



# **BHUTAN 21<sup>ST</sup> CENTURY ECONOMIC ROADMAP**

**10X National Economic Vision**

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*“Creating greater economic prosperity for our people and the nation remains an important national goal. If our country prospers, the people will enjoy the benefits as they become more confident and self-reliant and develop a greater sense of belonging to our country. Should we fail, our people will suffer.”*

*His Majesty The King’s Royal Address on the 114<sup>th</sup> National Day*





**PRIME MINISTER**

དཔལ་ལྷན་འབྲུག་གཞུང་།

**Royal Government of Bhutan**

## Foreword

I am pleased to share Bhutan's 21<sup>st</sup> Century Economic Roadmap, 10X National Economic Vision 2050, a bold and transformative blueprint that embodies our collective aspirations for a resilient, prosperous, and harmonious future.

Under the enlightened leadership of our beloved Kings and guided by the principles of Gross National Happiness, Bhutan has made remarkable strides over the decades. Our unique development approach has ensured that economic progress remains balanced with wellbeing, environmental conservation, and cultural preservation.

Yet, as we look ahead, we must acknowledge the profound transformations shaping the world — rapid technological advancements, demographic shifts, geopolitical uncertainties, and climate change. Bhutan stands at a defining crossroads. To secure our nation's future, we must embrace change with foresight and determination, strengthening our competitiveness, nurturing innovation, and fortifying our resilience. This demands bold vision, decisive action, and shared resolve.

The Vision 2050 draws profound inspiration from His Majesty's address during the 112<sup>th</sup> National Day, where His Majesty emphasised the need for Bhutan to anticipate and proactively adapt to emerging challenges. His Majesty's call for a clear economic roadmap is a directive for all

of us — government, individuals, institutions, and the private sector — to take ownership of our economic future, cultivate innovation, and work towards national self-reliance and shared prosperity.

This Vision is not merely a long-term strategy but a transformative roadmap designed to reimagine Bhutan's economic landscape. With an ambitious goal of growing our GDP tenfold by 2050, it envisions a future where every Bhutanese enjoys an enhanced quality of life, abundant opportunities, and a deep sense of fulfilment. Bhutan will evolve into a knowledge and innovation-driven economy, excelling in key sectors such as renewable energy, agriculture, tourism, digital technology, and financial services. These industries will not only generate wealth but also position Bhutan as a globally competitive economy, all while upholding our enduring values of sustainability and equity.

Guided by His Majesty's vision of Brand Economy, Trust Economy and Strength Economy, the Roadmap will enable Bhutan to establish a globally recognised brand across multiple sectors, enhance trust through strategic investments in policy, governance, human capital, and transparency, and build a strong economy by strengthening key industries and expanding into new sectors.



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One of the key objectives of the Vision 2050 is to complement the Royal vision of the Gelephu Mindfulness City, aligning with the principles of sustainability, innovation, integrity and wellbeing. To realise this Vision, we must focus on two fundamental imperatives: foster competitiveness in high-growth and innovation-driven sectors and strengthen essential enablers such as policy, infrastructure, education, financing, and innovation capabilities. The Vision is designed to open new doors for every Bhutanese, ensuring that economic growth is broad-based, inclusive, and sustainable. As such, the realisation of the 10X National Economic Vision 2050 is a shared national endeavour. Its success hinges upon the steadfast

commitment and collaboration of all segments of society — government, private sector, civil society, international partners, and local communities alike.

The next decade will be pivotal in shaping Bhutan's trajectory. Therefore, it is imperative that we act with urgency and conviction — aligning policies, mobilising resources, and cultivating an environment that nurtures enterprise, investment, and innovation. As we embark on this transformative journey, I invite and encourage every Bhutanese to take an active role in shaping our collective future. Together, we will build an economy that not only sustains us but also serves as an inspiration to the world.

(Tshering Tobgay)

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## Abbreviations

<b>ABTO</b>	Association of Bhutanese Tour Operators
<b>AI</b>	Artificial Intelligence
<b>AMC</b>	Agriculture Machinery Centre
<b>BCAA</b>	Bhutan Civil Aviation Authority
<b>BCCI</b>	Bhutan Chamber of Commerce and Industry
<b>BIMSTEC</b>	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
<b>BPO</b>	Business Process Outsourcing
<b>CAGR</b>	Compound Annual Growth Rate
<b>CLT</b>	Cross-Laminated Timber
<b>CRM</b>	Critical Resource Materials
<b>DHI</b>	Druk Holding and Investments
<b>ECCD</b>	Early Child Care and Development
<b>ESG</b>	Environmental, Social and Governance
<b>EU</b>	European Union
<b>EV</b>	Electric Vehicles
<b>FDI</b>	Foreign Direct Investment
<b>FMCL</b>	Farm Machinery Corporation Limited
<b>FY</b>	Financial Year
<b>FYP</b>	Five-Year Plan
<b>GB</b>	Gigabyte
<b>GCC</b>	Global Capability Centre
<b>GMC</b>	Gelephu Mindfulness City
<b>GDP</b>	Gross Domestic Product
<b>GNH</b>	Gross National Happiness
<b>HRAB</b>	Hotel and Restaurant Association of Bhutan
<b>ICT</b>	Information and Communication Technology
<b>IMF</b>	International Monetary Fund
<b>IoT</b>	Internet of Things
<b>KPIs</b>	Key Performance Indicators
<b>KPO</b>	Knowledge Process Outsourcing
<b>LVL</b>	Laminated Veneer Lumber
<b>MICE</b>	Meetings, Incentives, Conferences, and Exhibitions
<b>MoAL</b>	Ministry of Agriculture and Livestock
<b>MoENR</b>	Ministry of Energy and Natural Resources
<b>MoESD</b>	Ministry of Education and Skills Development
<b>MoFAET</b>	Ministry of Foreign Affairs and External Trade
<b>MoH</b>	Ministry of Health
<b>MoHA</b>	Ministry of Home Affairs
<b>MoICE</b>	Ministry of Industry, Commerce and Employment
<b>MoIT</b>	Ministry of Infrastructure and Transport
<b>MSMEs</b>	Micro, small-and medium-sized enterprises
<b>MW</b>	Megawatt

<b>NBC</b>	National Biodiversity Centre
<b>NCGS</b>	National Credit Guarantee Scheme
<b>NEC</b>	National Environment Commission
<b>NPL</b>	Non-Performing Loan
<b>NRDCL</b>	Natural Resource Development Corporation Limited
<b>NSB</b>	National Statistics Bureau
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OPMC</b>	Office of Prime Minister and Cabinet
<b>PISA-D</b>	Programme for International Student Assessment for Development
<b>R&amp;D</b>	Research and Development
<b>RCSC</b>	Royal Civil Service Commission
<b>REE</b>	Rare Earth Elements
<b>RMA</b>	Royal Monetary Authority
<b>RUB</b>	Royal University of Bhutan
<b>SAARC</b>	South Asian Association for Regional Cooperation
<b>SASEC</b>	South Asia Sub-Regional Economic Cooperation
<b>SDF</b>	Sustainable Development Fee
<b>SME</b>	Small and Medium Enterprises
<b>SOE</b>	State-Owned Enterprise
<b>STEM</b>	Science, Technology, Engineering, and Mathematics
<b>TVET</b>	Technical and Vocational Education and Training
<b>TWh</b>	Terawatt-hours
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>VC</b>	Venture Capital
<b>VDU</b>	Vision Delivery Unit

An aerial, high-angle photograph of a lush valley. A wide, light-colored river winds through the center of the valley. The surrounding hillsides are covered in vibrant green terraced fields. Small clusters of buildings with colorful roofs are scattered throughout the valley. In the background, misty mountains rise under a clear blue sky. The overall scene is peaceful and scenic.

# Executive Summary

## Executive Summary

Over the past four decades, Bhutan has made remarkable economic progress by leveraging its political stability, rich cultural and social assets, and strategic investments in hydropower and tourism. These efforts have resulted in sustained GDP growth, improved living standards, and international recognition as a carbon-negative country with development rooted in Gross National Happiness (GNH). In 2023, Bhutan's real GDP was \$2.2 billion (Nu 185 billion) with a nominal GDP per capita of \$3,920. Bhutan graduated from the Least Developed Country Category in December, 2023.

Advancements in technologies such as artificial intelligence and autonomous tech, and the broader digital revolution, offer pathways to accelerate economic growth by accessing opportunities across different sectors and markets. Demographic trends such as ageing and emigration within and outside Bhutan create both risks and opportunities. Climate change and transition to Net Zero requires economies to consider how they approach development. Bhutan's deep commitment to sustainability and environmental leadership positions Bhutan well to respond to the opportunities in green transition.

Bhutan also faces challenges that pose risks to its long-term development ambitions. High youth unemployment, recorded at 17.7 percent in Q4 2024,<sup>1</sup> and significant emigration, particularly of skilled workers, undermine its potential to harness its demographic dividend. Emigration has exacerbated labour shortages, weakened the domestic talent pool, and contributed to socio-economic disparities.

Structural and systemic barriers also hinder Bhutan's economic transformation. Around 96 percent of businesses<sup>2</sup> are small-scale and cottage-based enterprises employing 58 percent (~45,000) of individuals working in industry. High production costs, limited access to finance, and inadequate infrastructure weaken competitiveness and deter investment. Dependence on hydropower and low agricultural productivity heightens economic vulnerabilities, while workforce skill mismatches and inefficient trade logistics further constrain growth in key sectors.

