Nepal Competitiveness Index 2022

Supporting Nepal's Journey Towards Effective Planning

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A joint research initiative of

NIP❀Re
Nepal Institute for Policy Research

LKY Lee Kuan Yew
School of Public Policy
ASIA COMPETITIVENESS INSTITUTE

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Nepal Competitiveness Index

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Publishers' Note

About Publishers

Nepal Institute for Policy Research (NIPoRe)

Nepal Institute for Policy Research (NIPoRe) is an independent and non- partisan research institute based in Kathmandu, Nepal. It works to generate evidence-based debates among citizens and critical stakeholders of development in both the public and private sectors on contemporary policy issues from Nepal and Asia. The institution currently works on high policy priority areas through four research centers - Center for New Economy and Inequality (CNEI), Center for Strategic Affairs (CSA), Center for Governance Studies (CGS), and Center for Human Development (CHD). NIPoRe's team members represent the diversity of academic disciplines, professional backgrounds, and geography. The institute adopts a multi-disciplinary approach in its analysis of policies and research, supported by researchers trained at universities and professional environments (from) across the globe.

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Asia Competitiveness Institute (ACI)

The Asia Competitiveness Institute (ACI) was established in August 2006 as a Research Center at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS). It aims to build the intellectual leadership and network for understanding and developing competitiveness in the Asia region. ACI seeks to contribute to the enhancement of inclusive growth, living standards, and institutional governance through competitiveness research on sub-national economies in Asia. It identifies mitigating issues and challenges for potential public policy interventions through close collaboration with regional governments, business corporations, policy think-tanks, and academics. ACI's three key research pillars include (I) Sub-national economies level competitiveness analysis; (II) The development of digital economy and its implications in 16 Asia economies; and (III) Singapore's long-term growth strategies and public policy analysis.

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Preface

Asia Competitiveness Institute (ACI) started its competitiveness analytic series in 2013. We focus mainly on sub-national analysis of China, India, and Indonesia, assessing the relative competitiveness of states and provinces. We also examine the relative development attributes among ASEAN countries. Our reports have been well received, and they are widely disseminated and discussed at seminars and forums.

This year, ACI is very pleased to collaborate with Nepal Institute for Policy Research (NIPoRe) to produce the Nepal Competitiveness Index 2022 jointly. This inaugural report will set the benchmark for the provincial analysis of competitiveness within Nepal.

Nepal declared its federal democracy in 2015 and held the first general election in 2017. The government has introduced decentralisation policies across the newly formed seven provinces. It is timely to initiate a study of Nepal's provincial competitiveness using the latest available data in 2018 and 2019. We hope this study will set the benchmark for assessing future development trends of these provinces. ACI's research methodology provides policy recommendations based on *What-if* simulation study. We hope these recommendations could help facilitate discussion on future development strategies. This report also highlights the impact of the COVID-19 pandemic on the seven provinces and the government's responses.

This unique research collaboration has enhanced our understanding of Nepal's development experience and the heterogeneity across the seven provinces in Nepal. We hope this report marks the beginning of an educational, insightful journey to assess Nepal's provincial development.

Professor Paul Cheung, PhD
Director, Asia Competitiveness Institute
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Foreword

Decades of economic research on competitiveness can be distilled as follows: countries do not compete like firms in a zero-sum manner. However, locations clearly shape firm-level productivity, for they encapsulate all factors – natural endowments, human capital, institutions, and other public inputs – that shape firms' ability to mobilize and employ scarce resources. While increasing productivity is a narrower quest to generate more output, competitiveness is a broader notion of creating an enabling environment, partly through public policies, for firms to efficiently source inputs and sell their outputs.

This is why this report is of interest to a chronically high-cost-low-productivity economy like Nepal whose innate advantages are negated by adverse geography, a wanting business climate shaped by a perverse political economy culture of institutionalized rent extraction, and inadequate human resources.

Nepal has just entered its second cycle of experiment with federal governance. While seven provincial governments are to be elected later in 2022, 753 municipality chairs have just been sworn into a stable five-year term of office. This joint-research initiative by the Nepal Institute for Policy Research (NIPoRe) and the Asia Competitiveness Institute (ACI) at Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore is, therefore, timely.

Decades of impressive social-political changes have always been vulnerable to reversals because the economic fundamentals undergirding those changes have not been reliable. I expect the Nepal Competitiveness Index (NCI) to contribute to amend this realization. By compiling province-level data for 64 economic indicators categorized under four different pillars and 11 sub-pillars, I hope policymakers and allied stakeholders will be nudged to better understand key economic constraints, initiate reforms, and track progress through data-intensive processes.

I wish this endeavor sustained success.

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Former Chief Economic Advisor, UNDP Asia-Pacific, New York.
Former Vice-Chair, National Planning Commission, Government of Nepal.

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Executive Summary

Nepal has witnessed major political and economic events during the past two decades. The governance system has transitioned from a monarchy to a republic and then to a federal structure. In addition, the 2015 Gorkha Earthquake and the ongoing COVID-19 pandemic further altered the country's overall course of policy priorities.

After centuries of a centralised governance system, Nepal adopted a new constitution in 2015 that paved the way for the country to go towards federalism. The prime aim of Nepal's decentralised system of governance has been to govern the economy better while also decentralising economic activities across the country. Two years later, after the 2017 elections, the country formally began practising federalism, with the country divided into seven provinces and 753 local units.

In the light of these recent developments, the Nepal Institute for Policy Research (NIPoRe) and the Asia Competitiveness Institute (ACI) at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore, have undertaken this study to support key policy stakeholders in Nepal and other countries. The report aims to guide Nepal's current and future economic policies at the provincial and federal levels.

The inaugural issue of the Nepal Competitiveness Index (NCI) takes into consideration 64 indicators across four environments (*i. Macroeconomic Stability ii. Government and Institutional Setting iii. Financial, Businesses, and Manpower Conditions and iv. Quality of Life and Infrastructure Development*) and 11 sub-environments to assess the performance of Nepal's seven provinces across major economic parameters.

The major findings from our analysis are both obvious and surprising. Obvious because as Nepal began its federal system of governance in 2017, the findings alluded to the larger history of its centralised governance mechanisms. Bagmati has been the most competitive province across both overall competitiveness and environment-wise competitiveness. In terms of overall competitiveness, the provinces that followed Bagmati are, in order, Lumbini, Province 1, Gandaki, Madhesh, Sudurpaschim, and Karnali. Sudurpaschim and Karnali had previously been largely ignored by the central governments and thus remained the least competitive provinces in the current analysis. Interestingly,

in 2019, Sudurpaschim managed to increase one rank and reach the fifth position in terms of overall competitiveness. The findings were surprising in some aspects as Madhesh, which should be the industrial hub of the country, does rank second in 2019 in terms of GSDP, primary industry, secondary industry, and tertiary industry, but ranks last in terms of the presence of companies, government revenue, tax revenue, bank credit, bank deposits, and overall labour productivity.

While Bagmati leads the rest of the provinces by a large margin across all the indicators and environments, the disparities among the provinces are found to be narrowing down. The current study attributes an increase in access to finance, better budgetary support, and increasing investments in infrastructure development across all provinces in recent years for these positive developments. Still, the least competitive provinces continue to suffer from weak revenue sources, limited presence of private, public, and foreign companies, low wages and salaries, and a smaller number of educational institutions.

COVID-19 played a damaging role in the competitiveness of all the provinces. To help policy stakeholders better contextualise NCI findings, the current analysis also incorporates the disproportionate effects of the pandemic on seven provinces' current and future competitiveness across key relevant indicators.

NIPoRe and ACI plan to update NCI analysis as new data become available in the future. With this, the policy stakeholders in Nepal and outside will be able to follow the most updated analysis on contemporary economic issues at the provincial level for more intense and realistic evidence-based policymaking in the country.

Acknowledgement

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List of Abbreviations

ADB	Asian Development Bank
AMIS	Aid Management Information System
BBIN	Bangladesh, Bhutan, India, Nepal Initiative
BFI	Banks and Financial Institutions
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BIPPA	Bilateral Investment Promotion and Protection Agreement
BRI	Belt and Road Initiative
CBS	Central Bureau of Statistics
CCMC	COVID-19 Crisis Management Center
CPI	Consumer Price Index
CPN-MC	Communist Party of Nepal - Maoist Center
CPN-UML	Communist Party of Nepal - Unified Marxist-Leninist
CTEVT	Council for Technical Education and Vocational Training
DOI	Department of Industry
FCGO	Financial Comptroller General Office
FDI	Foreign Direct Investment
FITTA	Foreign Investment and Technology Transfer Act 2019
GDP	Gross Domestic Product
GoN	Government of Nepal
GSDP	Gross State Domestic Product
IBN	Investment Board Nepal
IBRD	International Bank for Reconstruction and Development
IMD	International Institute for Management Development
IMF	International Monetary Fund
INR	Indian Rupees
LLDC	Land-locked Developing Countries
LMIC	Lower and Middle Income Countries
MAPs	Medicinal and Aromatic Plants
MCC	Millennium Challenge Corporation
MoHP	Ministry of Health and Population
MPI	Multidimensional Poverty Index
NC	Nepali Congress

NEPSE	Nepal Stock Exchange Ltd.
NGO	Non-Governmental Organization
NPC	National Planning Commission
NPR	Nepali Rupees
NRB	Nepal Rastra Bank
NRNA	Non Resident Nepali Association
ODA	Official Development Assistance
OSR	Own Source Revenue
PPPI Act	Public-Private Partnership and Investment Act
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asian Free Trade Agreement
SEZ	Special Economic Zone
SME	Small and Medium-sized Enterprises
TEPC	Trade and Export Promotion Centre
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
USD	US Dollar
VAT	Value Added Tax
WB	World Bank
WEF	World Economic Forum
WHO	World Health Organization
WTO	World Trade Organization

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Introduction

Chapter 1 Introduction

1.1 Federal Nepal

1.2 Competitiveness and Nepal

1.1 Federal Nepal

A macroeconomic outlook and brief details on critical aspects of geographical, social, economic, and political ecosystems

1.1.1 Geography and Governance System

Nepal is a landlocked country in South Asia. It shares a natural border with China in the north and an open border with India in the east, west, and south. With a length of more than 1700 km, the open border between Nepal and India is among the longest such borders shared between two different countries in the world. The country declared itself a federal democracy in 2015. The country is divided into seven provinces namely- Province 1, Madhesh, Bagmati, Gandaki, Lumbini, Karnali, and Sudurpaschim. The country's administrative units are further divided into 753 local units. These comprise six metropolitan cities, 11 sub-metropolitan cities, 276 municipalities, and 460 rural municipalities.

Figure 1.1 Provincial Map of Nepal

Source: MoLCPA
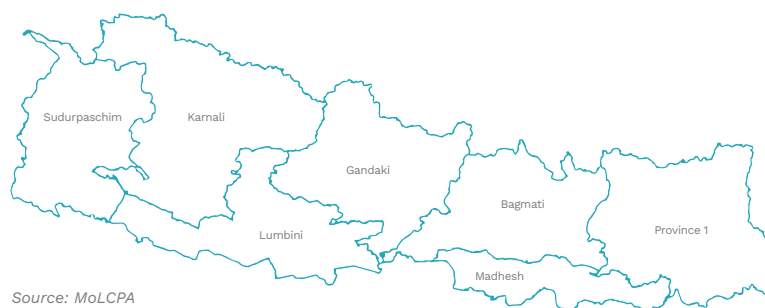
Geographically, the country is divided into Mountain (northern part), Hill, and Terai (southern part) regions. The Mountain region includes multiple mountain peaks above 8,000 metres, including Mt. Everest, the highest peak in the world. The Hilly region comprises key metropolises of the country, including the nation's capital city -

Kathmandu. The Terai region is the most fertile region of the country. It provides a significant contribution to the country's agricultural and industrial production.

1.1.2 Historical Snapshot

The late king Prithvi Narayan Shah successfully unified previously fractured states ruled by multiple rulers to pave the way for Modern Nepal in 1768. The unification was the start of the hereditary rule of the Shah Monarchs in Nepal. The Shah Monarchy was later disrupted due to the Rana Rule that started in 1856 under the leadership of Jung Bahadur Rana. It continued for the next 104 years until 1951. During the Rana Regime, the Shah Monarchs existed as the figurehead monarchy, and all the power resided with the Ranas who ruled the country as Prime Ministers. The Rana Rule came to its end in 1951 after the late Shah Monarch, King Tribhuvan, toppled Mohan Shamsher Rana's government with the help of the then Indian Leadership. Under the Rana Rule,

After the 2006 People's Movement, Nepal abolished the monarchy and the country became a democratic republic.

Nepal did not see much economic growth. The power and wealth of the country were concentrated among a few ruling elites, mostly the Rana families and their loyals. Nepal had begun to see a modicum of economic growth during King Tribhuvan's reign. However, it was during King Mahendra's reign, economic and developmental plans for the country began to take a better shape. During King Mahendra's regime, Nepal joined the United Nations (UN) and created the first five-year development plan (Pant, 1956). In 1960, he introduced the Panchayat System curbing political rights and activities of all the then active political parties and actors in the country. Three decades later in 1990, after a major political movement (*popularly known as People's Movement I*), Nepal adopted a multiparty democracy. Under the new governance system, the Shah Monarchs continued to have major roles in the country's plans and policies. However, after the 2006 People's Movement (*popularly known as People's Movement II*), Nepal abolished the monarchy and the country became a democratic republic. After almost one decade of constitutional transition, Nepal adopted a new constitution in 2015 followed by general and local level elections in 2017.

1.1.3 Socio-Economic Status

Nepal's Gross Domestic Product (GDP) growth has seen large swings at the national level due to major disruptions, mainly the 2015 earthquake and the ongoing novel coronavirus (COVID-19) pandemic. Compared to the South Asia region and other Lower-Middle Income

countries (LMICs), Nepal has seen a slow growth since it acceded to the World Trade Organisation (WTO) in 2004 (Figure 1.2) . While the growth figures were lower than the average figures for both aggregations, since 2017, Nepal has seen better growth than the both. The earthquake in 2015, had a damaging impact on Nepal's economy. Massive reconstruction activities post-earthquake gave a signficant boost to Nepal's GDP. This growth slowed after 2017 as major reconstruction works were completed by then.

Figure 1.2: GDP Growth (Annual Percent)
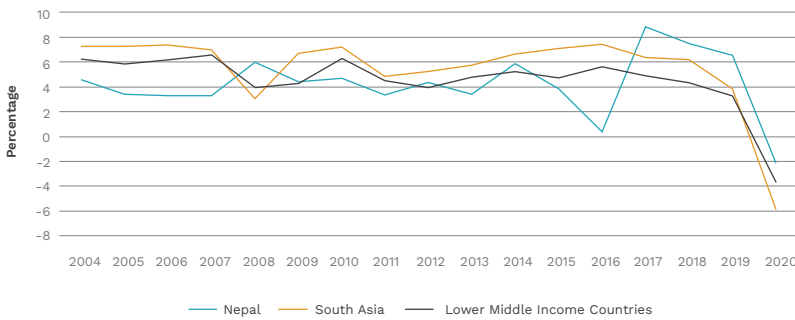
Source: The World Bank

Traditionally, Nepal's economy has mainly been driven by agriculture. In recent years though, while the agriculture sector's GVA has slightly increased throughout the years, as presented in Figure 1.3, there has been little change in terms of the overall share of the GDP. This trend could be attributed to the factors that major growth in other sectors (eg. industry and service sectors) has minimized the agriculture sectors' overall GDP share. In addition, failure of the key stakeholders in the country to modernize this sector also stalled the sector's growth.

Figure 1.3 Gross Value Added by Agriculture Sector
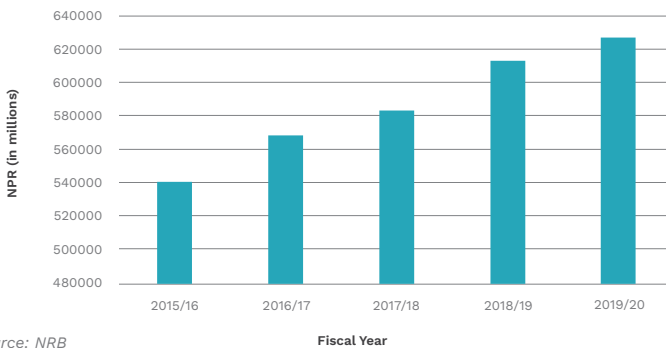
Source: NRB

The Nepali currency, Nepali Rupees (NPR), has been pegged to the Indian Rupees (INR) since 1993 (ratio 1:1.6). This has helped Nepal to give stability to the national currency as Nepal heavily relies on India for most of the exports and imports. With the other key global currencies, the fluctuation is highlighted in Figure 1.4.

Figure 1.4 Nepal's Foreign Exchange Rate
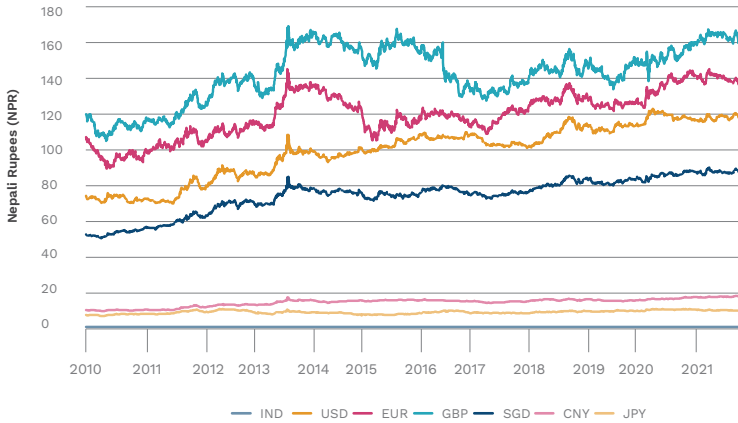
Source: NRB

On the inequality front, the Gini coefficient for the country was 32.8 (*as percentage*) in 2010 (The World Bank, 2010). The value indicates that Nepal currently has only a low to moderate level of inequality. While the level of inequality is less, Nepal continues to have a considerable share of poverty, mostly in rural parts of the country. According to the Multidimensional Poverty Index (MPI)[1] Report published in 2021 by the National Planning Commission (NPC), 17.4 percent of the country's population is multidimensionally poor. The MPI measures the summary poverty figures - the proportion of the population that is deemed poor and the breadth of poverty experienced by the poor household using a range of indicators. The provinces have seen uneven growth throughout the past decades and as a consequence, Nepal's inter-provincial poverty varies by a large margin. At the provincial level, in 2019, Bagmati has the lowest score while Karnali has the highest score. This means Karnali has the highest proportion of the poor. Figure 1.5 shows that between 2018 and 2019 the poverty has decreased drastically across all the seven provinces.

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[1] *The MPI measures the summary poverty figures - the proportion of the population that is deemed poor and the breadth of poverty experienced by the poor household using a range of indicators.*

Figure 1.5 Multidimensional Poverty Index for the Provinces in 2014 and 2019
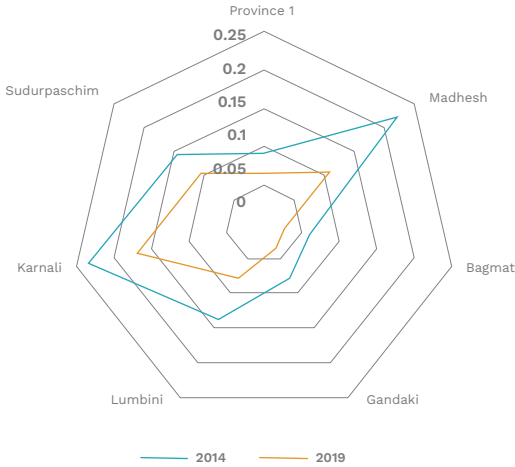
Source: Nepal Multidimensional Poverty Index: Analysis Towards Action, NPC

1.1.4 Development Financing

Nepal still lags behind in securing enough local revenue to finance key development and investment expenses. As a result, Nepal continues to rely on external sources to meet growing development spending. Nepal has been receiving a considerable amount of aid from the country's bilateral and multilateral partners for decades. Recently, to secure enough financial resources for financing major development activities and large-scale infrastructure projects, Nepal has also focused on securing Foreign Direct Investment (FDI).

In the FY 2019/20, Nepal received USD two billion in foreign aid which accounted for 23.3 percent of the national budget. Of the total aid received that year, 69.9 percent comprised of loans followed by 18.7 percent as grants, and 11.3 percent as technical assistance. Additionally, in terms of aid sources, 71 percent of the foreign aid was disbursed through multilateral partners while 29 percent of the aid was disbursed through the country's bilateral partners. That year, USA, the UK, India, China, and Japan remained the top five bilateral partners.

The Government of Nepal (GoN) prioritises FDI as one of the key investment sources for financing Nepal's development activities, mainly large-scale infrastructure and hydropower projects, in the recent years. GoN's priority could be felt through Nepal hosting frequent investment summits in the recent years. Nepal first hosted

an investment summit in 1992. After a gap of almost three decades, Nepal hosted two investment summits, one each in 2017 and in 2019. These recent investment summits were aimed at meeting Nepal's growing financial needs after the country adopted a federal system of governance, especially to finance major large-scale projects in each of the seven provinces. While hosting these summits, to better facilitate FDI in the country, Nepal has amended most of the related policies, including the Foreign Investment and Technology Transfer Act 2019, the Special Economic Zone Act and its subsequent revision in 2019, and the Public-Private Partnership and Investment Act among others.

In 2019, the net inflow of FDI coming into South Asia stood at $56 billion. Out of this investment inflow, India received the highest FDI ($50 billion), and Bhutan received the lowest ($13 million). Nepal received a total of $185 million FDI during that fiscal year. In terms of FDI, Nepal still is a minor player in South Asia as it receives only a fraction of the FDI that South Asia receives.

In addition to aid and FDI, Nepal relies heavily on remittance to manage the country's overall public finance. The growing remittance in recent years has also allowed the remittance recipient families to have additional expenses for their household, educational and health needs. Figure 1.6 shows the amount of remittance Nepal has received in recent years.

Figure 1.6 Amount of Remittance Received by Nepal per Fiscal Year and Remittance as the Percentage of GDP
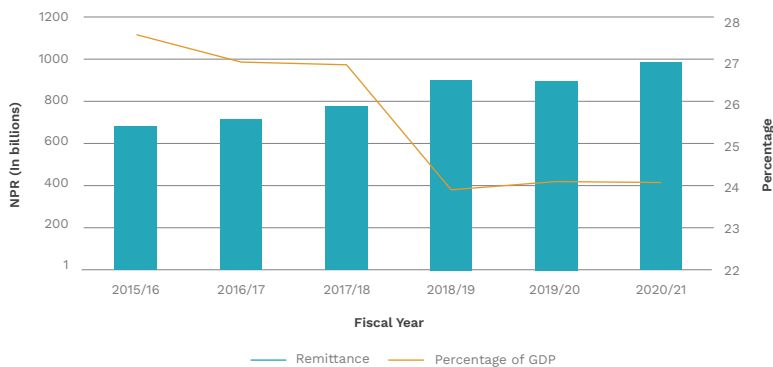
Source: NRB and The World Bank

In addition, research has shown that remittance receiving household are 2.3 percent less likely to be caught in poverty in comparison to a non-remittance receiving household and the probability of households falling to poverty decreases by 1.1 percent with every te n percent increase in remittance a household receives (Byanjankar and Sakha, 2021).

1.1.5 Recent Policy Challenges

During the last two decades, Nepal faced some key policy challenges due to disasters, pandemics, and political crises. These include the constitutional crisis between 2006 and 2015, Nepal Earthquake in 2015 and the ongoing COVID-19 Pandemic. All three crises occurred in a sequence and at a time while Nepal was beginning to recover from the earlier crisis. For example, while Nepal was about to adopt a new constitution in late 2015, the country was hit by a major earthquake in April 2015. By the early 2020s, while Nepal was on a comfortable path to recovery from earthquake damages, COVID-19 hit the economy. This way, multiple crises occurring one after another have severely affected Nepal's economic priorities and this could be reflected in Nepal's growth indicators for the past two decades.

1.1.6 Recent Political Changes

The election coalition formed by K. P. Sharma Oli, the chairman of the Communist Party of Nepal - Unified Marxist-Leninist (CPN-UML) and Pushpa Kamal Dahal, the chairman of the Communist Party of Nepal - Maoist Center (CPN-MC) won a two-third majority of seats in the 2017 elections in Nepal. Mr Oli became the Prime Minister with the main aim of achieving economic prosperity during his tenure with a slogan "Samriddha Nepal, Sukhi Nepali" (Prosperous Nepal, Happy Nepali). However, the nationwide spread of COVID-19 by late 2020 and related power struggles within the ruling party led Oli Government to collapse. This was followed by formation of a new coalition government under the Prime Ministership of Mr Sher Bahadur Deuba, Nepali Congress (NC) President in July 2021. Yet again, these major political events and leadership changes amid the COVID-19 crisis could be seen as distracting factors for Nepal to have a proper focus on better managing the pandemic for quick economic recovery. This is sure to have negative impacts across Nepal's key economic sectors for decades to come.

