeds, non-tariff barriers to trade across the border, and unavailability of modern technology. In addition to that, unsuccessful global negotiation, and patenting of technology have been depriving farmers of access to those inputs. Unequal subsidy regimes across the borders in agricultural production exist distorting the agricultural markets. Hence, the global community must work seriously to correct this anomaly and create a level playing field in the production and trade of agricultural goods. On top of that, Nepal has been facing low investment in agriculture, with both limited domestic resources to finance agricultural projects and donors channelling funds toward the non-agriculture sector.

There should be specific provisions for additional financing for agriculture infrastructure. This includes irrigation, power, rural road, and ICT services. Such provisions have to enhance productivity and market access capabilities. In doing so, establishing a quality control mechanism, and post-harvest practices of agricultural produce becomes essential rather than a mere choice.

There is a role for the private sector and cooperatives in delivering education and health services, particularly at the tertiary level, through market-based approaches. Enabling a policy environment for social business (making the profit while adhering to social responsibility) in these sectors would complement the public sector's responsibility to deliver quality services.

Women and men are actors and stakeholders in socio-economic development, but socio-economic values and institutions often constrain the role of women as a productive force in development. Macroeconomic policies and strategies often reinforce gender biases embedded in institutions, markets, and economic processes. Women are more likely to juggle their working hours between market and non-market economic activities. Macroeconomic policies do not account for domestic work or non-market economic activities of women (informal labor). All the sectoral policies therefore need to be reviewed and mapped to see whether they are consistent with the gender goals of the sustainable development agenda.

The labor market mismatch will persist in Nepalese economy until economic growth exceeds 7%. In the absence of instruments for labor-intensive growth, the rate of economic growth will have to absorb the job seekers within the country. This implies it will take some time to enable the domestic labor market to absorb labor supply. In the meantime, foreign employment will remain necessary. In this regard, there is a need for strong initiatives at both the national and global levels toward labor-market reforms for decent work, social security for workers, and gender discrimination in work and pay. Wherever it is needed, due supports and cooperation are also taken from The International Labor Organisation (ILO) and other UN agencies, while making the reform in labor markets, to ensure pro-poor labor market reforms, with generation of more jobs and employments in the domestic markets, as well.

In this process, equally important would be the roles of countries employing migrant workers to monitor their labor market practices and ensure that migrant workers are not vulnerable to dangerous and hazardous jobs in the distant -markets. A global governance mechanism could be worked out mandating bilateral agreements between the Governments (countries) to minimize labor exploitation and prevent illegal supply and employment of workers in the host countries employment foreign migrant labor forces.

Poverty, unemployment, and inequality are deeply rooted not only in the sectoral public policies but also in the macroeconomic policies underlying the output, price, trade, investment, and income distribution pattern.

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Sustained pro-poor growth in Nepal would be possible, largely also adequately utilizing external market opportunities. This means markets for exports and capacity to produce competitive goods and services are also critically important. Given the rise of the knowledge-driven production process, the smooth transfer of technology and know-how across the countries would be critical. Industrialisation in LDCs, such as case of Nepal, will be at faster pace when there is a swift access to global competitive technology. The global initiative for such market access and technology transfer will have to be materialised, and the advanced economies (and the international partner organizations and multilateral organizations) will also have to support Nepal's efforts on technology development in order to transmit the know-how and skill into the production of industrial outputs and employments in Nepal. This includes also more supports on increasing pace of infrastructure development, as well.

Substantial efforts from national, regional, and global level will be necessary for developing a resilient infrastructure in Nepal. This should not only be limited to regional infrastructure, but investment in trans-border infrastructure is also critically important for ensuring competitive production scale and economic development in the country. In doing so, the roles of the existing international and regional development banks will be also paramount important, specially for ensuring large-scale investments on flagship infrastructure and manufacturing industries.

While inclusive economic growth and socio-economic policies will help in reducing inequality in-country and across the countries. It cannot be achieved at international level, in the absence of special and preferential treatment of trading, investment, and development assistance flows to LDCs such as the case of Nepal. While a fair pro-LDC global trading regime would have to be in place for addressing inter-country inequality, the expanded volume of unconditional grants and concessional loans and debt relief can complement such efforts. So, revisiting the trade, investment, and aid environment including debt cancellation would be instrumental in achieving SDG 10. As safe migration and decent work in the international labor market is key to the reduction of income inequality for LDCs like Nepal, global initiatives need to be taken for bilateral agreements on migrant workers and formal labor arrangements.

Nepal, like many other LDCs, suffers from low competitiveness in international trade. Given the size of its economy, it must look outward to generate the demand for its goods and services. The current global trading regime, particularly the unsuccessful rounds of WTO negotiations, have created several barriers to external trade of Nepal, and of other LDCs. The resolutions on Landlocked Developing Countries (LLDCs) have not worked well to facilitate trade and transit across the countries. Without special and preferential treatment for the LDCs and LLDCs, such as Nepal, the risk is high that inter-country income disparity will increase. The UN agencies and global development forums should urgently create a mechanism to hear the voices of LDCs and their proper representation in multilateral financial institutions, as a prerequisite for reducing inter-country inequality. In several occasions, the development and governance initiatives outside the UN system, where big countries set the rule of global development and governance, concerns and priorities of small countries like Nepal, would not be heard at all. Where, many of these LDCs would likely become voiceless and helpless. The UN system should not

also lose its clout in these areas, but to create a forum to hear voices of small countries at the global forums.

Nepal is moving ahead with a new land-classification system, and a land-use policy is being put into place. For successful implementation of this scheme, international support for land-use planning and land development interventions in all municipalities is a necessary. The government will have to take up housing for the poor as its responsibility in providing basic houses to all, but this requires targeted financial and technical support on housing for the homeless and marginalised, and for vulnerable households. In addition, investment in housing will have to be encouraged with a soft line of credit. In that regard institutions and guidelines need to be developed, adapt, and make operational, including guidelines on the minimum physical conditions (facilities) to ensure while renting in and renting out housing in the country. This can be initiated gradually starting from major urban center first, and then at rural municipalities.

The 2015 mega earthquake has heavily damaged water supply, sanitation system, and transportation network and related infrastructures. It has also damage houses of hundreds of thousands of people and also made human settlement very vulnerable in the quake-affected areas, requiring huge-scale of resettlements and relocations of population. The post-disaster needs assessment (PDNA) done by the government (The National Planning Commission 2015b) shows that reconstruction and resettlement costs would need billions of dollars, urgently. In a situation of huge resource gap in addressing housing problems, this scale of earthquake and flooding disaster in Terai in 2017, have aggravated the issues on inaccessibility of affordable housing, water and sanitation to many folds. Substantial scaling-up of national efforts along with many folds increase on international technical and financial support would therefore be necessary for Nepal in the coming few years more to achieve the goal of making integrated human settlements safe, decent, adequate, and affordable ones to mass population. Meanwhile, policies and regulations for disaster proofing of development activities have also to be in place, with an institutional mechanism for their enforcement, implementations and monitoring of the new rules and regulations on the ground.

Intergenerational equity in access to non-renewable resources, and for healthy environment, calls for a model of responsible production and consumption from the present generation for the shake of future generations, particularly from the advanced economies where overconsumption is becoming a widespread social bane. Implementation of the 10-year framework of programs on sustainable consumption and production applies more to advanced economies, despite the fact that developing countries on the way to high economic growth are also becoming addicted to such a lifestyle and consumption habit. Initiatives from the economies that are excessively consuming the scarce global resources is a long- realised need in this arena.

Nepal's role in climate change mitigation and adaptation will be limited to strengthening resilience and adaptive capacity to climate-related hazards and natural disasters. The country will be committed to integrating climate change measures into national development policies, strategies, and planning. While doing this, strong international and especially regional support would be needed in various ways, such as developing mitigation and adaptation strategy, technology transfer, and financing.

Given the size of its economy, Nepal must look outward to generate the demand for its goods and services.

Restricted fiscal space for the government and competing and even more compelling allocation requirement would call for special financing commitment from the international community.

Nepal is still not a highly indebted country. Its debt servicing is still not a major issue. Given the huge public investment required to finance SDGs and the country's aspiration to graduate from LDC status by 2022, the higher inflow of ODA loan would likely to make debt servicing stressful. Considering its past debt servicing records, Nepal can also benefit from the UN initiative on debt relief and debt restructuring. Since, the UN resolutions have emphasized total cancellation of the debts owed by the LDCs, it is time that the lender countries and institutions onetime write-off debts with the condition that the debts thus cancelled be utilized for investing in the SDGs. The larger ODA flow to LDCs should moreover, continue in the form of grants, conditioned to investing in programs under SDGs' consistent fiscal framework.

6.3 Institutional Reforms

Strong international and especially regional support would be needed in various ways, such as developing mitigation and adaptation strategy, technology transfer, and financing.

All the institutions, namely the parliament, judiciary, constitutional bodies, and governmental bodies are crucial for achieving the goal of "Leaving No One Behind". Thus, it is necessary to set up a mechanism to bring on board all these institutions at a common platform. Institutions in the local governments, the private sector, and other non-state actors need to be restructured towards the implementing and monitoring on progress of the SDGs over the time.

In Nepal's new federal structure, each level of government has the legislative powers to enact their laws and implement them within their functional jurisdictions. Implementation of SDGs at the local and provincial levels needs to be institutionalised within the power-sharing mechanism across the three tires of the governments. Provincial and local governments have also to prepare their budget within the time-frame prescribed by the federal government.

Localisation of SDGs at the sub-national levels is critical for the universal, equitable, and inclusive outcome of sustainable development efforts. It is important to have a political set-up at the sub-national levels that is willing and capable of handling the development agenda effectively. While preparing SDG-based local development strategies at the provincial and local levels, the governments need to frame up implementation and financing strategies, devising capacity development interventions.

The challenges faced in financing local infrastructure can be addressed by creating legal frameworks for institutional restructuring along with modifications of the functional responsibilities of all three levels of the government. The present institutional structure at the sub-national level will have to evolve gradually, and federal law will have to make necessary institutional arrangements both at the federal and provincial levels to maintain effective coordination of activities, at the same time, adequate space for all local bodies to implement the activities on the ground.

Recently, after promulgation of new federalism-based constitutions in 2015, the role of NPC has been also redefined by the Government of Nepal, along with the changes on federalism-based resources allocation process and the program planning process. Over the time, it is expected that NPC will engage more to formulate long term vision and evidence-based policies and plans to the government; engage in monitoring and

evaluation process, and in coordination of these process and activities with provincial and local level governments, and between different government line agencies. Thus, NPC will engage more actively in study, research and exploration of new project ideas and plans; and will also act as a think tank body of the government.