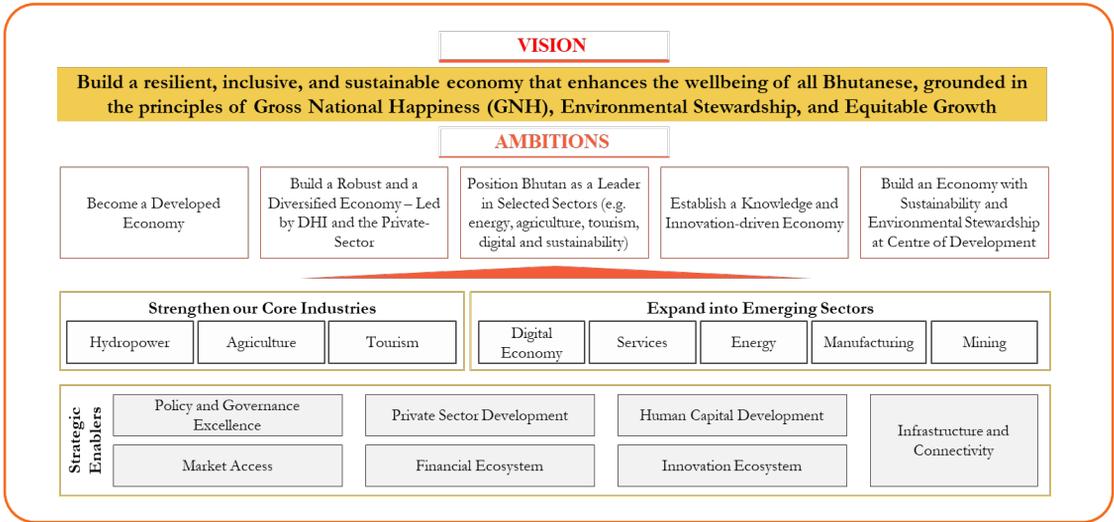
Bhutan is at a critical juncture and now is an opportunity to strategically plan the next few decades to develop a prosperous future. The 21<sup>st</sup> Century Economic Roadmap articulates Bhutan's economic direction through the 10X Vision and its bold ambitions to build a future-ready economy in a rapidly changing world.

The Vision seeks to achieve three core aspirations for Bhutan's economic transformation: establish a globally recognised Bhutanese brand in high-value sectors such as hydropower, tourism, agriculture, digital, and sustainability, embed and enhance trust through strategic investments in policy, governance, human capital, and transparency, and create a resilient economy by strengthening core industries and expanding into emerging sectors. The framework includes five ambitions, eight priority sectors, and seven strategic enablers.

Bhutan's 10X National Economic Vision is to **'build a resilient, inclusive, and sustainable economy that enhances the wellbeing of all Bhutanese, grounded in the principles of Gross National Happiness (GNH), Environmental Stewardship, and Equitable Growth.**

<sup>1</sup> National Statistics Bureau. (2024). *Fourth Quarter Labour Force Survey*.

<sup>2</sup> Department of Industry & National Statistics Bureau. (2024). *Industry Census of Bhutan 2024*.



Bhutan's 10X National Vision Framework

### 10X Economic Vision and Ambitions

By 2050, Bhutan will have grown real GDP tenfold, having already achieved a developed country status with full employment, and a diversified economy led by DHI and the private sector.

The Vision aspires to position Bhutan as a leader in selected high-value sectors and establish a knowledge and innovation-driven economy with established leadership as a carbon-neutral nation

committed to sustainable development globally.

Achieving these ambitions requires diversification across Bhutan’s economy, including building a dynamic private sector with a high share of growth SMEs and active participation from external investors.

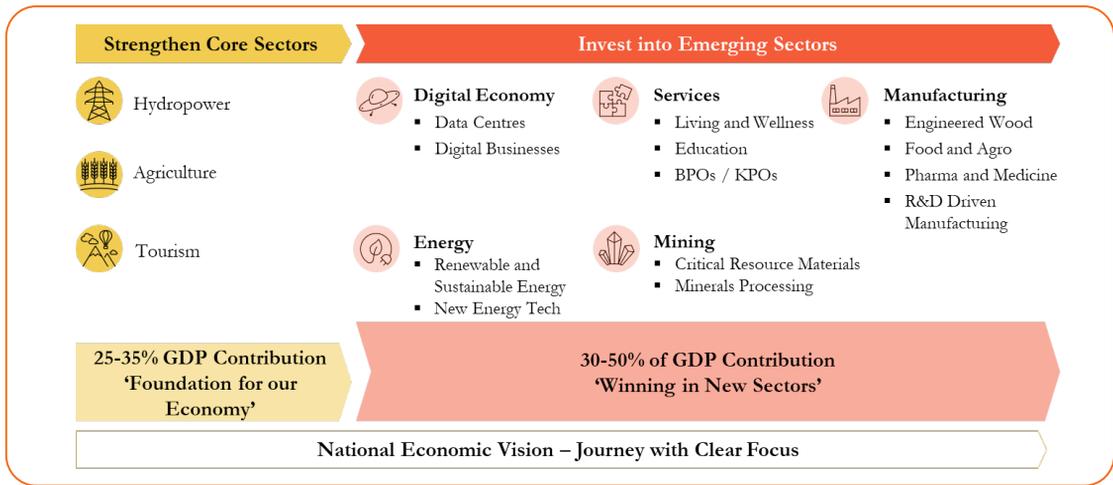
Indicative targets are:

Sl No	Ambition Area	2050 Targets
1	Transform Bhutan into a Developed Economy	Increase real GDP (basic) tenfold from Nu 185bn (2023) to Nu 1,850bn
2	Build a Robust and a Diversified Economy — Led by DHI and the Private Sector	Target 60-65 percent gross value added from a thriving private sector
3	Position Bhutan as a leader in selected priority sectors	Achieve recognition in sustainability, tourism, agriculture, digital and services sectors
4	Establish Bhutan as a Knowledge and Innovation Driven Economy.	Generate 20-25 percent of GDP via knowledge and tech led sectors, including education and digital
5	Foster an economy with sustainability and environmental stewardship at the centre of development	Maintain carbon neutrality through 2050 and beyond

Bhutan's 10X Ambitions and Targets

## Priority Sectors

Bhutan’s 10X National Economic Vision will be underpinned by a focus on priority sectors, enabling Bhutan to build a diversified and a resilient economy — well placed to prosper in the 21<sup>st</sup> Century.



Priority Sectors Strategy

## Strengthening Core Sectors

Bhutan’s economic transformation depends on its three core industries: hydropower, agriculture, and tourism. Together, these sectors will contribute between 25 and 35 percent of GDP by 2050.

Sector	Indicative GDP Contribution (2050)
Hydropower (incl energy)	12 to 15 percent
Agriculture	3 to 4 percent
Tourism	10 to 15 percent

2050 GDP Contributions of Priority Sectors

## Hydropower: The Foundation of Economic Growth

Hydropower has been Bhutan’s economic backbone, contributing ~12 percent of real GDP in 2023<sup>3</sup> and generating significant export revenues. The contribution of hydropower extends beyond energy generation, supporting industrialisation and economic diversification.

Bhutan’s untapped hydropower potential of 36,900 MW presents an opportunity to expand capacity to 25,000 MW by 2050, bolstering clean energy exports and fostering leadership in renewable energy.

Bhutan must negotiate challenges such as climate change, seasonal variability, and the capital-intensive nature of hydropower. Strategic initiatives include accelerating hydropower development and building expertise in hydropower technology. Commissioning hydropower projects will be essential in accelerating GDP growth in the short to medium-term. Emerging opportunities, like cryptocurrency mining powered by low-cost hydroelectricity, further underline the sector’s importance to Bhutan’s economy.

<sup>3</sup> National Statistics Bureau. (2024). *National Accounts Statistics*.

Hydropower, including energy, will be central to Bhutan's economic strategy — contributing 12 to 15 percent of GDP in 2050 and will underpin energy security, drive industrial competitiveness, and support the growth of other priority sectors.

### Agriculture: From Subsistence Farming to High-value Production

Agriculture employs 39.9<sup>4</sup> percent of Bhutan's workforce but is subsistence-based, with only 7 percent of land classified as arable. Productivity challenges and climate-related risks have constrained the sector's growth.

By 2050, agriculture's GDP share is expected to decline to 3-4 percent, reflecting economic diversification. Modernisation and infrastructure improvements are critical to transforming agriculture into a high-value, export-oriented sector. Key initiatives include expanding irrigation, adopting modern technologies, and enhancing cold storage and logistics. Private sector involvement, cooperative models, and land consolidation will also drive economies of scale and increase productivity.

Establishing Bhutan as a premium organic brand and diversifying into high-value crops and livestock will enhance export potential and income of farmers. Long-term growth in agri-processing and niche exports like superfoods, medicinal cannabis will position agriculture as a cornerstone of Bhutan's sustainable development strategy.

### Tourism: Premium Destination of Choice for Discerning Travellers

Tourism has been a major contributor to Bhutan's economy, generating ~10 percent of GDP pre-pandemic<sup>5</sup> and employing 16 percent of the workforce. Bhutan's unique "high-value low-volume," tourism model ensures sustainability while attracting high-spending visitors.

To drive growth, Bhutan will diversify its tourism products, targeting segments like wellness, adventure, and Meetings, Incentives, Conferences, Exhibitions (MICE). Investments in infrastructure, including expanded air connectivity and digitalisation, will improve accessibility and visitor experiences. Promoting tourism in underexplored regions, particularly Eastern Bhutan, will support regional development and attract repeat visitors.

By 2050, Bhutan aspires to increase tourism (and associated adjacent sectors)'s GDP contribution to between 10 and 15 percent by tapping high-value markets, enhancing branding, and fostering resilience through diversification. The sector will play a pivotal role in advancing Bhutan's global reputation as a sustainable and premium destination while supporting adjacent industries like hospitality and transportation.

### Expanding into Emerging Sectors

Bhutan's 10X National Economic Vision emphasises emerging sectors such as the digital economy, services, energy, manufacturing, and mining. These sectors will leverage Bhutan's

<sup>4</sup> National Statistics Bureau. (2024). *Fourth Quarter Labour Force Survey*.