Figure 1.7 Timeline of key events impacting Nepal's competitiveness

14 Dec 1955
Member of the United Nations

26 Apr 1956
Establishment of Nepal Rastra Bank

1956-61
First Five Year Plan

1963
First World Bank Mission to Nepal

1961
Member of the International Bank for Reconstruction and Development

Joined the Non-aligned Movement

6 Sept 1961
Member of the International Monetary Fund

1962-65
First Three Year Plan

1966
Member of the Asian Development Bank

1969
Received First Credit Line from World Bank

1975
The Zone of Peace Proposal Shared

1985
Founding member of South Asian Association for Regional Cooperation

2003
Formation of Non Resident Nepali Association

1997
Joined the Bangladesh, Bhutan, India, and Nepal Initiative (BBIN)

1994
Start of Nepal Stock Exchange

7 June 1993
Establishment of the Securities Board of Nepal

2004
Signed the South Asian Free Trade Area agreement

Joined Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation

23 April 2004
Member of the World Trade Organization

2006
Establishment of Trade and Export Promotion Center

2011
Signed the Bilateral Investment Promotion and Protection Agreement with India

2011
Establishment of Investment Board of Nepal

2022
Signed the Millennium Challenge Corporation Agreement

2017
Signed the Belt and Road Initiative

2015
Adoption of Federalism

Source: NIPoRe's compilation

1.2 Competitiveness and Nepal

Competitiveness has in recent history become a primarily analysed term. Competitiveness in the long term implies an increase in the level of economic efficiency and quality of products and services, which is a vital determinant of the long-term increase in living standards (Segota, Tomlanjovic and Hudek, 2017). As a critical requirement of long-term competitiveness, many authors also emphasise close

A provincial level competitiveness analysis provides a basis for targeted and more realistic policies and programs at the provincial levels.

cooperation between community, government, and society (Segler, 1986). There are varying definitions of the competitiveness concept by some of the institutions working in this sector. Although there are differences in definitions and measuring techniques among these available competitiveness indices, they look at the larger scale and measure economies' competitiveness against each other.

The World Economic Forum (WEF), defines competitiveness as "the set of institutions, policies and factors that determine the level of productivity of a country". It measures competitiveness among countries through the Global Competitiveness Index 4.0, consisting of 12 distinct pillars grouped into three sub-indexes (Cann, 2017). In the WEF's Global Competitiveness Index Nepal ranked 108th in 2019, an increase of one rank from 2018 with a score of 51.6 among 141 countries.

Similarly, the World Competitiveness Yearbook published by the International Institute for Management Development (IMD), defines competitiveness as the countries' ability to manage their competencies to achieve long-term value creation. IMD views competitiveness as a more holistic concept, beyond GDP and productivity indicators, as the respective economy's enterprises also must cope with political, social, and cultural dimensions quite often. Governments, therefore, need to provide an environment characterised by efficient infrastructure, institutions, and policies that encourage sustainable value creation by the enterprises. IMD uses 344 competitiveness criteria to measure competitiveness, grouped into 20 sub-factors of equal weightage (IMD, n.d.). However, IMD does not incorporate Nepal's performance in its competitiveness analysis.

Meanwhile, a significant gap exists in measuring a nation's internal or provincial competitiveness, which provides the basis of its inherent competitiveness. A nation divided into different local administrative

levels has different strengths across its provincial governments. Variations in development, geography, and natural heritages among others lead to niche competitiveness points for the sub-regions. For example, in the Nepali context, the mountain region is found to be more competitive in tourism and hotel infrastructures than in agriculture. At the same time, the Terai plains have more irrigable land and thus are more competitive in agriculture. Therefore, this measure becomes necessary to enable policymakers, private sector actors, development partners, and even the public to identify sectoral strengths and address imbalances among the sub-groups. Additionally, a provincial level competitiveness analysis provides a basis for targeted and more realistic policies and programs at the local levels. It can help recognize local problems with higher accuracy, increase efficiency through competition, and provide opportunities for sharing individual learnings. This is the motivation for forming the Nepal Competitiveness Index (NCI) to study the competitiveness of Nepal's provincial governments.

02

Research
Methodology

Chapter 2 Research Methodology

2 Research Methodology

This section introduces the overall approach to the Nepal Competitiveness Index (NCI) study. It also outlines the key methodologies used in this analysis. The outline details the equal weights methodology and the strategy to employ *What-if* analysis to provide practical policy significance to the initial findings.

2.1 Asia Competitiveness Institute's Competitiveness Framework

The competitiveness framework used by Asia Competitiveness Institute (ACI) is illustrated in Figure 2.1. The framework captures an economy's overall competitiveness through four environments: (1) Macroeconomic Stability, (2) Government and Institutional Setting, (3) Financial, Businesses and Manpower Conditions, and (4) Quality of Life and Infrastructure Development. The four environments

Figure 2.1 ACI's Competitiveness Framework

Physical Infrastructure
Technological Infrastructure
Standard of Living, Education and Social Stability

Regional Economic Vibrancy
Openness to Trade and Services
Attractiveness to Foreign Investors

Quality of Life & Infrastructure Development

Macroeconomic Stability

Financial, Businesses and Manpower Conditions

Government & Institutional Setting

Financial Deeping and Business Effeciency
Labour Market Flexibility
Productivity Performance

Government Policies and Fiscal Sustainability
Institutions, Governance and Leadership

Source: ACI

can be envisioned as quadrants, each contributing an equal weight of 25 percent to the overall competitiveness ranking. These four environments are further divided into 11 sub-environments using a nested approach.

Equal weights are assigned to sub-environments and environments as they are aggregated into environments and the latter into an overall ranking. Although it seems more appropriate to assign weights in accordance with the importance of a particular environment or sub-environment, there are practical difficulties involved. Therefore, we take a balanced view of the factors comprising competitiveness, assigning equal weights to each environment or sub-environment.

2.2 NCI Framework

Nepal, although declared as a federal democratic republic in 2015 and held federal elections in late 2017, has not had a provincial competitiveness analysis conducted on a large scale earlier. So, for this first of its kind analysis in the country, a different approach has been taken. This has helped capture as many available indicators as possible. The report's aim is to offer a unique opportunity to measure competitiveness at the provincial level. The final findings of the study are sure to help key policy stakeholders in the country to plan and implement more realistic policies thus boosting economic development at the local levels.

The index has adopted the methodologies used by ACI as described in section 2.1 for the current study and the indicators have been localised for the Nepali context.

In the analysis, the four environments consider different aspects of provincial competitiveness.

The first environment, Macroeconomic Stability, encompasses aspects of economic competitiveness among the measured areas. The indicators such as Gross State Domestic Product (GSDP) and its various breakdowns into contributions of various industries and sectors provide a broad measure of overall economic progress across seven provinces. Additionally, as Nepal is heavily dependent on foreign aid, trade, and tourism, this environment also considers those indicators for the analysis. Nepal's continued major reliance on Official Development Assistance (ODA) without the country exploring alternative financial resources could prove counterproductive in the long run.

The second environment, Government and Institutional Setting, is focused more on the stability of the overall governance system of the

country and those related to the key public institutions. Measures such as government revenue and expenditure provide an idea of the country's fiscal stability. Meanwhile, the total number of companies and Non-Governmental Organisations (NGOs) provide enough data for measuring how vibrant the seven provinces are in terms of economic activities and job creation. The strength of government and the number of corruption cases filed help better craft an image of the quality of governance across the provinces.

The third environment, Financial, Businesses, and Manpower Conditions, is there to capture details on people's access to financial resources and services. In addition, this helps understand the overall labour market situation of the provinces. Furthermore, indicators such as total workers, wages and salaries, and industrial training institutes assist in getting enough details for analysing key issues related to the state of the provincial level labour market. These details are also helpful to gauge overall regulation of economic incentives and availability of capacity enhancement facilities for the workers at the provincial governments. In a way, these indicators help better understand the overall contemporary labour scenario while also serving as a precursor to predicting what the future labour market would look like. First, however, there is a need to understand that the number of Nepali migrant workers is enormous. Returning migrants also, therefore, will play a significant part in Nepal's future workforce and need to be considered whenever predictions are made.

> Indicators such as total workers, wages and salaries, and industrial training institutes assist in getting enough details for analysing key issues related to the state of the provincial level labour market.

The final environment, Quality of Life and Infrastructure Development, encompasses indicators such as population density, length of roads, persons per internet subscriber, and student-teacher ratio among others. These social indicators are indispensable in helping incorporate aspects of the standard of living of the citizens across seven provinces into the analysis.

2.3 Computation of Competitiveness Ranking using Equal Weights

The four environments comprise 64 different indicators (*listed in Appendix II*) for the construction of the index. Although each environment is assigned an equal weight of 25 percent, each indicator is weighted based on the number of indicators present in each sub-environment. Depending on the availability of data, the number of

indicators within each environment or sub-environment are set. Thus, some environments and sub-environments have more indicators than the others.

Having more indicators, to some extent, ensures that the aggregate sub-environment score can be subjected to a more robust interpretation. The uneven distribution of indicators across sub-environments, on the other hand, is not regarded as a problem. Regardless of the number of indicators within a sub-environment, the indicators are expected to average out. This allows for the inclusion of a reasonable number of indicators capable of comprehensively defining the sub-environment while maintaining equal weights for the four environments in the overall competitiveness calculation. Furthermore, this provides flexibility to add or subtract indicators in the annual updates of the index, as long as the overall structure of the 11 sub-environments and four environments remain unchanged. This is particularly the case as the results of the new 2021 census would be available by late 2022, presenting new data points to be explored to support the competitiveness analysis.

The 64 indicators used for the competitiveness study include both determinant and outcome indicators. A comprehensive view that includes both determinant and outcome indicators makes it easier to answer the question, "Which provinces in the country are the most and least competitive?" In addition, the inclusion of both determinant and outcome indicators further highlights the sharp contrast between the high and low-performing provinces.

2.4 The Standardised Score

The focus now is on identifying methods to aggregate different types of data. For instance, an indicator such as GSDP is measured in millions of rupees (रु) while others, such as the length of the paved roads, is expressed in kilometres. How are these differences resolved to construct the competitiveness index?

The solution is that the standardised score is computed for each indicator, and this allows for a relative comparison of the performance of a particular province to the overall indicator average. As a result, the unit in which an indicator is measured is superseded by the standardised scores, which can be used for all types of indicators. Statistically, the standardised score represents the number of standard deviations each province is from the average.

To exemplify, a standardised score of zero indicates that the province is an average performer for that particular indicator. Similarly, a negative score implies a below-average performance, while a positive

score implies an above-average performance. The further away the score is from zero, the further is the performance of the province from the national average.

The standardised scores for each indicator are aggregated at the sub-environment level, re-aggregated at the environment level and finally aggregated at the overall level (as explained in *Appendix IV*). This allows a comparison of the performance of the provinces at different levels, from the specific indicators to overall competitiveness. With each aggregation, the scores are re-standardised, as detailed earlier, to calculate the standardised score at the sub-environment, environment, and overall levels.

2.5 *What-if* Competitiveness Simulation Analysis

What-if analysis holds significance in real-life policymaking. A ranking exercise on its own is like a beauty contest if the rankings serve only to identify best and lagging performing provinces without providing insights into how they could improve their rankings. Through this competitiveness exercise, the researchers and the policy makers can effectively answer the question: "What needs to improve in which province?" by abandoning the standard practice of simply treating the ranking as an end in itself.

The empirical exercise is extended to address the policy implications emanating from the competitiveness rankings generated for all the Nepali provinces. The framework uses the available data to create an in-depth analysis of the performance of each province according to the indicators, sub-environments, and environments. Through this endeavour, both the overall competitiveness rankings and particular indicators for which the province is doing well or otherwise can be identified. Policy recommendations can then be furnished from the analysis for each province.

'What-if' a province can improve its performance across various indicators?

The *What-if* simulation analysis is based on a hypothetical improvement of each province's top 20 percent weakest indicators up to the national average and the recalculation of its standardised scores to incorporate this supposed improvement. First, the weakest indicators for any province are identified by sorting all 64 indicators (for that province) in descending order. Next, the bottom 20 percent of the 64 indicators are ascertained, and their values are raised to match the average scores. This simulation exercise is aptly titled,

as it answers the question: 'What-if' a province can improve its performance across various indicators?

Scores are not discounted under any circumstance. Once the values of the relevant indicators are raised, the ranking for the province is re-calculated, assuming that the indicator value for other provincies stays constant. This simulation is performed for each province which will then have a new and improved standardised score.

The findings from this year's ranking exercise using the equal weights methodology is presented in the next chapter.

03

Provincial
Competitiveness
Analysis

Chapter 3 Provincial Competitiveness Analysis

3.1 Competitiveness Analysis Results for Seven Provinces of Nepal

With their unique vital economic sectors and establishments, the seven provinces of Nepal perform differently. Being home to the country's capital city, Bagmati ranks highest across all environments considered for the competitiveness index. For centuries, Kathmandu has been at the center of major trade and economic activities, beginning with the Licchavi Dynasty in early 400 AD. In the following years, the Malla Dynasty further developed the city into a more economically vibrant one, thus making it one of the critical economic hubs between India and China. The then Gorkha Kingdom made the city its capital after it claimed it following the 1768 Battle of Kathmandu. Since then, the city has served as the country's capital city and a central hub for economic, trade, and foreign relations activities. After the local and general elections in 2017, Nepal has made some attempts at decentralising government activities and related economic activities across Nepal's newly formed seven provinces.

After the local and general elections in 2017, Nepal has made some attempts at decentralising government activities and related economic activities across Nepal's newly formed seven provinces.

As crucial economic activities outside Bagmati, especially in Karnali and Sudurpaschim, were limited before Nepal adopting federalism, their performance across the four environments and indicators is poor. Seven provinces' overall rankings and the corresponding scores below reflect this scenario for both the years. In the meantime, as some of the provincial governments had made significant policy reforms that encouraged the overall competitiveness of the provinces between 2018 and 2019, one can observe subsequent changes in the overall provincial rankings between these two years.

Table 3.1 Competitiveness Analysis Results of Province 1

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	3	0.0432	2	0.1873	+1
Environments					
Macroeconomic Stability	4	0.1071	3	0.1765	+1
Government and Institutional Setting	2	-0.2022	2	-0.0172	0
Financial, Businesses and Manpower Conditions	2	0.2410	3	0.0804	-1
Quality of Life and Infrastructure Development	5	0.0089	3	0.2487	+2

As seen in Table 3.1, from 2018 to 2019, Province 1 improved as its overall rank moved from third to second. For Province 1, the increase in overall competitiveness ranking from 2018 to 2019 can be attributed to the increase in rankings for all the constituent environments from 2018 to 2019. Furthermore, the provincial government's budget for the FY 2018/19 focused on development activities, with infrastructure development being a priority (The Kathmandu Post, 2019). The provincial government's efforts could be a probable reason for a large increase in the score of Quality of Life and Infrastructure Development environment. In addition, the improvement in the Macroeconomic Stability ranking can be seen as Province 1's contribution to the country's total GDP stood at 15 percent in 2018 and reached 16 percent in 2019.

Table 3.2 Competitiveness Analysis Results of Madhesh

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	5	-0.2814	6	-0.6981	-1
Environments					
Macroeconomic Stability	3	0.3612	2	0.3906	+1

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	5	-0.2814	6	-0.6981	-1
Government and Institutional Setting	6	-0.4833	7	-0.8900	-1
Financial, Businesses and Manpower Conditions	7	-1.4132	7	-1.3232	0
Quality of Life and Infrastructure Development	2	0.5261	6	-0.6964	-4

Madhesh saw a fall in overall competitiveness ranking from 2018 to 2019 (Table 3.2) in large part due to the decrease in ranking for Government and Institutional Setting and Quality of Life and Infrastructure Development environments. This considerable decrease in the two environments has overshadowed small growths across the other two environments.

Table 3.3 Competitiveness Analysis Results of Bagmati

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	1	2.1615	1	2.1659	0
Environments					
Macroeconomic Stability	1	1.7661	1	1.9297	0
Government and Institutional Setting	1	2.4150	1	2.3485	0
Financial, Businesses and Manpower Conditions	1	2.0398	1	2.0583	0
Quality of Life and Infrastructure Development	1	1.5302	1	1.4790	0

Bagmati continues to stay atop overall and across all four environments (Table 3.3). Bagmati has remained most competitive in 2019 as well, while maintaining its first position across all environments. From this, it can be concluded that in 2019, as Nepal began putting some efforts to implement federalism and thus decentralise overall government and major large-scale infrastructure development activities across the seven provinces, Bagmati continues to remain largely competitive. Moving forward, this trend can be expected to continue in the future.

Table 3.4 Competitiveness Analysis Results of Gandaki

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	4	0.0089	4	0.0411	0
Environments					
Macroeconomic Stability	5	-0.0957	5	-0.1733	0
Government and Institutional Setting	5	-0.4389	6	-0.6818	-1
Financial, Businesses and Manpower Conditions	3	0.2348	3	0.0804	0
Quality of Life and Infrastructure Development	4	0.3316	2	0.9229	+2

Gandaki, one of the best provinces for tourism-related economic activities, performs poorly in terms of overall ranking (Table 3.4). The analysis finds that except for an increase in the Quality of Life and Infrastructure Development environment, the province's competitiveness across the Government and Institutional Setting environment degraded in 2019, while it remained constant for the other two environments. Furthermore it has maintained its 2018 rank in terms of overall competitiveness in 2019.

Table 3.5 Competitiveness Analysis Results of Lumbini

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	2	0.1562	3	0.0572	–1
Environments					
Macroeconomic Stability	2	0.4748	4	0.1421	–2
Government and Institutional Setting	4	-0.3301	3	-0.1178	+1
Financial, Businesses and Manpower Conditions	4	0.0298	4	0.0455	0
Quality of Life and Infrastructure Development	3	0.3854	4	0.1366	–1

Lumbini saw its rank drop from second in 2018 to third in 2019 (Table 3.5). For Lumbini province, the fall in Macroeconomic Stability ranking and Quality of Life and Infrastructure Development ranking were the main reasons for the decrease in the overall competitiveness rank. In addition, the province saw a huge downfall in the Regional Economic Vibrancy Sub-Environment from 2018 to 2019 which contributed to the overall decrease of the Macroeconomic Stability ranking.

Table 3.6 Competitiveness Analysis Results of Karnali

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	7	-1.1890	7	-1.2262	0
Environments					
Macroeconomic Stability	7	-1.5176	7	-1.2702	0
Government and Institutional Setting	3	-0.2247	5	-0.3829	–2
Financial, Businesses and Manpower Conditions	6	-0.2247	6	-0.3829	0

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	7	-1.1890	7	-1.2262	0
Quality of Life and Infrastructure Development	7	-1.7467	7	-1.8231	0

Karnali remains the least competitive province for both the years (Table 3.6). It has failed to perform better than other provinces over the two years. The Province's ranking position slid further by two positions for Government and Institutional Setting environment while remaining at the bottom position in both 2018 and 2019 across other three environments.

Table 3.7 Competitiveness Analysis Results of Sudurpaschim

Indicator/ Environment	Ranking (2018)	Score (2018)	Ranking (2019)	Score (2019)	Changes in Ranking
Overall competitiveness	6	-0.8992	5	-0.5272	+1
Environments					
Macroeconomic Stability	6	-1.0960	6	-1.1954	0
Government and Institutional Setting	7	-0.7357	4	-0.2588	+3
Financial, Businesses and Manpower Conditions	5	-0.3573	5	-0.1804	0
Quality of Life and Infrastructure Development	6	-1.0356	5	-0.2677	+1

Sudurpaschim, the second least competitive province in 2018, has improved its overall competitiveness ranking by one position in 2019 (Table 3.7) and ranks as the fifth most competitive province of Nepal. Moreover, during two years, except for the Macroeconomic Stability and Financial, Businesses and Manpower Conditions environments, the province has improved its overall competitiveness ranking across the remaining two environments with massive improvement across Government and Institutional Setting.

3.2 Analysis of Two Best and Two Lagging Performers by Environment

3.2.1 Macroeconomic Stability

Figure 3.1 Two Best Performers in Macroeconomic Stability Environment for 2018

2018   Top 2: Bagmati, Lumbini
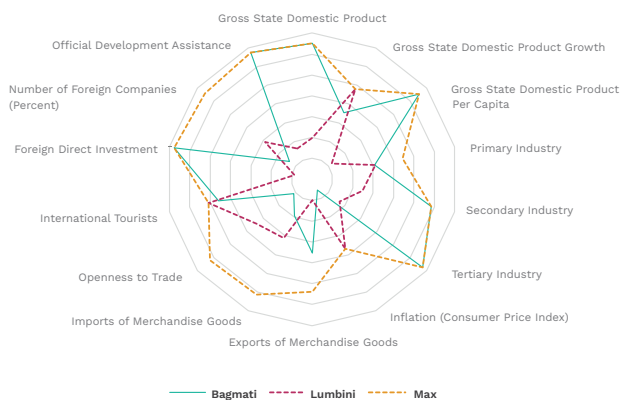
Figure 3.2 Two Lagging Performers in Macroeconomic Stability Environment for 2018

2018   Bottom 2: Sudurpaschim, Karnali
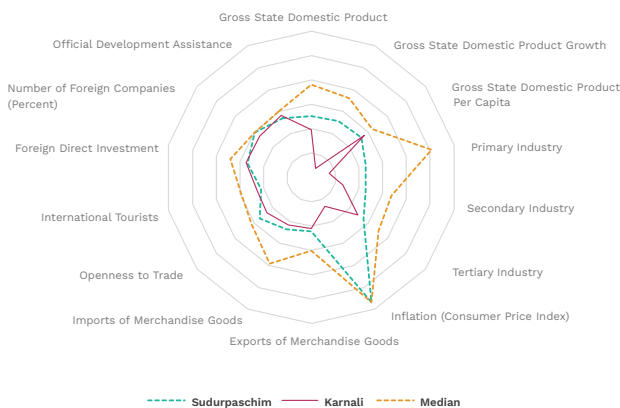
Figure 3.3 Two Best Performers in Macroeconomic Stability Environment for 2019

2019   Top 2: Bagmati, Madhesh
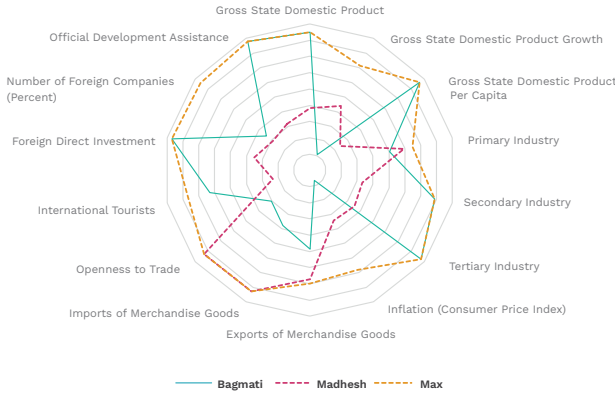
Figure 3.4 Two Lagging Performers in Macroeconomic Stability Environment for 2019

2019   Bottom 2: Sudurpaschim, Karnali
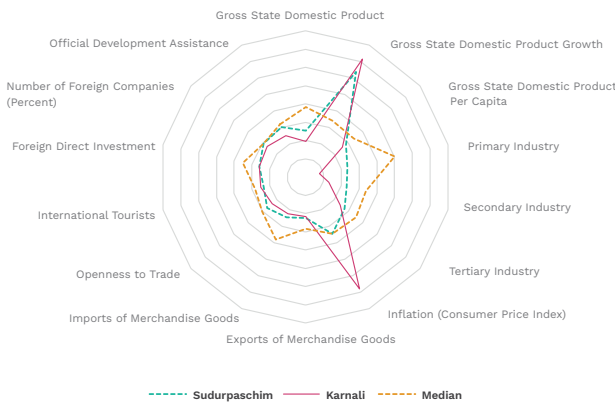
Under the environment Macroeconomic Stability for both the years 2018 and 2019 (Figures 3.1 and 3.3), Bagmati remained the top performer. Bagmati's strong performance in this indicator can be attributed to developmental activities that have been conducted in this region since before the country adopted federalism. In addition to Kathmandu, other major cities mainly Bharatpur, Hetauda, Banepa have all been hubs for economic activities. The province is heavily

industrialised, with industrial estates in Kathmandu, Lalitpur and Hetauda. Furthermore, the foreign investment flowing into the province is higher because of the large industrial and service sector (hotels and transportation facilities like cable cars) that exist in the province. Due to the heavy presence of industries, the GDP of the province is higher, which has contributed to a higher Macroeconomic Stability score.

In 2018, Lumbini province was among the top performers for this indicator. The province has industrial centers in Dang, Rupandehi, and Banke districts, including Nepalgunj and Butwal industrial estates. Furthermore, Lumbini is one of the top tourism destination, in particular for religious tourism. In 2019, Madhesh had the second-highest score after Bagmati. Madhesh showed an improvement in Openness to Trade and Services scores, which increased its overall environment score.