Along with the changes on constitutions- which is based on federal set up - the operational modality, functions, and roles of NPC also need to be revised, restructured, and readjusted by engaging the institutions more on advising government on long term, periodic, and setting macroeconomic policies, to facilitate on resource mobilization, and forecasting budget ceilings for all three levels of the government, as per the recommendations made by the National Natural Resources and Fiscal Commission (NNRFC). Likewise, in the coming years, NPC will also likely to be involved more in monitoring and evaluation, impact evaluation of outputs and outcome of large-scale projects and programs, also by involving independent third-party review teams as and where necessary. The NPC will also have to advice the federal government to adopt budget ceiling and constraints within revenue and expenditure tracking systems, and advice and facilitate implementation of Public Private Participation (PPP) mode of development to all three levels of the governments.

Thus, NPC has to coordinate, monitor, and develop plans and strategies to achieve national goals and objectives as outlined in the National Development Plans. NPC has to advise and guide provincial and local governments planning process to develop their periodic development plans within the broader frameworks of development strategies and plan of the federal government of Nepal.

The institutions of the private sector, mainly FNCCI, CNI, and FNCSI may also have to emerge and evolve as responsible apex organisations to mainstream SDGs into their business plans. They also have to set up focal units to address measures needed for achieving the SDGs. A business-to-business cooperation mechanism across South-South countries, and more among the SAARC countries, is also critical to support the achievement of various targets of SDGs in Nepal, and in timely fashions.

The institutions of the civil society also have to be engaged for various developmental and socio-economic transformation process in the country. But, large part of their activities remains uncoordinated, particularly with program planning process of the governments. Some of them also lack effectiveness in service delivery to the needed communities. Therefore, effective monitoring and evaluation mechanisms, and an effective institutional mechanism to enforce laws and regulations are also needed at all three layers of governments to enhance effectiveness and efficiencies of operations of civil society and developmental partners, and for better collaborations among various institutions and organizations involved in achieving related targets of SDGs.

Implementation of SDGs at the local and provincial levels needs to be institutionalised within the power-sharing mechanism across the three tires of the governments.

6.4 SDG Prioritisation

Prioritisation of SDGs involves cross-cutting implications. While unfinished MDGs are reflected in SDG 1 to SDG 6 and commonly understood as the top priority agenda of the SDG 2030, as well. Likewise, other development interventions such as in infrastructure are getting equal priority in the SDG discourse. Nevertheless, setting priorities is imperative for several reasons including inherent resource and capacity constraints to create an effective comple-

mentary interaction and synergy among the various targets and goals of SDG.

SDG priorities need to be institutionalized in the development policies, strategies, perspective plans, periodic plans, and annual budgets of the governments at all levels in terms of resources allocation, effective implementation, and continuous monitoring. Monitoring of priority projects and programs has to be done more frequently, it is institutionalized, and often carried out through the governmental institutional apparatus than others, and the uptake of the findings and results has to come from the highest level of government.

Sequencing and prioritization of SDG interventions are necessary for several reasons including strengthening the implementation capacity of the government and its various partners. Among the top priorities of activities in SDG are those that

(i) do not require new legislation or redesigning of the organisational structure;
(ii) need low level of capital resources and capitalize on low-hanging fruits; and
(iii) complement the implementation and delivery of other top prioritized goals and targets, as well.

SDG priorities need to be institutionalized in the development policies, strategies, perspective plans, periodic plans, and annual budgets of the governments at all levels.

Obviously, SDG priorities have to be set against fiscal, financial, managerial, institutional, and other capacity constraints. But they should not be rigidly bound by constraints, and efforts must be made to unlock the binding resources. The prioritisation criteria of policies, programs, or activities could be based on following factors:

(i) the degree of synergy, and how well other goals can build on the outcomes;
(ii) contribution to gender, social, and geographical inclusion;
(iii) level of people's participation and ownership; and
(iv) cost-effectiveness and sustainability.

Nepal faced two shocks in the course of its transition from the decade-long armed conflict toward peace and prosperity. The first one is 2015 mega earthquake, which caused a huge loss of lives, and damage of properties, and physical infrastructure. With rehabilitation and reconstruction, the key priorities of the government, a five-year recovery and reconstruction strategy (NRA 2016) has been brought into operation, which will shape the course of development for several years to come. The interventions that promote sustainable livelihoods and expedite reconstruction of the damaged infrastructure under the Reconstruction Strategy are embody the spirit of the SDGs. As conflicts and disasters have nullified several development achievements of the past few decades, sustaining the outcomes in future also implies that targets and indicators related to addressing such shocks be prioritized in SDG implementations.

The second shock relates to the four-month trade blockade on the border between India and Nepal, starting in October 2015. The trade blockade from the largest trading partner, India, - comprising of more than two-thirds of Nepal's international trade - virtually crippled the national economy until middle of 2016, causing shortage of essential goods and services in the country. This even led to a huge humanitarian crisis due to acute shortage of food, medicine, and petroleum products.

After experiencing these two major shocks in the economy, subsequently, Nepal's priority has increasingly been shifted to attaining self-sufficiency in basic goods such as food, medicine, and energy. With huge infrastructure gap in sustainable growth of the economy, the emerging priority is development of infrastructure-based economy, mainly with greater emphasis in hydropower, transports

and roads networks (all mode of transportations), and new construction and improvement on infrastructure of airports.

Nepal has made significant progress in poverty reduction and human development in the last two decades — absolute poverty declined by one percentage point each year in the last two decades, and has experienced considerable improvement in the Human Development Index. Still, absolute poverty at 21.6% (National Planning Commission 2017) is among the highest in South Asia, and the country is at the bottom of countries with middle human development status. Poverty is closely correlated with lack of access to productive resources (mainly land), educational attainment, family size, geographical location, inadequate infrastructure base, and social exclusion. With the Constitution's stress on inclusive development with social justice, the government has prioritized implementation of inclusion to reduce absolute poverty, achieve fundamental rights of the citizens to all populations, and minimize disparity in development outcomes across gender, social class, and geographical regions. As already stated, the foremost priority has to be accorded to areas that address absolute poverty and human deprivation.

Nepal intends to graduate from the status of LDC to that of developing countries in the near future and to become a middle-income country by 2030. It has already met two of the three criteria for graduation (human assets and economic vulnerability), and is orienting its policies to meet the threshold for per capita income. Its priority in plans, policies, and budgets is to achieve economic growth of more than 7% per annum (NPC, 2017). While this growth is envisioned to be built-in-distributive, it is expected to generate jobs for half a million new entrants in the labor market every year.

Effectively architecting prioritisation becomes a critical strategy for Nepal to achieve the SDGs, given several interventions to be made amid financing constraints of financing and implementation capacity, and paucity of time. Besides, prioritisation is necessary in the context of efforts needed to create institutions and mechanism for SDG implementation and for the value of fostering synergetic interaction among the targets. Prioritisation is governed by political, social, and environmental imperatives such as conflict resolution, peacebuilding, disaster mitigation, and resilience. The government planning process so far is giving utmost priority to resolving the frontal challenges of development — absolute poverty, exclusion, and deprivation of basic services. There are also unfinished agendas of the MDGs, which need to be prioritized over the next several years.

Effectively architecting prioritisation becomes a critical strategy for Nepal to achieve the SDGs, given several interventions to be made amid financing constraints of financing and implementation capacity, and paucity of time.

Potential interactions across the targets have to be considered while making the policy, considering the holistic nature of the SDGs. The extent to which the country is able to reduce absolute poverty also may depend upon the achievements in developing physical infrastructure in the hinterlands of Nepal (SDG 9) which in turn may impact healthy lives, considering access to roads and hospitals. To a certain extent, health has a synergetic impact from agriculture productivity (SDG 2). Attainment of education may have implications for empowerment of people and society (SDG 4). Access to renewable energy (SDG 7), on the other hand, may ensure a positive impact on the wellbeing of rural households in Nepal. A recent comprehensive analysis of poverty in Nepal (CBS 2012) shows that poverty (SDG 1) is correlated with lack of productive assets like land (SDG 2), family size and illness (SDG 3), lack of education (SDG 4), and exclusion by geography and social institutions (SDGs 9 and 16). Examin-

There is an urgent need to institutionalise a better system of project prioritisation criteria by the Government of Nepal for allocation of public funding.

ing goals in terms of different perspectives should help refine the policies, and plan for more effective action. Stand-alone prioritisation of one goal over other risks losing synergy and overly burning out the already scare resources in the implementation phase. Therefore, a proper quantification of such synergy and trade-offs becomes important in designing an action plan.

Additionally, to refine the process, prioritisation of SDG targets can be institutionalised in MTEF. This means proper quantification of the synergies between the goals, and categorizing interventions. For example, if the broader aim is to reduce MPI which remains a key development challenge for Nepal, priority can be assigned to the inherent factors. The major factors weighted in MPI are nutrition and child mortality, years of schooling, school attendance, access to water, sanitation, clean energy, and housing condition.

The following pointers provide a quick look at the refinements that need to be considered SDGs prioritisation:

(i) Prioritisation of SDG targets and indicators has to be done in line with the government policies, plans, and synergy that could be attained in implementing interventions.

(ii) Unfinished MDG agenda will have to be the most important priority interventions followed by interventions that have the highest impact to achieve multiple goals.

(iii) Jobs are critical for reducing poverty, ensuring basic social security, empowering people, and raising income levels. The synergies of SDGs that help create jobs should be quantified and assign the priority.

(v) Furthermore, factors that help build resilience against reducing disaster risk, and ensure human security need to be prioritized in the course of SDG implementation.

Finally, in the government planning formulation process, there is an urgent need to institutionalise a better system of project prioritisation criteria by the Government of Nepal for allocation of public funding. The project prioritisation criteria used so far are, by and large, adhuck basis, based on power and influences of higher authority or governing institutions. In large part of the cases, they are not properly institutionalised among the development agencies and are often driven by funding sources (or availability of resources) rather than the evidence/need based planning and priority of the government in line with government plans, policies, and programs.

Formulation and development of national standard for project analysis and evaluation are crucial for selection and prioritization of projects for achieving various targets of SDGs. In other words, there is an urgent need to incorporate SDGs prioritization for new projects, along the line of establishing a "National Project Bank' in National Planning Commission and Provincial Project Banks in Provincial Planning Commissions, as widely being discussed in public forums, recently. The NPC has been given the mandate by the government directives to establish National Project Bank (NPB). The proposed National Project Bank will be, thus, very useful to the Government of Nepal for screening, appraisal and prioritization of the projects in coordination with the priority of sectoral ministries and the provincial planning commissions. This will also essential for ensuring selection of eco-

nomically efficient, regionally balanced, environment-friendly, socially inclusive projects with sustained impact in the society.