<sup>5</sup> Department of Tourism. (2019). *2019 Bhutan Tourism Satellite Account*.

resources, infrastructure, and unique market advantages to create high-quality jobs, reduce emigration, and establish a credible brand in regional and global markets. A coordinated, state-led effort is required to establish foundational ecosystems and attract private sector participation.

Sector	Focus Areas	Indicative GDP Contribution (2050)
Digital Economy	<ul style="list-style-type: none"> <li>AI-ready Data Centres</li> <li>Digital Businesses targeting multiple sectors</li> </ul>	10 to 17 percent
Services	<ul style="list-style-type: none"> <li>Holistic Living and Wellness Hubs</li> <li>Education Services</li> <li>BPO and KPO Services</li> </ul>	8 to 12 percent (excluding digital businesses)
Energy	<ul style="list-style-type: none"> <li>Renewable Energy</li> <li>Sustainable Energy</li> <li>Green Technologies</li> </ul>	Refer to hydropower
Manufacturing	<ul style="list-style-type: none"> <li>Forestry-based Manufacturing</li> <li>Agriculture-based Manufacturing</li> <li>Pharmaceuticals and related sectors</li> <li>R&amp;D-driven Manufacturing</li> </ul>	15 to 20 percent
Mining	<ul style="list-style-type: none"> <li>Critical Resource Materials (CRM) and Rare Earth Elements (REE)</li> <li>Mineral Processing</li> </ul>	>4 to 5 percent

Emerging Sectors Focus Areas

### Digital Economy: Data Centres and Digital Businesses

Digitalisation provides immense opportunities for Bhutan to become a technology-led and knowledge-driven economy.

Bhutan will establish AI-ready, eco-friendly data centres by leveraging the abundant renewable hydropower, temperate climate, and political stability. Bhutan will position itself as a regional hub for green data centres.

Data centres also represent a strategic opportunity to integrate Bhutan into the global digital ecosystem while reducing dependency on traditional sectors like agriculture and hydropower. However, Bhutan must mitigate and manage challenges by ensuring 24/7 power reliability, upgrading fibre connectivity, and adopting seismic-resistant designs for the construction of data centres. Key initiatives will include the construction of several data centres in the next decade, creating thousands of jobs

during the construction and operational phases.

Bhutan will also build a vibrant digital business ecosystem where Bhutan will be home to innovative companies and start-ups focused on digital, data analytics, AI, and software businesses delivering solutions. These businesses will work across existing sectors to driving synergies and enabling ecosystem benefits.

By 2050, digital economy will contribute between 10 and 17 percent of GDP and generate over 20,000 high-paying and skilled jobs.

### Services: Wellness, Education, and Business Services

Bhutan will develop a dynamic services sector that aligns with global trends leveraging its unique cultural and natural assets. Specifically, Bhutan will focus on holistic Living and Wellness Centres, Education Services, and Business and Knowledge Process Capability Centres.

Bhutan's pristine environment and rich spiritual and cultural heritage offer a compelling opportunity to establish world-class wellness tourism and holistic living hubs. By integrating traditional medicine, mindfulness, and sustainable practices, Bhutan will cater to the growing global demand for wellness experiences and solutions. The global wellness market, valued at USD 830 billion in 2023,<sup>6</sup> presents an opportunity for Bhutan to differentiate itself as a premier destination for wellbeing.

Further, Bhutan will explore retirement communities and elderly care services, offering an affordable, culturally immersive, and tranquil alternative to traditional retirement destinations. These initiatives will complement the core tourism sector offerings and pave the way for medical tourism, targeting international patients seeking advanced treatments, post-recovery care, and alternative therapies. The ambition is to establish Bhutan as a trusted centre for integrated wellness and healthcare services.

Bhutan will develop a knowledge-driven services sector, with a strategic focus on education and digital capabilities. The Education Services will attract international students and academic institutions, offering programmes aligned with Bhutan's economic priorities in sustainability, tourism, digital economy, and business. By forming global partnerships, expanding research capabilities, and enhancing infrastructure, Bhutan will strengthen its position as a regional leader in higher education, reducing outbound student migration while ensuring strong synergies with other sectors such as healthcare, technology, and entrepreneurship.

Establishing Business Process Outsourcing (BPO) and Knowledge Process Outsourcing (KPO)

centres will integrate Bhutan into the global digital and services economy, supporting multiple industries ranging from financial services through to retail sector. This sector will work closely with education services to ensure graduates have relevant skills while attracting international firms to invest and operate in Bhutan.

By 2050, Bhutan's services sector will contribute 8-12 percent (excluding digital services) of GDP.

### Energy: Green and Sustainable Energy

Bhutan will build a resilient and diversified energy sector and reduce its dependence on seasonal hydropower and fossil fuel imports. While hydropower contributes over 95 percent of electricity generation, seasonal variations require imports. Bhutan has vast untapped renewable energy potential, including 12,000 MW of solar, 761 MW of wind, and waste-to-energy solutions. Bhutan is also exploring green hydrogen and geothermal energy, with plans for pilot projects by 2028-29.

To achieve these ambitions, Bhutan will invest in solar, wind, biomass, and sustainable fuels like biofuels and green hydrogen. It will implement the Hydrogen Roadmap, pilot advanced energy storage solutions, modernise the power grid, and enhance electric vehicle adoption. Bhutan will engage in global carbon markets and incentivise private sector participation. These initiatives will strengthen energy security, support economic growth, reduce fossil fuel dependence, and position Bhutan as a leader in clean energy while maintaining its carbon-negative status.

By 2050, the broader energy initiatives will create jobs and add to GDP contribution together with hydropower.

<sup>6</sup> Global Wellness Institute. (2024), <https://globalwellnessinstitute.org>

## Manufacturing: High-value, Eco-friendly manufacturing

Bhutan's ambition for manufacturing targets high-end, export-oriented products by leveraging its natural resources, biodiversity, and unique cultural values to create sustainable and high-value manufacturing industries.

The manufacturing ambition spans across multiple sectors, including forestry, agriculture, pharmaceuticals and cosmetics, and R&D-driven industries, all of which align with Bhutan's Gross National Happiness philosophy and sustainability goals.

Within Forestry, Bhutan will develop an engineered wood industry by using advanced technologies like Cross-Laminated Timber (CLT) and Laminated Veneer Lumber (LVL). These products will meet the growing demand for sustainable construction materials, particularly in South and Southeast Asia, the Gelephu Mindfulness City (GMC), and other domestic projects within Bhutan.

Bhutan will invest into agri-based manufacturing and transform Bhutan's agricultural produce into premium products targeting health-conscious consumers in international markets. Key areas of focus include high-value dairy products, and superfoods like buckwheat and quinoa, marketed in eco-friendly packaging to emphasise Bhutan's organic and sustainable practices.

Bhutan's rich biodiversity also provides a foundation for developing traditional medicines and natural cosmetics. Natural cosmetics that reflect Bhutan's pristine environment and commitment to sustainability could appeal to premium international markets. Investments in research and development are critical to standardising traditional medicines and expanding into the generics market through partnerships and

FDI. Medicinal cannabis cultivation, supported by proper regulatory frameworks, could tap into a growing global industry.

Bhutan will also invest in high-tech, R&D-driven manufacturing sectors to diversify its economy. Opportunities exist in producing high-value components for advanced automotive, technology, and electric vehicle industries. This will require significant investments in R&D infrastructure, international collaboration, workforce development, and technology transfer. These efforts will position Bhutan as a competitive player in global high-tech markets. DHI will play a key role in the development of R&D-driven manufacturing.

Manufacturing will contribute 15-20 percent of GDP, driving economic growth, creating jobs, and positioning Bhutan as a global supplier of high-end, sustainable goods.

## Mining: Unlocking Critical Resources and Sustainable Mineral Processing

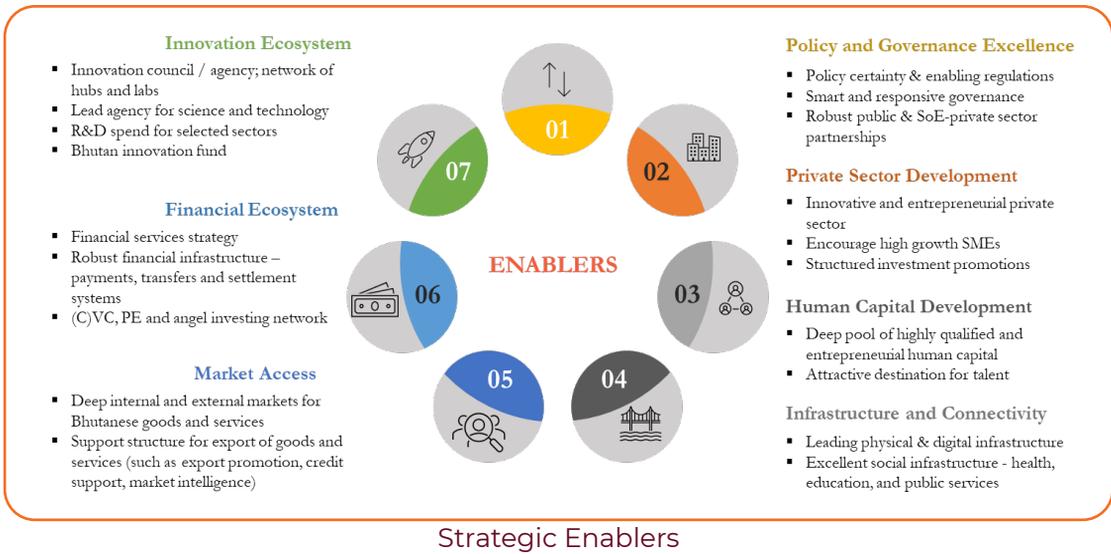
Bhutan will also explore the presence of critical resource materials (CRMs) and rare-earth elements (REE), to participate in global supply chains for clean energy technologies and advanced electronics. Comprehensive geological surveys will be required to confirm deposits of lithium, cobalt, copper, and other CRMs, which are increasingly sought after by industries worldwide.