Sudurpaschim and Karnali have the lowest scores for both years (Figures 3.2 and 3.4). The challenging geography of these provinces (both composed mostly of rugged hills and mountains), inadequate industries and economic activities, the huge distance from the center (Kathmandu), and poor developmental activities during the post-

> Karnali has a high potential for trade and tourism sectors, which can boost the province's economy.

unification era have all caused these provinces to lag behind in overall development indicators. In addition, only a few established development projects and industries have made it harder for these provinces to attract foreign investments. The geographical terrain also makes it harder to create infrastructure projects in the region, impacting the trade and tourism sectors. In addition, most of the settlements across these two provinces are sparsely distributed thus making it difficult for the government, private sector, and development partners to make wise investments in these regions.

The gap between Bagmati and Karnali scores shows how the latter is lagging behind in terms of all indicators. While the gap has narrowed between 2018 and 2019 in terms of gross domestic state product per capita and inflation (consumer price index), the gap between other indicators still remains high and given the current realities, it will take a few more years to notice this gap declining. Karnali has a high potential for trade and tourism sectors, which can boost the province's economy.

3.2.2 Government and Institutional Setting

Figure 3.5 Two Best Performers in Government and Institutional Setting Environment for 2018

2018   Top 2: Bagmati, Province 1
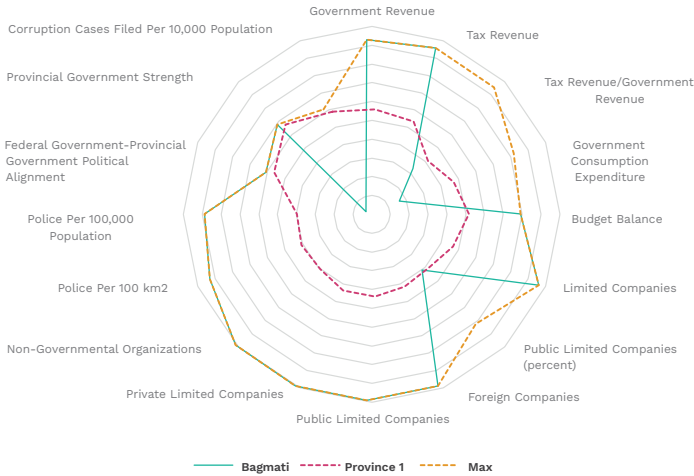
Figure 3.6 Two Lagging Performers in Government and Institutional Setting Environment for 2018

2018   Bottom 2: Madhesh, Sudurpaschim
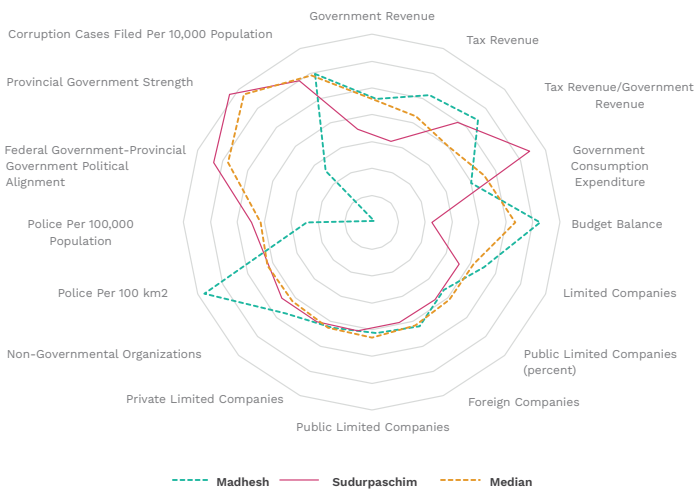
Figure 3.7 Two Best Performers in Government and Institutional Setting Environment for 2019

2019   Top 2: Bagmati, Province 1

Legend: — Bagmati ---- Province 1 ---- Max
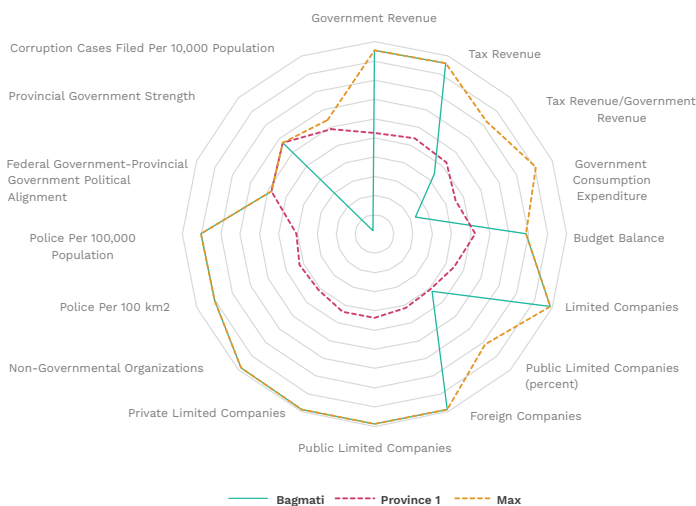
Figure 3.8 Two Lagging Performers in Government and Institutional Setting Environment for 2019

2019   Bottom 2: Gandaki, Madhesh

Legend: ---- Gandaki — Madhesh ---- Median
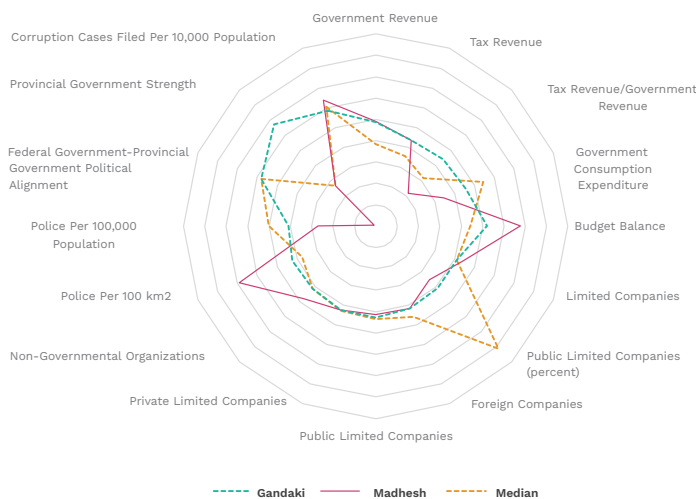
Under the Government and Institutional Setting environment, for both years, Bagmati remains the top performer while Province 1 is the second-best performer (Figures 3.5 and 3.7). Both provinces have similar trends moving from 2018 to 2019 but only marginal improvements across most indicators. Bagmati leads in this environment due to centuries of centralized governance. In addition, other key cities in the province - Lalitpur, Bhaktapur, Hetauda and Chitwan - have given a further boost to the province's overall performance. The second-ranked province, Province 1, is home to some of Nepal's oldest industrial establishments, zones and cities. For example, Biratnagar - the provincial capital city, is home to some of the country's oldest and large-scale manufacturing industries pertaining to sugar and jute.

Similarly, Ilam and some parts of the neighbouring districts (Jhapa and Panchthar) house the country's major tea estates. Furthermore, the Jhapa - Taplejung corridor is rich in high-value cash crops, mainly tea, potatoes, ginger, cardamom and broom grass. On the political side, both the provinces are home to some of Nepal's most significant political movements and some of the country's senior leaders.

On the contrary, out of the two lagging performers (Figures 3.6 and 3.8), Madhesh slides further in 2019 and ranks as the worst performer for the year despite making some progress in the government revenue indicator. Sudurpaschim, on the other hand, ranked last for the year 2018. Nevertheless, for the year 2019, it has made significant improvements across the indicators and moved out of the list of two worst-performing provinces in 2019. For 2019, Gandaki ranks as the second-worst performing province with poor performance across key indicators, such as provincial government strength, tax revenue, government revenue, budget balance, public limited companies, and private limited companies. Some of the

> On the political side, both Bagmati and Province 1 are home to some of Nepal's most significant political movements and some of the country's senior leaders.

reasons behind the falling performance of Gandaki between 2018 and 2019 could be explained by the fact that it struggled to comfortably finance all added provincial government arrangements using limited public revenue. In addition, the province also saw an overall fall in the registration of enough new public and private limited companies in 2019 compared to those in 2018.

3.2.3 Financial, Businesses, and Manpower Conditions

Figure 3.9 Two Best Performers in Financial, Businesses, and Manpower Conditions Environment for 2018

2018   Top 2: Bagmati, Province 1

Bank Offices
Secondary Industry, Value-Added Per Worker — Population Served Per Bank Office
Overall Labour Productivity — Bank Credit
Industrial Training Institutes — Bank Deposits
Agricultural Wages — Total Workers
Wages and Salaries — Unemployment Rate (Urban)

— Bagmati ----- Province 1 ----- Max
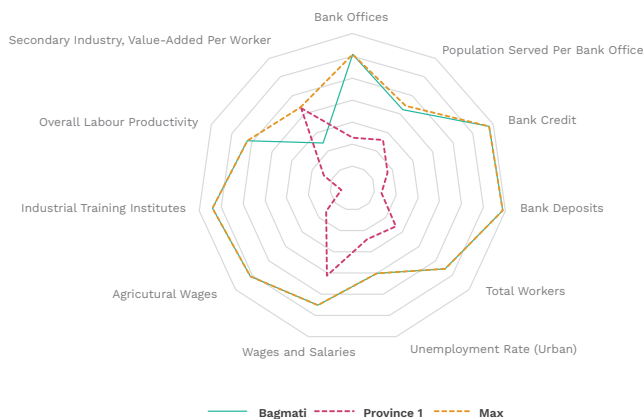
Figure 3.10 Two Lagging Performers in Financial, Businesses, and Manpower Conditions Environment for 2018

2018   Bottom 2: Karnali, Madhesh

Bank Offices
Secondary Industry, Value-Added Per Worker — Population Served Per Bank Office
Overall Labour Productivity — Bank Credit
Industrial Training Institutes — Bank Deposits
Agricultural Wages — Total Workers
Wages and Salaries — Unemployment Rate (Urban)

----- Karnali — Madhesh ----- Median
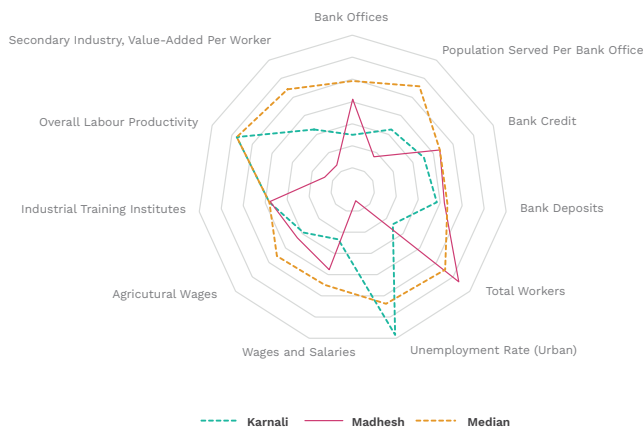
Figure 3.11 Two Best Performers in Financial, Businesses, and Manpower Conditions Environment for 2019

2019   Top 2: Bagmati, Province 1
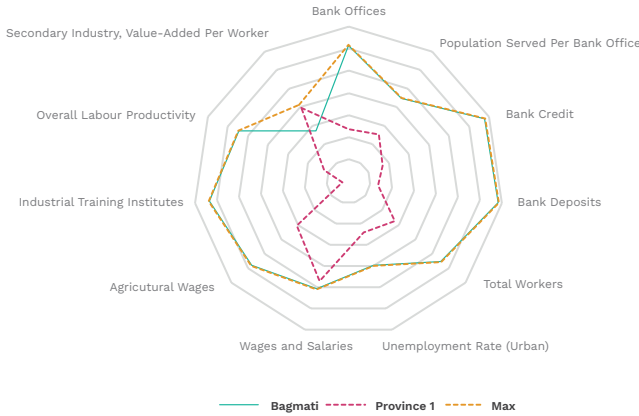
Figure 3.12 Two Lagging Performers in Financial, Businesses, and Manpower Conditions Environment for 2019

2019   Bottom 2: Karnali, Madhesh
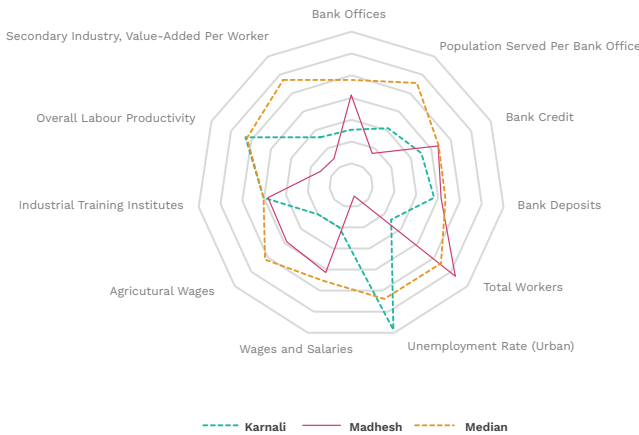
For both years, very similar data points can be observed among the two best performing and two lagging provinces in the Financial, Businesses, and Manpower Conditions environment (Figures 3.9, 3.10, 3.11, and 3.12). The ranks of the two best and two lagging provinces also remain the same.

Bagmati is the clear winner among the observed provinces in all indicators of the environment, only slightly losing to second-best performer Province 1 in the secondary industry, value-added per worker indicator. The results are obvious as Bagmati is the most developed in terms of access to financial services. It also serves as the top destination for internal migration, with people from all parts parts of the country coming here for job opportunities. This has helped Bagmati become more competitive than other provinces in decreasing its unemployment rate, increasing the number of workers, agricultural wages, and labour productivity. The prevalence of greater access to finance can be seen through the large gap in scores between Bagmati and the rest of the provinces, in terms of the number of bank offices, amount of bank credit and bank deposits, and density of population served per bank office. Madhesh province has struggled across all these fronts. Even though it holds one of the most fertile areas of the country, it has suffered setbacks in its industrialization attempts. On top of that, a combination of outward migration of workers with less access to financial services has contributed to it being uncompetitive compared to other provinces.

> Historical development may have helped Bagmati leap ahead in job opportunities and access to finance but distributed developed practices by the federal government can contribute to other provinces increasing their competitiveness.

The gap between Bagmati and the rest of the provinces is massive. Historical development may have helped Bagmati leap ahead in job opportunities and access to finance but distributed developed practices by the federal government can contribute to other provinces increasing their competitiveness. In 2018, while the gap between the second-best Province 1 and the lagging province is 1.6542, the gap between the first and second is 1.7987. Similarly, in 2019, the gap between the second-best and lagging province is 1.5910 while the gap between the first and the second is 1.7904. This indicates that for both years the gap between Bagmati and the rest is monumental. The federal and provincial governments need to identify these sectors and look at policies that can decrease this gap to make other provinces competitive in this environment.

3.2.4 Quality of Life and Infrastructure Development

Figure 3.13 Two Best Performers in Quality of Life and Infrastructure Development Environment for 2018

2018   Top 2: Bagmati, Madhesh

── Bagmati ------ Madhesh ------ Max
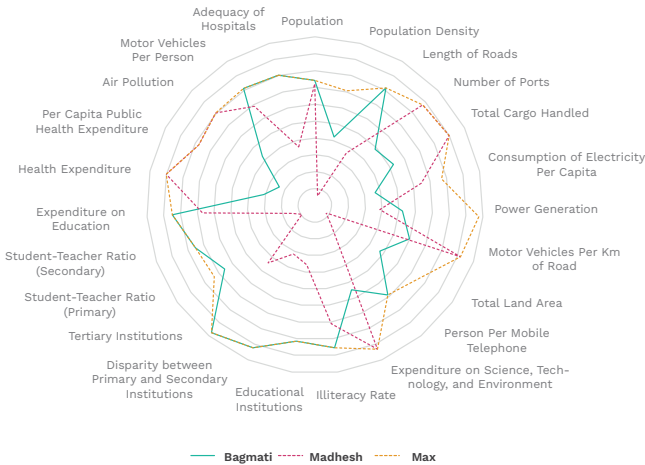
Figure 3.14 Two Lagging Performers in Quality of Life and Infrastructure Development Environment for 2018

2018   Bottom 2: Sudurpaschim, Karnali

------ Sudurpaschim ── Karnali ------ Median
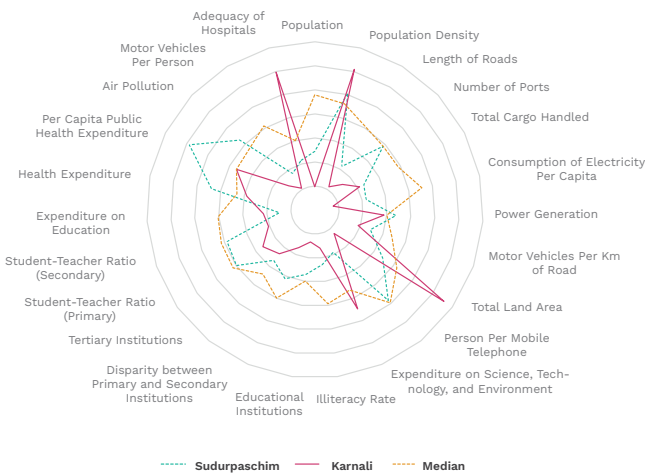
Figure 3.15 Two Best Performers in Quality of Life and Infrastructure Development Environment for 2019

2019   Top 2: Bagmati, Madhesh
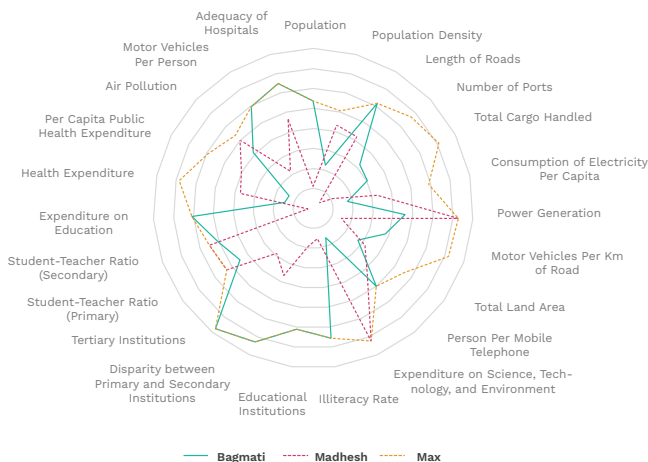
Figure 3.16 Two Lagging Performers in Quality of Life and Infrastructure Development Environment for 2019

2019   Bottom 2: Sudurpaschim, Karnali
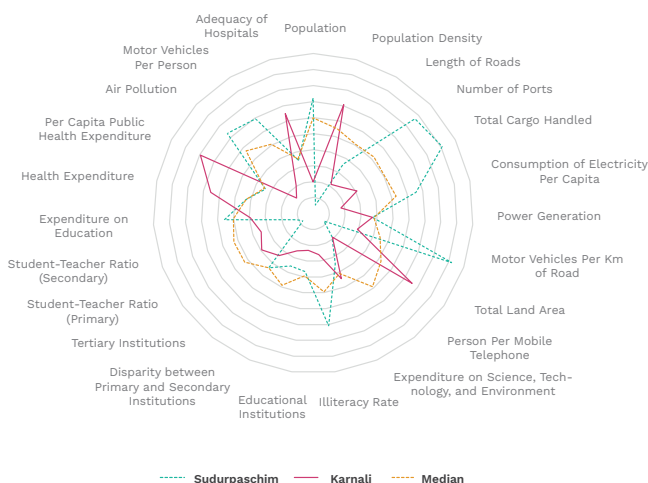
In the Quality of Life and Infrastructure Development environment, the disparity between the two best performers and the two lagging performers is apparent from Figures 3.13, 3.14, 3.15, and 3.16. The two lagging performers, though, outperform the top performer in terms of per-capita public health expenditure, population density, and the disparity between primary and secondary institutions. Better performances in health can be attributed to the development of the lagging performers. Bagmati is relatively well-off in health services. Karnali and Sudurpaschim, meanwhile, are in the nascent stages of their investments in the health sector. After the provincial division of the country, investments in those sectors have therefore been noteworthy.

In 2019, Madhesh moved drastically from the second-best performer in 2018 to the second worst performer. This can be primarily attributed to the enormous expenditure of Madhesh on health, education, science, technology, and environment during the previous year which substantially boosted its overall competitiveness but failed to continue the trend during the second year as well. However, all other indicator scores remain very similar for the province.

> The two lagging performers, though, outperform the top performer in terms of per-capita public health expenditure, population density, and the disparity between primary and secondary institutions.

Overall, the performances of the other provinces remain stagnant between the two years. However, the discrepancies between the two best and the two lagging performers remain high. For example, comparing the differences in scores between the top-performing province Bagmati and the second-best performer Gandaki and scores between the two lagging performers, a large gap exists between Bagmati and the rest. Additionally, in 2018 the gap between the first and second is quite similar to the lagging and second-lagging performers. However, in 2019, the gap between the lagging and second-lagging performers further increased than in 2018.

This shows that Bagmati is far ahead above the rest of the provinces across all indicators. Although some provinces are slowly improving their competitiveness, the lagging province, Karnali, should make major improvements across almost all indicators, sub-environments and environments to catch up with the rest of the provinces, especially across Quality of Life and Infrastructure Development environment.

3.3 *What-if* Competitiveness Simulation Analysis on Overall Competitiveness

This section discusses the results of the *What-if* competitiveness simulation analysis of the seven provinces of Nepal for the years 2018 and 2019. *What-if* competitiveness analysis assists provinces in re-directing their limited resources to areas that can improve their competitiveness significantly. This simulation helps in the identification of the top 20 percent weakest indicators for a particular province. It demonstrates how the province's overall ranking can be improved by improving through policy simulations. Thus, this exercise can point policymakers in the direction of policy interventions they need to take to facilitate growth and development (*for details, please check Section 2.5*).

Table 3.8 show the rankings and scores for the seven provinces before and after simulation in 2018 and 2019. The difference among the provinces in the two years together with policy research can help understand if any targeted policy efforts were made in 2018 and if those efforts furnished results that brought about actual change in the competitiveness of a province in 2019.

Table 3.8 *What-if* Competitiveness Analysis of 2018 and 2019

Year	2018				2019			
Economy	Rank		Score		Rank		Score	
	Before	After	Before	After	Before	After	Before	After
Bagmati	1	1	2.1615	2.1911	1	1	2.1659	2.2218
Lumbini	2	2	0.1562	0.4670	3	2	0.0572	0.3095
Province 1	3	2	0.0432	0.3300	2	2	0.1873	0.3926
Gandaki	4	2	0.0089	0.2946	4	2	0.0411	0.3860
Madhesh	5	2	-0.2814	0.2401	6	4	-0.6981	-0.0736
Sudurpaschim	6	6	-0.8992	-0.4341	5	5	-0.5272	-0.2285
Karnali	7	6	-1.1890	-0.6681	7	5	-1.2262	-0.6925

Table 3.8 distinctly shows the increase of competitiveness of provinces Lumbini, Province 1, Gandaki, and Madhesh after the *What-if* simulation in 2018. While the rank of Lumbini remains the same, the increase in scores for all the provinces except the top one, Bagmati, is considerable. Even the two lagging economies, Sudurpaschim and Karnali, show massive improvements in scores. Bagmati, meanwhile, remains the top economy both before and after the *What-if* simulation,

with the lowest change in scores of just 0.0438. On the other hand, Karnali jumps one rank from the bottom seventh to sixth with the highest increase in score of 0.5350.

For 2019, Table 3.8 provides a clear picture of a higher jump in ranking and scores of all the provinces. Madhesh has the highest jump in score among the provinces with a rise of 0.6560, while Bagmati has the lowest rise in the score, of just 0.0682 while continuing to remain at the top.

For both the years, the most and least competitive provinces are quite clear before the analysis. However, even after the simulation, Bagmati leads the pack with a massive difference in scores with the second-ranking economy. Karnali, meanwhile, can shed its position as the least competitive as its position and scores increase substantially after the *What-if* analysis. This means that Karnali has chances to substantially boost its competitiveness if it works on its worst-performing indicators while Bagmati is well ahead of the competitiveness of all the remaining six provinces.

Bagmati's position also shows the level of concentration of development activities in the country. The vast gap in scores between Bagmati and the rest should be a factor in the federal government policy plans moving forward. While Bagmati continues to improve its competitiveness further, the federal government needs to concentrate its efforts on other provinces so that they will be able to be as competitive as Bagmati, if not more. But this has to be done while also ensuring that Bagmati's overall competitiveness does not slide as compared to the previous years.