The essence of National Project Bank (NPB), as proposed to be establish in NPC, aimed at enhancing efficiency and effectiveness in identification, screening, selection and prioritization of new projects for funding, that are, at the time of securing funding, already institutionalized in the project bank. This will also help to institutionalize a system of conducting proper screening of new ideas and concepts, with debate and discussion with key stakeholders and a priori empirical assessment- including an in-depth ex-ante empirical analysis, before allocating huge-scale of public resources for a new project and program. Over the time, based on the lesson learning on functioning of Project Bank at national level, Provincial Government Level Project Bank can also be established at each of the seven provinces, with more active roles and supports from the newly established Provincial Planning Commission.

In addition to revisiting the project and program prioritisation criteria, there is an urgent need to develop evidence-based reporting and Monitoring and Evaluation Systems in Nepal. This can be done using the new innovations and tools and technology provided by development of ITC and online system platform. Then, the timely availability of empirical evidence and best practices would reveal the impact and synergy imparted by the prioritized projects. This can also significantly enhance efficiency and effectiveness of project prioritization and development investment process and procedures, so far, adopted by the public sector agencies in Nepal. It is equally important to consider that project prioritisation is done periodically, is a resource–specific process, and should be effective enough to overcome challenges in achieving the SDG Agenda and its various targets within a time bound period.

There is an urgent need to develop evidence-based reporting and Monitoring and Evaluation Systems in Nepal.This can be done using the new innovations and tools and technology provided by development of ITC and online system platform.

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Annex Table 1. Data Requirements* and Availability for SDG Monitoring

SDG 1: End poverty in all forms everywhere

Targets	Data Source	Frequency	Responsible Agency	Data Quality[1]	Latest Year of Data Availability
Target 1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than					
1.1.1 Population below US$1.25 per day (ppp value) (%)	NLSS	6-8 yrs	CBS, WB	1	2010-11
1.1.2 Poverty gap ratio at US$1.25 per day (%)	NLSS	6-8 yrs	CBS, WB	1	2010-11
1.1.3 Poverty US$1.9 per day	NLSS	6-8 yrs	CBS, WB	1	2010-11
1.1.4 Per capita GNI (US$)	NAS ES	Annual	CBS, MoF	1	
Target 1.2 By 2030, reduce at least by half the proportion of men, women, and children of all ages living in poverty in all its dimensions according to national definitions					
1.2.1 Population below national poverty line (%)	NLSS	6-8 yrs	CBS	1	2010-11
1.2.2 Women of all ages below national poverty line (%)	NLSS, HS	5 yrs	CBS	4	Needs Assessment
1.2.3 Children of all ages below national poverty line (%)	Survey	5 yrs	CBS, MOWCSW	4	Needs Assessment
Target 1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable					
1.3.1 Social protection expenditure in total budget (%)	ES	Annual	MoF	1	
1.3.2 Population covered by social protection	ES	Annual	MoF	1	
1.3.3 Employed people living below US$1.25 per day in total employment (%)	NLFS	8-10 yrs	CBS	1	To be done
Target 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services, including microfinance					
1.4.1 Multidimensional poverty index	NDHS, Census	5, 10 years	OPHI UNDP	1	
1.4.2 Share of bottom quintile in national consumption (%)	NLSS	6-8 year	CBS	1	2010-11
1.4.3 Households having access to market center within 30 min walk (% of total)	NLSS	6-8 year	CBS	1	2010-11
1.4.4 Households covered by formal financial services (% of total)	NLSS	6-8 year	CBS	1	2010-11
1.4.5 Households having property/tangible assets in women's name (% of total)	Census	10 years	CBS	2	2010-11
Target 1.5 By 2030, build up the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters					
1.5.1 Loss of lives from disaster (number)	Records	Annual	MoHA	2	
1.5.2 Missing persons and persons affected by disaster per 100,000 (number)	Records	Annual	MoHA	2	
1.5.3 Economic Vulnerability Index (EVI)	LDC category: Nepal	Ad-hoc	UN/DESA, Population Division	1	
Target 1.a Ensure significant mobilisation of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programs and policies to end poverty in all its dimensions					
1.a.1 Proportion of resources allocated by the GoN directly to poverty reduction programs	GoN budget	Ann	MoF	1	
1.a.2 Proportion of total govt spending on essential services (education, health, and social protection)	GoN budget	Ann	MoF	1	

* Only measurable and tangible indicators within each SDG targets are listed in annex. Details indicators and data sources are provided in SDG Status and Roadmap Report (2017).

SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Targets	Data Source	Frequency	Responsible Agency	Data Quality[1]	Latest Year of Data Availability
Target 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round					
2.1.1 Prevalence of undernourishment (%)	NHDS	5 yrs	MoH	1	
2.1.2 Population spending more than two-third of total consumption on food (%)	NLSS	6-8 yrs	CBS	1	2010-11
2.1.3 Per capita food grain production (kg)	Am data, Pop. projection	Ann,10 yrs	MoAD, CBS	2	
2.1.4 Global Food Security Index (GFSI) (score)	GFSI report	Ad-hoc	International Trade Association	1	
Target 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons					
2.2.1Underweight children under five years of age (-2 Standard Deviation) (%)	NDHS	5 yrs	MoH	1	
2.2.2 Stunting (low height for age) children under five years of age (-2SD) (%)	NDHS	5 yrs	MoH	1	
2.2.3 Wasting (low weight for height) children under five years of age (-2SD) (%)	NDHS	5 yrs	MoH	1	
2.2.4 Population below minimum level of dietary energy consumption (%)	NDHS	5 yrs	MoH	1	
2.2.5 Anaemia among women of reproductive age (Adolescent girls) (%)	NDHS	5 yrs	MoH	1	
2.2.6 Anaemia among children under five years of age	NDHS	5 yrs	MoH	1	
2.2.7 Children aged 6-23 months consuming Minimum Acceptable Diet (MAD) (%)	NDHS	5 yrs	MoH	1	
2.2.8 Adolescent population with low BMI (< 18) (%)	NDHS	5 yrs	MoH	1	
2.2.9 Prevalence of exclusive breastfeeding (%)	NDHS	5 yrs	MoH	1	
Table 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment					
2.3.1 Land productivity (metric tonne per ha)	Am Data	Ann	MoAD	2	
2.3.2 Fertilizer use (kg per ha)	Am Data	Ann	MoAD	2	
2.3.3 Access to finance for agriculture (agri loan as % of total bank loans)	Eco. survey	Ann	MoF	1	
2.3.4 Seed replacement rate (%)	Am Data	Ann	MoAD	2	
2.3.5 Round the year irrigated land in total arable land (%)	Am Data	Ann	MoAD	2	
2.3.6 Agriculture insurance coverage (% of agriculture households)	Am data	Ann	MoAD	2	
2.3.7 Proportion of landless farmers (%)				3	

Targets	Data Source	Frequency	Responsible Agency	Data Quality[1]	Latest Year of Data Availability
Target 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, help maintain ecosystems, strengthen capacity for adaptation to climate change, extreme weather, drought, flooding, and other disasters and progressively improve land and soil quality					
2.4.1 Agricultural land at the present level (000 ha)	Am data	Annual	MoAD	1	
2.4.2 Cereal grain (Rice) productivity (metric tonne per ha)	Am data	Annual	MoAD	1	
2.4.3 Soil erosion	Am data			3	
2.4.4 Pesticide uses in agricultural production	MOAD			3	
2.4.5 Bio-fertilizers in agricultural production (kg per ha)	Am data	Annual	MoAD	1	
Target 2.5 By 2020, maintain genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilisation of genetic resources and associated traditional knowledge, as internationally agreed					
2.5.1 Establish DNA bank for variety of seeds (number)	MIS	Annual		3	
2.5.2 Establish DNA bank for variety of plants (number)	MIS	Annual		3	
2.5.3 Establish DNA bank for endangered animal species (number)	MIS	Annual		3	
2.5.4 Community Seed banks (number)	MIS	Annual		3	
Target 2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular LDCs and policies to end poverty in all its dimensions					
2.a1 Government Expenditure in agriculture (% of total budget)	Budget	Annual	MoF	1	
Target 2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round					
2.b1 Agricultural export subsidies	MIS	Annual	MOF		
Target 2.c Adopt measures to ensure proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility					
2.c1 Food Consumer Price Index	Report/MIS	Annual	NRB	1	
2.c2 Number of food reserve depots	MIS	Annual	MOAD, MOS		

SDG 3: Ensure healthy lives and promote well-being for all at all ages

Targets	Data Source	Frequency	Responsible Agency	Data Quality[1]	Latest Year of Data Availability
Target 3.1 By 2030, reduce the global MMR to less than 70 per 100,000 live births					
3.1.1 MMR (per 100,000 live births)	NDHS	5 yrs	MoH	1	2016
3.1.2 Live births attended by skilled birth attendants (%)	HMIS	Ann	MoH	2	
Target 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age					
3.2.1 Under five mortality rate (per 1,000 live births)	NDHS	5 yrs	MoH	1	
3.2.2 Neonatal mortality rate (per 1,000 live births)	NDHS	5 year	MoH	1	
Target 3.3 By 2030, end the epidemics of acquitted immunodeficiency syndrome (AIDS), tuberculosis (TB), malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases					
Target 3.3.1 By 2030, end the epidemics of AIDS					
3.3.1.1 HIV prevalence for the overall population aged 15-49 years (%)	Survey	Ad hoc	NCASC, MoH	1	
3.3.1.2 HIV prevalence among men and women aged 15–24 years (%)	Survey	Ad hoc	NCASC, MoH	1	
3.3.1.3 Population with advanced HIV infection receiving Antiretroviral combination therapy (%)	HMIS	Ann	MoH	1	
Target 3.3.2 By 2030, end the epidemics of TB					
3.3.2 Prevalence of TB per 100,000 population	HMIS	Ann	MoH	2	
Target 3.3.3 By 2030, end the epidemics of malaria					
3.3.3.1 Total number of confirmed Malaria cases	HMIS	Ann	MoH	2	
3.3.3.2 Malaria new incidence rate per 1000 population	HMIS	Ann	MoH	2	
Target 3.3.4 By 2030, combat hepatitis					
3.3.4.1 Hepatitis B incidence per 1000 population	HMIS	Ann	MoH	2	
3.3.4.2 Confirmed Hepatitis cases (number)	HMIS	Ann	MoH	2	
3.3.4.3 Laboratory confirmed cases of Hepatitis A (number)	HMIS	Ann	MoH	2	
3.3.4.4 Cases of unspecified viral Hepatitis (number)	HMIS	Ann	MoH	2	
Target 3.3.5 By 2030, end the epidemics of neglected tropical diseases					
3.3.5.1 Registered prevalence rate of Leprosy (per 10,000 of population)	HMIS	Ann	MoH	1	
3.3.5.2 Average prevalence of Lymphatic Filariasis (%)	HMIS	Ann	MoH	2	
3.3.5.3 Cases of Dengue (number)	HMIS	Ann	MoH	2	
3.3.5.4 People who die annually due to Rabies (number)	HMIS	Ann	MoH	2	
3.3.5.5 Active Trachoma cases (number)	HMIS	Ann	MoH	2	
3.3.5.6 Average prevalence of Soil Transmitted Helminthes among school-going children (%)	HMIS	Ann	MoH	2	
Target 3.3.6 By 2030, combat water-borne diseases					
3.3.6.1 Incidence of Diarrhea (per 1,000 under 5 yrs children)	HMIS	Ann	MoH	2	
3.3.6.2 Children under age 5 with Diarrhea in the last 2 weeks (%)	HMIS	Ann	MoH	2	
3.3.6.3 Cases of Typhoid (number)	HMIS	Ann	MoH	2	