Using Bhutan's clean hydropower and political stability, Bhutan will also invest in sustainable mineral processing technologies. This will include partnering with environmentally responsible mining firms, leveraging AI-based exploration technologies, and aligning with international standards.

Challenges such as high exploration costs, market volatility, and environmental concerns must be carefully managed. Successful development of the mining sector would diversify Bhutan’s economy and complement the broader manufacturing sector. Over the long-term, mining will contribute around 4-5 percent of 2050 GDP.

## Creating Enabling Ecosystem

To power the development of the priority sectors, the 10X National Economic Vision has identified seven strategic enablers to address systemic barriers and unlock economic potential.



## Policy and Governance Excellence

In the short to medium-term, the public sector will lead key areas of economic development. Transparent governance structures, streamlined bureaucratic processes, and policy alignment will create an enabling environment for economic growth. By fostering accountability and implementing pro-growth policies, Bhutan can attract investments, encourage entrepreneurship, and build confidence in Bhutan’s economic ambitions. A predictable policy environment will reduce risks and establish Bhutan as an attractive destination for foreign direct investment (FDI). Through this initiative, relevant regulations and policies will be reviewed or developed.

The public sector will adopt innovative and responsive governance practices, leveraging

technology and data for evidence-based decision-making. Stronger public-private partnerships will align efforts across the priority sectors, enabling efficient resource allocation and sectoral growth.

As institutional capacity and governance environment improves, the private sector will be empowered to increase participation in the economy driving diversification, resilience, and inclusivity.

## Transitioning to Private-Sector-Led Growth

Bhutan’s economic transformation depends on transitioning from the public-sector-led growth to a dynamic, private-sector-driven model in the next two decades. Enhancing the ease of doing

business, streamlining regulatory frameworks, and expanding access to credit will empower small, medium, and large enterprises. Bhutan will develop and implement a SME strategy focused on high-growth sectors of the economy. Strategic investment promotion and targeted capacity building initiatives will attract domestic and foreign investors, fostering innovation, driving employment, and positioning the private sector as a catalyst for sustainable growth.

Developing sector-specific capabilities, particularly in high-growth industries, will enhance Bhutan's competitiveness in regional and global markets. State Owned Enterprises (SOE) will refocus on large-scale strategic investments, creating opportunities for the private sector players to lead and participate in several sectors. Over time, a dynamic private sector will drive GDP growth, reduce economic vulnerabilities, and support Bhutan's economic vision.

### Deepening Talent

A well-educated and skilled workforce is vital for Bhutan's transformation. Early childhood education, vocational training, and higher education must be recalibrated and revamped to align with global standards and emerging market demands. Investment in early-stage education will ensure cognitive development and reduce inequalities, while vocational training based on models like Germany's dual education system will equip the workforce with relevant skills.

Incentives to attract Bhutanese diaspora and high-skilled international talent will also address critical gaps. By fostering collaboration between academia, industry, and government, Bhutan can align education with economic ambitions and create a competitive workforce.

### Investing in Infrastructure and Connectivity

Strategic investments in physical, digital, and social infrastructure will enhance Bhutan's economic competitiveness. Upgraded transportation networks, including roads, rail links, and air transport, will reduce trade costs and improve access to regional and global markets. Enhanced air capacity and industrial zones will support key sectors like tourism, manufacturing, and agriculture.

Digital infrastructure such as high-speed internet, data centres, and 5G networks will enable Bhutan to capitalise on growth opportunities in technology services and software businesses. Social infrastructures, including healthcare, education, and climate and disaster-resilient housing, will enhance the wellbeing of the population and make Bhutan an attractive destination for talent and investments.

### Expanding Market Access

Bhutan will prioritise market access and development to overcome the limitations of its small domestic economy. Expanding exports through trade agreements, regional partnerships, and public marketing initiatives will enable Bhutanese businesses to tap into the ever growing Indian and broader markets in the region.

Export promotion councils, improved trade infrastructure, and diaspora engagement will build Bhutan's global brand, fostering competitiveness and resilience. Further, the GMC creates significant market opportunities for broader Bhutan as a gateway to Southeast Asia.

Diversifying Bhutan's export base beyond hydropower, ferro-silicon, and other commodities such as dolomite, boulders is crucial. Targeted support for sectors like agriculture, tourism, and

digital services will broaden the economic base and create sustainable revenue streams. By leveraging Bhutan's unique cultural and environmental assets and investing into new capabilities (modern manufacturing, digital and technologies), Bhutan can establish itself as a trusted exporter of high-quality goods and services in the regional and global markets.

### Enhancing the Financial Ecosystem

A dynamic financial ecosystem is essential to support Bhutan's economic transformation. Broader access to credit for the private sector including SMEs, combined with innovative instruments like green bonds and venture capital, will drive diversification and innovation. Strengthening financial literacy and regulatory frameworks will promote financial inclusion and attract both domestic and foreign investors.

Strategic use of long-term capital from pension funds and insurance companies will also support critical sectors like renewable energy and infrastructure. Improved payment systems and streamlined FDI policies will strengthen the trade and investment climate, driving sustainable economic growth and resilience. These financial advancements will empower businesses to innovate and thrive, aligning with Bhutan's long-term ambitions.

### Fostering a Culture of Innovation

Innovation will be central to Bhutan's 10X National Economic Vision. Crafting deep innovation capability will enable Bhutan to scale and accelerate different sectoral ambitions and power growth to 2050.

The Government will develop and implement a strategy for science, technology, and innovation. Establishing innovation hubs, scaling R&D, and fostering collaboration across academia, industry,

and government will create deep knowledge across sectors, empower entrepreneurs to create and commercialise new products and services. Tax incentives for R&D and a funding structure for innovation will attract global talent and investment, enhancing Bhutan's competitiveness.

Innovation will focus on priority sectors such as digital services, agriculture, tourism, and sustainability to enable a fly-wheel model of development. Measurable progress in global innovation rankings, increased R&D spending, and the emergence of high-growth startups will position Bhutan as a regional leader in sustainable, technology-driven growth.

### Operationalising for Success

The Vision aims to achieve sustainable growth through a robust governance framework, strategic alignment, and collaborative partnerships. The success of this Vision depends on effectively balancing short-term initiatives with long-term objectives, fostering cross-sector synergies, and ensuring strong private sector participation.

Achieving the ambitions requires real GDP growth rates of more than 8 percent per annum. However, in the short-term, growth rates of around 10-12 percent per annum will be required to establish momentum. It is essential for Bhutan to kick-start key initiatives as soon as possible and latest by 2027.

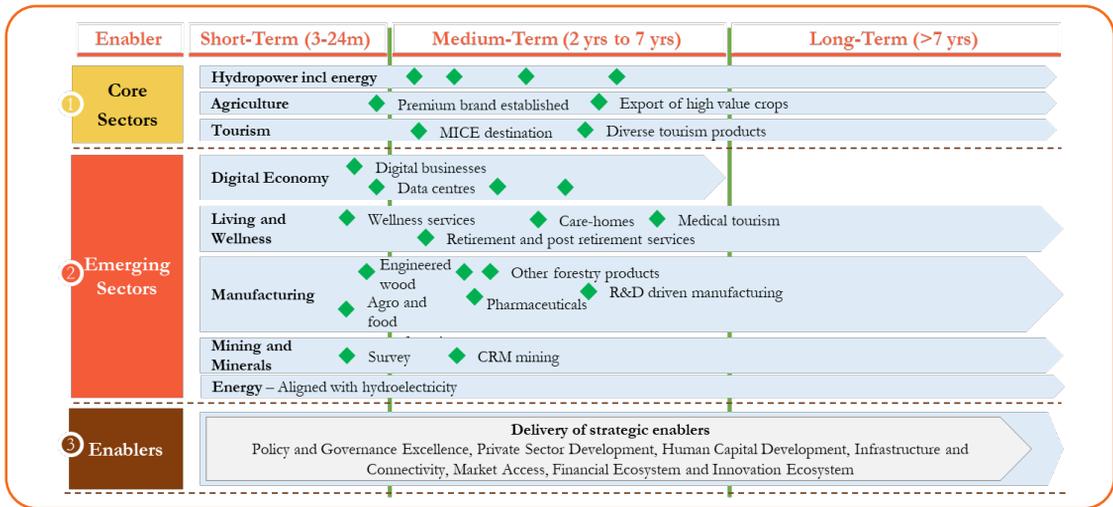
The GDP growth can be accelerated by construction and commissioning of planned hydropower projects. Further, Bhutan could initiate key projects such as a large multi-million AI data centre (construction beginning in 2027), a large engineered wood production facility generating USD 50 million in annual export revenues from 2029, a large scale BPO / KPO centre employing up to 1,000 people created through partnerships

with global outsourcing firms and accelerating wellness services and establishing retirement and nursing homes for up to 1,000 residents. High level vision milestones are provided in the Figure below.

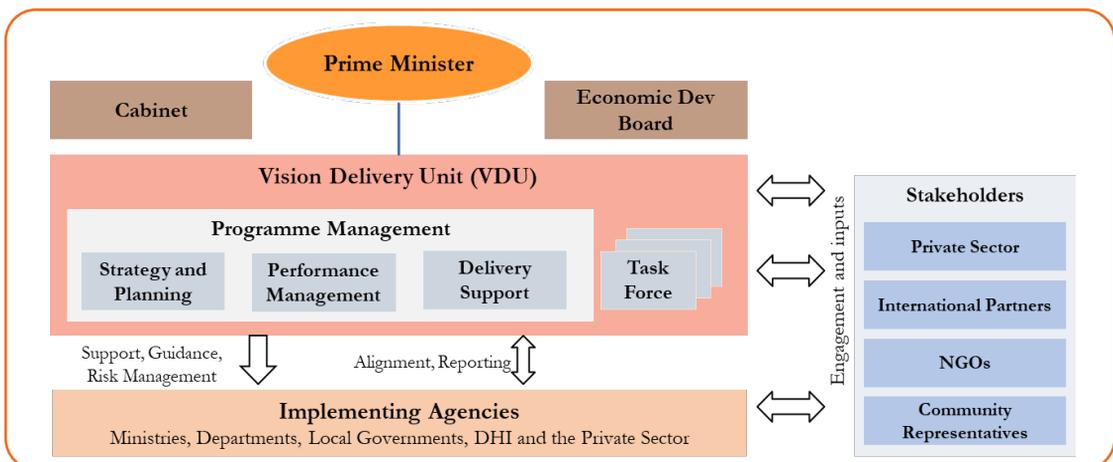
Bhutan will require substantial financing to achieve its Vision which will be a mix of domestic savings, long-term investment capital, FDI, and international financing mechanisms. Additionally, the government will collaborate with development partners to secure grants and aid, while implementing policies to attract FDI and mobilise resources.