3.4 *What-if* Competitiveness Simulation Analysis by Four Environments

3.4.1 Macroeconomic Stability

Table 3.9 shows the effects of the *What-if* simulation on Macroeconomic Stability for the seven provinces for the years 2018 and 2019. In 2018, Bagmati, Lumbini, and Madhesh retained their positions as the top three provinces even after the simulation, with rising scores of 0.0578, 0.1588, and 0.0628, respectively. Unsurprisingly the two lagging provinces, Sudurpaschim and Karnali, continue to be at the bottom post the simulation. However, Karnali moves from seventh to sixth after the simulation with a large change in its score of 0.3302. The largest change in rank is of Gandaki, with a rise from

fifth to third and a rise in a score of 0.4642. Gandaki therefore can be said to benefit the most from working on its lagging performing indicators to be better competitive in the Macroeconomic Stability environment.

Meanwhile, for 2019, Lumbini moves from the fourth to the second place after the simulation. This could be attributed to the fact that a fall in ODA in the region coupled with a decrease in GSDP has impacted its overall competitiveness. The rest of the provinces do not see changes in their rankings from 2018. The consistent ranking of the two years even after the simulation could be attributed to no noticeable changes in macroeconomic policies by the provincial governments. Nevertheless, if worked on the least performing indicators, a more remarkable rise in average competitiveness scores can be seen for all the provinces.

Table 3.9 *What-if* Competitiveness Simulation for Macroeconomic Stability

Year	2018				2019			
Economy	**Rank**		**Score**		**Rank**		**Score**	
	Before	After	Before	After	Before	After	Before	After
Bagmati	1	1	1.7661	1.8239	1	1	1.9297	2.0625
Lumbini	2	2	0.4748	0.6336	4	2	0.1421	0.3855
Madhesh	3	3	0.3612	0.4240	2	2	0.3906	0.3906
Province 1	4	3	0.1071	0.3412	3	2	0.1765	0.3538
Gandaki	5	3	-0.0957	0.3685	5	3	-0.1733	0.3478
Sudurpaschim	6	6	-1.0960	-0.8393	6	6	-1.1954	-0.8104
Karnali	7	6	-1.5176	-1.1874	7	6	-1.2702	-0.9481

3.4.2 Government and Institutional Setting

For the Government and Institutional Setting environment (Table 3.10), Sudurpaschim registered the most remarkable change in ranks, moving from seventh to second place after the simulation in 2018. It also has the highest change in scores of 0.536. This change can be attributed to Sudurpaschim having problems maintaining its budget balance and tax revenue, with both falling in its 20 percent weakest indicators.

Similarly, for 2019, Karnali yielded the largest change in its rank moving from fifth to second position with a change in score of 0.3344. However, Karnali also has a major problem with budget balance which

falls in its 20 percent weakest indicator. So, policies that address issues of increasing or integrating the otherwise informal economy into the formal economy may help Sudurpaschim increase its competitiveness. At the same time, both the provinces need to work on maintaining their budget balances with careful considerations in maintaining their expenditures as well.

Additionally, except for Bagmati, all other provinces have scored lower than the mean score before the simulation. Even after the simulation, two provinces (Sudurpaschim and Karnali) remain below the average value of zero. This highlights the growing disparity between the top-performing province, Bagmati, and the rest of the provinces, particularly in this environment. Policies focusing on creating strong government institutions, a better business climate, checking corruption, and maintaining proper provincial budgets are imminently necessary for all the provinces to increase their competitiveness in this environment.

Table 3.10 *What-if* Competitiveness Simulation for Government and Institutional Setting

Year	2018				2019			
Economy	Rank		Score		Rank		Score	
	Before	After	Before	After	Before	After	Before	After
Bagmati	1	1	2.4150	2.4322	1	1	2.3485	2.3872
Province 1	2	2	-0.2022	0.0327	2	2	-0.0172	0.1084
Karnali	3	2	-0.2247	0.1088	5	2	-0.3829	-0.0485
Lumbini	4	2	-0.3301	0.1662	3	2	-0.1178	-0.0065
Gandaki	5	5	-0.4389	-0.3587	6	6	-0.6818	-0.4223
Madhesh	6	4	-0.4833	-0.3187	7	6	-0.8900	-0.4438
Sudurpaschim	7	2	-0.7357	-0.1997	4	4	-0.2588	-0.2588

3.4.3 Financial, Businesses and Manpower Conditions

For the year 2018, after the *What-if* simulation, only Gandaki and Madhesh see a rise in their ranks, with Gandaki moving from third to second position while Madhesh moving from seventh to fifth position (Table 3.11). Other provinces maintain the same ranks while witnessing improvements in their scores. Madhesh can improve its rank in this environment if it works on indicators such as urban unemployment, labour productivity, and population served per bank office among others.

For 2019, only Lumbini and Madhesh move upwards by one rank after the simulation, while other provinces maintain the same ranks post-simulation. Madhesh province faces the same issues as in the previous year, which further strengthens the argument that it needs to work on improving access to finance and create a better environment for generating employment for local citizens to improve its competitiveness.

Table 3.11 *What-if* Competitiveness Simulation for Financial, Businesses, and Manpower Conditions

Year	2018				2019			
Economy	**Rank**		**Score**		**Rank**		**Score**	
	Before	After	Before	After	Before	After	Before	After
Bagmati	1	1	2.0398	2.0398	1	1	2.0583	2.0583
Province 1	2	2	0.2410	0.2991	2	2	0.2679	0.3310
Gandaki	3	2	0.2348	0.3539	3	3	0.0804	0.1454
Lumbini	4	4	0.0298	0.1671	4	3	0.0455	0.1493
Sudurpaschim	5	5	-0.3573	-0.2002	5	5	-0.1804	-0.0254
Karnali	6	6	-0.7749	-0.5709	6	6	-0.9486	-0.6237
Madhesh	7	5	-1.4132	-0.5611	7	6	-1.3232	-0.4782

3.4.4 Quality of Life and Infrastructure Development

In the last environment, Quality of Life and Infrastructure Development, several areas of improvements in competitiveness for all the provinces exist. Across other environments, Bagmati remains at the top of the rankings before and after the simulation but in this environment, even the other provinces rank first after simulation (Table 3.12).

Madhesh reached the first position after the simulation in 2018. For Madhesh, this meant working on maintaining its student-teacher ratio, creating policies to manage its densely populated areas, and providing access to mobile phones for its population. Unfortunately, in 2019, the same indicators worsened, which decreased its competitiveness. This moved Madhesh back to the sixth position, while after the simulation, it could still reach the third rank.

In the following year, Gandaki reached the top position after the simulation. Gandaki, therefore, should aim for policies that help the province to increase its cargo handling capacity by maintaining a port with India and increasing its expenditure on education. In addition,

the population density has also considerably increased in Gandaki. Thus it needs to further amplify its road network. Policies to cater for these issues should help boost Gandaki's competitiveness in this environment.

Table 3.12 *What-if* Competitiveness Simulation for Quality of Life and Infrastructure Development

Year	2018				2019			
Economy	Rank		Score		Rank		Score	
	Before	After	Before	After	Before	After	Before	After
Bagmati	1	1	1.5302	1.6432	1	1	1.4790	2.2218
Madhesh	2	1	0.5261	1.3152	6	3	-0.6964	0.2659
Lumbini	3	2	0.3854	0.7125	4	3	0.1366	0.5868
Gandaki	4	2	0.3316	0.6848	2	1	0.9229	1.3077
Province 1	5	3	0.0089	0.5097	3	3	0.2487	0.6251
Sudurpaschim	6	6	-1.0356	-0.3035	5	3	-0.2677	0.2717
Karnali	7	6	-1.7467	-0.7833	7	5	-1.8231	-0.9034

3.5 Conclusion

The analysis and *What-if* simulations in this chapter help provide meaningful insights into the competitiveness structure of the provinces. The conclusions from this chapter can form a basis for further policy interventions. While the competitiveness analysis results showcase the economic situation across the provinces, the *What-if* simulations help in understanding the areas for improvement. Further research into data points is sure to add to the outcomes of the analysis and help structure provincial interventions in the following years.

While the *What-if* simulations can provide intervention points based on the current indicators, some unexpected events, such as natural disasters or pandemics, can alter the overall intervention plans of the provinces. As a result, the provinces need to update their overall intervention strategies and act accordingly. Nepal has almost recovered from the earthquake but it still is struggling to manage the pandemic. This will have significant implications for the seven provinces' current and future priorities and competitiveness. To provide the stakeholders better insights, in the following chapter, the study takes into consideration a few key indicators that have been hit hard by COVID-19 and discuss in detail what this means for the overall performance of Nepal's provincial governments moving forward.

04

COVID-19 and Provincial Competitiveness

Chapter 4 COVID-19 and Provincial Competitiveness

4.1 COVID-19 in Nepal

Nepal reported the first confirmed case, also the first confirmed case in South Asia, of novel coronavirus (COVID-19) in January 2020 (Bastola, et al., 2020). Two years later, by January 2022, Nepal had confirmed more than 896,584 cases of COVID-19 and over 11,635 related human casualties.

4.1.1 Trends across provinces

The first reported case of COVID-19 was in the Bagmati Province in January 2020. The remaining provinces too began reporting confirmed cases of COVID-19 in the following months. By late 2020, all 77 districts of Nepal had reported at least one confirmed case of the virus (WHO, 2021). However, the overall spread of the virus across provinces and districts varied depending upon population density, availability of virus testing facilities, proximity to Indian cities, and overall implementation of the nationwide (and later localised) lockdowns.

Nepal saw an influx of COVID-19 cases across all provinces, mainly due to the high mobility of migrant workers across the Nepal-India borders

Except for Karnali, all the six provinces share an open border with India where COVID-19 had taken severe form. However, Karnali still remains one of the key regions in Nepal from where seasonal migrant workers migrate to India for seasonal and long-term employment opportunities. As a consequence, Nepal saw an influx of COVID-19 cases across all provinces, mainly due to the high mobility of migrant workers across the Nepal-India borders (Pantha, Acharya, Joshi, & Vaidya, 2021). India reported one of the highest numbers of COVID-19 cases during the first wave of the pandemic (Kumar, 2021). The subsequent spread of COVID-19 had been evident in Nepal in the following weeks and months (Figure 4.1).

Figure 4.1 Daily number of COVID-19 cases
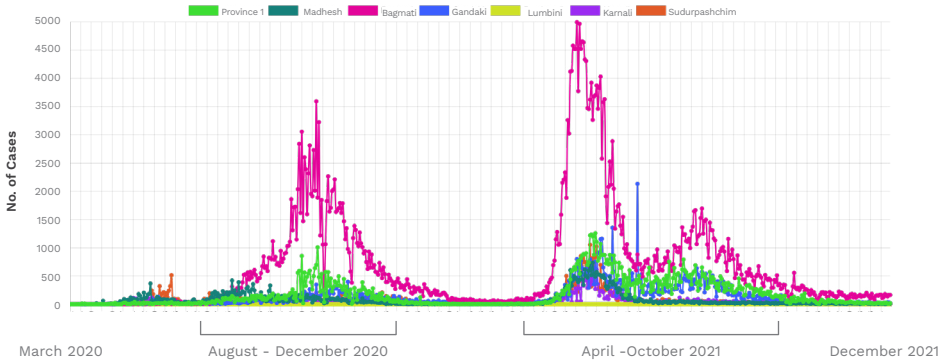
Source: MoHP

4.1.2 Government Response to COVID-19

In early 2020, Nepal created the COVID-19 Crisis Management Center (CCMC) to manage the country's overall response to the pandemic, including managing related internal as well as external affairs and Nepal's coordination with all the bilateral and multilateral institutions and governments around the world. As all issues related to COVID-19 were decided by CCMC, there were issues related to ineffectiveness and irrelevance of the same response mechanisms and efforts across all provincial and local levels as reported by the local governments. The overall flowchart of Nepal's COVID-19 response mechanism is outlined in Figure 4.2.

Figure 4.2 COVID-19 Decision Making Flow Chart

Central Government (Ministries) and COVID-19 Crisis Management Committee/Center

Information like need of resources, returnees, no. of cases identified etc.

HEOC

NEOC

Policies & Guidelines on quarantine management, tracking, testing logistic management, use of PPE, record keeping etc.

Information like need of resources, returnees, no. of cases identified etc.

Provincial Crisis Management Executive Committee

District Level Covid-19 Crisis Management Center

Directives on service delivery such as patient management, resource mobilization, transportation of patients, quarantine management

Directives on quarantine management, resource mobilization, tracing/tracking

Information particularly updates on treatment, tracking, requirement of needs

COVID -19 Management at the Local Level (Municipality and Wards)

Technical guideline support

Sharing of financial details, treatment details, requirement of needs

Source: Decision Making of the Government of Nepal for managing the Covid-19 Pandemic, Foundation for Development Management

*Dotted lines indicate weak linkage

Note:
- Health Emergency Operation Center (HEOC) coordinates with the National Emergency Operation Center (NEOC) at all times for any health-related disaster response. In case there is any need for health-related human resources, materials or hospitals, then the Health Minister / MoHP calls HEOC for data on any health-related resources and if required will mobilize it in coordination with NEOC.
- National Emergency Operation Center (NEOC) is a high level committee with the responsibility of managing all kind of disaster in Nepal. It is located in the Ministry of Home and reports to the Minister of Home and actively coordinated with all security agencies. It was the prime agency to coordinate all activities in April 2015 earthquake in Nepal.

4.1.2.1 Budget Disbursement

As COVID-19 continued to evolve over the months, one of the key objectives of the provinces' budgets and programs for FY 2020/21 was to manage and mitigate immediate and potential long-term impacts from the pandemic. Due to the pandemic, all seven provinces struggled to meet their annual expenditure targets as COVID-19 severed their budget implementation and program execution processes. However, most provinces used the opportunity to rationalise their spending, reducing unproductive expenditure and activities. As expected, all provinces prioritised vaccination and COVID-19 mitigation works in their FY2020/21 budgets. To support these plans, the federal government also provided financial assistance to all provinces to help provincial authorities manage immediate financial resources for quarantine, testing, isolation, and transportation among others.

> Due to the pandemic, all seven provinces struggled to meet their annual expenditure targets as COVID-19 severed their budget implementation and program execution processes.

As of August 2020, the provinces had spent NPR 1.5 billion on combating COVID-19. Sudurpaschim spent the highest sum (NPR 429.8 million), while Bagmati province spent the least (NPR 136.7 million). As of May 2021, NPR 12.09 billion had been spent for the prevention, control, and treatment of the COVID-19 pandemic from the NPR 17.57 billion deposited by provinces and local governments in the COVID-19 Fund and approved through the budget (Nepal Economic Survey, 2020/21).

4.1.2.2 Establishment of COVID-19 Funds in the Initial Phase

The federal, provincial, and municipal governments' administration of COVID-19 funding and resources has been somewhat satisfactory. These steps taken by the federal and provincial governments proved helpful. It allowed the authorities to resume economic activities, step-by-step, so as to minimise the overall effects of COVID-19 on their competitiveness.

During the pandemic, the provinces announced their budgets for the FY 2020/21 and allocated the budget specifically as COVID-19 Fund as shown in Figure 4.3.

Province 1 allocated NPR 1100 million to COVID-19 Funds, strengthened the health infrastructure of the hospital (i.e., designated Covid-19 Biratnagar Koshi Hospital), and purchased medical equipment for other major hospitals like Mechi Hospital. The province allocated NPR

Figure 4.3 Provincial Allocation of COVID-19 Funds
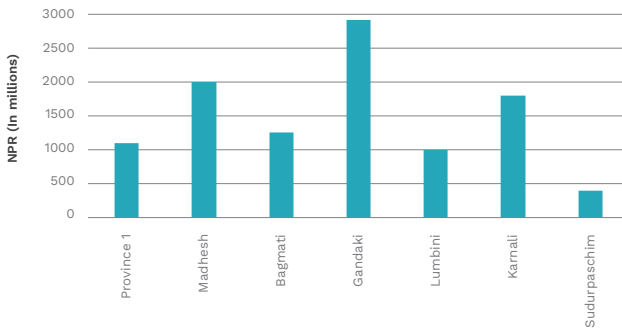
Source: NIPoRe Compilation

five million to compensate the families of frontline employees who die of COVID-19 while on the job, in addition to allocating funds and incentives for the frontline workers (Dhurba, 2020).

Madhesh has been impacted the most by the pandemic. Madhesh established a Coronavirus Infection Prevention, Control, and Treatment Fund in FY 2020/21 with a budget of NPR 250 million to combat the pandemic's effects. It has also set aside NPR 455 million to convert Janakpur Regional Hospital into a health sciences academy and NPR 700 million to improve medical facilities and ensure that medications are available in times of need. Each provincial minister from Madhesh contributed his/her one month's salary to this fund which was highly commendable.

Furthermore, Bagmati established an NPR 500 million COVID-19 Control Fund and devised working guidelines on how to control the outbreak (Bidari, 2020). For FY 2020/21, Bagmati allocated NPR 757 million to the COVID-19 fund including the development of medical infrastructure.

Gandaki set aside NPR 2.91 billion in FY 2020/21 to combat COVID-19 by constructing high-quality quarantine centers and specialist hospitals, as well as purchasing test kits and other medical equipment (Prasain, Shrestha, 2020).

Similarly, Lumbini allocated NPR One billion in FY 2020/21 as an emergency COVID-19 fund along with physical health infrastructure and established a COVID-19 Fund close to NPR 210 million (Prasain, Shrestha, 2020).

The case of Karnali was quite different as the province had to deal with the twin problem of tackling the COVID-19 pandemic and food shortages. Karnali allocated a budget of NPR 305.9 million for the

COVID-19 Action Plan in FY 2020/21 (Kathayat, 2020). The province set aside NPR 1.5 billion for health, education, and food programs in FY 2020/21 to tackle the COVID-19 outbreak (Prasain, Shrestha, 2020). The province also focused on buying medical supplies and increasing hospital beds. Karnali is prone to food shortages, so providing food security is a key budget concern. The province set aside NPR 500 million in anticipation of a possible food crisis when more migrants from other countries arrive.

The Sudurpaschim government had set up a fund of NPR 400 million to prevent and contain the pandemic. The province also declared FY 2020-21 as the "Health Service Improvement Year." In seven districts, the province decided to construct 10-bed COVID-19 treatment hospitals.

4.1.2.3 Enforcement of Lockdown

Strict lockdowns were considered the most effective instruments to check COVID-19 spread during the initial days of the pandemic. Nepal too imposed a strict nationwide lockdown for the duration of 24 March to 21 July 2020. This step helped Nepal in managing the crisis for a while. However, over time it had severe effects on economic activities at the federal, provincial, and local levels. After 21 July 2020, even during the second and third waves of the pandemic, the lockdowns became more localised rather than nationwide. These steps, from July 2020 onwards, helped Nepal resume some of the economic activities across provinces at limited workers' capacity. After almost four months of complete lockdown, resuming these activities gave Nepal's industries and companies across the provinces a much-needed economic boost and recovery.

4.1.2.4 Vaccination Rollout

In January 2021, almost after one year since the country reported the first confirmed case of COVID-19, Nepal formally administered a national COVID-19 vaccination drive. As of 30 January 2022, Nepal had vaccinated 74 percent of the citizens (aged 18 and over) with at least one dose and 69 percent with a full dose (WHO, 2022). At the provincial levels, the chief ministers of all seven provinces launched the COVID-19 vaccination campaign, following the federal government's steps. The federal and provincial governments have helped Nepal in creating safer working environments and helping to resume physical activities thereby slowly making provinces economically vibrant. As Nepal planned to fully vaccinate 100 percent of the citizens (aged 18 and over) by mid 2022, it will help local enterprises and businesses in resuming most of their physical activities by mid-2022 (WHO, 2022). This will help Nepal recover from the economic losses due to the

pandemic at all levels of the government. However, existing data shows that the share of vaccinated people as a percentage of the provincial population varies.

As it can be seen in Figure 4.4, Bagmati province stands at the front in vaccinating its population in comparison to the other six provinces. Bagmati, Province 1, Gandaki and Lumbini have administered first dose to over 60 percent of their population. Madhesh, Karnali, and Sudurpaschim have vaccinated around 55 percent of their population. With regards to administering the second dose, Gandaki and Bagmati have vaccinated close to 70 percent of their population. Overall, Madhesh, Karnali, and Sudurpaschim lagged behind in terms of vaccinating their population. Due to difficult geographical terrain, Karnali could not administer the vaccination programme properly. It mainly affected the disabled groups because of the poor door-to-door vaccination campaigns (Maharjan, 2021). Floods and landslides swept away several electricity poles and blocked roads in Sudurpaschim which halted the vaccination rollout in the province (Singh, 2021).

> As Nepal plannned to fully vaccinate 100 percent of the citizens (aged 18 and over) by mid-April 2022, it will help the local enterprises and businesses in resuming most of their physical activities by mid-2022

Figure 4.4 Province-wise Vaccinated Population (in percent)
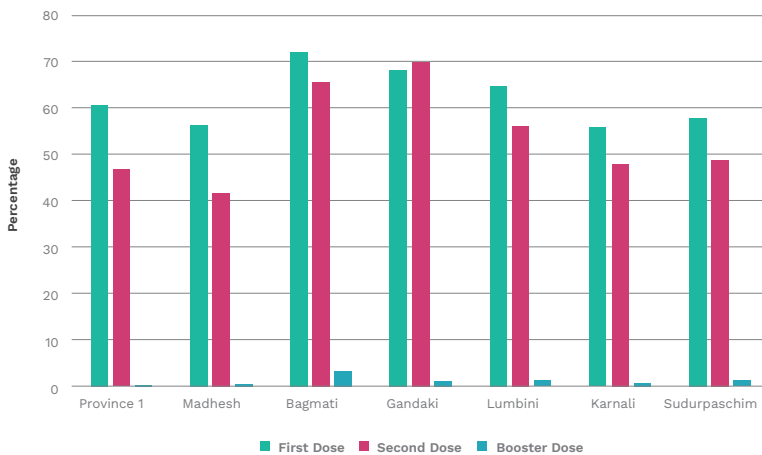
Source: Situation Reports of MoHP
Note: Johnson & Johnson vaccine doses have been integrated into second dose vaccines.

4.2 COVID-19 and Provincial Competitiveness

Nepal was facing major economic challenges even prior to COVID-19 hitting the country. The pandemic further worsened the country's already crippling economy (Lena Michaels, 2020). The pandemic-related lockdowns, travel restrictions, and strict measures for cross-border movement of people and goods have affected Nepal's economy in the worst posisble way thus making the pandemic one of the major crises that Nepal witnessed in its modern history. Various short-term measures taken by Nepal though could have varying long-term impacts on the competitiveness of all the seven provinces.

The current study takes into consideration the visible impacts of COVID-19 on the overall competitiveness of Nepal's seven provincial governments. To do this, the current study takes into consideration a range of indicators for which sufficient data points were available at the provincial levels to help us gauge the overall economic performance during the pandemic period at the provincial level.

4.2.1 Gross State Domestic Product growth

The seven provinces differ significantly in terms of their geographical size and population. In terms of land area, Karnali is the largest province. However, it has the lowest population. Bagmati has the highest population among the seven provinces. On the contrary, Madhesh has the highest population density despite being the smallest in size.

Figure 4.5 GDP growth rate (in percent)

Source: CBS, 2021

Bagmati had the highest share (*37.7 percent*), while Karnali had the lowest share (*4.3 percent*) of Nepal's GDP (*NPR 4266.32 billion-at producer's price*) in FY 2020/21 (Nepal Economic Survey, 2020/21). Province 1 ranks in second place, accounting for 15.6 percent of the country's overall economic output. Lumbini contributes 14 percent of the country's total GDP, totalling NPR 597 billion, while Madhesh comes in fourth with 13.2 percent (Nepal Economic Survey, 2020/21). Gandaki accounts for 8.7 percent whereas Sudurpaschim accounts for 6.9 percent of the country's GDP. In comparison to the previous fiscal year, the GDP share of Bagmati increased, while the GDP share of Province 1, Madhesh, Karnali, and Sudurpaschim declined marginally (Nepal Economic Survey, 2020/21). Following the decreasing impact of COVID-19 in the second quarter of FY 2020/21, economic activities continued to expand as usual, and the economic growth rates of all provinces were projected to be above 3.5 percent based on these evolving circumstances (Nepal Economic Survey, 2020/21). As a result, the national GDP growth rate at producer's price was projected to be 3.98 percent, with Bagmati having the greatest growth rate of 4.65 percent and Madhesh having the lowest at 3.52 percent (Nepal Economic Survey, 2020/21). However, due to the fast-expanding second wave of COVID-19, meeting the predicted province-by-province GDP growth rates has been difficult. All provinces's GDP growth rate increased in the current FY compared to the previous FY except Sudurpaschim (Figure 4.5). Between FY 2018/19 and FY 2019/20, GDP growth rates for all the provinces' have declined. Bagmati experienced the greatest impact of COVID-19 in the previous FY, resulting in the province's worst GDP decline (Nepal Economic Survey, 2020/21).