Targets	Data Source	Frequency	Responsible Agency	Data Quality[1]	Latest Year of Data Availability
3.3.6.4 Cases of Cholera(number)	HMIS	Ann	MoH	2	
Target 3.3.7 By 2030, combat other communicable diseases					
3.3.7.1 Laboratory confirmed cases of Japanese Encephalitis (JE) (number)	HMIS	Annual	MoH	1	
3.3.7.2 Laboratory confirmed cases of Influenza (H1N1) (number)	HMIS	Annual	MoH	1	
Target 3.4.1 By 2030,reduce by one third premature mortality from non-communicable diseases through prevention and					
3.4.1.1 Probability of dying between ages 30 and 70 from Cardiovascular Diseases (CVDs), Cancer, Chronic Respiratory Diseases, and Diabetes (%)	Study		WHO	1	
3.4.1.2 Death from non-communicable diseases out of all deaths (%)	HMIS	Ann	MoH	2	
3.4.1.3 Death from CVDs out of all Deaths (%)	HMIS	Ann	MoH	2	
3.4.1.4 Death from Cancer out of all Deaths (%)	HMIS	Ann	MoH	2	
3.4.1.5 Death from Chronic Obstructive Pulmonary Diseases (COPD) out of all Deaths (%)	HMIS	Ann	MoH	2	
3.4.1.6 Deaths from Diabetes out of all Deaths (%)	Research	Ad hoc	NHRC	1	
3.4.1.7 People (aged 15 – 69) with raised Total Cholesterol (≥190 mg/dl) (%)	Research	Ad hoc	NHRC	1	
3.4.1.8 People (aged 15 – 69) with raised Blood Pressure levels (SBP ≥ 140 and/or DBP ≥ 90 mm Hg or not currently on medication for raised blood pressure (%)	Research	Ad hoc	NHRC	1	
3.4.1.9 People (aged 15 – 69) not engaging in vigorous activity (%)	Research	Ad hoc	NHRC	1	
3.4.1.10 People (aged 15 – 69) overweight (%)	Research	Ad hoc	NHRC	1	
3.4.1.11 People (aged 15 – 69) who currently drink or drank alcohol in the past 30 days (%)	Research	Ad hoc	NHRC	1	
3.4.1.12 People (aged 15 – 69) who currently smoke tobacco daily (%)	Research	Ad hoc	NHRC	1	
Target 3.4.2 By 2030, promote mental health and well-being					
3.4.2.1 Mental health problems (%)	HMIS	Ann	MoH	2	
3.4.2.2 Suicide rate (per 100,000 population)	Admin data		Nepal police	3	
3.4.2.3 Women (aged 15 – 24) who are very or somewhat satisfied with their life (%)	NMICS	5 yrs	CBS	1	
Target 3.5.2 Strengthen prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol					
3.5.2.1 People who received pharmacological treatment for substance use disorders (%)				4	NA
3.5.2.2 People who received psychosocial treatment for substance use disorders (%)				4	NA
3.5.2.3 Alcohol use disorders and alcohol dependence (% of 15 years plus population)				4	NA
3.5.2.4 Alcohol consumption per capita (15 plus) in liters				4	NA
3.5.2.5 Estimated number of hard drug users	Survey	Ad hoc	MoHA/CBS	2	

Targets	Data Source	Frequency	Responsible Agency	Data Quality[1]	Latest Year of Data Availability
Target 3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents (RTAs)					
Target 3.6.1 By 2020, halve the number of deaths from RTAs					
3.6.1.1 RTA Mortality (per 100,000 population)	Am data	Ann	Nepal Police	2	
Target 3.6.2 By 2020, halve the number of injuries from RTAs					
3.6.2.1 Serious Injuries (per 100,000 population)	Am data	Ann	Nepal Police	2	
3.6.2.3 Slight Injuries (per 100,000 population)	Am data	Ann	Nepal Police	2	
Target 3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education,and the integration of reproductive health into national strategies and programs					
3.7.1 Contraceptive prevalence rate (modern methods) (%)	NDHS	5 yrs	MoH	1	2016
3.7.2 Proportion of births attended by a skilled birth attendant (%)	HMIS	Ann	MoH	1	
3.7.3 Adolescent Fertility Rate (births per 1,000 women age 15-19 yrs)	NDHS	5 yrs	MoH	1	2016
3.7.4 Institutional delivery (%)	HMIS	Ann	MoH	1	
3.7.5 Postnatal Care (PNC) for mothers (mothers who received care within two days of childbirth, (%))	HMIS	Ann	MoH	1	
3.7.6 Unmet need for family planning (%)	HMIS	Ann	MoH	2	
3.7.7 Total Fertility Rate (births per women aged 15-49 years) (%)	NDHS	5 yrs	MoH	1	
3.7.8 Households within 30 minutes travel time to health facility (%)	NDHS	5 yrs	MoH	1	2016
3.7.9 Uterine prolapse among women of reproductive age (15-49 years) (%)	NDHS	5 yrs	MoH	1	2016
Target 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all					
3.8.1 Women having 4 antenatal care visits as per protocol (among live births) %	HMIS	Ann	MoH	2	
3.8.2 Government Health Expenditure as % of GDP	Gov. Budget	Ann	MoE	1	
3.8.3 People living with HIV enrolled in ART (%)	HMIS	Ann	MoH	2	
3.8.4 Population aged 18 years and above with raised blood pressure who are currently taking medication (%)				4	NA
3.8.5 Children age 12-23 months who received all vaccinations (Measles, BCG, OVP3, DPT3, HepB3, Hib3, etc.) recommended in the national immunisation schedule by their first birthday (%)	NMICS	5 yrs	CBS	1	2014
3.8.6 TB treatment success rate	HMIS	Ann	MoH	2	
3.8.2.1 People covered by health insurance or a public health system (%)	Report	Ann	MoH	1	
3.8.2.2 Incidence of impoverishment due to OoP expenditure in health (%)				4	NA
3.8.2.3 ART Coverage (%)	HMIS	Ann	MoH	2	

Targets	Data Source	Frequency	Responsible Agency	Data Quality[1]	Latest Year of Data Availability
Target 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination					
3.9.1 Mortality attributed to households and ambient air pollution (%)				4	NA
3.9.2 Mortality attributed to unsafe water, unsafe sanitation, and lack of hygiene (exposure to unsafe water, sanitation and hygiene for all WASH Services (%)				4	NA
3.9.3 Deaths from hazardous chemicals (toxic substances, pesticides, etc) (number)				4	NA
3.9.3.2 Illnesses from hazardous chemicals (toxic substances, pesticides, etc) (number)				4	NA
Target 3.a Strengthen the implementation of the World Health Organisation Framework Convention on Tobacco Control in all countries, as appropriate					
3.a.1 Age-standardized prevalence of current tobacco use among persons aged 15 years and older				4	NA
Target 3.b Support the research and development of vaccines and medicines for the communicable and noncommunicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, provide access to medicines for all					
3.b.1 Percentage of ODA out of health sector budget				4	NA
3.b.2 Percentage of ODA spent in health system research and development				4	NA
Target 3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in LDCs and small island developing States					
3.c.1 Health worker population ratio (per 1000 population)	HMIS	Ann	MoH	1	
3.c.2 Expenditure on health as a proportion of total budget expenditure, (%)	Budget	Ann	MoF	1	
Target 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks					
3.d1 Percentage of health facilities reporting on early warning system (epidemic, flood, etc.) for health risk reduction within 24 hours	HMIS	Ann	MoH	2	
3.d2 Percentage of health facilities reporting on disease outbreak within 24 hours	HMIS	Ann	MoH	2	

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Targets	Data Source	Frequency	Responsible agency	Quality	Latest year of data availability
Target 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes					
4.1.1 Net enrolment rate in primary education (%)	Flash Report	Ann	MoE	1	
4.1.2 Primary completion rate (%)	Flash Report	Ann	MoE	1	
4.1.3 Proportion of pupils enrolled in grade one who reach grade eight (%)	Flash Report	Ann	MoE	1	
4.1.4 Ratio of girls (to boys) enrolled in grade one who reach grade eight	Flash Report	Ann	MoE	1	
4.1.5 Ratio of girls (to boys) enrolled in grade one who reach grade twelve	Flash Report	Ann	MoE	1	
4.1.6 Ratio of students to teacher in basic education (up to 8 level)	Flash Report	Ann	MoE	1	
4.1.7 Ratio of students to teacher in secondary education (up to 12 level)	Flash Report	Ann	MoE	1	
4.1.8 Proportion of trained teachers in primary and secondary education (% of total teachers)	Flash Report	Ann	MoE	1	
4.1.9 Learning Achievement / Score (Math, Nepali and English) for Class 5				3	
4.1.10Gross Enrolment secondary education (grade 9 to 12)	Flash Report	Ann	MoE	1	
Target 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education					
4.2.1 Coverage of child grant for pre-primary education (number in '000)	Admin data	Ann	MoE	1	
4.2.2 Day meal programme coverage (%)	Admin data	Ann	MoE	1	
4.2.3 Attendance to early childhood education (Gross Enrolment) (%)	Flash report	Ann	MoE	1	
Target 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university					
4.3.1 Ratio of girl's enrolment in technical and vocational education	Admin data	Ann	TEVEC	2	
4.3.2 Ratio of girls' enrolment in tertiary education (graduate level)	Admin data	Ann	Universities	2	
4.3.3 Scholarship coverage (% of total students)	Admin data	Ann	MoE	1	
Target 4.4 By 2030, increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship (in 000)					
4.4.1 Youth and adults having technical and vocation skills (number in '000, annual)	Admin data	Ann	MoE	2	
4.4.2 Working age population with technical and vocational training (%)	Admin data	Ann	TEVEC	2	
4.4.3Internet users (percent of adult population)	Census, Admin data	10 yrs, Ann	CBS, NTA	1	
Target 4.5 By 2030, eliminate gender disparities in education and ensure equal access					
4.5.1 Gender parity index (GPI) (primary school)	NMICS	5 yrs	CBS	1	2014
4.5.2 GPI (secondary school)	NMICS	5 yrs	CBS	1	2014