A well-structured delivery mechanism and empowered implementing agencies are keys to driving and sustaining these outcomes.

To ensure seamless implementation, a Vision Delivery Unit (VDU) will coordinate efforts across government agencies and private stakeholders. This unit will guide strategic planning, monitor progress, and establish frameworks for consistent tracking and reporting. Meanwhile, Ministries, Departments and DHI will take ownership of the Vision’s initiatives, aligning them with the Five-Year Plans and ensuring regular reporting to maintain accountability.



Vision Milestones



Governance and Delivery Structure

However, delivering the Vision is a collective responsibility. The private sector, international organisations and individuals have pivotal roles in driving productivity, fostering innovation, and creating an enabling environment for economic diversification. The Vision through its initiatives promises significant opportunities for all stakeholders in the economy. Local governments, NGOs, and community organisations will ensure that national strategies align with regional needs, promoting equitable economic success across all communities.

Clear communication, transparent performance management, and optimised resource allocation will underpin the operational strategy. Comprehensive frameworks for monitoring and evaluation, alongside structured reporting mechanisms, will enhance accountability and stakeholder trust.

By integrating Bhutanese values, such as the GNH philosophy, and leveraging strategic international partnerships, Bhutan is well-positioned to realise its ambitious Vision, fostering long-term prosperity for the nation.



## CHAPTER ONE:

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# Purpose of the Economic Vision

The 10X National Economic Vision, rooted in Bhutan's unique strengths, values, and culture, is Bhutan's strategic blueprint for economic transformation and reflects the aspirations for a prosperous, sustainable, and resilient Bhutan.

The Vision articulates our national ambitions and targets, detailing strategic initiatives, which addresses our current challenges — both economic and social — to become a developed country by 2034 and grow GDP tenfold by 2050.

The Vision lays the foundations for a prosperous Bhutan which will ensure economic stability and opportunities for all Bhutanese in an increasingly interconnected and fast-evolving global landscape.

### 1.1 Context

Over the past four decades, Bhutan has made significant strides in socio-economic development, leveraging political stability, rich social and cultural assets, led by the enlightened leadership of our beloved Kings. Bhutan has achieved sustained GDP growth (nominal growth of 9.3 percent per annum since 2010 and 7.1 percent per annum since 2013)<sup>7</sup> and improved living standards, while cementing Bhutan's reputation as a carbon-negative country, guided by our unique development philosophy centred on GNH. Bhutan graduated from the category of Least Developed Countries (LDCs) on December 13, 2023.

The ever-changing global economic scenario presents opportunities for Bhutan to transform its economy. Bhutan can become a developed country with all citizens enjoying significantly improved living standards.

The Vision is developed in the context of major global mega-trends and considers key challenges for Bhutan such as our reliance on hydropower, limited economic diversification, and vulnerability to global economic and environmental changes.

### Technological Innovation and the Digital Revolution

The world is witnessing an explosion in technological advancements, which are reshaping industries, economies, and societies globally. The rise of artificial intelligence, autonomous technologies, distributed ledger technologies and automation are creating opportunities for countries and industries to leapfrog traditional development paths. Digital transformation and adoption of appropriate technologies offer pathways for Bhutan to transform the economy. There are opportunities to invest in digital infrastructure, upskill the workforce, and foster an entrepreneurial ecosystem.

### Increasingly Connected World

Globalisation and regional integration continue to drive interconnectedness in trade and finance. The DHL Global Connectedness Tracker reveals that globalisation remains robust, with international flows holding at record levels despite geopolitical tensions and global uncertainties. In 2023, international trade accounted for 21 percent of global GDP, close to the all-time high of 22 percent.<sup>8</sup>

This not only creates new markets, and access and collaboration opportunities but also increases economic dependencies. Participation in global value chains and cross-border trade is important for Bhutan to build resilience against external shocks.

<sup>7</sup> Calculated based on information from National Accounts Statistics, 2024, National Statistics Bureau

<sup>8</sup> DHL. Global Connectedness Tracker, <https://www.dhl.com/global-en/microsites/core/global-connectedness/tracker.html>

## Geopolitical Shifts and Economic Uncertainty

The global political economy landscape is also becoming increasingly complex, characterised by geopolitical tensions, protectionism, potential trade war and shifts in global power dynamics. Bhutan needs to navigate strategic relations with key development partners effectively and build new partnerships and collaborations. Trade disruptions and changing energy policies globally and regionally could impact Bhutan's hydropower exports and broader supply chains necessitating strategic adjustments.

## Climate Change and Environmental Risks

Climate change poses a direct and significant challenge to Bhutan, particularly to the hydropower sector, which is heavily reliant on glacial-fed rivers. Bhutan's glaciers are retreating at a rate of 20 to 30 meters per year, highlighting the rapid impact of climate change on the region's fragile ecosystems.<sup>9</sup> Changes in precipitation patterns, glacial melt, and extreme weather events could reduce energy generation capacity and disrupt economic stability. This also impacts the agriculture sector, the mainstay of Bhutan's economy — thus requiring adaptation measures. Additionally, Bhutan's vulnerability to natural disasters such as landslides, floods, and earthquakes necessitates climate-resilient infrastructure and disaster preparedness.

### 1.2 Purpose

The 10X National Economic Vision is a transformative blueprint designed to set the direction for Bhutan's economy, chart a strategic roadmap for sustainable and inclusive development, and grow GDP tenfold by 2050. The purpose of the National Economic Vision is threefold.

#### 1. Set the Direction of our Economy for the 21<sup>st</sup> Century

The Vision will define Bhutan's economic goals, providing a clear direction for the economy, and outlining guiding principles and key priorities required to achieve a prosperous, inclusive, and sustainable future.

The Vision builds on the foundation of Bhutan's unique strengths, such as the pristine environment, distinct cultural identity, and commitment to equitable development, while adapting to the dynamic and interconnected nature of the global economy.

The Vision will foster cohesion among priority sectors including creating opportunities for the private sector, ensuring that investments and initiatives contribute to a shared national goal. The Vision also emphasises economic resilience, aiming to reduce dependencies, diversify income streams. It is a call to action for all Bhutanese to work together with purpose, commitment, and foresight in shaping an economy that balances growth with values and is agile in the face of global uncertainties.

#### 2. Define our Pathway to become a Developed Country

Bhutan has demonstrated abilities to achieve ambitious goals in the past and this is an opportunity for Bhutan to become a developed GNH country as soon as possible. This ambitious goal requires a sustained focus on boosting productivity, increasing exports, and fostering innovation-driven industries.

To achieve this, Bhutan will not only pursue and deliver robust growth in its core sectors but also invest in emerging industries with

<sup>9</sup> ICIMOD. (2016). *Bhutan: Climate + Change Handbook*.

high growth potential such as capitalising on digital transformation and building competitive manufacturing and service industries.

Bhutan must integrate into the regional and global trade flows through better connectivity and provision of services while continuously innovating and building competitiveness and finding our place in a fast-developing world.

### 3. Unlock Opportunities for Bhutan from Emerging Mega-trends

The Vision will unlock new opportunities for Bhutan. It identifies key structural reforms, policy shifts, and sectoral investments required to modernise the economy. This includes fostering innovation, adopting digital technologies, and expanding into high-value industries such as digital and green economies. It aims to reduce Bhutan's reliance on a few sectors and create a more diversified and resilient economy.

Unlocking opportunities will also require improving and reorienting institutional capacity, strengthening governance, and investing in human capital to equip the workforce with skills and knowledge for emerging opportunities. This will require investments into world-class infrastructure that is climate resilient and partnerships with global markets.

#### 1.3 Current and Long-Term Challenges

Bhutan faces structural and systemic challenges which necessitates a change in our approach to economic growth. It is important to address rising aspirations for job creation, build resilience and enable economic self-sufficiency. The Vision aims to tackle Bhutan's most pressing challenges and build foundations for success.

#### Population and Migration

In 2017, Bhutan's population was estimated at 735,553 people. According to United Nations<sup>10</sup> estimates, Bhutan's population in 2024 is projected to be approximately 794,417. Looking ahead, the Population Projection 2017–2047 forecasts Bhutan's population to reach 884,000 by 2047, despite a declining fertility rate that is expected to remain below the replacement level for the near future.<sup>11</sup>

Bhutan's population is also expected to undergo significant demographic shift. The proportion of individuals below 15 years of age is anticipated to decline from 26 percent in 2017 to 17 percent by 2047. Conversely, the share of elderly individuals (aged sixty-five and above) is projected to increase from 6 percent to 13 percent over the same period, indicating an aging population.

However, during the period Bhutan is projected to experience an increase in its working-age population, offering a potential demographic dividend. This is at significant risk due to the high emigration among the Bhutanese. As of July 2024, approximately 9 percent of the Bhutanese population has emigrated, posing challenges to the nation's ability to fully capitalise on its demographic potential.

The sex ratio in Bhutan is projected to decline by 2047 to 105 males to 100 females from 110 males to 100 females currently. This shift necessitates economic and social planning that aligns opportunities with the needs of the growing female population. Additionally, by 2037, over half of the population is expected to reside in urban areas, increasing the demand for employment opportunities and urban infrastructure.