> Following the decreasing impact of COVID-19 in the second quarter of FY 2020/21, economic activities continued to expand as usual, and the economic growth rates of all provinces were projected to be above 3.5 percent based on these evolving circumstances

4.2.2 GSDP Sector-wise (Primary, Secondary, Tertiary)

Figure 4.6 Province-wise GDP Composition (in percent)
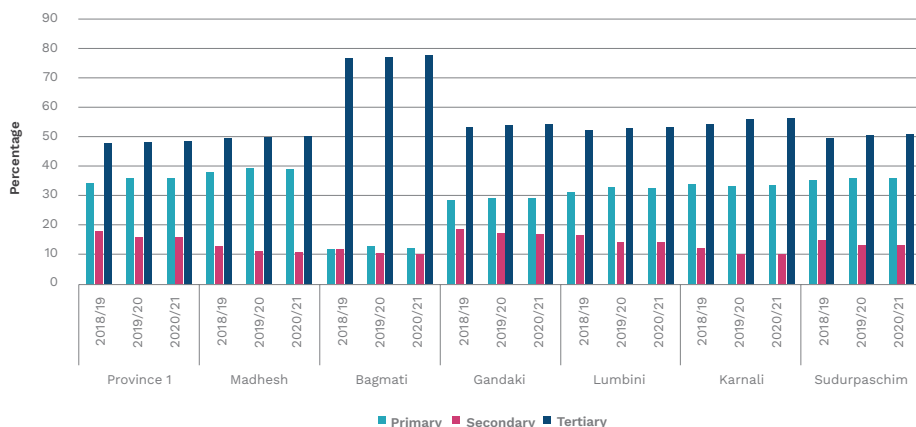
Source: CBS, 2021

4.2.2.1 Primary Sector

Figure 4.6 shows the primary sector's composition in GDP for FY 2018/19, 2019/20, and 2020/21 for all provinces. Among seven provinces, Madhesh has the highest share (39 percentage) of primary sector's contribution to provincial GDP in FY 2020/21 (Nepal Economic Survey, 2020/21). The province encompasses eight of Nepal's Terai districts. Madhesh, considered as the grain basket of the country, is falling behind in terms of food and nutrition security respectively. Despite the tremendous potential, poor irrigation and flooding during the monsoon season have negative impacts on Madhesh's net food production. In terms of agriculture's contribution to GDP by province, Bagmati province has the lowest, at 12.3 percent (Nepal Economic Survey, 2020/21).

Bagmati has a high food deficit (but not due to low production) because it contains densely populated metropolitan areas like Kathmandu, Lalitpur and Bharatpur, as well as other major cities such as Hetauda, Bhaktapur, Dhulikhel, and Banepa (Department of Agriculture, 2018).

In Province 1, agriculture contributes 35.7 percent of its GDP (Nepal Economic Survey, 2020/21). The Terai and Inner Terai districts of this province are fertile and often considered as major areas for the production of cash crops in the province, producing a huge amount of

food grains for the local population. Rice, maize, jute, and sugarcane remain the key crops grown in the Terai region, but tea, cardamom, ginger, and citrus are grown in the hills and high hills which provide the majority of income. Over 90 percent of the total tea production in Nepal takes place in Province 1.

Gandaki is also primarily an agricultural province. Agriculture employs 64 percent of the population. This province has a diverse climate ranging from Terai to the Mountains. Except for rice, the province has a shortage of fruits and vegetables and is self-sufficient in cereals.

Lumbini is a high-potential province for agriculture output, including five core Terai districts, one inner Terai district, and six other hill districts. In terms of cereal grains and pulses, the province is self-sufficient.

Karnali stands in the fourth position in terms of agriculture's contribution to GDP (33.5 percent) by province (Nepal Economic Survey, 2020/21). The high-value medicinal plants can be a source of prosperity in the Himalayan region, which is known as the home of Himalayan Ayurvedic Plants. Karnali's agriculture vulnerability was most affected during the COVID-19 pandemic, as it had been suffering from food insecurity for a long period and was receiving assistance from food-aid programs run and supported by the government authorities and the development partners. The vast potential areas are still virgin and rely on cereal grain imported from the Terai region. This province may attain economic security, if not food security, by promoting organic farming while improving production.

> Karnali stands in the fourth position in terms of agriculture's contribution to GDP (33.5 percent) by province. The high-value medicinal plants can be a source of prosperity in the Himalayan region, which is known as the home of Himalayan Ayurvedic Plants.

Sudurpaschim occupies the second position in terms of agriculture's contribution to GDP (36.1 percent) by province (Nepal Economic Survey, 2020/21).The districts of Kailali and Kanchanpur produce a substantial portion of the province's agricultural output. The other hill districts, on the other hand, can cultivate high-value crops. This province, like other provinces, has placed a higher focus on agriculture.

Poor people across all the provinces were unable to make a living in their villages. This clearly demonstrated that food and livelihood are more important to poorer people than the COVID-19 infection itself. Wage workers, indigenous peoples, and women from marginalised groups in Gandaki, Karnali and Sudurpaschim who were already prone to food insecurity and malnutrition suffered more as a result

of COVID-19 because they lost both external support and coping strategies (Adhikari et al. 2021.). Moving forward, to make agriculture one of the key sectors for the quick economic recovery of Nepal, remaining fallow lands across the provinces could be brought back into agriculture with the right policies and support at the provincial levels. This will aid in the preservation of traditional and indigenous food systems, with positive implications for food diversity, biodiversity, and food culture. On a positive note, COVID-19 presents an opportunity to improve both subsistence and commercial farming systems across all provinces. And if provincial governments and other stakeholders in the government, private sector and development partners aim to further improve subsistence agriculture across the country, they can do so by improving productivity while also diversifying, promoting, and protecting indigenous food systems. In addition, they can also improve existent commercial farming by building a reliant supply network linking farming to markets and ensuring a sustainable input supply.

4.2.2.2 Secondary and Tertiary Sectors:

Gandaki and Karnali had the highest and lowest contributions to Nepal's secondary sector respectively (Nepal Economic Survey, 2020/21). In Gandaki, the sector contributed 16.7 percent to provincial GDP compared to Karnali's contribution amounting to GDP's 10.2 percent (Nepal Economic Survey, 2020/21). Except for Gandaki province, the industrial sector contributes less than 15 percent to the respective province's GDP. According to the Economic Census 2018 conducted by the Central Bureau of Statistics (CBS), Bagmati has the highest number of industries (282,920 in total or 30.6 percent of the total industries in the country) and Karnali has the lowest number (42,807 in total or 4.6 percent of the country's total establishments) industries. The same report also finds that Lumbini has the highest rate of industrial capacity utilisation (64.2 percent), whereas Gandaki has the lowest rate of industrial capacity utilisation (40.0 percent). Although the industry's capacity utilisation has grown since last year as the impact of the COVID-19 pandemic has smoothened, there has been no meaningful gain in the overall usage of the industry's capacity. Because of the concentration of the nation's trade and industry in Bagmati alone, the lockdown has resulted in the largest economic losses in this province among the seven provinces.

As per the census, Bagmati made the biggest contribution to Nepal's service sector. Bagmati alone accounts for over half of all transactions in Nepal's service sector. At the provincial level, the sector contributed 77.4 percent to Bagmati's GDP. The increase in service sector share was mostly due to an increase in real estate and transportation transactions. Province 1 had the lowest GDP contribution from the

service sector (48.6 percent). Except for Province 1, the service sector contributes more than 50 percent to the respective province's GDPs.

COVID-19 has negatively impacted the service sector. The lockdown, in particular, had a severe impact on Nepali wage earners, informal sector workers, and self-employed merchants (Karn, 2021). The tourism and public transport sectors have been most affected while the real estate, financial services and other sectors have been less affected (Khanal, 2020). The service sector is expected to improve further in the following year, with the steady reduction in the incidence of COVID-19 and the establishment of hotels and restaurants, domestic tourism-related businesses, wholesale and retail commerce, and schools (Prasain, 2020).

The COVID-19 pandemic has resulted in significant business failures and job losses, with financial strains being felt most acutely in Bagmati, while other provinces can rely on agriculture (Prasain, 2020). The pandemic's uncertain impact on socio-economic indicators of all provinces' will be amplified depending on how the events play out, especially across two key fronts. First is the country's reliance on tourism, trade, and foreign employment, and the consequences that will ripple through the services and industrial landscape. The second is how COVID-19 overwhelms a woefully inadequate health infrastructure along with the efficacy of vaccination rollout in all provinces.

> The pandemic's uncertain impact on socio-economic indicators of all provinces' will be amplified depending on how the events play out

4.2.3 Unemployment

The problem of unemployment is one of the major strains on Nepal's economy. According to the Nepal Labour Force Survey of 2017-18 (CBS, 2018), only 7.1 million people out of 29 million working-age people were employed, i.e., an unemployment rate of around 11.4 percent. According to the survey, the highest rate of unemployment is in Madhesh (20.1 percent), while Bagmati has the highest employment rate (43.8 percent).

Nepal has an ongoing trend of a huge number of individuals migrating for foreign employment opportunities, primarily to India and other countries in the Middle East and in Southeast Asia. Though there is no official record on the number of Nepali migrant workers in India, mainly due to an open border between Nepal and India and the non-requirement of special permits for the Nepali workers to work in India, some estimates put these figures at around eight million compared to about six million workers in other key migrant worker

recipient countries (Jha, 2020). This is a sizable outflow for a country with a population of about 30 million.

Figure 4.7 Percentage of Migrant Workers by Province

Percentage of Total Workers
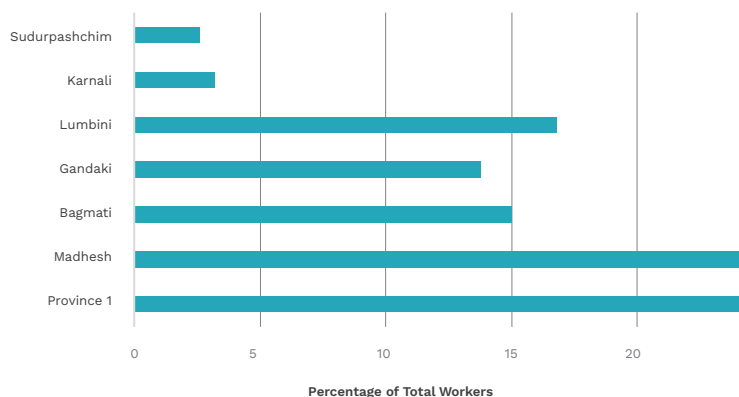
Source: GoN, MoLESS, 2020

The highest population proportion of individuals migrated from Province 1 and Madhesh in FY 2018/19, followed by Lumbini and Bagmati (Figure 4.7). Whereas, Karnali and Sudurpaschim had the least share of population of recorded migrations for the same FY; this low share of migration may have been underreported because most of the migration from these regions is limited to India. Also, most migrant workers to India move to different Indian cities on a seasonal basis and this makes an official recording of their numbers a bit challenging (Government of Nepal, Ministry of Labour, Employment and Social Security, 2020).

With growth figures plummeting to 2.3 percent for FY 2019/20 from an average rate of 6.9 percent between 2016 and 2019 (The Asia Foundation, 2021), COVID-19 has further exacerbated the unemployment problem in the country. During the four-month-long lock-down of the pandemic, about 61 percent of businesses closed down. An estimated 22.5 percent of the employees in the business sector were laid off as a result. Of those, almost 40 percent worked in the hotel and tourism sector and about 30.5 percent worked for SMEs (Jha, 2020). Similarly, workers in the informal sector and home-based work were severely impacted by the economic downturn due to the pandemic. About 81 percent of the workers in the informal sector and 1.4 million in home-based work were reported to be at the risk of losing jobs (Poudel, 2020). By late April 2020, an estimated one in ten Nepalis had lost their jobs. Moreover, the fall in wage growth rates from 10.04 percent last year to 1.72 percent this year is also a

very concerning signal for the current employment situation in the country (The Asia Foundation, 2021). Though there are no estimates available for the trends for the provinces, given COVID-19's severe impacts on national figures, it can be inferred that the pandemic has had severe impacts on the provinces.

4.2.4 Health Budget

Nepal's health budget increased from NPR 23.81 billion in FY 2010/11 to NPR 122.79 billion in FY 2021/22, representing an absolute growth of 415 percent in total, or 16 percent per year on average (Fiscal Budget Speech, MoF, 2021). The health budget has increased significantly in absolute terms and as a percentage of the total budget since FY 2019/20, particularly in FY 2020/21 and FY 2021/22. This substantial growth can be attributed to the COVID-19 Prevention and Control Programme that mandated major budget increases to meet the growing health care budget needs. The health budget comprises the budget for federal government (MoHP) and conditional grants to provincial and local governments. The trend of government health spending as a percentage of GDP is presented in Figure 4.8 below.

Figure 4.8 Composition of Health Sector Budget
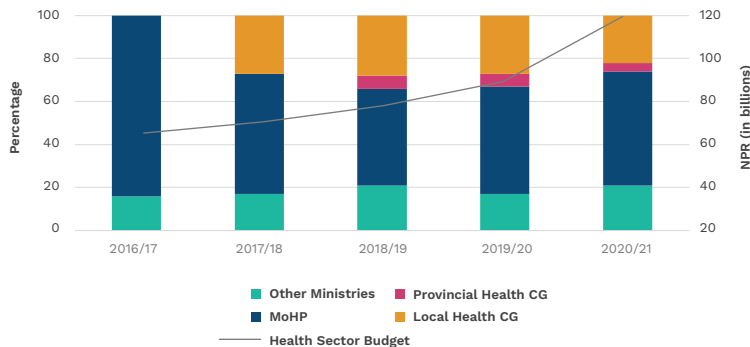
Source: MoHP and UKaid/Nepal Health Sector Support Programme (NHSSP, 2020).

According to the 2015 Constitution of Nepal, consolidated health expenditures are distributed among all three levels of government, but they mostly fall under the control of the central government. The central government's health expenditures increased to 74 percent in FY 2021/22 from 67 percent the previous year. In FY 2021/22, the central government budget was roughly equivalent to the whole consolidated health budget (all three tiers) in the preceding fiscal year. Although provincial governments' budgets increased slightly by NPR 1.7 billion, the share of provincial governments in the total budget remained

unchanged in comparison to the last FY 2020/21. The share of local governments' budget to the total budget fell by seven percent to counteract the rise at the federal level. Even though health and other expenditures have been delegated to other levels of government, the question of whether provincial and local governments have adequate autonomy in expenditure allocations remains unanswered, as they are primarily funded by conditional grants.

Figure 4.9 Province Health Budget
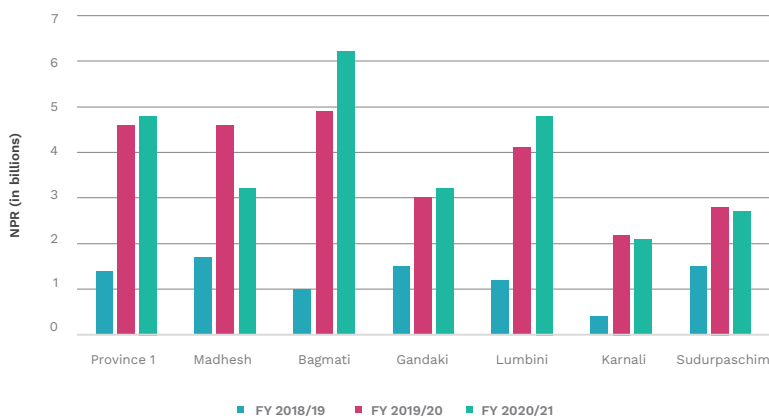
Source: Budget Analysis of MoHP 2018/19, 2019/20, 2019/20

Bagmati's health budget for the FY 2020/21 amounts to NPR 6.20 billion, which is the highest health budget among all the provinces. For the FY 2020/21, Lumbini and Province 1 announced health budgets of NPR 3.20 billion and NPR 4.80 billion respectively. Similarly, Lumbini and Sudurpaschim province's health budgets amount to NPR 2.20 billion and NPR 2.70 billion respectively. Karnali ranks the lowest among all the provinces in terms of provincial health budget which is NPR 2.10 billion. Except for three provinces (Madhesh, Karnali and Sudurpaschim), the health budgets of remaining four provinces increased from FY 2019/20 to FY 2020/21. All province health budgets rose from the pre-COVID-19 pandemic i.e., FY 2018/19 to the midst of the COVID-19 pandemic in FY 2019/20.

4.2.5 Budget Balance

Budget balance is calculated in terms of the percentage of GSDP for the FY 2020/21. The revenue includes actual tax (direct and indirect) generated whereas expenditure comprises actual, recurrent and capital expenditures. Hence, the budget balance is simply the difference between actual revenue and expenditure generated which

is calculated in terms of the percentage of province GDP. All seven provinces had budget deficits for FY 2018/19, totalling 12 percent of total provincial GDP whereas the total provincial budget deficit rose to 22.3 percent of total provincial GDP in FY 2019/20. The budget deficit massively declined to 10.1 percent of total provincial GDP in the FY 2020/21. Karnali had the highest budget deficit in FY 2018/19 (3.3 percent) and FY 2019/20 (7.3 percent) whereas Gandaki (2.6 percent) had the highest budget deficit in FY 2020/21. On average, Bagmati has the lowest budget deficit during all three fiscal years. In FY 2020/21, Madhesh and Bagmati had positive budget balances, meaning a budget surplus. Overall, all the provinces mostly run negative budget balances meaning they generate less revenue to fund their expenditures. The following Figure 4.10 shows the budget balance for three consecutive fiscal years for the provincial governments.

Figure 4.10 Province Budget Balance (in percentage of GSDP)

in percentage of GSDP
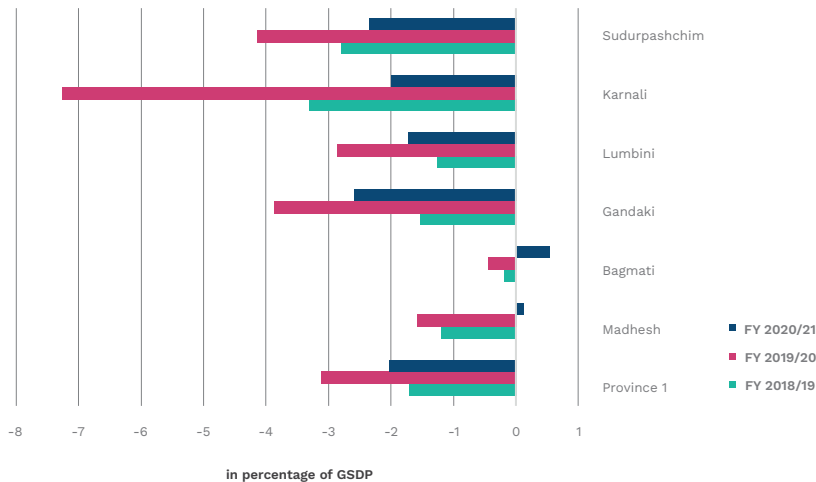
Source: Consolidated Financial Statements for FY 2018/19, 2019/20, and 2020/21, FCGO

In FY 2020/21, Bagmati generated the highest revenue amounting to NPR 35.59 billion whereas Karnali generated the lowest revenue amounting to NPR 22.04 billion. Revenue collection fell across all provinces in the fourth quarter of FY 2019/20 because of the pandemic-related lockdowns and other COVID-19 control measures. Due to the federal government's budget shortage, the amount received by provinces via revenue-sharing dipped in FY 2020/21, resulting in lower revenue-sharing ceilings for provincial governments. The highest share of the revenue for the provinces (46.43 percent) comes from car taxes, followed by home and land registration fees (34.02 percent). Other sources contributed just a small amount to provincial

revenue, indicating that provincial governments' taxation is mostly focused on non-productive industries and sectors. Other service fees account for a significant portion of Province 1's revenue (9.93 percent). Additional administrative costs accounted for the largest percentage (7.44 percent) in Gandaki, whereas business fees accounted for the highest percentage (8.79 percent) in Madhesh. Even during normal times, the provinces failed to generate enough revenues to meet the expenditures. The OSR could not cover administrative expenses so the provinces were dependent on the source of funds from the federal government. COVID-19 exposed the vulnerability of revenue generation capacity of Nepal's all provinces.

All seven provinces implemented balanced budgets in FY 2017/18. Between FY 2018/19 and FY 2020/21, the budgets of Bagmati, Gandaki and Sudurpaschim gradually increased whereas that for Province 1, Madhesh, Lumbini and Karnali increased in FY 2019/20 (in comparison to FY 2018/19) but decreased in FY 2020/21 (in comparison to FY 2019/20). Bagmati has by far the largest budget and Sudurpaschim has the lowest in FY 2020/21. In comparison to the previous FY 2019/20, the total provincial budget increased somewhat to about NPR 264.2 billion in FY 2020/21 and COVID-19 has been responsible for the increase (Devkota et. al., 2021). The budget for the provinces for FYs 2018/19, 2019/20, and 2020/21 are shown in Figure 4.11. Budget sizes grew steadily during the last three fiscal years, except for a few provinces. Internal revenue, royalty and revenue shared with the central government, fiscal transfers, and carryover cash balance from the previous fiscal year will cover most of the expenditure. The provinces' Own-Source Revenue (OSR) base is disappointing, and

Figure 4.11 Province Budgets for FY 2018/19 to FY 2020/21
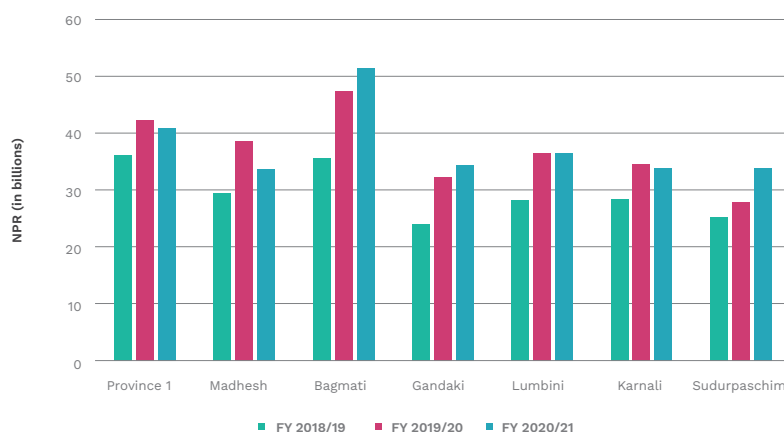
Source: Province Budget Speeches FY 2018/19, 2019/20, and 2020/21

revenue collection is low. The average proportion of OSR in provincial budgets was 11.24 percent (FY 2019/20) and 14.47 percent (FY 2020/21) respectively (Devkota et. al., 2021). Vehicle taxes, home and land registration fees, and a tax on entertainment and advertising, of which around 40 to 60 percent goes to local governments, are the only sources of OSR in the province. Although provincial OSR has been increasing nominally, no major policy adjustments have been implemented to lessen reliance on federal fiscal transfers, which are likely to decrease owing to the pandemic economy. On average, provinces have been unable to spend more than 70 percent of their yearly budgets, with the majority of this spending occurring in the last fiscal quarter (Devkota et. al., 2021). But the provinces still face budget deficits due to very little revenue sources of their own even with the little expenditure that they spend. This shows the heavy dependency of the provinces on fiscal transfers from the federal government to make the provinces' budget. The following graph shows the province budget trends from FY 2018/19 to FY 2020/21.

> Although provincial OSR has been increasing nominally, no major policy adjustments have been implemented to lessen reliance on federal fiscal transfers, which are likely to decrease owing to the pandemic economy.

4.2.6 Openness to Trade

Openness to trade is derived from the total cargo handled by each province divided by the province GDP (Figure 4.12). Madhesh handles the largest cargo among all the provinces, followed by Lumbini and Province 1. The openness to trade index for the top three provinces stands at 1.55, 0.75 and 0.49 respectively for FY 2019/20.

Figure 4.12 Openness to Trade
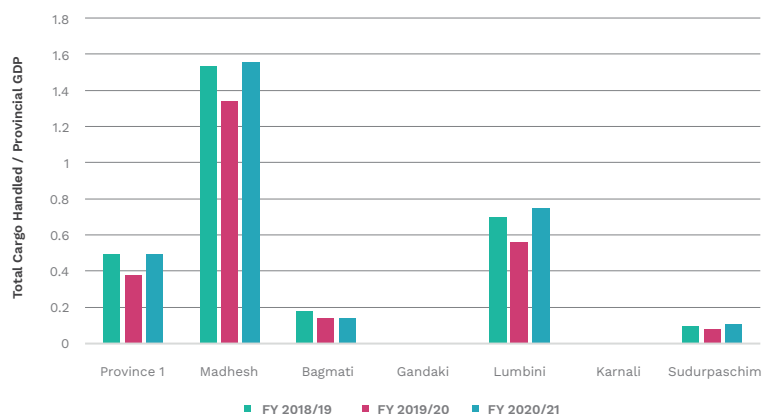
Source: Department of Customs and CBS

When we compare openness to trade in terms of total cargo handled to its GDP in real prices taking FY 2010/11 as the base year, we observe results similar to openness to trade calculated in current prices for FY 2020/21. Madhesh, Lumbini and Province 1 are the top three provinces handling cargo for the fiscal years 2018/19, 2019/20 and 2020/21. In comparison to FY 2018/19, there was a slight decrease in the trading of goods in 2019/20 due to the strict lockdown imposed by the Nepal government while the volume of goods traded increased again in FY 2020/21. When the economy started to get back to normalcy, the increase in imports was due to increased demand for medical equipments, electronic items such as cell phones and computers, gold, petroleum products, and vehicles, among other things.