Targets	Data Source	Frequency	Responsible agency	Quality	Latest year of data availability
4.5.3 GPI based on literacy (above 15 years)	NMICS	5 yrs	CBS	1	2014
Target 4.6 By 2030, ensure that all youth and at least 95 percent of adults, both men and women, achieve literacy and numeracy					
4.6.1 Literacy rate of 15-24 years old (%)	Census	10 yrs	CBS	1	2011
4.6.2 Literacy rate of 15-24 years old (women) (%)	Census	10 yrs	CBS	1	2011
4.6.3 Numeracy all (who can read and write numeric terms) of 15 years and older (%)				4	NA
4.6.4 Numeracy of female (who can read and write numeric terms) of 15 years and older (%)				4	NA
4.6.5 Public spending per student (Basic education in '000)	Budget	Ann	MoF	1	NA
Target 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development					
4.7.1 Human assets index	Census, NLSS, DHS	10, 6-8 and 5 yrs	CBS, MoH	1	UNDESA
4.7.2 Gender development index	HD report	2-4 yrs	UNDP/NPC	2	
4.7.3 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels.	National policy	Periodic	NPC	2	
Target 4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all					
4.a.1 Schools with access to electricity (%)				4	NA
4.a.2 Schools with access to internet (%)	Report	Annual	MoE	2	
4.a.3 Schools with WASH facilities (%)	Report	Annual	MoE	2	
4.a.4 Disability-friendly schools (%)				4	NA
Target 4.b By 2020, expand by [x] percent globally the number of scholarships available to developing countries, in particular LDCs, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries					
4.b1 Volume of official development assistance flows for scholarships by sector and type of study					
Target 4.c By 2030, increase by [x] percent the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially LDCs and small island developing States					
4.c1Proportion of teachers in primary education who have received at least the minimum organized teacher training.	Report	Ann	MoE	1	
4.c2 Proportion of teachers in basic education who have received at least the minimum organized teacher training.	Report	Ann	MoE	1	

SDG 5: Achieve gender equality and empower al women and girls

Targets	Data Source	Frequency	Responsible Agency	Quality	Latest year of data avail.
Target 5.1 End all forms of discrimination against all women and girls everywhere					
5.1.1Wage equality for similar work (ration of women's wage to that of men)	NLFS	8-10 yrs	CBS	1	
5.1.2Gender Inequality Index	National Human Development (NHDR)	2-3 yrs	UNDP/NPC	1	
5.1.3Gender Empowerment Measurement Index	NHDR	2-3 yrs	UNDP/NPC	1	
Target 5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation					
5.2.1 Sex ratio at birth (female to male)	Census	10 yrs	CBS	1	2011
5.2.2 Ratio of women to men in healthy life expectancy	Census	10 yrs	CBS	1	Estimates
5.2.3 Women aged 15-49 years' experience Physical / sexual violence (%)	NMICS	5 yrs	CBS	1	2014
5.2.4 Girls Trafficking in number	Records	Ann	NHRC	2	
Target 5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation					
5.3.1 Women aged 15-19 years who are married or in union (%)	Census	10 yrs	CBS	1	2011
5.3.2 Lifetime Physical and/or Sexual violence (%)	DHS	5 yrs	MOHP	1	2014
5.3.3 Discrimination for Chhaupadi and menstruation	DHS	5 yrs	MOHP	1	2014
5.3.4 Children age 1-14 years who experienced psychological aggression or physical punishment during the last one month (%)	DHS	5 yrs	MOHP	1	2014
Target 5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate					
5.4.1 Ratio of women to men participation in labor force	NLFS	8-10 yrs	CBS	1	2008-09
5.4.2 Average hours spent in domestic work by women	NLFS	8-10 yrs	CBS	1	2008-09
5.4.3Social protection coverage of women in informal market				4	NA
Target 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life					
5.5.1 Seats held by women in the national parliament (%)	Records	Ann	Parliamentary Secretariat/EC	1	
5.5.2 Seats held by women in the local government bodies (%)	Records	5 yrs	DCC/EC	1	
5.5.3Seats held by women in provincial parliament (%)	Records	5 yrs	PO/EC	1	
5.5 4 Women's participation in decision making level in the private sector (%)	Records	Ann	FNCCI	1	
5.5.5 Women's participation in cooperative sector (%)	Records	Ann	MoACD	1	
5.5.6 Women in public service decision making positions (% of total employees)	Admin data	Ann	MoGA/ Public Service Commission (PSC)	1	

Targets	Data Source	Frequency	Responsible Agency	Quality	Latest year of data avail.
5.5.7 Ratio of women to men in professional and technical workers (%)	Admin data	Ann	MoGA/PSC	2	
Target 5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences					
5.6.1 Awareness about reproductive rights among girls and women (%)	MMICS, NDHS	5 years	CBS, MOH	4	NA
5.6.2 Receiving specific support and service provisions related to sexual health care to the poor, discriminated and social groups (%)	HMIS	Annual	MOH	4	NA
Target 5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws					
5.a1 Proportion of pro-gender budget (directly benefiting women) (%)	Budget	Ann	MoF	1	
5.a2 Number of enterprises owned by women	MIS	Ann	MoI	2	
5.a.3 Women's ownership of landed property	Census	10 yrs	CBS	1	
Target 5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women					
5.b1 Exposure to mass media by women aged 15-49 year (%)	Stat. Year Book	2 yrs	CBS	1	
5.b2 Use of computers by women aged 15-24 year (%)	Stat. Year Book	2 yrs	CBS	1	
5.b3 Use of Internet by women aged 15-24 year (%)	Stat. Year Book	2 yrs	CBS	1	
Target 5c. Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels					
5.c1 Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment	MIS	Annual	MOF		

SDG 6: Ensure availability and sustainable management of water and sanitation for all

Targets	Data Source	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all					
6.1.1 Household with access to piped water supply (%)	Admin data, census	Ann, 10 yrs	MWSS, CBS	1	
6.1.2 Basic water supply coverage (%)	Admin data	Ann	MWSS	1	
6.1.3 Households with E. coli risk level in household water ≥ 1 cfu/100ml) (%)	Study	Ad hoc	MWSS	1	
6.1.4 Household with E. coli risk level in source water ≥ 1 cfu/100ml (%)	Study	Ad hoc	MWSS	1	
6.1.5Population using safe drinking water (%)	Study	Ad hoc	MWSS	1	
6.1.6 Turbidity (Nephelometric turbidity unit - NTU) (%)	Study	Ad hoc	MWSS	1	
Target 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations					
6.2.1 Households using improved sanitation facilities that are not shared (%)	Admin data, census	Ann, 10 yrs	MWSS, CBS	2	
6.2.2 Proportion of population using latrine (%)	Admin data, census	Ann, 10 yrs	MWSS, CBS	1	
6.2.3 Local authority areas that have declared Open Defecation Free (%)	Admin data	Ann	MWSS	1	
6.2.4 Sanitation coverage (%)	Admin data	Ann	MWSS	2	
6.2.5 Urban households with toilets connected to sewer systems/ proper FSM (%)	Admin data, census	Ann, 10 yrs	MWSS/CBS	1	
Target 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated waste water and increasing recycling and safe					
6.3.1 Proportion of untreated domestic waste water (%)	Survey	5 years	CBS	4	NA
6.3.2 Proportion of untreated industrial waste water (%)	MIS	Annual	MoI	4	NA
6.3.3 Proportion of bodies of water with good ambient water quality	MIS	Annual	MOWSS	4	NA
Target 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity					
6.4.1 Wastage of water while using it (per person per day in litters)	Survey	5 years	CBS	4	NA
6.4.2 Wastage of water – Irrigation	MIS	Annual	MOI	4	NA
6.4.3 Availability of freshwater (per person per day in liters)	MIS	Annual	MOI	4	NA
6.4.4 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	Survey/MIS	5 yrs, Annual	CBS	4	NA
6.4.5 Non- Revenue Water	MIS/Study	Annual	CBS	4	NA
Target 6.5 By 2030, implement integrated water resources management at all levels, including through trans-boundary cooperation as appropriate					
6.5.1 Degree of integrated water resources management implementation (0-100)	MIS	Annual	MOEN, MOIR, MOWSS	4	NA
6.5.2 Proportion of trans boundary basin area with an operational arrangement for water cooperation	MIS	Annual	MOEN, MOIR, MOWSS	4	NA

Targets	Data Source	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes					
6.6.1 Change in the extent of water-related ecosystems over time	Survey		MOWSS	4	NA
6.6.2 Extraction of ground water				4	NA
Target 6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies					
Target 6.b Support and strengthen the participation of local communities in improving water and sanitation management					