<sup>10</sup> United Nations, Department of Economic and Social Affairs, Population Division. (2024). *World Population Prospects 2024: The 2024 Revision*

<sup>11</sup> National Statistics Bureau. (2019). *Population Projections Bhutan: 2017–2047*

Youth unemployment remains high at 17.7 percent as of the fourth quarter of 2024.<sup>12</sup> This persistent issue creates disengagement among young people and increases emigration, compounding Bhutan's challenges in retaining its talent pool.

### High Administrative Costs and Policy Uncertainty

Bhutan's regulatory frameworks impose significant administrative and opportunity costs on businesses and the public. Complex licensing procedures, a lack of streamlined bureaucratic processes, and policy uncertainty impede business efficiency and investments. While several services are digitalised, erratic availabilities and digital adoption is a challenge. Considerable progress has been made since 2020 when Bhutan was ranked 89<sup>th</sup> by the World Bank in its Doing Business report.<sup>13</sup> However, further improvements are required to create a business-friendly climate and encourage private sector growth.

### Low Productivity and Workforce Constraints

Bhutan's economy is characterised by low productivity, with significant sectoral imbalances, which increases costs of production and costs of doing business. For instance, the agriculture sector employs 39.9 percent of the labour force and contributes only ~15 percent to GDP (2024), while the capital-intensive industry sector, which offers limited employment, accounts for 32 percent of GDP.<sup>14</sup>

Several factors such as but not limited to inadequate transportation infrastructure, low levels of mechanisation, limited entrepreneurial

and managerial capabilities, and inadequate work ethics drive low productivity. Further, the private sector faces competition from the public sector in attracting and retaining talent. Aligning the output of the current education system with Bhutan's evolving talent needs is essential. Bhutan's small population base and recent emigration also constrain workforce development by limiting the availability of skilled labour.

### Infrastructure and Market Access

Bhutan's trade is primarily with India (~80 percent of imports and ~77 percent of exports in 2023)<sup>15</sup> with access to international markets confined to over two dozen international markets. Trade depends on efficient trade routes and improved logistics connections. Limited port, airport, and telecommunications infrastructure and lack of market information coupled with inefficiencies in customs processes and unreliable utilities hamper Bhutan's trade expansion.

Internally, challenges include irregular electricity supply, cumbersome customs and administrative procedures, and limited reforms to support ease of doing business. Externally, stringent environmental standards and technical and phytosanitary requirements also create obstacles for exports which significantly restrict Bhutan's competitiveness.

### Suboptimal Private Sector

Bhutan's private sector remains underdeveloped, with ~96 percent of businesses being sole proprietorships and only 3 percent incorporated as companies.<sup>16</sup> The private sector's contribution to the economy is modest, with tax revenue

<sup>12</sup> National Statistics Bureau. (2024). *Fourth Quarter Labour Force Survey*.

<sup>13</sup> World Bank. (2020). *Doing Business 2020: Comparing business regulation in 190 economies*. Washington, DC: World Bank.

<sup>14</sup> National Statistics Bureau. (2024). *Statistical Yearbook 2023*. Thimphu, Bhutan & National Statistics Bureau. (2025). *2024 Fourth Quarter Labour Force Survey*. Thimphu, Bhutan

<sup>15</sup> Ministry of Finance. (2023). *Bhutan Trade Statistics*.

<sup>16</sup> Department of Industry & National Statistics Bureau. (2024). *Industry Census of Bhutan 2024*.

accounting for just 13 percent of GDP in fiscal year 2023-24 and private sector credit contributing less than 40 percent of GDP.<sup>17</sup>

Cottage and small-scale industries dominate Bhutan's economy, accounting for over 95 percent of the industrial licenses as of April 2024.<sup>18</sup> Larger industrial groups are scarce. Businesses primarily operate in sectors such as retail, trade, construction, transportation, tourism, and light industries. However, limited product diversity, and deficiencies in trade facilitation hinder enterprises from scaling and competing in external markets. Additionally, Bhutan's small domestic market restricts economies of scale, further impeding efforts to expand internationally.

The private sector faces systemic productivity issues stemming from inadequate organisation, insufficient skills, use of outdated technologies and a misalignment of skills between labour supply and demand. Low investment in training, limited incentives for skills development, and weak work ethics exacerbate these issues, contributing to limited economic diversification and minimal private sector impact on growth and employment.

SOEs play a significant role in Bhutan's economy by undertaking high-risk, capital-intensive

investments and addressing social mandates. However, profitability and operational inefficiency challenge many SOEs, some of which compete with the private sector in commercial areas like manufacturing and real estate, crowding out private enterprise. Broader issues in governance, investment management, and financial reporting further highlight the need for SOE reforms to better balance economic and social objectives.

### Underdeveloped Financial Ecosystem

Bhutan's financial system is underdeveloped characterised by high borrowing costs and provides limited access to finance for small businesses and certain sectors. The capital market is nascent, with market capitalisation at just 29 percent of GDP, much lower than the proportions in advanced and emerging economies.<sup>19</sup> Restrictions on foreign portfolio investment and shortage of skilled professionals hinder the development of a robust financial ecosystem.

These challenges highlight the need for Bhutan to undertake structural reforms, strengthen institutional capacities, and foster a supportive environment for private sector growth. Addressing these issues is essential to realising the Vision of a diversified, competitive, and resilient economy.

<sup>17</sup> Ministry of Finance. (2024). *Macroeconomic Situation Report, 4th Quarter*. Thimphu, Bhutan

<sup>18</sup> Department of Industry & National Statistics Bureau. (2024). *Industry Census of Bhutan 2024*

<sup>19</sup> Royal Government of Bhutan. (2024). *Thirteenth Five Year Plan (2024–2029)*. Thimphu: Cabinet Secretariat

## CHAPTER TWO:

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# The Vision

## 2.1 10X National Economic Vision

Bhutan will become a developed country, creating accessible and higher-value opportunities for its people and communities, enabling them to participate in and share the nation’s economic prosperity.

**10X National Economic Vision**  
 Build a resilient, inclusive, and sustainable economy that enhances the wellbeing of all Bhutanese, grounded in the principles of Gross National Happiness (GNH), Environmental Stewardship, and Equitable Growth.

The Vision reflects a shared aspiration for Bhutan’s growth and prosperity and encompasses five key elements:

1. **Resilience:** Developing an economy that can withstand and adapt to global and local challenges, ensuring stability and long-term growth.
2. **Inclusivity:** Ensuring all segments of society and regions across Bhutan benefit from economic advancements, reducing disparities and improving social equity.
3. **Sustainability and Environmental Stewardship:** Prioritising environmentally sustainable practices that preserve our natural resources and support a carbon-neutral future, upholding our commitment to environmental protection and climate resilience.
4. **Wellbeing:** Enhancing the quality of life for all citizens by integrating the holistic values of GNH into economic planning and policies.
5. **Equitable Growth:** Promoting fair and balanced economic development that provides equal opportunities for all Bhutanese to thrive.

Bhutan’s 10X National Vision Framework (Figure 1) has been carefully crafted to achieve three core aspirations of Bhutan’s long-term economic transformation.

- **Brand Economy** by positioning Bhutan as a leader in high-value sectors such as hydro-power, tourism, agriculture, digital, and sustainability. The Vision aims to build a globally recognised Bhutanese brand, extending Bhutan’s distinctive identity built on the principles of GNH.

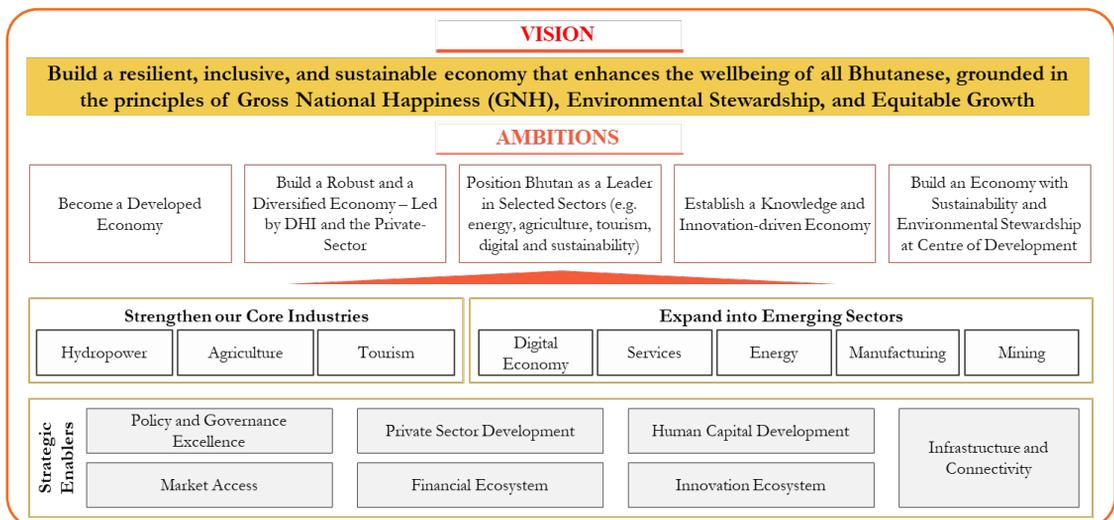


Figure 1: Bhutan’s 10X National Vision Framework

- **Trust Economy** through strategic investments in policy and governance excellence, human capital development, and embedding transparency across all sectors. Bhutan will deepen trust between citizens, public institutions, and economic actors — fundamental to unlocking better outcomes across the economy enabling inclusive progress and a more cohesive society.
- **Strength Economy** by strengthening core industries and expanding into emerging sectors like energy, digital economy, services, and

manufacturing. Bhutan will build an economy that is resilient, future-ready, and capable of withstanding external and internal shocks, underpinned by strategic enablers including infrastructure, private sector development, and market access.