Nepal, being a landlocked small economy, trades largely with its immediate neighbours, namely, India and China. In addition, Nepal fully relies on transit through neighbouring nations to have access to port facilities for international trade. However, due to the poor state of industrial activities and day-to-day needed resources, the country relies heavily on imports and has a low export base. Nepal mainly imports items like fuel, apparels, gold, iron and steel, machinery and equipments. Therefore, Nepal runs a trade deficit with most bilateral trade partners around the world. Nepal's export-to-import ratio has dropped from 48 percent in FY 2001/02 to 9.2 percent in FY 2020/21 (ADB Macroeconomic Update, September 2021). Due to the pandemic-related restrictions, however, FY 2019/20 had been an exceptional year for commerce for Nepal, with the country's total trade deficit by 15 percent only.

In FY 2019/20, the imports-to-exports ratio was 12.2, down from 14.6 the previous FY implying that Nepal imported USD 12.2 for every dollar exported. According to the most recent NRB data, due to the irregular trade pattern in the previous year when COVID-19 was severe, Nepal's imports decreased by 15.6 percent while exports climbed marginally by 0.6 percent in FY 2019/20. This resulted in a USD 9.1 billion trade imbalance (down from USD 11.4 billion the previous year), or 27 percent of GDP (much improved from a staggering 37 percent the previous year). At border checkpoints, the Nepali Customs Administration collects customs duty, VAT, excise, and other taxes. The collected money contributed 63.21 percent of the total tax revenue in FY 2018/19 and it increased to 64.16 percent of the total tax revenue in FY 2019/20 (FCGO, 2018/19). The customs charge alone accounts for 20 percent of total tax revenue. The three main customs points bordered by India that handled the most cargo in FY 2020/21 are Birgunj in Madhesh, Bhairahawa in Lumbini and Biratnagar in Province 1. The road network is the main medium to facilitate bilateral trade between Nepal and India. Tribhuvan International Airport in Bagmati province has only access to air transportation to facilitate international trade. Karnali and Gandaki have no major customs points to handle the cargo.

> Due to the pandemic-related restrictions, however, FY 2019/20 had been an exceptional year for commerce for Nepal, with the country's total trade deficit by 15 percent only.

As these collected revenues are managed through the federal government, the figures for provincial-level revenue collection are not available. But we can consider provinces sharing borders with India and China, especially border checkpoints with higher trade flows (Birgunj, Bhairahawa, Biratnagar, Nepalgunj and Rasuwa among others), earn a significant amount of revenues from these sources. If the federal government, in the future, decides to benefit respective provinces with these revenues, provinces with these checkpoints are sure to boost their respective provinces' overall competitiveness.

4.2.7 Foreign Direct Investment

The concept of FDI was first introduced in Nepal in 1982 alongside the Foreign Investment and Technology Transfer Act (Investment Policy and Regulatory Framework in Nepal). Over the years, FDI has become a crucial support system for Nepal's frail economic system. Nepal has also established agencies such as the Department of Industry (DOI), Investment Board of Nepal (IBN), and NRB for regulating the FDI activities in the country. The FDIs in Nepal are primarily in sectors

such as hydropower, industrial, manufacturing, service, tourism, construction, agriculture, minerals and energy.

The COVID-19 pandemic has adversely affected economics across the globe. The FDI inflows into the landlocked developing countries (LLDCs) went down by 31 percent to USD 15 billion, which is reportedly the lowest aggregate FDI since 2007 (UNCTAD, 2021). The evidence further projects that FDI inflows in all the landlocked developing countries, including Nepal, to go down in the next few years accounting for the dependence on neighbouring countries for international transportation. During the pandemic years (2020-2021), Nepal has not been an exception and is likely to witness a major fall in net FDI receipts for the next couple of years. Nepal's FDI receipts for the years 2015 - 2020 are highlighted in Figure 4.13. If the same trend continues for the next few years and the country fails to manage enough resources from other alternative sources, Nepal's provincial governments are sure to lose a noticeable extent of their competitiveness in the following years.

Figure 4.13 Nepal's FDI Inflows
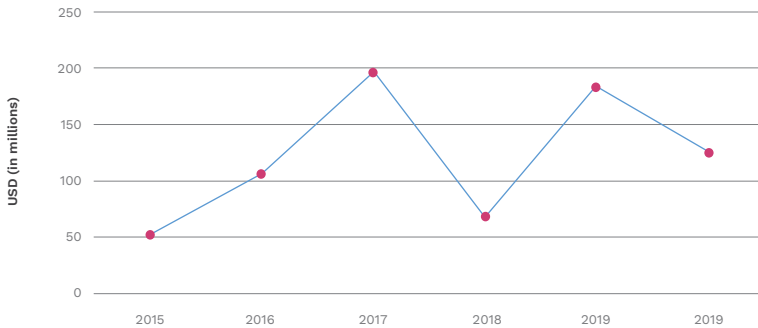
Source: Investment Report 2021, UNCTAD

In order to counter the many new challenges brought about by the pandemic, Nepal has updated its FDI requirements in January 2021 (UNCTAD, 2021).   Foreign investors are now required to contribute 70 percent of their proposed investment prior to operations and the remaining 30 per cent in the next two years. Additionally, the pledged capital needs to be transferred within a year of project approval. The latter provision is made to help Nepal realise its most share of committed FDI by bilateral and multilateral institutions and the governments, which traditionally remains low (Figure 4.14). For example, various investors committed USD 13.74 billion FDI to Nepal during the Nepal Investment Summit in 2017 (Investment Policy and Regulatory Framework in Nepal) and the actual stock inflow has been lower than the committed figure.

Figure 4.14 Foreign Investment Approval and Realization in Nepal
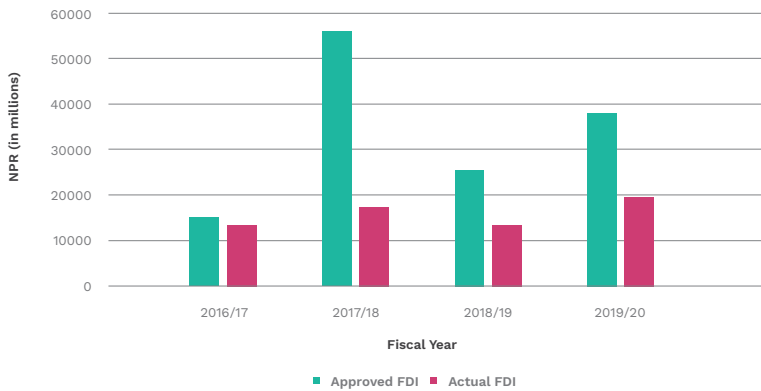
Source: NRB, Economic Research Department, 2021

When it comes to the spread of FDI projects across provinces, they are unevenly distributed. As shown in Figure 4.15, a majority of the FDI stocks are concentrated in Bagmati (approximately 60 percent). Simi-larly, a majority of FDI funded industries are also in the same province as shown in Figure 4.16. Moreover, Sudurpaschim obtained the lowest share of FDI stock and also has the least number of industries.

Figure 4.15 Province-wise FDI Stock
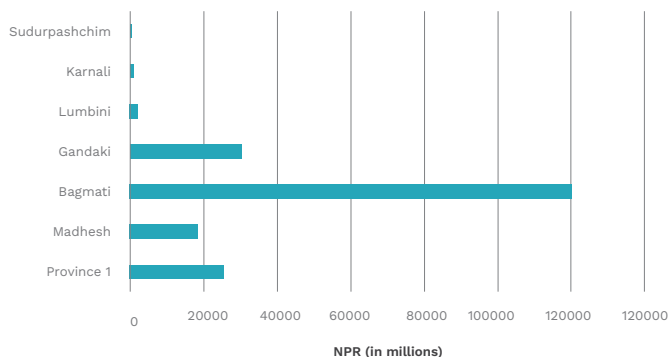
Source: NRB, Economic Research Department, 2021

Figure 4.16 Province-wise FDI Projects
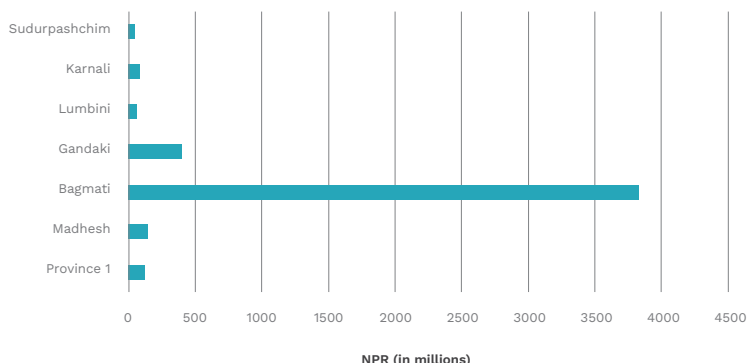
Source: Kharel, 2020

Bagmati has a competitive advantage because of the presence of Tribhuvan International Airport (TIA), the only operational international airport in the country, through which all of the international aviation-based trade in the country is facilitated. Likewise, the province is abundant in skilled as well as unskilled workforce along with the presence of several specialised economic zones. Two of the major economic centers of the country - Chitwan and Kathmandu Valley - are located in this province (Province Policy and Planning Commission, 2019).

Karnali and Sudurpaschim on the other hand are way behind in terms of attracting FDI. Karnali has a huge potential for drawing

investment in hydro projects because the Karnali river, the longest river in Nepal flows through it. It also has huge potential in terms of tourism because notable tourism hotspot (national parks, religious destinations, and hiking routes) are located in that region. Similarly, Sudurparchim also has several landmarks that are of cultural and religious significance along with a few national parks and mountain ranges. These provinces have huge potential for attracting FDI if they are able to leverage these strengths in the hydro and tourism industries respectively.

4.2.8 Official Development Assistance (ODA)

The world economy has significantly been hampered by the health and economic crises ignited by COVID-19, with research indicating that the crisis is disproportionately harmful to low and middle-income countries (Bhattarai & Subedi, 2021). While the prolonged lockdown has already taken a toll on the economies of low- and middle-income nations, the dramatic drop in remittances, FDI, and foreign aid has driven these economies even deeper into disaster.

In 2019/20, ODA disbursements in Nepal grew by 26.9 percent over the previous year, from USD 1,578.5 million to USD 2,002.8 million. However, ODA's contribution to the national budget has decreased from 24.7 percent in FY 2018/19 to 23.3 percent in FY 2019/20. Nationwide, USD 512.9 millions of ODA was disbursed exclusively for COVID-19 response and recovery (out of USD 2,002.8 million in FY 2019/20). A total of 1,672.9 million USD (83.5 percent) of ODA went to on-budget projects, with the remaining USD 329.9 million (16.5 percent) going to off-budget initiatives. This is a major increase over the previous fiscal year when only 78.4 percent of ODA was spent on budget. 71 percent of total ODA came from multilateral development partners whereas bilateral development partners contributed 29 percent of total ODA. In FY 2019/20, the health sector received the most ODA, accounting for USD 318.4 million, or 16.1 percent of overall ODA followed by the financial sector reform (11 percent), housing sector (7.7 percent), energy sector (7.2 percent), road and transportation sector (seven percent).

> In 2019/20, ODA disbursements in Nepal grew by 26.9 percent over the previous year, from USD 1,578.5 million to USD 2,002.8 million. However, ODA's contribution to the national budget has decreased from 24.7 percent in FY 2018/19 to 23.3 percent in FY 2019/20.

Although the Aid Management Information System (AMIS) does not allow for province-level tagging, district-level support has been

aggregated to provide insight into how ODA is distributed at the provincial levels as shown in Figure 4.17. It should be emphasised that the high disbursement (all three fiscal years) in Bagmati is due, in part, to the province's inclusion of the country's capital city, which is the focal point for numerous significant post-earthquake rehabilitation projects. Gandaki received the second-highest ODA disbursements in all three fiscal years among all other provinces. As per Aid Management Information System for Nepal, ODA disbursements in Province 1 were lowest in FY 2018/19 and FY 2020/21, whereas Karnali received lowest the ODA disbursements in FY 2019/20. Overall, ODA disbursements in Madhesh, Bagmati, Lumbini, Karnali and Sudurpaschim gradually decreased from FY 2018/19 to FY 2020/21.

Figure 4.17 ODA Disbursements
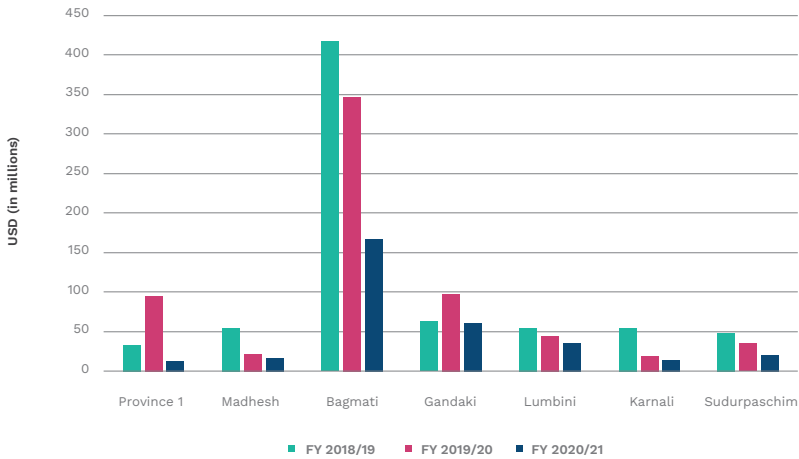
Source: Aid Management Information System for Nepal, MoF

Figure 4.18 Total Provincial Level Disbursements, FY 2019/20
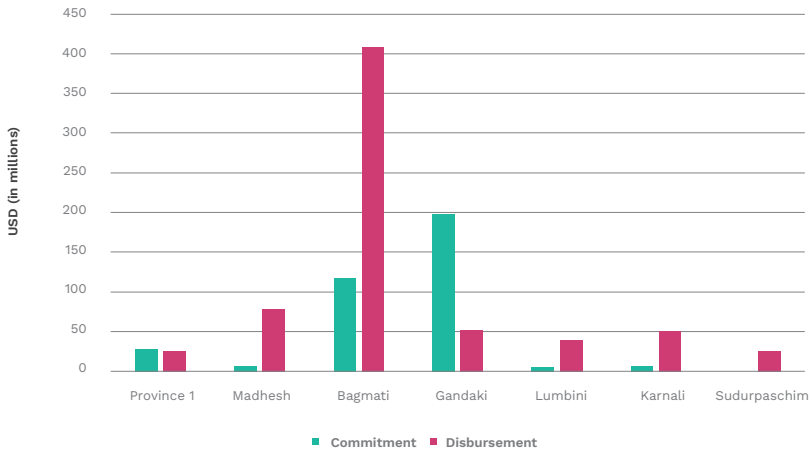
Source: Development Cooperation Report, 2021, MoF

Province 1 received the lowest disbursement in FY 2019/20. The highest and lowest aid commitment was in Gandaki and Sudurpaschim respectively. Moving forward, with more realistic plans and policies, more equitable distribution of ODA across provinces is still possible and this will help all provinces to make their local economic activities livelier thus boosting overall provincial economic performance. Figure 4.18 shows the total provincial level commitments and disbursements in FY 2019/20 showing the differences.

4.2.9 Access to Finance

With the expansion of financial institutions' reach in the past decade, people's access to financial resources has increased. Despite these improvements and the prevalence of reasonable policies, a considerable portion of the Nepali population remains outside of the formal financial system. Even the ones with access to banking and financial services often face quality-related issues. At the end of 2020, nationwide, there were 125.68 banks per 100,000 population. As highlighted in Figure 4.19, the differences in banks per 100,000 population between provinces are significant.

> Despite these improvements and the prevalence of reasonable policies, a considerable portion of the Nepali population remains outside of the formal financial system.

In comparison to other provinces, the concentration of bank offices is larger in Bagmati (1841) followed by Lumbini (925). However, bank offices per 100,000 population are higher in Gandaki (29.06), followed by Bagmati (28.60). Karnali has the fewest branches i.e., 198. However,

Madhesh has the lowest 9.40 bank offices per 100,000 population. Since 2017, bank offices per 100,000 population in Gandaki experienced an exponential rise whereas Madhesh witnessed a slow growth in comparison to other provinces. In comparison to rural and urban communities, banking and financial institutions branches are highly concentrated in metropolitan and sub-metropolitan areas (CBS, 2020). Mountain districts have fewer branches than districts in the hill and Terai regions (CBS, 2020). In comparison to other provinces, Bagmati and Gandaki have a comparatively high number of accounts per 1,000 people (CBS, 2020) whereas the lowest number of accounts per 1,000 people was found in Karnali (CBS, 2020).

Figure 4.19 Bank Offices per 100,000 Population
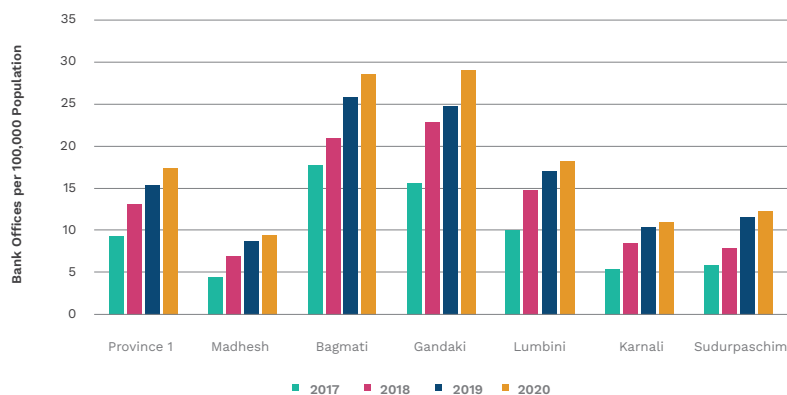
Source: NRB

A NRB-led study titled "Financial Access in Nepal" reveals that financial access has improved during the past few years but financial access to women in rural areas are still lagging behind. In this respect, provinces with a higher proportion of rural population such as Karnali, Madhesh, and Surdurpaschim are likely to fall behind in terms of overall competitiveness as compared to those with higher urban and suburban settlements.

COVID-19 has substantially disrupted Nepal's FinTech landscape. If provinces with higher rural populations focus on promoting FinTech across their rural communities, they can minimise their existing gap. Thus, they can match the competitiveness levels of the urban areas in the following years.

COVID-19 and Nepali Businesses

After the onset of the pandemic, the Nepali business houses witnessed a slowdown in their operations amid the uncertainties and the operational disturbances added by the lockdowns. However, the deposits in banking largely continued in their normal trajectory. Further, the central bank also took expansionary monetary policies and offered adequate relief measures to support impacted sectors.

Hence, banks were flush with liquidity during the initial waves of pandemics. This led to a rather aggressive credit growth approach by banks wherein they continued a 20-25% pace of growth, even during the uncertain times (20-25% average for the industry; few banks reported much higher growth) at much lower ROI of ~8-9% on an average. Since the business activities were still to pick pace, a part of the high credit growth somewhat found its way into non-productive sectors like real estate and the secondary market, both of which witnessed swift growth after the pandemic. Some of our rated entities have also undergone aggressive CAPEX during these uncertain times, mostly along with land and building.

With the gradual normalization of the economy, the business activities have taken pace, and this has led to sharp spikes in import levels, leading to depleting forex reserves. The banks are now tight on liquidity and interest rates are rising. The borrower's businesses are yet to reach their normal levels and it is expected that there would be some pressure on their debt repayment capacity over the near term, since the loan exposure, as well as interest rates, have been rising. This is also seen in rising NPL levels in recent quarters and the trend is expected to continue over the near term, with the central bank's relaxations also ending for most sectors. Severely impacted sectors like tourism could witness elongated pressures as these sectors were provided with the longest moratoriums and the trend of recovery in these sectors is expected to remain slow. The country's macroeconomic outlook and the pressures from the external sector (mainly the Russia-Ukraine conflict) are also likely to pressurize the near-term performances of Nepali business houses.

> Severely impacted sectors like tourism could witness elongated pressures as these sectors were provided with the longest moratoriums and the trend of recovery in these sectors is expected to remain slow.

In our rated universe of private business houses, the majority of the companies are in the non-investment grade category, indicating a relatively weaker ability to withstand such stress. In the past, banks have been accommodating the stress levels of their borrowers through various measures. However, as of now, banks are also under asset quality and liquidity pressures and hence their

ability to absorb a part of stress would remain low. Hence, we expect a slight rise in delay/default rates across the weaker entities. These rates will be more significant in less competitive provinces which already have more vulnerable economies.

Most of the businesses in Nepal are either registered in or have their headquarters in Bagmati or both, although business operations could be located in other provinces. Thus, in the event of sustained liquidity pressures in banking and continued challenges in the macroeconomy, Bagmati is likely to witness the largest spike in delay/default rates. With the adoption of the provincial system, the banks have also diversified controls and growth along with their provincial offices in recent years, which is being reflected in the growth of businesses across the provinces recently. However, most of the incremental businesses are also along already fragmented sectors like poultry, cement and steel. So, a slowdown in the economy could impact a large number of borrowers across the provinces. In this context, ICRA Nepal has not been focusing on province-wise trends in delinquencies (focus is only on the overall trend in delinquencies), which impacts our ability to provide further inputs.

Historically, default rates in the Nepali banking have been low, irrespective of the challenges in the macroeconomy or during abnormal events like earthquakes, blockades or pandemics. This can be somewhat attributed to the flexibility allowed by the banking sector/regulator to accommodate exigencies at the end of their borrowers. Similar support from banks is not expected based on their current liquidity levels.

The current crisis and upcoming possible waves of COVID-19 might severely affect provinces disproportionately. All three tiers of the governments together, therefore, need to identify core affected sectors (like tourism, hospitality or SMEs) and direct their relief measures accordingly. The analysis in this report can help provide those data-driven insights that can guide provincial policy interventions.

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4.2.10 Digital Transformation

While COVID-19 caused havoc across all sectors in Nepal, it brought an unprecedented disruption to the country's digital environment. Nepal witnessed a huge shift in technology across key sectors, mainly education, business, banking and finance, transportation, hospitality, investment and e-commerce among others. Prior to the pandemic, the government and public were apprehensive about the idea of incorporating digital technology into their day-to-day activities. However, the necessity brought about by the pandemic-related restrictions provided an opportunity for the government and the private sector to integrate technology into almost every key economic sector of the country, both at the federal as well as at provincial levels. If continued in effective ways in the future, these developments are likely to make the economic activities of the provincial companies and businesses more efficient thus helping them achieve higher competitiveness.

The education institutions, that were forced to remain closed for months due to COVID-19, resumed their classes using online platforms along with policy, guidelines and product support systems from the government entities, private sector, and the development partners. For example, within months since the beginning of the pandemic, the Ministry of Education, Science, and Technology (MoEST) released the "Guideline for Facilitation of Student Learning through Alternative Means" along with a learning portal named "Sikai Chautari". While the former was aimed at supporting schools and colleagues, the latter was aimed at meeting the needs of primary and secondary students (Gyawali & Bhatta, 2021). Similarly, key stakeholders also developed and broadcasted a remote-learning radio program "Radio Schools" to facilitate teaching and learning during the pandemic (Radhakrishnan-Nair, Aedo, Aryal, Sherpa, & Sharma, 2020). These programs also benefited students and teachers across Nepal's rural and mountainous regions where high-speed and stable internet facilities are often scarce.

> During the month of August-September 2020 alone, there were digital non-cheque transactions worth NPR 215 billion, cards transactions worth NPR 34.1 billion, mobile banking worth NPR 20.3 billion, internet banking worth NPR 4.7 billion, and digital wallet transactions worth NPR 7.3 billion

Similarly, the technological shift in the banking and financial sector has been extraordinary during the COVID-19 crisis. Among the 50,000 people employed in Nepal's banking sector, about 8,000 banking staff

were infected with COVID-19 during the first wave of the pandemic (Parajuli, 2021). Banks being one of the most essential services for the consumers were encouraged to employ safer ways to provide their services. The banks and financial institutions (BFIs) then were encouraged consumers to use their internet-based platforms for transactions (KC, 2020). This resulted in considerable growth in new card subscriptions (by 9.48 percent), mobile banking (by 35.46 percent) and internet banking (by 12.41 percent) in FY 2019/20. (Pradhan, n.d.) The use of technology-based platforms for financial transactions during the pandemic has been unprecedented. For example, during the month of August-September 2020 alone, there were digital non-cheque transactions worth NPR 215 billion, cards transactions worth NPR 34.1 billion, mobile banking worth NPR 20.3 billion, internet banking worth NPR 4.7 billion, and digital wallet transactions worth NPR 7.3 billion (Pradhan, n.d.).