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Targets	Data source	Frequency	Responsible agency	Quality	Latest year of data availability
Target 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services					
7.1.1 Per capita energy (final) consumption (in GJ)	Admin data, Pop. Project	Annual, 10 yrs	NEA, CBS	1	
7.1.2 Proportion of population access to electricity (%)	Census	10 yrs	CBS	1	2011
7.1.3 Households using solid fuels as the primary source of energy for cooking (%)	Census	10 yrs	CBS	1	2011
7.1.4 Proportion of people using for cooking and heating	Census	10 yrs	CBS	1	2011
7.1.5 Electricity consumption (k Wh per capita)	Admin data, pop. Projection	Annual	NEA, CBS	1	
7.2.1 Share of renewable energy in total energy (final) consumption (%)	Admin data	Annual	NEA, AEPC	1	
7.2.2 Installed capacity of hydropower (MW)	Admin data	Annual	NEA, AEPC	1	
7.2.3 Grid connected to solar PVC (MW)	Admin data	Annual	AEPC	1	
7.3.1 Commercial energy use per unit of GDP (ToE/million Rs)	Admin data, National a/c	Annual	NEA, CBS	1	
7.3.2 Energy efficiency in Industry (MJ per1000 Rs of product)				4	NA
7.3.3 Efficient lighting systems CFL (in residential and commercial), %				4	NA
7.3.4 Efficient lighting systems (light-emitting diodes) (in residential and commercial), %				4	NA
7.3.5 Higher efficiency appliances (in residential and commercial)				4	NA
7.3.6 Electric vehicles in public transport systems (%)	Admin data	Annual	DoTM	1	
Target 7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology					
7.a1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems	MIS	Annual	MOF, MOPE, MOEN		
Target 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular LDCs and small island developing States					
7.b1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services	MIS	Annual	MOF, MOPE, MOEN		

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Targets	Data source	Frequency	Responsible agency	Quality	Latest year of data availability
Target 8.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all					
8.1.1Per capita GDP growth	National accounts	Ann	CBS	1	
Target 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value-added and labor-incentive sectors					
8.2.1 Growth of agricultural sector (%)	National accounts	Ann	CBS	1	
8.2.2 Growth of construction sector (%)	National accounts	Ann	CBS	1	
8.2.3 Annual growth of real GDP per employed person (%)	National accounts, NLFS	Ann, 6-8 yrs	CBS	1	
Target 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services					
8.3.1 Contribution of Micro- Small-, and Medium-scale enterprises in GDP (%)	NLSS	6-8 yrs	CBS	1	
8.3.2 Proportion of informal employment in nonagriculture employment (%)	NLFS	8-10 yrs	CBS	1	
8.3.3 Access to Cooperatives/Communities (% of households within 30 min walk)	NLLS	6-8 yrs	CBS	1	
Target 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead					
8.4.1 Material Intensity in total manufacturing (Rs of material input to achieve the output value of Rs 100)	census of anufacturing establishments (CMEs)	5 yrs	CBS	1	2011-12
Target 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value					
8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	NLFS	8-10 yrs	CBS	1	2008-09
8.5.2 Underemployment rate (15-59 year) (%)	NLFS	8-10 yrs	CBS	1	2008-09
Target 8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training					
8.6.1 Youth underemployment rate (%)	NLFS	8-10 yrs	CBS	1	
Target 8.7 Take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labor, eradicate forced labor and, by 2025, end child labor in all its forms, including recruitment and use of child soldiers					
8.7.1 Child working under hazardous conditions				4	NA
Target 8.8 Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment management					
8.8.1 Numbers of fatal and non-fatal occupational injuries, by sex and migrant status	Economic Census	10 years	CBS	4	NA
8.8.2 Illegal migrant workers, (%) of total	MIS		MOLE	4	NA

Targets	Data source	Frequency	Responsible agency	Quality	Latest year of data availability
Target 8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products					
8.9.1 Tourist arrival (million)	Records	Ann	MoCTC	2	
8.9.2 Tourism direct GDP as a proportion of total GDP	Survey, Satellite A/c	Ad hoc	CBS	2	
8.9.3 Annual number of jobs in tourism industries (thousands)	Survey	Ad hoc	CBS, MoCTC	2	
Target 8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance, and financial services for all					
8.10.1 Life insurance coverage (%)	Records	Ann	Beema Samiti	1	
8.10.2 Number of commercial bank branches per 100,000 adult population	Records	Ann	NRB	1	
8.10.3 Number of automated teller machines per 100,000 adult population	Records	Ann	NRB	1	
8.10.4 Proportion of adults (15 yrs and older) with an account at a bank or other financial institution or with a mobile-money-service provider	Survey	Ad hoc	CBS	2	

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 9.1 Develop quality, reliable, sustainable, and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all					
9.1.1 Road density (km/sq. km)	Admin data	Ann	MoPIT	1	
9.1.2 Paved road density (km/sq. km)	Admin data	Ann	MoPIT	1	
9.1.3 Passenger , by mode of transport (Road)				4	NA
Target 9.2 Promote inclusive and sustainable industrialisation and, by 2030, significantly raise industry's share of employment and gross domestic product (GDP), in line with national circumstances, and double its share in LDCs					
9.2.1 Industry's share in GDP (%)	National Accounts	Ann	CBS	1	
9.2.2 Manufacturing value added as a proportion of GDP (%)	National accounts	Ann	CBS	1	
9.2.3 Manufacturing employment as a proportion of total employment (%)	CMEs, NLFS	5, 6-8 yrs	CBS	1	
Target 9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets					
9.3.1 Proportion of small-scale industries integrated to value chain and markets	Economic Census	10 years	CBS	4	NA
9.3.2 Proportion of small-scale industries with a loan or line of credit	MIS	Annual	NRB	4	NA
Target 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities					
9.4.1 CO2 per capita in manufacturing and construction (value added) in grams	Survey	5 years	CBS	4	needs assessment
Target 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and increasing the number of research and development workers per million people by 75% and public and private research and development spending					
9.5.1 Research and development expenditure in proportion to GDP (%)	Budget	Ann	MoF	1	
9.5.2 Researchers (in full-time equivalent) per million inhabitants				4	NA
9.5.3 Enrolment in Science and Technology in proportion to total enrolment (%)	Am data	Ann	MoE		
9.5.4 Number of patents registered	Records	Ann	DoE	1	
9.5.5Proportion of population covered by a mobile network, by technology	Census	10 yrs	CBS	1	
9.5.6 Tele density (% of population)	Census	10 yrs	CBS	1	

SDG 10: Reduce inequality within and among countries

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 percent of the population at a rate higher than the national average					
10.1.1 Consumption inequality (measured by the Gini coefficient)	NLSS	6-8 yrs	CBS	1	2010-11
10.1.2 Income inequality (Gini coefficient)	NLSS	6-8 yrs	CBS	1	2010-11
10.1.3 Share of bottom 40% of population in total consumption (%)	NLSS	6-8 yrs	CBS	1	2010-11
10.1.4 Share of bottom 40% of population in total income (%)	NLSS	6-8 yrs	CBS	1	2010-11
10.1.5 PALMA Index				4	NA
Target 10.2 By 2030, empower and promote social, economic, and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status					
10.2.1 Social Empowerment Index	NHDR	2-3 yrs	NPC, UNDP	2	2004
10.2.2 Economic Empowerment Index	NHDR	2-3 yrs	NPC, UNDP	2	2004
10.2.3 Political Empowerment Index	NHDR	2-3 yrs	NPC, UNDP	2	2004
Target 10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies, and practices and promoting appropriate legislation, policies, and action in this regard					
10.3.1 Proportion of the population reporting having personally felt discriminated against or harassed within the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law	NDHS	5 yrs	CBS	1	
10.3.2 Finished primary school on time (ratio of richest vs poorest quintile)	NDHS, NLSS	5 yrs	MOE, CBS	1	
10.3.3 Childhood free of stunting (ratio of richest vs poorest quintile)	NDHS, NLSS	5 yrs	MOH, CBS	1	
Target 10.4 Adopt policies, especially fiscal, wage, and social protection policies, and progressively achieve greater equality					
10.4.1 Ratio of Wage Index to Consumer Price Index	Household Budget Survey	5-7 yrs	NRB	1	2014-15
10.4.2Labor share of GDP, comprising wages and social protection transfers	National accounts, NLFS and Budget	Ann, 5-7 yrs	CBS, MoF	2	Separate analysis required
10.4.3 Population receiving social protection transfers (%)	Budget	Ann	MoF	1	
Target 10.5 Improve regulation and monitoring of global financial markets and institutions and strengthen implementation of such regulations					
10.5.1 Proportion of farm households covered by microfinance (%)	Survey Reports	Ad hoc	NRB	2	
10.5.2 Financial Risk Index	Study Report	Ad hoc	NRB	1	
10.5.3Global Competitive Index (Score)	The Global Competitiveness Report	Ad hoc	World Economic Forum	1	2016-17
10.5.4 Doing Business Index (country ranking)	WB Report	Ad hoc	WB group	1	

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
10.5.1 Proportion of farm households covered by microfinance (%)	Report	Ann	NRB	1	
Target 10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions					
10.6.1 Proportion of members and voting rights of developing countries in international organizations	MIS	Annual	MOF, MOFA		
Target 10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies					
10.7.1 Proportion of migrants receiving complete orientation before migration	MIS	Annual	MOLE		
10.7.2 Recruitment cost borne by migrant labor (average of cost for Malaysia, South Korea and Middle East – US$)	MIS	Ad hoc	NPC	2	
Target 10.a Implement the principle of special and differential treatment for developing countries, in particular LDCs, in accordance with the World Trade Organisation agreements					
10.a.1 Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff	MIS	Annual	MOC		
Target 10.b Encourage ODA and financial flows, including FDI, to states where the need is greatest, in particular LDCs, African countries, small island developing States, and landlocked developing countries, in accordance with their national plans and programs					
10.b.1 Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)	MIS	Annual	MOF, MOI		
Target 10.c By 2030, reduce to less than 3% transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5%					
10.c.1 Remittance costs as a proportion of the amount remitted	Records	Ann	NRB	1	

SDG 11: Make cities and human settlements inclusive, safe, resilient, and sustainable