The Vision will create opportunities for all stakeholders in the economy and delivery will be a collective responsibility of the citizens, policymakers, the private sector, and partners.

## 2.2 National Ambitions

Five key national ambitions underpin Bhutan’s 10X National Vision. Figure 2 show key targets against each of the ambitions.

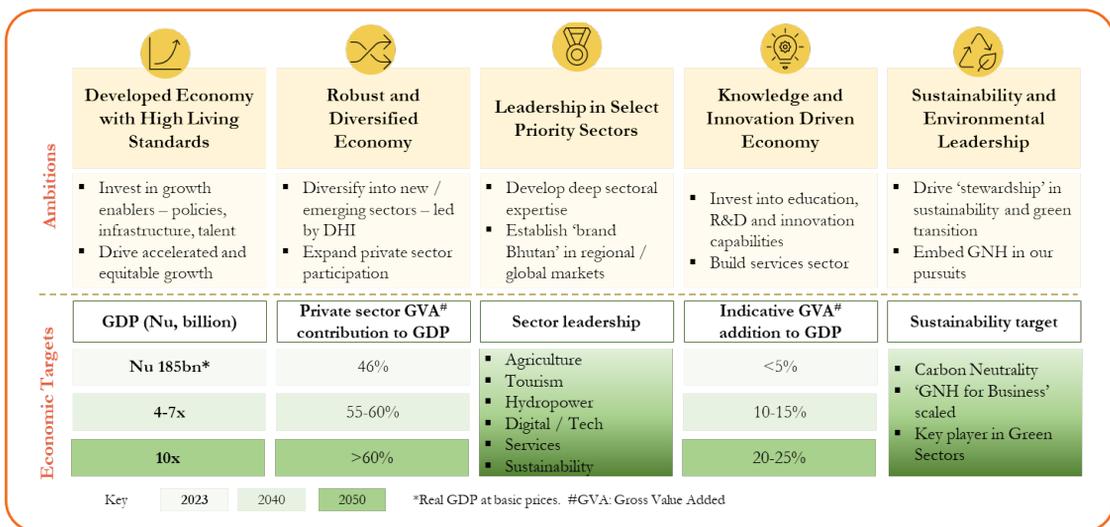


Figure 2: Ambitions and Targets

### Become a Developed Economy

Bhutan aims to achieve developed country status in the next 10 years while targeting a real GDP of Nu 1.9 trillion by 2050, reflecting a tenfold increase from 2023. This will require Bhutan to grow at an annual GDP growth rate of at least 8 percent to 2050. However, in the short-term to build momentum, Bhutan must target significantly

higher growth rates (~12 percent per annum) by embarking on some anchor projects.

Alongside this economic growth, Bhutan will strive for near full employment with an unemployment rate of 2 percent across the years.

## Build a Robust and Diversified Economy — Led by DHI and the Private Sector

Bhutan's economy will diversify across various sectors with active participation from small and large enterprises. Diversification will improve Bhutan's economic resilience by expanding into export-oriented sectors—from traditional sectors like agriculture and tourism to knowledge and technology-driven sectors, attracting significant external investment and FDI.

Druk Holding and Investments (DHI) will play a critical role in accelerating the economic growth and will subsequently enable the private sector. By 2050, the private sector's GDP share is targeted to increase to between 60 and 65 percent, driven by enterprises of different sizes in high-growth sectors.

## Position Bhutan as a Leader in Selected Sectors

Bhutan aims to establish itself as a leader in sectors such as hydropower, agriculture, eco-tourism, digital and the wellness economy. Bhutan will develop a premium brand for its products and services, especially in agriculture, digital, sustainability and other sectors, and build a reputation for high-quality services.

This ambition reflects Bhutan's commitment to sustainability and ambitious standards across various industries. For example, promoting organic farming practices and supporting Bhutanese businesses to produce high-quality goods and services can enhance Bhutan's brand value and attract eco-conscious consumers globally.

## Establish Bhutan as a Knowledge and Innovation-Driven Economy

Bhutan seeks to become a knowledge and innovation-driven economy, with the knowledge and innovation aligned sectors contributing 20-25 percent of GDP by 2050 enabled by growth of digital economy, the services, and the education sector.

The economy will be characterised by high-growth SMEs, with Bhutan as an attractive destination for knowledge workers, talent, and capital. Technology and digital will lead to a step change in productivity across both existing and new sectors.

Bhutan will also develop a strategy for science, technology, and innovation. An innovation ecosystem comprising of technology and science parks, innovation hubs and accelerators will nurture talent and encourage research and development in areas like artificial intelligence and biotechnology. Bhutan will improve in innovation rankings and be seen as an innovative economy.

## Foster an Economy with Sustainability and Environmental Stewardship at the Centre of Development

Bhutan will maintain its leadership as a carbon-neutral nation by embedding sustainability across all sectors. Economic activities will be pursued with a climate-resilient approach, ensuring that growth does not come at the expense of ecological balance and environmental stewardship. For instance, implementing sustainable forestry practices, developing manufacturing capabilities supported by hydroelectricity and renewable energy can help reduce carbon emissions and enhance environmental sustainability. GNH will be embedded across all public and private sector undertakings to ensure alignment with Bhutan's GNH values.

### 2.3 Strategic Sectors

Bhutan’s growth will be driven through investments in and a focus on priority sectors — core and emerging — selected based on their attractiveness, export potential and Bhutan’s ability to realistically develop them.

Investments into a specific sector will reinforce developments in other sectors driving synergies and creating ecosystem effect. Figures 3 and 4 shows the prioritisation framework and the priority sectors, respectively.

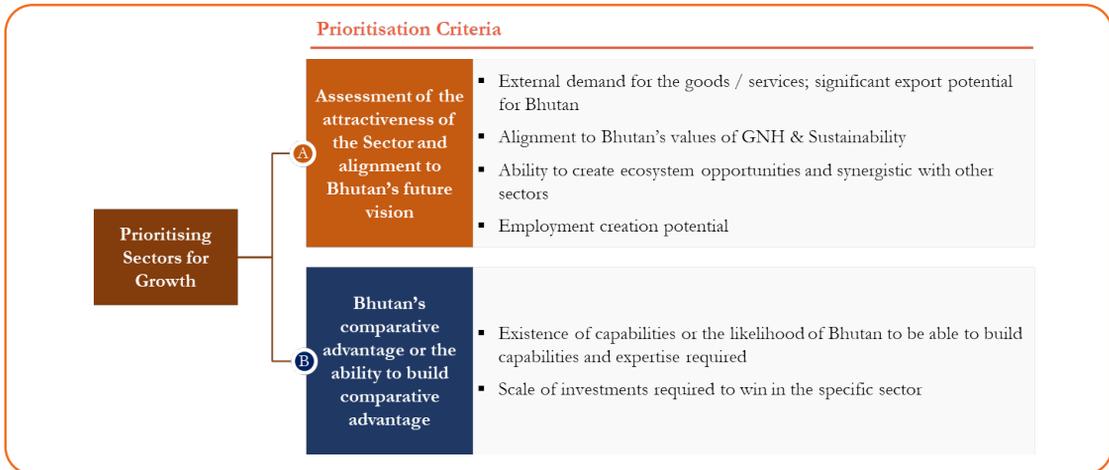


Figure 3: Sectoral Prioritisation

The assessment identifies two categories of priority sectors:

- Core Sectors** comprise of hydropower (and energy), agriculture, and tourism, where Bhutan already has some existing capabilities. Bhutan will further strengthen capabilities to expand these sectors which will also support the development of the emerging sectors. These three core sectors and their adjacencies, will contribute between 25 percent and 35 percent of future GDP, forming the foundation of the economy.

	Sector	A Attractiveness of the Sector				B Comparative Advantage	
		External Demand	Alignment to Bhutan's Values	Ecosystem Opportunities	Job Creation	Existing Capabilities	Investments Required
Core	Hydropower	●	●	●	○	Medium	High
	Agriculture	○	●	●	●	Medium	Medium
	Tourism	●	○	●	○	High	Medium
Digital	Data Centres	●	○	○	○	Medium	High
	Digital Businesses	●	●	●	●	Low to Medium	Medium
Services	Holistic Living and Wellness	●	●	○	○	Medium	Medium
	Education Services	●	●	●	○	Low to Medium	Medium
	BPO / KPO	○	●	●	●	Low to Medium	Medium
	Energy	○	●	●	○	Medium	High
Manufacturing	Wood Processing	●	○	●	○	High	Medium
	Agri-processing	●	●	●	○	Medium	Medium
	Pharmaceuticals	●	●	○	○	Medium	Medium
	R&D driven manufacturing	●	●	●	○	Low	Medium
Mining	Critical Resources Minerals	●	○	○	○	n.a	High
	Minerals Processing	●	○	○	○	Medium	High

● High ○ Medium ○ Low

\*Sector priorities should be continuously reassessed to adapt to emerging opportunities and evolving economic trends.

Figure 4: Priority Sectors

**2. Emerging Sectors** include the digital-led economy, services (health and wellness, education services and BPOs/KPOs), energy, manufacturing (wood processing, pharmaceuticals, food and Agro-processing, and modern technology sectors), and mining and minerals. These sectors will diversify Bhutan’s economy through integration into the regional and global markets. The emerging sectors will contribute between 30 and 50 percent of the GDP in 2050.

The overall strategy for both core and emerging sectors will be to push for rapid growth, particularly in the initial years.