To support the citizens in having easy access to BFIs and related services, the Nepali digital payment companies also came up with new products and services that resulted in a major surge in new users since the pandemic-related restrictions began in late March 2020. For example, eSewa, the pioneering digital wallet in Nepal has reached an estimated total of five million registered customers in the country, with partnerships with 51+ banks and financial institutions and transactions worth almost NPR 600 million per day (eSewa, March 16, 2022). Similarly, PrabhuPay saw a 30 to 40 percent increase in its transactions, ranging from services like utility payments, mobile top-ups and remittance transfers. Likewise, IMEPay saw a 30 percent increase in new users during this period (Agrawal, 2020).

Additionally, many businesses including small businesses have also incorporated contactless payment options for their buyers to overcome COVID-19 transmissions through banknotes and coins. For example, Fone Pay - the leading Payment System Operator in Nepal - shared that their merchant base has reached 600,000 persons in Nepal and that they partnered with more than 61 BFIs, financial institutions and other payment wallets; this reflects the wide penetration of the contactless payment system in the country. In this context, a comparison of NRB's Payment Systems Indicators data from July/August 2020 with the data from July/August 2021 (see table 4.1) shows that there has been remarkable growth across almost every payment system. The number of Payment System Providers has doubled from 14 to 28 and the number of wallet users has increased by 47.5 percent within just one year as COVID-19 became even more serious during this period thus encouraging consumers to opt for safer transactions.

05

Policy Recommendations

Chapter 5 Policy Recommendations

5.1 Policy Recommendations

5.2 Way Forward

Policy Recommendations

The current study, being the first of its kind in Nepal, takes into consideration the key aspects of competitiveness among Nepal's newly established provincial governments to rank the country's seven provinces against four environments, 11 sub-indicators and 64 indicators. From this analysis based on data from 2018 and 2019, it can be concluded that between the years, the provinces' overall competitiveness has changed by a small margin, with the best and the worst-performing provinces remaining the same.

The top four provinces have above-average standardised scores while the bottom three provinces have below-average standardised scores showing that regional disparities still heavily exist among and between the provinces. This calls for a need to disaggregate development activities across all the provinces. By now, Nepal has already practised five years of federal governance system so there is no reason not to fully invest in each province and utilise their specialities to boost their competitiveness.

The COVID-19 pandemic has hit Nepal at a very crucial juncture, while the country was in the middle of its first five years of provincial governance structure. Therefore, the pandemic has affected competitiveness at all levels of the governments, both in the short- and long runs. Without any doubt, moving forward toward post-pandemic Nepal, the country's provincial governments will have to manage and allocate additional resources and efforts to maintain and improve their overall competitiveness. Thus, the competitiveness of all the provinces has suffered and what little progress they were starting to make after federalisation has been disrupted. The subsequent impacts on their competitiveness is yet to be seen but progressive policies are being taken out by provincial governments. If the policies are implemented well, future studies of competitiveness are sure to generate positive results. In the future, the net increase in provincial competitiveness will also depend heavily on the order in which the different provinces recover from the pandemic.

Finally, we are sure that our current analysis will prove useful for all the policy stakeholders in Nepal, at all levels of government. Our findings can become a major addition to the toolbox for provinces to understand where Nepal's different provinces stand against each other in terms of key competitiveness indicators and thus support them to work on more realistic plans and policies for improving their respective economic vibrancy in the future.

5.1 Policy Recommendations

The findings of this research can help the key policy stakeholders in Nepal's provincial and federal governments to take necessary policy interventions that could improve provinces' overall competitiveness in the future. This involves Nepal formulating new policies while also updating the existing policies. Traditionally, Nepal's seven provinces performed unevenly across the identified four environments, 11 sub-environments and 64 indicators due to a centralised system of governance for decades. With a federal system of governance, Nepal aims to decentralise overall economic activities and competitiveness across all the provinces and local levels. However, COVID-19 hit the country as it was practising the first five years of provincial governance mechanisms.

The pandemic created a need for newer policies with immediacy to address urgent socio-economic and healthcare needs. As Nepal prepares for the post-pandemic reality, there now needs to be a focus on long term economic growth across all provinces. Our findings suggest that the ground realities for all the provinces still have not changed. Even after the country concludes the five years of the federal structure, discrepancies between the provinces still exist and, in some ways, have widened further. Below we provide environment-wise policy recommendations for the concerned policy stakeholders across all provinces.

5.1.1 Macroeconomic Stability

1. Out of the 14 indicators for this environment, Province 1 has below the standardised average score in nine of those indicators. Firstly, it needs to focus on increasing the number of foreign companies and foreign investments in the province. The province, in coordination with the federal government, needs to ease business registration and investment security, including registration of a foreign company and to secure FDI at the provincial levels. For example, one way of making business registration hassle-free is to develop and adopt a full online business registration system. Another area of focus for the province needs to be in developing

tourist areas. Destinations such as Gorakshep (a frozen lake), Pumori mountain, and Cho Oyu mountain, could be added with more modern amenities such as better hotels, high-speed internet access, to attract more visitors. One more way to attract more tourists would be inviting foreign travel vloggers to make vlogs about lesser known tourist spots which would reach wide-international audiences quicker, in a similar manner to how the federal government did before the Visit Nepal Year 2020.

2. Madhesh understandably has done relatively better in the primary sector's contribution to GDP. However, Madhesh can do more in increasing that contribution, given its large arable land. The province also needs to focus on industrialising the province. Birgunj, the only metropolitan city in the province, has a lot of industries along with the Birgunj industrial estate. The province needs to identify niche industries and understand what they can be competitive in. For example, providing tax cuts or preferential trade policies for those sectors can help attract both domestic and foreign investments in those sectors while boosting production significantly. Birgunj is also the primary source of trade with India. The province can use this advantage in turning it into a major industrial hub as it can provide easy access to external markets.

3. Bagmati has done impressively well in most of the indicators with it having maximum scores in 50 percent of the indicators of this environment. Bagmati though suffers mostly from inflation, maintaining a healthy GDP growth, and less openness to trade. Inflation and GDP growth are intricately linked and the province needs to figure out ways to balance both of these indicators. The Central Bank which is located in Bagmati needs to balance monetary and fiscal policies to address issues of inflation while still trying to maintain healthyGDP growth. In addition, Bagmati can take help of the concerned federal ministries to open new trade routes while also further improving the existing trade routes across Nepal-India and Nepal-China borders. The successful operation of the recently inaugurated Chobhar dry port will also help Bagmati increase its foreign trade.

4. Although Gandaki does have land custom offices, the current study findings showed that no significant trade has occurred through those custom points. Gandaki can work on improving trade through both previously unused land custom offices as well as through the Pokhara Regional Airport which is soon to be operationalised. As Gandaki shares borders with both India and China, it needs to take advantage of this to implement

effective trade facilitation measures. Gandaki can improve its competitiveness immensely through a focus on trade, as exports, imports, and openness to trade are three of its poorly performing indicators, while it continues to perform well across its impressive tourism sector.

5. Bhairahawa customs situated in Lumbini province is the second-largest custom of the country in terms of trade volume, revenue collection, and declarations. However, as a province, Lumbini has very less exports. Lumbini needs to increase its export capacity and have better trade facilitation services on the border with India to drive up the size of exports. Additionally, Lumbini needs to expand other custom points in addition to Bhairahawa so that the entire trade route is not entirely dependent on a single custom point. More industries, as well as, formation of investor-friendly policies by the provincial government can help attract FDI and ODA in industries as well as tourism ultimately contributing to GDP growth and an increase in exports. For example, one way of making foreign investments hassle-free is to develop and adopt a full online business registration system.

6. Karnali has to work on almost all indicators in this environment. With very less arable land it is understandable that the province is least competitive in primary industry's contribution to GDP. There though exists possibilities of focusing on apple farming and subsequent apple related industries and tourism. It requires high investment and development assistance in creating road networks, supplying electricity, and maintaining supply chains from farms to industries to the consumers. This would then help Karnali even increase its export of goods, develop secondary, and tertiary industries, and eventually contribute more to GDP with a healthy GDP growth.

7. Sudurpaschim performs well below standardised average in all except one indicator for this environment. With the abundance of Medicinal and Aromatic Plants (MAPs) growing in the province, one area of focus could be improving this sector further. The province seems to be moving in that direction with the recent budget of 2020/21 having NPR 120 million for installation of herbs processing plant (NepaliSansar, 2020). The direction that the province now should take is to modernise this sector with proper investments in industries related to growing and processing MAPs and an export-oriented strategy based on exporting processed MAPs products. Additionally, the province can integrate growth of MAPs with tourism and can develop tourism routes and homestays along farms to promote tourism as well as MAPs products.

5.1.2 Government and Institutional Setting

1. Province 1 needs to work on enabling companies, public and private, and NGOs to come and work into the province. Easing registration practices for these institutions in close coordination with federal government could help the province improve its competitiveness immensely. The province performs under the standardised average in both police per 100,000 population as well as police per 100 km^2 indicators, with police per 100,000 population being its weakest indicator. Better security could further help attract more NGOs and companies. Thus, the province could take initiatives, for example adding a few more police personnel, that boosts it's overall security thus making it more attractive for investors and development partners.

2. Madhesh has had differences in the political leadership in the province and the central government. There can be difficulties in governance due to this so better symmetry between the provincial government and the federal government needs to exist regardless of differences in political ideologies. Additionally, Madhesh needs to work on improving its revenue sources. A more organized coordination between Madhesh and the central government can create dialogues to give Madhesh better control of its revenue sources. Madhesh also needs to increase its expenditure with better planning and project selection to develop the required basic infrastructures.

3. Bagmati needs to focus on increasing its expenditure if it wants to remain competitive. Bagmati should plan its expenditures properly and implement projects on time. Planned developments, when the budget is made, need to be cautiously implemented and completed. Another important aspect that Bagmati can focus on to become more competitive is increasing its tax revenue. While the current tax revenue is significant while compared to other provinces, the ratio of tax to government revenue is still low. Additionally, while it outperforms all the other provinces in terms of other indicators of this environment, it needs to take policies to keep on working on them so as to not fall behind as decentralization processes move ahead and other provinces increase their competitiveness.

4. Gandaki continues to have problems in tax revenue and government revenue generation. The province needs to find solutions together with the federal government to identify areas where it can get more share of revenue or increase its revenue sources. Furthermore, there also seems to be a smaller number

of private and public companies and NGOs in the province, with the province having less than the standardised score across all three indicators. Better infrastructures such as continued access to electricity, ease of access to markets, coupled with tax breaks for potentially large companies can help attract companies to establish their bases in the province.

5. Lumbini exhibits similar problems as that of Gandaki. City centers such as Butwal, Nepalgunj, and Bhairahawa have the potential to be massive industrial hubs attracting both domestic and foreign companies. With easy access to the Indian market through Bhairahawa and good transportation facilities already in the province, Lumbini needs to focus on developing city centers to be places of industrial activities.

6. Karnali displays concerns in maintaining its budget balance as well as being able to generate total revenue as well as tax revenue. While Karnali's expenditure did suddenly increase in FY 2019/20 due to the COVID-19 pandemic, it still needs to manage its budget better. Coordination with the federal government is required to figure out ways to expand the provinces' tax base and share of the revenue. Being able to attract domestic as well as foreign companies to the province is essential for the province which will ultimately increase its tax revenue as well while also generating more employment opportunities for the local people.

7. Sudurpaschim faces identical problems like that of Karnali but can offer different solutions. With access to both India and China, the province can attract export-oriented companies, both domestic and foreign, if it can provide better trade facilitation and good access to road networks to its customs points. Additionally, it will assist with the increase its tax revenue and play a vital part in maintaining its budget balance. Sudurpaschim should also work with the federal government in increasing police presence in the region to provide better security for the public which would also help make companies feel more secure in establishing their bases.

5.1.3 Financial, Businesses, and Manpower Conditions

1. Province 1 performs relatively well in this environment in comparison to other provinces. To better the underlying conditions, however, the province should focus on increasing the number of industrial training institutes to increase the skill level of workers. This would help contribute to the increase in labour productivity and consequently the increase in wages and bank deposits and credits.

2. Madhesh is the least competitive province in this environment. Thus it needs to work on all indicators under this environment. While it has a good number of workers, the province needs to focus on job-creation and skill-upgrading programs for its workers. Increasing the number of industrial training institutes to provide the workers necessary skills to compete in the market should be the number one priority for the province moving forward. Furthermore, Madhesh needs to create and implement policies to establish enough banks in the province giving its citizens better access to secure financial institutions. This, in turn, can help them increase their savings. In addition, better access to finance will help the people to access additional credit sources to help them better manage their finances and work on improving their skills.

3. Bagmati is competitive in all aspects of this environment with above the standardised scores for all indicators. While miles above the rest of the provinces, it still needs to work on decreasing its unemployment rate by training its citizens in high value skills required for the modern workforce. Skill focused trainings and policies that require companies to provide on the job trainings will help raise the overall skill level making workers more productive. Creating tie-ups between provincial or local governments and universities to provide scholarships in return for contractual employments in governments can help decrease unemployment rates as well as provide skilled manpower for the governments to use.

4. One of the main issues for Gandaki to address is the major shortage of workers. While many in the province migrate to foreign countries for better employment opportunities addressing issues such as low wages, and less skilled manpower can help the province boost its overall competitiveness at home. The province also needs to address its shortage in industrial training institutes by working with the government and private institutions like

Council for Technical Education and Vocational Training (CTEVT).

5. Lumbini too faces issues of high unemployment and less wages and salaries for its workers contributing to a decrease in overall labour productivity. Although the province has a good number of training institutes, it needs to address issues of unemployment by investing heavily in job-creation programs. Coupled with aspects of other environments such as policies to bring in more companies, and industries in the province, employment programs need to be at the forefront. Creating more economic activities in the province then are sure to contribute to increasing the use of banks giving rise to bank deposits and credits.

6. Agricultural wages and salaried wages are both issues that Karnali needs to seriously address if it wants to increase its competitiveness in this environment. As most indicators of this environment are intricately linked, addressing issues of wages through job-trainings or raising minimum wages can contribute to all aspects of competitiveness in this environment. Increase in wages certainly can help retain workers that rather migrate to foreign countries for better employment opportunities. Skill-training programs meanwhile will help workers demand better wages for themselves and create a growing cash-flow in the economy. The province also needs to work with banking institutions such as Nepal Bankers' Association (NBA) to provide access to secure financial institutions especially in rural parts of the province.

7. Workers in Sudurpaschim are found to be temporarily migrating to India for seasonal employment opportunities resulting in a net shortage of workers at home. While this has resulted in a lower unemployment rate in the province, the cause for concern is the smaller number of available workers to contribute in development activities for the province. Creating opportunities for employment in the province itself by establishing industrial hubs for niche products such as MAPs can help its citizens get better opportunities close to home. Policies promoting the industrial sector with increased safety nets for workers in times of crises, and worker protection mechanisms can also help retain domestic labour. Additionally, the population served per bank office is below average in the province leading to less credits and deposits. The provincial and local governments need to address this issue working with banking institutions to establish branches in accessible areas of the province.

5.1.4 Quality of Life and Infrastructure Development

1. Province 1 is one of the least competitive provinces in aspects of expenditure on education, health, and science, technology, and environment. The provincial government needs to increase its expenditure on these aspects to become competitive. Increasing spending on education by establishing tertiary education institutions can reduce illiteracy rate while also providing the province with skilled manpower. Providing adequate health facilities also contributes to raising the overall quality of life of the citizens of the province.

2. Madhesh is one of the most populated provinces of the country. This serves as a challenge for the province to provide adequate basic services to all of its citizens. While expenditure on education is above the median score, additional investment needs to be made in this sector. The province also needs to invest in quality education by increasing the number of better trained teachers in primary, and secondary levels. There is an apparent need to do so as it performs poorly in student-teacher ratio in both levels. The province also needs to work in close coordination with the local as well as the central governments to increase budgets in education, health, and science, technology, and environment to increase its competitiveness.

3. Out of all the environments, Bagmati has the least scores in Quality of Life and Infrastructure Development. While Bagmati still outperforms other provinces and remains on the top position it still needs to better manage its population by disaggregating development so that the population is not concentrated only across the city centers. Additionally, the province needs to increase its per capita public health expenditure by increasing the quality and quantity of available public hospitals and creating cheaper health insurance schemes for its needy residents. With access to both India and China, it also needs to concentrate on increasing its capacity to handle large cargos by establishing more dry ports and making proper use of border points. It needs to coordinate with the federal government to increase both exports and imports and decrease non-tariff barriers to trade.

4. Gandaki should concentrate on improving road infrastructure, increase the number of available ports, and expand the capacities of existing ports. While the soon to be operationalised Pokhara Regional Airport will provide the province more opportunities in trade and infrastructure, better land port facilities need to be

established. The province is geographically well-positioned with access to both Indian and Chinese markets and can use this to serve as transit points for trade. Additionally, the province needs to focus on increasing its expenditure on education by increasing the number of educational institutions available in the province to increase the overall literacy rate.

5. Lumbini needs to increase its health expenditure to remain competitive in this environment. The province performs poorly across all health-related indicators such as health expenditure, adequacy of hospitals, and per capita public health expenditure. The province also needs to better regulate its air pollution. The provinces' policies also need to focus on reducing the disparity between primary and secondary institutions. The disparity can be considered as one of the key indicators responsible for more dropouts at the school level contributing to a lower literacy rate in the province.

6. Karnali is the least competitive province in this environment. Out of the 23 indicators, Karnali performs below the standardised score across 18 indicators. While the provinces' performance on expenditures on health and education is relatively better than its performance across other indicators, more efforts need to be made to better educate and train the local citizens. Providing attractive salaries and resources to teachers could be one way that the province can increase its student-teacher ratios while also substantially decreasing illiteracy rates. Establishing public schools through coordination with local governments could also be one way to increase the level of education. Karnali also needs to increase incentives for its population to stay in the province by investing in creating better jobs while also increasing access to educational facilities, road infrastructures, electricity, and communication services.

7. Sudurpaschim ranks as the second-least performing province for this environment. While the expenditure on education, health, science, technology, and environment has risen significantly between the years, the province still needs to invest more. As the province did not receive much focus before federalisation, it requires high investment in all sectors to become competitive under the new governance system. All three tiers of government need to make coordinated efforts to raise the quality of life and available infrastructure in the province. The province needs to invest in increasing its road network, providing access to electricity for its citizens, and increasing citizens' access to education. Investing in educational infrastructure, increasing

the number of schools, and raising the quality of education received by its citizens both need to be kept in the priority list of provincial policies. The province can also take advantage of its geographical proximity with both of Nepal's neighbours, India and China, to increase its cargo handling capacity. Maintenance of road networks will be a massive help in this regard together with upgradation of customs points to be able to handle more goods.

5.2 Way Forward

This is the first of its kind study conducted in Nepal. Using the data from 2018 and 2019, the current study analysed the overall competitiveness of seven provinces across key environments, sub-environments, and a set of indicators. The current analysis finds uneven performance of seven provinces checked against the data available for 64 indicators. However, further research is needed in the coming years to assess overall competitiveness of Nepal's provincial governments more accurately incorporating data for additional indicators across all environments and sub-environments. With incorporation of new indicators the researchers then would be able to undertake more rigorous analysis thus making the overall analysis more holistic and realistic. For this, data from the country's ongoing census would prove useful as it aims to incorporate data on all key indicators at the provincial and local levels. In addition, if enough data becomes available when census findings are out in late 2022, conducting competitiveness analysis of Nepal's metropolitan and sub-metropolitcan cities is also highly recommended. The findings of these analyses would help key policy stakeholders at all levels of governments to further improve overall provincial competitiveness while also establishing major hubs for provincial and local-level economic activities.

Appendix

Appendix I: Government Actions taken in regards to COVID-19

Date	Government Actions
27-Feb-20	Nepal halts all labor migrations to South Korea as Covid-19 takes serious form in the latter half of FY 2019/20
29-Feb-20	GoN announces to suspend all promotional activities relating to the Visit Nepal 2020 Campaign
01-Mar-20	Cabinet Meeting decides to cancel Sagarmatha Sambad (A global dialogue forum initiated by the Government of Nepal) and Visit Nepal 2020 (a year-long campaign to boost Nepal's tourism industry) and establishes a special high-level committee, to be chaired by the Deputy Prime Minister and Minister of Defence, to coordinate the government's response to the pandemic
02-Mar-20	Nepal stops issuing on-arrival visas to foreign nationals travelling from high-risk countries - China, South Korea, Iran, Japan and Italy - and also advising Nepalis not to travel to these countries
09-Mar-20	Nepal extends suspension of on-arrival visas to nationals of France, Germany and Spain
14-Mar-20	GoN suspends all permits for mountaineering expeditions and stops issuing on-arrival visas to all foreign nationals. GoN makes it mandatory for all international arrivals to self-isolate for 14 days
15-Mar-20	Nepal sits for the 15 March 2020 Video Conference between SAARC Heads of States for regional response to the pandemic
16-Mar-20	GoN orders all schools, colleges, cinema halls, gyms, clubs, swimming pools, and museums to close until April 30
22-Mar-20	Suspension of international flights to and from Tribhuvan International Airport, Nepal's only international airport as of now. Nepal contributes NPR 100 million (Approx USD 831,393.45) to the SAARC Covid-19 Fund
23-Mar-20	Nepal closes its international borders with China and India
24-Mar-20	Beginning of a nationwide lockdown

29-Mar-20	NRB lowers its cash reserve ratio from four to three percent as well as reducing the standing liquidity facility interest rate from six to five percent to provide liquidity to the financial system. Allowing BFIs to meet their regulatory and supervisory requirements until 15 April 2020 without any punishments. With an aim to reduce the economic impact of the pandemic, NRB announces an interest subsidy for lenders and reschedule loan payments for Covid-19 affected businesses. GoN Requests all landlords to waive rent for tenants for the nation-wide lockdown period. GoN announces to provide discounts of 25 percent on all electricity bills for households that use more than 250 units/month
30-Mar-20	GoN announces to increase health spending and also to provide social assistance to the needy people. The key objectives of these measures included providing additional insurance benefits to the front-line workers, providing daily food rations to the most vulnerables, subsidizing utility-bills for lower income consumers, importing additional medical supplies, constructing quarantine centers and temporary Covid-19 hospitals and extending deadlines for filing tax
01-Apr-20	Imposing of temporary ban on imports of luxury goods (gold over 10 kg and vehicles worth over USD 50,000)
04-Apr-20	GoN suspends leave for all healthcare workers
26-Apr-20	GoN announcement saying that the workers from the informal sector, if lost their jobs, would be provided opportunities to either work in the public-work projects for GoN defined subsistence wage or get 25 percent of local daily wage.
29-Apr-20	NRB announces Nepali banks deferring their loan repayment deadlines from Apr and May until mid-Jul 2020 (it was later extended to Jan 2021 or later) and directing banks to apply lower interest rates (up to two percentage points) for the borrowers from the affected sectors when calculating the interest due for the period of mid-Apr to mid-Jul 2020
28-May-20	The Finance Minister delivers the budget speech for FY 2020/21 that included many measures aimed at managing Covid-19 and the related issues in the country, including further strengthening Nepal's healthcare system, special business support for cottage and SMEs plus those in the tourism sector and creation of more local jobs to provide jobs to migrants returnees
17-Jul-20	NRB lowers policy rate from 3.5 percent to three percent with some backup plans to provide additional support, if needed
22-Jul-20	GoN lifts nation-wide lockdown
02-Sep-20	GoN resumes international flights
17-Sep-20	Domestic flights and long-haul public transport services resume
13-Nov-20	Relaxation of restrictions at tourist sites
03-Dec-20	An announcement by NRB announced the collateral auction process will be deferred for some time for borrowers impacted by the Covid-19 pandemic who have outstanding interest payment of less than six months. The NRB also announced that provisions will be made to allow repayment of foreign currency loans in local currency.
23-Dec-20	GoN bans entry of passengers originating or traveling from the United Kingdom
24-Jan-21	GoN rollouts vaccination campaign with vaccines received from India