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 11.1 By 2030, ensure access for all to adequate, safe and affordable housing, and basic services and upgrade slums					
11.1.1 Population living in slum and as squatters ('000)	Study Report	Ad hoc	NPC	2	
11.1.2 Household units with thatched/straw roof (%)	Census	10 yrs	CBS	1	
11.1.3 Households living in safe houses (%)	Study Report	Ad hoc	NPC	2	
Target 11.2 By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons					
11.2.1 Availability of safe road (%)	Study Report	Ad hoc	NPC	2	
11.2.2 Availability of safe public transport (%)	Study Report	Ad hoc	NPC	2	
11.2.3 Access to paved road within 30 minutes of walking (%)	NLSS	6-8 yrs	CBS	1	
Target 11.3 By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries					
11.3.1 Planned new cities (number)	Plan Document	3-5 yrs	NPC	1	
11.3.2 Households resided by 5 and more persons (%)	Census	10 yrs	CBS	1	
11.3.3 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically	MIS	Annual	MOUD	4	NA
11.3.4 Ratio of land consumption rate to population growth rate	Am data	Ad hoc	GON	3	
Target 11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage					
11.4.1%Budget allocated for the protection of natural and cultural heritage	Budget	Annul	MoF	1	
11.4.2 Total number of effected cultural and religious heritage by earthquake	PDNA report	Ad hoc	NPC	1	
Target 11.5 By 2030, significantly reduce the number of deaths and the number of people affected and decreasethe economic losses relative to GDP caused by disasters, including water-related disasters, with focus on protecting the poor and people in vulnerable situations					
11.5.I Houses destroyed by earthquake ('000)	PDNA Report	Ad hoc	NPC	1	
11.5.2 Houses partially damaged by earthquake ('000)	PDNA Report	Ad hoc	NPC	1	
11.5.3 Health facilities destroyed by earthquake ('000)	PDNA Report	Ad hoc	NPC	1	
11.5.4 Health facilities partially damaged by earthquake ('000)	PDNA Report	Ad hoc	NPC	1	
11.5.5 Central, district, municipal, and village structures fully or partially damaged by earthquake (number)	PDNA Report	Ad hoc	NPC	1	
11.5.6 Deaths due to earthquake disaster (number)	PDNA Report	Ad hoc	NPC	1	
11.5. 7 Deaths due to other natural disaster (number)	PDNA Report	Ad hoc	NPC	1	
11.5.8 Injuries due to earthquake disaster (number)	PDNA Report	Ad hoc	NPC	1	
11.5.9 Injuries due to other disaster (number)	PDNA Report	Ad hoc	NPC	1	

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management					
11.6.1 Concentration of Total Suspension Particulates (µg/m3, 24 hours' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.2 Concentration of Particulate Matters (µg/m3, 24 hours' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.3 Concentration of PM2.5 (µg/m3, 24 hours' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.4 Concentration of Sulphur Dioxide (µg/m3, 24 hours' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.5 Concentration of Nitrogen Dioxide (µg/m3, 24 hours' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.6 Concentration of Carbon Monoxide (µg/m3, 8 hours' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.7 Concentration of Lead [µg/m3, 12 months' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.8 Concentration of Ozone [µg/m3, 8 hours' average)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.9 Municipalities provided with sewerage services (%)	Study Report	Ad hoc	MoPE/NPC	2	
11.6.10 Private hospitals segregates wastes (%)	Study Report	Ad hoc	MoPE/NPC	2	
Target 11.7 By 2030, provide universal access to safe, inclusive, and accessible green and public spaces, in particular for women and children, older persons, and persons with disabilities					
11.7.1 Proportion of open spaces in urban households	Survey, MIS	Annual, 5 yrs	MOUD	4	NA
11.7.2 Proportion of open spaces in cities	Survey, MIS	Annual, 5 yrs	MOUD	4	NA
11.7.3 Proportion of victims of physical or sexual harassment, women, in the previous 12 months (%)	Am data	Ann	Nepal Police	2	
Target 11.a Support positive economic, social, and environmental links between urban, peri-urban, and rural areas by strengthening national and regional development planning					
11.a1 Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city	MIS	Annual	MOUD	4	NA
Target 11.b By 2020, increase the number of cities and human settlements adopting and implementing integrated policies and plans toward inclusion, resource efficiency, mitigation, and adaptation to climate change, resilience to disasters, and develop and implement, in line with the forthcoming Hyogo Framework, holistic disaster risk management at all levels					
11.b.1 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030	MIS	Annual	MOHA		
11.b.2 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	MIS	Annual	MOFALD		
Target 11.c Support LDCs, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials					
11.c.1 Proportion of financial support to the least developed countries that is allocated to the construction and retrofitting of sustainable, resilient and resource-efficient buildings utilizing local materials	MIS	Annual	MOF, MOHA		

SDG 12: Ensure sustainable consumption and production patterns

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 12.1 Implement the 10-year framework of programs on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries					
Target 12.2 By 2030, achieve the sustainable management and efficient use of natural resources					
12.2.1 Proportion of total water resource used (%)	Report	Ad hoc	MoPE/NPC	2	
12.2.2 Use of fossil fuel energy consumption (% of total)	Report	Ad hoc	MoPE/NPC	2	
12.2.3 Total carbon sink (tons) in forest area	Report	Ad hoc	MoPE/NPC	2	
12.2.4 Land use for agricultural production (cereal as % of cultivated land)	Report	Ad hoc	MoPE/NPC	2	
12.2.5 Soil organic matter (%)	Report	Ad hoc	MoPE/NPC	2	
12.2.6 Consumption of Wood per capita cubic meter)	NLSS	6-8 yrs	CBS	2	
Target 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses					
12.3.1 Food waste rate at consumer level (waste per capita)	-	-	-	4	NA
12.3.2 Post harvest loss (%)	Admin data	Ad hoc	NARC	1	
12.3.3 Food loss index (% of supply, Cereal)	Admin data	Ad hoc	NARC	1	
Target 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with the agreed international frameworks, and significantly reduce their release to air, water, and soil in order to minimize their adverse impacts on human health and environment					
12.4.1 Use of plastics (per capita in gram per day)	MIS	Annual	MOPE	4	NA
12.4.2 Disposal of liquid Industrial waste	MIS	Annual	MOPE, MOI	4	NA
12.4.3 Disposal of solid Industrial waste	MIS	Annual	MOPE, MOI	4	NA
Target 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse					
12.5.a Recycling of plastics in manufacturing industries (% of industries)	CMEs	5 yrs	CBS	1	2011-12
12.5.b Re-use of glass and metal products in manufacturing industries (% of industries)	CMEs	5 yrs	CBS	1	2011-12
Target 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle					
12.6.1 Large and transnational companies adopting sustainable practices (number)	MIS	Annual	MOI	4	NA
Target 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities					
12.7.a Number of countries implementing sustainable public procurement policies and action plans	MIS	Annual	OPMCM, MOF	-	
Target 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature					
12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	MIS	Annual	MOE, MOPE	4	NA

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 12.a Support the developing countries to strengthen their scientific and technological capacity to move toward more sustainable patterns of consumption and production					
12.a1 Amount of support to developing countries on research and development for sustainable consumption and production and environmentally sound technologies	-	-	-	-	
Target 12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products					
12.b1 Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools	MIS	Annual	MOCTCA	-	
Target 12.c Rationalise inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of the developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and affected communities					
12.c1 Eliminate LPG subsidy (as percent of cost price)	MIS	Annual	MOFSC, MOS	-	NA

SDG 13: Take urgent action to combat Climate change and its impacts

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries					
13.1.1 Annual CO2 emission (metric tonne per capita)	NAPA Report	Ann	MoEn	2	
13.1.2 Consumption of ozone-depleting substance (t)	NAPA Report	Ann	MoEn	2	
13.1.3 Green House Gas (GHG) emission from transport sector (%)	NAPA Report	Ann	MoEn	2	
13.1.4 GHG emission from industrial sector (%)	NAPA Report	Ann	MoEn	2	
13.1.5 GHG emission from commercial and agricultural sector (%)	NAPA Report	Ann	MoEn	2	
13.1.6 GHG emission (CH4) from Agri sector (Gg)	NAPA Report	Ann	MoEn	2	
13.1.7 GHG emission (N2O) from Agri sector (Gg)	NAPA Report	Ann	MoEn	2	
13.1.8 GHG emission (CO2) from Agri sector (Gg)	NAPA Report	Ann	v	2	
13.1.9 GHG emission (CO2) from Industrial sector (cement and lime) (Gg)	NAPA Report	Ann	MoEn	2	
13.1.10 GHG emission (CO2) from Energy sector (Industrial, transport andothers) (Gg)	NAPA Report	Ann	MoEn	2	
Target 13.2 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses					
13.2.1 Local adaptation plan preparation (number of Village councils)	Village Profile	Ann	Village Council	4	Proposed
13.2.2 Community level adaptation plan	Village Profile	Ann	Village Council	4	Proposed
13.2.3 Implementation of adaptation plan	Village Profile	Ann	Village Council	4	Proposed
13.2.4 Climate-smart villages	Village Profile	Ann	Village Council	4	Proposed
13.2.5 Climate-smart farming	Village Profile	Ann	Village Council	4	Proposed
Target 13.3 Improve education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning					
13.3.1 Proportion of schools covered by climate change education	Am data	Ann	MoE	4	Proposed
13.3.2 Number of trained persons in climate change mitigation (early warning, etc)	-	-	-	4	needs assessment
13.3.3 Number of trained persons (local planners) in climate change adaptation	Report	Ann	DCCO	4	Proposed
Target 13.a Implement the commitment undertaken by developed-country parties to the United UN Framework Convention on Climate Change to the goal of mobilizing jointly US$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalise the Green Climate Fund through its capitalisation as soon as possible					
13.a1 Mobilized amount of United States dollars per year between 2020 and 2025 accountable towards the $100 billion commitment	MIS	Annual	MOPE		
Target 13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in LDCs, including focusing on women, youth, and local and marginalised communities					
13.b1 Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities	MIS	Annual	MOPE		

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 15.1 By 2020, ensure the conservation, restoration, and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains, and dry lands, in line with obligations under international agreements					
15.1.1 Forest under community-based management (% of total dense forest areas)	Report	Ann	MSFC	1	
15.1.2 Conservation area (including forest, % of total land area)	Report	Ann	MFSC	1	
15.1.3 Conservation of lakes, wetlands, and ponds (number)	Report	Ann	MFSC	1	
Target 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and increase afforestation and reforestation					
15.2.1.1 Handover of forests to leasehold forest groups (000 ha)	Report	Ann	MFSC	1	
15.2.1.2 Additional plantation (ha. per annum)	Report	Ann	MFSC	1	
15.2.1.3 Additional plantation (seedlings in million per annum)	Report	Ann	MFSC	1	
Target 15.3 By 2020, combat desertification, restore degraded land and soil, including land affected by desertification, drought, and foods, and strive to achieve a land-degradation-neutral world					
15.3.1 Rate of forest loss and degradation (%)	Report	Ann	MFSC	2	
15.3.2 Conservation of watershed (number)	Report	Ann	MFSC	2	
15.3.3 Forest Density (average number of trees per ha)	Report	Ann	MFSC	2	
15.3.4 Conservation of rivulet and river banks through bio-engineering (km)	Study report	Ad hoc	MFSC/NPC	1	
Target 15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits essential for sustainable development					
15.4.1 Potentially dangerous lakes (%)	Study report	Ad hoc		1	
15.4.2 Mountain ecosystems covered by protected areas (%)	Study report	Ad hoc		1	
15.4.3 Mountain Green Cover Index	-	-	-	4	NA
Target 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity, and, by 2020, protect and prevent the extinction of threatened species					
15.5.1 Threatened flora (medicinal and aromatic plants) (%)	Report	Ad hoc	MFSC/NPC	1	
15.5.2 Threatened fauna (mammals, birds, reptiles, amphibians, fishes, insects, Platyhelminthes, molluscs, etc.) (%)	Report	Ad hoc	MFSC/NPC	1	
15.5.3 Wild tigers (number)	Report	Ad hoc	MFSC/NPC	1	
15.5.4 Rhinos (number)	Report	Ad hoc	MFSC/NPC	1	
15.6.5 Community led anti-poaching units mobilized (number)	Report	Ad hoc	MFSC/NPC	1	
Target 15.6 Ensure fair and equitable sharing of the benefits arising from utilisation of genetic resources and promote appropriate access to such resources					
Target 15.7 Take urgent action to end poaching and trafficking of the protected species of flora and fauna and address both demand and supply of illegal wildlife products					

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
15.7.1 Trade in wildlife in RED LIST poached or illicitly trafficked	-	-	-	4	NA
Target 15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate priority species					
15.8.1 Number of nations–wide survey and research on invasive alien plant species	Report	Ad hoc	MFSC/NPC	2	
15.8.2 Prevented or prohibited imports of invasive alien species (number)	-	-	-	4	needs assessment
Target 15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts					
15.9.1 Plant (floral) species under conservation plan(number)	Report	Ad hoc	MFSC/NPC	2	
15.9.2 Animal (faunal) species under conservation plan (number)	Report	Ad hoc	MFSC/NPC	2	
Target 15a. Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems					
15.a1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems	-	-	-	-	-
Target 15b. Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation					
15.b1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems	-	-	-	-	-
Target 15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities, the Doha Development Agenda, and the Hong Kong ministerial mandate.					
15.c1 Proportion of traded wildlife that was poached or illicitly trafficked	MIS	Annual	MOFSC	-	-

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 16.1 Significantly reduce all forms of violence and related death rates everywhere					
16.1.1 Direct deaths from armed and violent conflict (number)	Admin data	Ann	MoHA	1	
16.1.2 People displaced from armed and violent conflict (number)	Admin data	Ann	MoHA	1	
16.1.3 Proportion of population that feel safe walking alone around the area they live	Survey, NMICS	5 yrs	MOGA, CBS	4	NA
16.1.4 Proportion of seized small arms and light weapons that are recorded and traced, in accordance with international standards and legal instruments	-	-	-	4	NA
Target 16.2 End abuse, exploitation, trafficking, and all forms of violence against and torture of children					
16.2.1 Children aged 1-14 years who experienced psychological aggression or physical punishment during the last one month) (%)	NMICS	5 yrs	CBS	1	2014
16.2.2 Women age 20-49 years who were first married before age 18 years (%)	NDHS, NMICS, Census	5 yrs	MoH, CBS	1	
16.2.3 Child trafficking to abroad (including India) per annum (reported number)	Report	Annual	NHC	2	
Target 16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all					
16.3.1 Transparency, accountability, and corruption in public (score out of 6)	Report	Annual	Trans. Intel.	1	
16.3.2 Proportion of victims of violence in the previous 12 months who reported their victimisation to competent authorities or other officially recognized conflict resolution mechanisms	MIS, Survey	Annual , 5 yrs	MOHA, MOGA	4	NA
16.3.3 Un-sentenced detainees as a proportion of the overall prison population	MIS, Survey	Annual	MOHA	4	NA
16.3.4 Proportion of seized small arms and light weapons that are recorded and traced, in accordance with international standards and legal instruments	MIS, Survey	Annual	MOHA	4	NA
16.3.5 Good Governance (reported along a scale of -2.5 to 2.5. Higher values corresponding to good governance) for control of corruption	MIS, Report	Annual	OPMCM, Trans. Intel.	2	
Target 16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets, and combat all forms of organized crime					
16.4.1 Volume of illicit financial flows	MIS	Annual	MOHA	4	NA
16.4.2 Stolen assets recovery initiatives	MIS	Annual	MOHA	4	NA
Target 16.5 Substantially reduce corruption and bribery in all their forms					
16.5.1 People's perception on corruption (% of people with at least one instance in the past 12 months that were required to give a bribe/present) (Corruption Index Score)	Report	Annual	Trans. Intel.	1	
16.5.2 Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by public officials during the previous 12 months	Survey	5 years	CBS	4	NA

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 16.6 Develop effective, accountable, and transparent institution at all levels.					
16.6.1 Quality of public administration (score out of 6)	CPIA	Ad hoc		2	
16.6.1Actual budget expenditure as percent of budget estimate	Economic survey	Ann	MoF	1	
16.6.2 Proportion of population satisfied with their last experience of public services				4	NA
Target 16.7 Ensure responsive, participatory, and representative decision-making at all levels					
16.7.1 Voter Turnout (%)	Report	5 yrs	Election commission	1	
16.7.1 Proportions of positions by female in public institution	Report	Ann	PSC/MoGA	1	
16.7.2 Proportion of population who believe decision-making is inclusive and responsive, by sex, age, disability, and population group	Survey	Annual, 5 years	CBS, MOGA	4	NA
Target 16.8 Broaden and strengthen participation of the developing countries in the institutions of global governance					
Target 16.9 By 2030, provide legal identity for all, including birth registration					
16.9.1 Birth registration (% of children under age 5 whose births are registered)	CRVS report	Ann	MoFALD/ DCCO	2	
16.9.2 Birth registration by gender and social groups	-	-	-	4	NA
16.9.3 Citizenship by gender and social groups	-	-	-	4	NA
Target 16.10 Ensure public access to information and protect fundamental freedoms, in accordance with the national legislation and international agreements					
16.10.1 Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention, and torture of journalists, associated media personnel, trade unionists, and human rights advocates in the previous 12 months	MIS	Annual	MOHA	4	NA
16.10.2 Freedom score (combined with freedom of speech, freedom of assemblies and association, electoral self-determination)	-	-	-	4	NA
16.10.3 Access to information (%)	MIS	Annual	OPMCH	4	NA
Target 16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime					
16.a1Number of trainings received by relevant institutions (Police and Military personnel, NGOs, Civil Societies, Bureaucrats)	Survey	Ad hoc	MOGA	4	NA
Target 16.b Promote and enforce non-discriminatory laws and policies for sustainable development					
16.b.1 Number of laws and policies that are discriminatory	-	-	-	4	NA
16.b.2 Number of laws and policies that are amended	-	-	-	4	NA
16.b.3 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law	Survey	5 years	MOGA	4	NA

SDG 17. Strengthen the means of implementation and revitalise Global Partnership for Sustainable Development

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 17.1 Significantly reduce all forms of violence and related death rates everywhere					
17.1.2 Domestic expenditure financed by domestic revenue, (%)	ES	Ann	MoF	1	
16.10.3 Access to information (%)	-	-	-	4	NA
Target 17.2 Developed countries to implement fully their ODA commitments, including the commitment made by many developed countries to achieve the target of 0.7% of GNI for ODA to the developing countries and 0.15 to 0.20% of ODA/GNI to LDCs					
17.2.1 Net ODA, as a proportion of OECD/DAC GNI	-	-	-	4	NA
Target 17.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all					
17.3.1 ODA as a proportion of the total domestic budget (%)	ES	Ann	MoF	1	
17.3.2 FDI as a proportion of the GDP (inward stock) (%)	ES	Ann	MoF	1	
17.3.3 Volume of remittances (in US dollars) as a proportion of total GDP (%)	ES	Ann	MoF	1	
Target 17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief, and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress					
17.4.1 Outstanding Debt to GDP Ratio (%)		-	-	1	
17.4.2 Debt service ratio to Export of Goods and Services (%)	Economic survey	Ann	MoF	1	
Target 17.5 Adopt and implement investment promotion regimes for LDCs					
17.5.1 Number of countries that adopt and implement investment promotion regimes for LDCs	MIS	Ann	MoF, MOI	4	NA
Target 17.6 Enhance North-South, South-South; and triangular regional and international cooperation on and access to science, technology; and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among the existing mechanisms, in particular at the United Nations Level, and through a global technology facilitation mechanism when agreed upon					
17.6.1 Number of science and/or technology cooperation agreements and programs between countries, by type of cooperation	MIS	Ann	MoF, MOST	4	Na
Target 17.7 Promote the development, transfer, dissemination, and diffusion of environmentally sound technologies to developing countries on favorable terms, including on concessional and preferential terms, as mutually agreed					
17.7.1 Total amount of approved funding for developing countries to promote the development, transfer, dissemination, and diffusion of environmentally sound technologies	MIS	Ann	MOF, MOPE	4	NA
17.7.2 Internet Density (per 100 persons)	Report	Ann	NTA	1	
Target 17.8 Fully operationalise the technology bank and science, technology, and innovation capacity-building mechanism for LDCs by 2017 and enhance the use of enabling technology, in particular information and communications technology					
17.8.1 Proportion of individuals using the Internet	MIS, Survey	Ann, 5 years	CBS, MOIC		
Target 17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South, and triangular cooperation					
17.9.1 Dollar value of financial and technical assistance (including through North-South, South-South, and triangular cooperation) committed to developing countries	MIS	Annual	MoF, MOFA	4	NA
Target 17.10 Promote a universal, rules-based, open, non discriminatory, and equitable multilateral trading system under the World Trade Organisation, including through the conclusion of negotiations under its Doha Development Agenda					
17.10.1 Worldwide weighted tariff-average	MIS	Annual	MOF, MOC	4	NA

Targets	Data	Frequency	Responsible Agency	Quality	Latest year of data availability
Target 17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the LDCs' share of global exports by 2020					
17.11.1 Developing countries' and LDCs' share of global exports	MIS	Annual	MOF, MOC	4	NA
Target 17.12 Realise timely implementation of duty-free and quota-free market access on a lasting basis for all LDCs, consistent with the World Trade Organisation decisions, including by ensuring that preferential rules of origin applicable to imports from LDCs are transparent and simple, and contribute to facilitating market access					
17.12.1 Average tariffs faced by developing countries, LDCs, and small island developing states	MIS	Annual	MOF, MOC	4	NA

Number of indicators by Data Quality Rating: Good = 214, Moderate = 105, Poor= 9, Data not available = 100

GOVERNMENT OF NEPAL

NATIONAL PLANNING COMMISSION

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