18-Mar-21	GoN halts vaccination campaign due to unavailability of vaccines
07-Apr-21	GoN resumes vaccination campaign with vaccines from China
19-Apr-21	GoN directs shut-down of all schools in city areas, public places of gatherings like cinemas, gyms, banquet venues, and bans on assemblies and political rallies until May 14. People more than 25 people also cannot gather at festivals, and meetings, etc. The government tasks COVID-19 Crisis Management Center with setting up of holding centers near border points with India. Provincial governments are also tasked by the cabinet to operate holding centers and isolation centers, and testing and treatment of the infected. GoN also provides the authority to Chief District Officers to enforce all decisions and take actions as per the Infectious Disease Act 1964 against anyone not following government directives.
20-Apr-21	GoN grants emergency use approval for Sputnik V vaccine
21-Apr-21	MoEST stops issuing no-objection letter to students going abroad
26-Apr-21	GoN bans making Nepal a transit country by foreign nationals and mandatory isolations for returning nationals and foreigners until they test negative for COVID-19. Prohibitory orders issued for Kathmandu, Lalitpur, and Bhaktapur districts (jointly, Kathmandu Valley) for 15 days starting from April 29
27-Apr-21	Nepal seats for joint foreign ministers video conference with China, Afghanistan, Pakistan, Sri Lanka, and Bangladesh
27-Apr-21	GoN bans entry of foreign nationals through Jhapa border
30-Apr-21	GoN shuts down 22 of 35 entry points from India with holding centers to be constructed on open entry points
03-May-21	GoN halts domestic flights until May 14
05-May-21	GoN halts international flights except for two flights a week between Kathmandu and Delhi until May 14
11-May-21	GoN bans international flights extended until May 31. Prohibitory orders in the valley extended until May 27.
13-May-21	Nepal permits special flights to evacuate foreign citizens
19-May-21	Social Welfare Council requests headquarters of INGOs to raise COVID-19 funds
22-May-21	The President passes the COVID-19 Crisis Management Ordinance allowing the GoN to declare health emergency under which the government can requisition private properties and vehicles to use them in an effort to stop the spread of the virus
28-May-21	GoN allows limited passenger flights from China, Qatar, and Turkey
04-Jun-21	Nepal grants emergency approval to Sinovac COVID-19 vaccine
06-Jun-21	Nepal signs non-disclosure agreement with Sinopharm to procure vaccines
22-Jun-21	Nepal resumes international flights to and from major labour destination countries
30-Jun-21	GoN eases lockdown measures, and resumes domestic flights
22-Jul-21	ADB approves USD 165 million loan for Nepal to purchase safe and effective vaccines

17-Aug-21	COVID-19 Crisis Management Center directs District Administration Offices to enforce smart lockdowns depending on the situation of the districts
20-Aug-21	High level committee led by Health Minister formed to look at both COVID-19 and non-COVID-19 cases
10-Sep-21	GoN announces cash grant of NPR 10,000 each to 500,000 poor households who lost employment and livelihood due to the pandemic
23-Sep-21	GoN resumes on-arrival visa to all vaccinated foreigners with no quarantine requirements
09-Oct-21	GoN reduces maximum amount Nepali citizens travelling abroad can carry considering diminishing foreign exchange reserves
09-Nov-21	GoN approves purchase of six million doses of US made Pfizer vaccines under non-disclosure agreement
22-Nov-21	Pfizer-BioNTech vaccine approved for all children above 12 years old
24-Nov-21	Government asks provinces, local units to ramp up vaccination
29-Nov-21	Nepal stops issuing visa on arrival to visitors from African countries with the rise in Omicron
20-Dec-21	Central bank makes policies to discourage imports on non-essential goods to conserver declining foreign exchange reserves

Appendix II: List of Indicators for provinces of Nepal

No.	Indicator	Unit	Reversed Indicator
1	**Macroeconomic Stability**		
1.1	**Regional Economic Vibrancy**		
1.1.01	Gross State Domestic Product (GSDP)	10 Million Rupees(रु), Real GSDP (Base Year 2010/11)	
1.1.02	Gross State Domestic Product Growth	Percent Change per Annum	
1.1.03	Gross State Domestic Product per Capita	Rupees(रु)	
1.1.04	Primary Industry	10 Million Rupees(रु), Real GSDP (Base Year 2010/11)	
1.1.05	Secondary Industry	10 Million Rupees(रु), Real GSDP (Base Year 2010/11)	
1.1.06	Tertiary Industry	10 Million Rupees(रु), Real GSDP (Base Year 2010/11)	
1.1.07	Inflation (Consumer Price Index)	Percent	R
1.2	**Openness to Trade and Services**		
1.2.01	Exports of Merchandise Goods	10 Million Rupees(रु), Real Prices (Base Year 2010/11)	
1.2.02	Imports of Merchandise Goods	10 Million Rupees(रु), Real Prices (Base Year 2010/11)	
1.2.03	Openness to Trade	Ratio	
1.2.04	International Tourists	10,000 Visits	
1.3	**Attractiveness to Foreign Investors**		
1.3.01	Foreign Direct Investment	10 Million Rupees(रु), Real Prices (Base Year 2010/11)	
1.3.02	Number of Foreign Companies (Percent)	Percent of Total	
1.3.03	Official Development Assistance	10 Million USD	
2	**Government and Institutional Setting**		
2.1	**Government Policies and Fiscal Sustainability**		

2.1.01	Government Revenue	10 Million Rupees(रु), Real Prices (Base Year 2010/11)	
2.1.02	Tax Revenue	10 Million Rupees(रु), Real Prices (Base Year 2010/11)	
2.1.03	Tax Revenue/Government Revenue	Percent of Government Revenue	
2.1.04	Government Consumption Expenditure	Percent of GSDP	
2.1.05	Budget Balance	Percent of GSDP	
2.2	**Institutions, Governance and Leadership**		
2.2.01	Limited Companies	Number	
2.2.02	Public Limited Companies (Percent)	Percent of Total Limited Companies	
2.2.03	Foreign Companies	Number	
2.2.04	Public Limited Companies	Number	
2.2.05	Private Limited Companies	Number	
2.2.06	Non-Governmental Organizations	Number	
2.2.07	Police per 100 km2	Ratio	
2.2.08	Police per 100,000 Population	Ratio	
2.2.09	Federal Government-Provincial Government Political Alignment	0 or 1	
2.2.10	Provincial Government Strength	0 or 1	
2.2.11	Corruption Cases Filed per 10,000 population	Number	R
3	**Financial, Businesses and Manpower Conditions**		
3.1	**Financial Deepening and Business Efficiency**		
3.1.01	Bank Offices	Number	
3.1.02	Population Served per Bank Office	Ratio	R
3.1.03	Bank Credit	10 Million Rupees (रु), Real Prices (Base Year 2010/11)	
3.1.04	Bank Deposits	10 Million Rupees (रु), Real Prices (Base Year 2010/11)	
3.2	**Labour Market Flexibility**		
3.2.01	Total Workers	Number	
3.2.02	Unemployment Rate (Urban Area)	Percent	R
3.2.03	Wages and Salaries	10 Million Rupees (रु), Real Prices (Base Year 2010/11)	

3.2.04	Agricultural Wages	10 Million Rupees (रु), Real Prices (Base Year 2010/11)	
3.2.05	Industrial Training Institutes	Number	
3.3	**Productivity Performance**		
3.3.01	Overall Labour Productivity	Rupees (रु), Real Prices (Base Year 2010/11) per Person-Year	
3.3.02	Secondary Industry, Value-Added per Worker	Rupees (रु), Real Prices (Base Year 2010/11) per Person-Year	
4	**Quality of Life and Infrastructure Development**		
4.1	**Physical Infrastructure**		
4.1.01	Population	10,000 Persons	
4.1.02	Population Density	Persons per km2	R
4.1.03	Length of Roads	km	
4.1.04	Number of Ports	Number	
4.1.05	Total Cargo Handled	10 Million Rupees (रु), Real Prices (Base Year 2010/11)	
4.1.06	Consumption of Electricity per Capita	KWh per person	
4.1.07	Power Generation	Million Units	
4.1.08	Motor Vehicles per Km of Road	Number	R
4.1.09	Total Land Area	km2	
4.2	**Technological Infrastructure**		
4.2.01	Persons per Mobile Telephone Subscriber	Number	R
4.2.02	Expenditure on Science, Technology and Environment	Percent of Total Expenditure	
4.3	**Standard of Living, Education and Social Stability**		
4.3.01	Illiteracy Rate	Percent	R
4.3.02	Number of Educational Institutions	Total Units	
4.3.03	Disparity between Primary and Secondary Institutions	Percent	R
4.3.04	Tertiary Institutions	Percent of Total Institutions	
4.3.05	Student–Teacher Ratio (Primary)	Ratio	R
4.3.06	Student–Teacher Ratio (Secondary)	Ratio	R

4.3.07	Expenditure on Education	Percent of Total Expenditure	
4.3.08	Health Expenditure	Percent of Total Expenditure	
4.3.09	Per Capita Public Health Expenditure	Rupees (रु), Real Prices (Base Year 2010/11) Per Person	
4.3.10	Air Pollution	Milligram/m3	R
4.3.11	Motor Vehicles per Person	Number	
4.3.12	Adequacy of Hospitals	Per 10,000 Persons Per Hospital	R

Appendix III: Definition of Indicators and Proxy Methods

No.	Indicator	Definition	Remarks
1	**Macroeconomic Stability**		
1.1	**Regional Economic Vibrancy**		
1.1.01	Gross State Domestic Product (GSDP)	Monetary market value of all the final goods and services produced by a state in a specific time period	
1.1.02	Gross State Domestic Product Growth	Change in State's GSDP during one fiscal year	
1.1.03	Gross State Domestic Product per Capita	GSDP divided by the population of each of the province	
1.1.04	Primary Industry	Primary sector's contribution to GSDP	
1.1.05	Secondary Industry	Secondary sector's contribution to GSDP	
1.1.06	Tertiary Industry	Tertiary sector's contribution to GSDP	
1.1.07	Inflation (Consumer Price Index)	Change in purchasing power of NPR over a period of time	Data availability for Kathmandu Valley, Terai, Hill, and Mountain from NRB. Province-wise inflation was taken according to where the maximum population of the province was based in those 3 regions. Here, Terai data for: Province 1, Madhesh, Gandaki, and Sudurpaschim. Kathmandu Valley data for Bagmati.
1.2	**Openness to Trade and Services**		
1.2.01	Exports of Merchandise Goods	The monetary value of exports being handled by the customs points located in the province.	Exports of merchandise goods consider the number of exports being handled by the custom point located in the province.
1.2.02	Imports of Merchandise Goods	The monetary value of imports being handled by the customs points located in the province.	Imports of merchandise goods consider the number of imports being handled by the custom point located in the province.
1.2.03	Openness to Trade	Ratio of total cargo handled by the province to GSDP	

1.2.04	International Tourists	Number of foreign tourists visiting each province during each fiscal year	Numbers of tourists are taken by aggregating data for tourists visits to major tourist sites of the particular province from Nepal Tourism Statistics.
1.3	**Attractiveness to Foreign Investors**		
1.3.01	Foreign Direct Investment	Amount of FDI approvals taken from NRB	
1.3.02	Number of Foreign Companies (Percent)	Ratio of the number of foreign companies to total number of companies in percentage	
1.3.03	Official Development Assistance	Total amount of Official Development Assistance (loans, grants, and technical assistance) disbursed in a particular FY	
2	**Government and Institutional Setting**		
2.1	**Government Policies and Fiscal Sustainability**		
2.1.01	Government Revenue	Amount of revenue collected by the government during its fiscal year from taxes and non-tax sources	
2.1.02	Tax Revenue	Amount of revenue collected by the government during its fiscal year from taxes	
2.1.03	Tax Revenue/ Government Revenue	Ratio of tax revenue to government revenue	
2.1.04	Government Consumption Expenditure	Amount of money spent by state governments in their activities	
2.1.05	Budget Balance	(Revenue – Expenditure)*100/GSDP	
2.2	**Institutions, Governance and Leadership**		
2.2.01	Limited Companies	The total number of companies registered with the Office of Company Registrar	The total number of limited companies registered beginning from 1945. This indicator does not consider the total number of companies not currently in operation as those data are not available.

2.2.02	Public Limited Companies (Percent)	Ratio of the number of public limited companies to the total number of companies in percentage	
2.2.03	Foreign Companies	The total number of foreign companies registered with the Department of Industries	Number of companies registered as foreign companies in DoI
2.2.04	Public Limited Companies	The total number of companies registered as public limited companies with the Office of Company Registrar	The total number of companies registered as public companies beginning from 1945. This indicator does not consider the total number of public limited companies not currently in operation as those data are not available.
2.2.05	Private Limited Companies	The total number of companies registered as private limited companies with the Office of Company Registrar	The total number of companies registered as private limited companies beginning from 1945. This indicator does not consider the total number of private limited companies not currently in operation as those data are not available.
2.2.06	Non-Governmental Organizations	The total number of NGOs registered with the Social Welfare Council	The total number of companies registered as NGOs from FY 1977/78. This indicator does not consider the total number of NGOs not currently in operation as those data are not available.
2.2.07	Police per 100 km^2	Total number of police personnel deployed per 100 km2	Proxy Method 1 for unavailable years.
2.2.08	Police per 100,000 Population	Total number of police personnel deployed per 100,000 population	Proxy Method 1 for unavailable years.
2.2.09	Federal Government-Provincial Government Political Alignment	If the ruling party at federal and provincial government is the same	1 if the ruling party at federal and provincial government is the same, 0 if it is not
2.2.10	Provincial Government Strength	If the ruling party at federal and local (metropolitan) level is the same	1 if the ruling party at federal and local government is the same, 0 if it is not
2.2.11	Corruption Cases Filed per 10,000 population	Number	R
3	**Financial, Businesses and Manpower Conditions**		
3.1	**Financial Deepening and Business Efficiency**		

3.1.01	Bank Offices	Total number of bank branches of Class A and Class B banks as approved by Nepal Rastra Bank	Aggregated data for Class A and Class B institutions
3.1.02	Population Served per Bank Office	Ratio of total population to total number of bank branches of Class A and Class B banks	
3.1.03	Bank Credit	Credit amount disbursed by the banks in a particular FY	
3.1.04	Bank Deposits	Amount deposited in the banks in a particular FY	
3.2	**Labour Market Flexibility**		
3.2.01	Total Workers	Total number of workers	Using population growth rate on the data available for total workers in 2017.
3.2.02	Unemployment Rate (Urban Area)	Total number of unemployed workers in metropolitan, sub-metropolitan, and municipality	Proxied as same as latest available data.
3.2.03	Wages and Salaries	Yearly wages and salaries of employed workers	Proxy Method 2
3.2.04	Agricultural Wages	Yearly wages and salaries of agricultural workers	Proxy Method 2. The same CAGR of Indicator 3.2.03 was used.
3.2.05	Industrial Training Institutes	Number of training institutes affiliated to CTEVT that provide technical training	Proxy Method 1 was used for unavailable data.
3.3	**Productivity Performance**		
3.3.01	Overall Labour Productivity	Ratio of total GSDP to Total Workers	
3.3.02	Secondary Industry, Value-Added per Worker	Ratio of Gross Value Added by Secondary Industry to Total Workers	Using population growth rate for total workers for the unavailable years.
4	**Quality of Life and Infrastructure Development**		
4.1	**Physical Infrastructure**		
4.1.01	Population	Total number of citizens of Nepal	
4.1.02	Population Density	Total population per km2	
4.1.03	Length of Roads	Total length of local road networks	

4.1.04	Number of Ports	Total number of ports used for import and export of goods to and from Nepal	
4.1.05	Total Cargo Handled	Amount of cargo handled by custom offices in the province	
4.1.06	Consumption of Electricity per Capita	Total electricity consumed per capita	Proxy Method 1
4.1.07	Power Generation	Total power generated through the various power stations in the province	Aggregated data for the power generation stations falling in each province
4.1.08	Motor Vehicles per Km of Road	Ratio of the total number of vehicles registered to the total length of roads	Total number of vehicles registered were taken from the year 1989 to 2017 up to when the data is available. For the later years, Proxy Method 2 is used.
4.1.09	Total Land Area	Total land area of Nepal	
4.2	**Technological Infrastructure**		
4.2.01	Persons per Mobile Telephone Subscriber	Total population per total number of mobile telephone subscribers	Data is only taken from Nepal Telecom. Zonal data is aggregated into provinces considering Nepal Telecom regional offices. Zonal data is aggregated as, Province 1: Mechi, Koshi, and Sagarmatha, Madhesh: Janakpur, Bagmati: Bagmati and Narayani, Gandaki: Gandaki and Dhaulagiri, Lumbini: Lumbini, Rapti, and Bheri, Karnali: Karnali, Sudurpaschim: Seti and Mahakali.
4.2.02	Expenditure on Science, Technology and Environment	Total provincial expenditure on science, technology, and environment	Aggregated from OAG's Annual Reports
4.3	**Standard of Living, Education and Social Stability**		
4.3.01	Illiteracy Rate	total adult population who cannot read or write/total adult population*100 OR (100 minus literacy rate)	Proxied the same as latest available data
4.3.02	Number of Educational Institutions	Sum of all Primary, Secondary, and Tertiary educational institutions	

4.3.03	Disparity between Primary and Secondary Institutions	(Primary Institutions – Secondary Institutions)*100/ (Primary Institutions + Secondary Institutions)	
4.3.04	Tertiary Institutions	Percentage of tertiary institutions in total institutions	
4.3.05	Student–Teacher Ratio (Primary)	Ratio of primary students to primary teachers	
4.3.06	Student–Teacher Ratio (Secondary)	Ratio of secondary students to secondary teachers	
4.3.07	Expenditure on Education	Total provincial expenditure on education	Aggregated from OAG's Annual Reports
4.3.08	Health Expenditure	Total provincial expenditure on health	Aggregated from OAG's Annual Reports
4.3.09	Per Capita Public Health Expenditure	Total health expenditure per population	
4.3.10	Air Pollution	Total Suspended Particulate (TSP) per cubic meter	Proxying as the same as latest available data for unavailable data (Karnali 2018, and Sudurpaschim 2018 and 2019). For Madhesh, data for 2018 and 2020, is the average of monthly available data
4.3.11	Motor Vehicles per Person	Total number of registered vehicles per total population	
4.3.12	Adequacy of Hospitals	Total number of health facilities per 100,000 population	Health facilities consider public hospitals, PHCCs, Health Posts, and Non-Public facilities

Proxy Method 1

If province-wise data is available for a particular year and the totals are known for other years, then the ratio for the data available year is used to find the province wise data for the remaining years.

Example

For Indicator 4.1.06, Consumption of Electricity per Capita, province wise data was available for 2019, and the total consumption was known for 2018.

The proxied data is then computed from the calculated ratio

	2019	Ratio	2018
Province 1	1,041,635	0.16	1,023,018
Madhesh	1,254,188	0.20	1,231,772
Bagmati	2,113,215	0.33	2,075,445
Gandaki	428,554	0.07	420,894
Lumbini	1,301,342	0.20	1,278,083
Sudurpaschim	46,525	0.01	45,693
Karnali	235,303	0.04	231,097
Total	**6,420,762**		**6,306,002**

Proxy Method 2

If data was available for 2 years and the need was to calculate the data for the third year, Compound Annual Growth Rate (CAGR) was calculated for the two years, and used to proxy the data for the third.

Example

For Indicator 3.2.03, Wages and Salaries, for Province 1,
Yearly Wages and Salaries, in current prices was,
NPR 182496 for 2017 and NPR 257820 for 2018.

$$\text{CAGR} = \left(\frac{Ending\ Value}{Beginning\ Value}\right)^{\left(\frac{1}{Number\ of\ years}\right)} - 1 = \left(\frac{257820}{182496}\right)^{\left(\frac{1}{1}\right)} - 1 = 0.41$$

Then, Wages and Salaries for 2019 is,
257820 + 257820 × 0.41 = NPR 364233

Appendix IV: Computation of Rankings using Equal Weights - The Algorithm

A step-by-step description of the ranking process is described below for N regions, M practical indicators and C environments, with each environment comprising S sub-environments.

Algorithm: Ranking Methodology

1. Compute the mean value of practical indicator j (j = 1, …, M),

$$\overline{X}_j = \frac{1}{N}\sum_{i=1}^{N} X_{ij}$$

where represents the value that region i (i = 1, …, N) takes for practical indicator j.

2. For each practical indicator j (j = 1, …, M), calculate its standard deviation (SD),

$$SD_j = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(X_{ij} - \overline{X}_j)^2}$$

3. Compute the standardised value of indicator (SVI) that each region i (i = 1, …, N) takes under each of the practical indicators j (j = 1, …, M),

$$SVI_{ij} = \frac{X_{ij} - \overline{X}_j}{SD_j}$$

4. Compute the 'ranked' standardised value of indicator (RSVI) that each region i (i = 1, …, N) takes under each of the practical indicators j (j = 1, …, M)

$$RSVI_{ij} = \begin{cases} SVI_{ij}, \text{if a higher value is better} \\ -SVI_{ij}, \text{if a lower value is better} \end{cases}$$

5. For each practical indicator j (j = 1, …, M), a ranking can be obtained for regions. Regions with a higher value of RSVI for indicator j are ranked ahead of those with a lower value.

6. For each region i (i = 1, …, N), calculate the RSVI for each sub-environment k (k = 1, …, S), belonging to environment l (l = 1, …, C),

$$Raw\_RSVI_{i,lk} = \frac{1}{ylk} \sum_{p=1}^{ylk} RSVI_{i,jlk,p}$$

$$Mean\_RSVI_{lk} = \frac{1}{N} \sum_{i=1}^{N} Raw\_RSVI_{i,lk}$$

$$SD\_RSVI_{lk} = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (Raw\_RSVI_{i,lk} - Mean\_RSVI_{lk})^2}$$

$$RSVI_{i,lk} = \frac{Raw\_RSVI_{i,lk} - Mean\_RSVI_{lk}}{SD\_RSVI_{lk}}$$

where ylk is the total number of practical indicators under sub-environment k of environment l and (RSVIi,jlk,1, ..., RSVIi,jlk,ylk) are the RSVIs for region i that makeup sub-environment k of environment l.

7. For each region I (I = 1, ..., N), calculate the RSVI for each environment l (l = 1, ..., C),

$$Raw\_RSVI_{i,l} = \frac{1}{S_l} \sum_{p=1}^{S_l} RSVI_{i,lk}$$

$$Mean\_RSVI_l = \frac{1}{N} \sum_{i=1}^{N} Raw\_RSVI_{i,l}$$

$$SD\_RSVI_l = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (Raw\_RSVI_{i,l} - Mean\_RSVI_l)^2}$$

$$RSVI_{i,l} = \frac{Raw\_RSVI_{i,l} - Mean\_RSVI_l}{SD\_RSVI_l}$$

where ⟦(RSVI⟧_(i,l_1),...,⟦RSVI⟧_(i,l_S)) are the RSVIs for the S sub-environments under each environment l.

8.   Overall rank score of region i (i = 1, …, N),

$$Raw\_R_i = \frac{1}{C}\sum_{p=1}^{C} RSVI_{i,l}$$

$$Mean\_R = \frac{1}{N}\sum_{i=1}^{N} Raw\_R_i$$

$$SD\_R = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(Raw\_R_i - Mean\_R)^2}$$

$$R_i = \frac{Raw\_R_i - Mean\_R}{SD\_R}$$

Regions with a higher Ri are ranked ahead of those with a lower Ri, and the region with the highest Ri is the most competitive region.

Step (5) provides the ranking of each region for each individual practical indicator. To achieve this ranking, Step (4) adjusts the value of the SVIs so that a higher value will lead to a better ranking in terms of 'competitiveness'. Depending on the nature of the indicator in question, a higher or lower value may reflect a more 'competitive' region. Take, for instance, the practical sub-indicators 'Gross State Domestic Product (GSDP)' and 'inflation'. Having a higher GSDP but a lower inflation suggests better economic performance, which makes a region more 'competitive'. In most cases where a higher value is better (e.g., GSDP), the SVIs of regions are considered, and those with a higher SVI value will have a better ranking. However, for indicators where the inverse is true (e.g., unemployment rate), the 'negative SVI' values are compared between regions and a lower SVI value will lead to a better ranking. Step (4) thus seeks to make the standardized values of all practical indicators consistent for ranking purposes.

Step (6) determines the sub-environment rankings of each region. The average RSVI of all the indicators in the sub-environment are calculated, re-standardized across all the regions and compared to other regions. Regions with a higher average RSVI rank better in the sub-environment.

To arrive at the ranking for each environment, the RSVIs of the sub-environments are averaged and re-standardized across all the regions as detailed by Step (7). Finally, Step (8) requires the RSVI values of each environment to be averaged and re-standardized across all the regions to determine the overall ranking of the region. Regions with a higher RSVI are ranked ahead of those with a lower RSVI.

Although the number of sub-environments and indicators varies for each main environment, the aggregate score for each main environment is given an equal weight: 25 percent of the Nepali provincial overall competitiveness index. An identical weight is assigned to each environment as they present

equal significance to the computation of the index. This method is repeated and applied consistently across all the provinces to ensure precision of the rankings. Mathematically, this can be illustrated as follows:

Nepal Provincial Overall Competitiveness Index

= 25% X (Macroeconomic Stability)

+ 25% X (Government and Institutional Setting)

+ 25% X (Financial, Businesses, and Manpower Conditions)

+ 25% X (Quality of Life and Infrastructure Development)

Appendix V: About the Contributors

JAYA JUNG MAHAT

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Nepal Competitiveness Index

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The Nepal Competitiveness Index (NCI) is a collaborative effort of Nepal Institute for Policy Research (NIPoRe) and Asia Competitiveness Institute (ACI). It ranks Nepal's provincial governments based on analysis carried out across four environments, 11 sub-environments, and 64 indicators. It aims to help the key policy stakeholders in Nepal and outside to better understand competitiveness of Nepal's seven provinces and formulate more realistic plans and policies for provincial economic development.

◄ **https://nipore.org/nci**

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