## 2.4 Enabling Ecosystem

For Bhutan to realise its Vision, establishing a robust and supportive environment that fosters growth, innovation, and sustainable development is vital. The seven enablers will create optimal conditions for investment, entrepreneurship, and employment which will support the growth of the sectors

- 1. Deliver excellence in policies and governance:** In the short to medium-term, Bhutan’s public sector, including DHI, will be pivotal in driving growth. To achieve the Vision, the government will adopt a stronger pro-growth mindset, improve policy and governance, streamline bureaucratic processes, and foster accountability.
- 2. Transition to a private-sector-led growth:** Over the long-term, Bhutan must develop a vibrant private sector characterised by a world-class business environment, easy access to credit, leadership capabilities, reduced regulatory complexity, and the divestment of non-strategic SOE assets. Supporting entrepreneurship and innovation through targeted programmes will be critical.
- 3. Cultivate, retain, and attract talent:** The Vision relies on a skilled workforce. Bhutan will expand early-stage education, remodel schools in line with global best practices (e.g. Finland), enhance vocational and tertiary programmes to reflect market needs, and reverse emigration. Incentives for high-skilled foreign workers and returning Bhutanese professionals are also essential to create an innovative, globally competitive labour force.

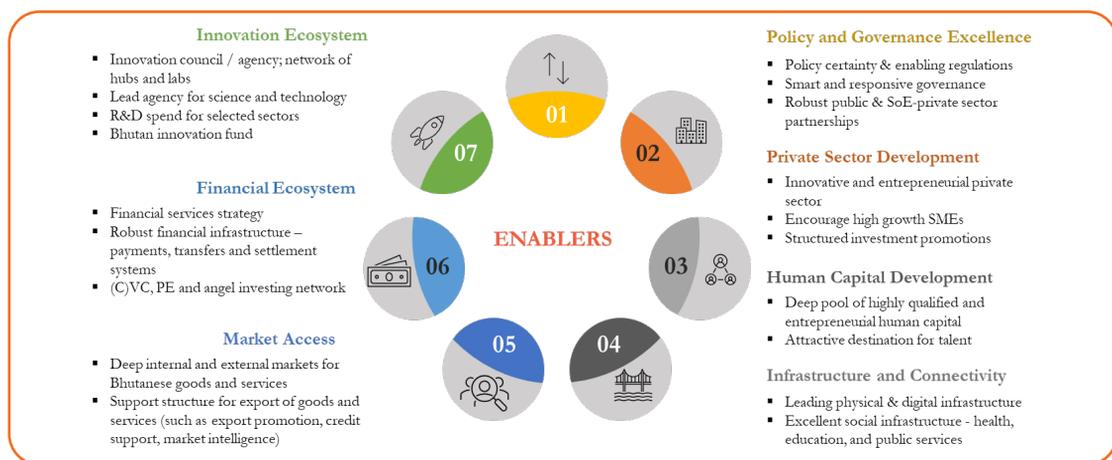


Figure 5: Strategic Enablers

**4. Invest in infrastructure and connectivity:**

Bhutan will also make strategic investments in physical, digital, and social infrastructure which will boost competitiveness, foster exports, and support emerging sectors such as the digital economy, services sector, manufacturing, and mining.

**5. Expand market access:** Given the limited size of Bhutan's domestic market, export-oriented growth is vital. Expanding market access for Bhutanese businesses, particularly in export-driven industries, will help unlock the potential of the private sector and stimulate resilient economic growth. Alongside, the public sector and the DHI will also invest in and develop internal markets.**6. Enhance the financial ecosystem:** Establishing a broader, more dynamic financial sector will power growth and diversification. Modern and efficient financial services can stimulate entrepreneurship through enhancing access to capital and attracting foreign capital.**7. Develop an innovation ecosystem:** Bhutan must invest in developing a thriving innovation ecosystem which will not only make the public more effective but also enable start-ups and entrepreneurship. Bhutan can draw global talent and investment while empowering local entrepreneurs. The innovation ecosystem will comprise of incubators and accelerators which will enable the identification of new opportunities, the testing of and scaling of solutions, and subsequent commercialisation.

Excelling in these areas will position Bhutan among the most dynamic, open, and prosperous economies in the coming decades.

**2.5 Guiding Principles**

Eight principles will guide the delivery of the Vision — serving as the basis for all decisions and actions, to ensure overall efficacy and equity on the journey towards achieving the Vision.

**1. Gross National Happiness (GNH):**

Anchor economic development in the philosophy of Gross National Happiness, ensuring that growth enhances the wellbeing of Bhutanese citizens by harmonising economic, social, and environmental objectives.

**2. Alignment with GMC:** The Vision and Ambitions and underlying strategic initiatives will align with the Vision of the GMC. This will not only accelerate Bhutan's economic transformation but also mutually reinforce initiatives and investments and drive synergies in investments and economic outcomes.**3. Equity and Regional Balance:** Strive for inclusive and balanced development across all regions within Bhutan, reducing disparities between urban and rural areas and ensuring equitable access to opportunities, resources, and benefits, promoting high-quality living standards for all Bhutanese.**4. Enhancing Competitiveness:** Improve the business environment by reducing costs, streamlining bureaucratic processes, and fostering innovation. These will enhance Bhutan's competitiveness to attract investments and position it as a hub for sustainable and forward-looking enterprises.**5. Economic Diversification and Resilience:**

All economic activities will expand the economic base across sectors and geographic sources of income to reduce dependency on limited activities or markets. The initiatives

will aim to build resilience against external shocks and ensure long term stability by fostering a variety of sustainable and high-growth industries.

6. **Fostering Innovation and Value Creation:** Focus on developing high-value sectors that leverage Bhutan's natural and cultural strengths and promote innovation, digital transformation, and knowledge-based industries to position Bhutan as a competitive and forward-looking economy.
7. **Preserving Bhutan's Cultural and Environmental Heritage:** Ensure that economic development aligns with Bhutan's cultural values and traditions, reinforcing the nation's identity while protecting its ecological and cultural assets. Across all initiatives, traditional practices will be integrated with modern development for a unique and sustainable growth model.
8. **Wellbeing and Fairness:** Uphold the principles of fairness and social justice, ensuring that economic growth contributes to the holistic wellbeing of all citizens. This

includes prioritising policies that enhance education, healthcare, and community welfare, creating a society where no one is left behind.

The Vision has identified several initiatives across priority sectors and enablers across an implementation timeline structured as follows:

- **Immediate (0-3 months):** The Vision Delivery Unit and implementing agencies will review, prioritise, and finalise action plans.
- **Short-Term (up to 2 years):** Focus on executing anchor projects and delivering essential requirements to activate key enablers and the priority sectors.
- **Medium-Term (2-7 years):** Implement programmes and projects that lay the foundation for long-term impact.
- **Long-Term (beyond 7 years):** Integrate and operationalise major projects to ensure sustained development and scalability.

It will be critical for Bhutan to effectively structure implementation through appropriate sequencing and commitment of resources.



**CHAPTER THREE:**

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# **Priority Sectors — Strengthen our Core Sectors**

Bhutan’s economic growth will be driven through investments into core and emerging sectors to maximise competitiveness, productivity, and exports.

This Chapter focuses on Bhutan’s “core” sectors- hydropower, agriculture, and tourism. Together, they generate ~35 percent of total Gross Value Added (GVA) in Bhutan’s economy and employ more than 304,000 people (approximately 51 percent of total employment).<sup>20</sup> The core sectors will form the backbone of Bhutan’s economy, playing a fundamental role in propelling Bhutan along its 10X journey.

Hydropower enabled Bhutan to maintain a high average real economic growth rate of 8.8 percent between 2000 and 2010 – higher than the average growth of other South Asian countries and low and middle-income economies, despite Bhutan’s distinctive geography and economic challenges.<sup>21</sup> Bhutan will continue to leverage the vast hydropower potential to increase export revenues, strengthen its reputation as a leading supplier of clean energy, and enable other sectors. Realising this potential, however, will require large capital investments.

Agriculture currently employs 39.9 percent of Bhutan’s workforce. Due to the challenging mountainous terrain, much of agriculture is focused on subsistence farming. Since 2011, at least

37,000 people have left agricultural employment for other sectors.<sup>22</sup> Bhutan has significant potential to transform the agriculture sector by focusing on high-value export oriented agricultural produce and building a distinctive brand in the regional and global markets.

In the tourism sector, Bhutan pioneered a “low-volume, high-value” model that provides significant government revenue, supports the wider economy, and safeguards the country’s pristine environment and cultural values. The ambition is to enhance Bhutan’s position as a premium tourist destination.

Each of the core sectors requires distinct strategies and approaches. Tourism and agriculture will largely be driven by the private sector, with the government supporting through relevant regulations, addressing market failures and enabling access to relevant markets. By contrast, due to the strategic importance of hydropower and the need for substantial, long-term capital investments, the sector is expected to remain under the stewardship of DHI with selective private sector participation.

Together the core sectors will maintain their key role in the economy and will be instrumental in advancing the 10X transformation of Bhutan’s economy and are estimated to generate 25–35 percent of the future GDP.

Sector	Indicative GDP Contribution (2050)
Hydropower (incl energy)	12 to 15 percent
Agriculture	3 to 4 percent
Tourism	10 to 15 percent

**Table 1: 2050 GDP Contributions of Priority Sectors**

<sup>20</sup> Estimated based on the National Accounts Data.

<sup>21</sup> Khan, Nazmus Sadat; Trost Zagatti, Melanie Simone; Yoshino, Yutaka; Maellberg, Ragnvald Michel; Alvarez Estrada, Daniel; Mastruzzi, Massimo; Kumar,Rajiv-000395723; Ghosh,Rangeet; Etang Ndip, Alvin; Rahman, A.N.M. Mustafizur; Miningou, Elise Wendlassida; Paladino, Juan Pablo; Hervera, Matias Ramon. (2023). *Bhutan - Public Expenditure Review*. Washington, D.C.: World Bank Group

<sup>22</sup> Estimated based on the Labour Force Survey Data.

### 3.1 Hydropower

Hydropower has been the cornerstone of Bhutan's economic development since the commissioning of the first hydropower plant, Chhukha, in 1987. The sector has contributed significantly to GDP, accounting for 12.4 percent of the GDP in 2023.<sup>23</sup>

Hydropower has played a dual role — as a driver and an enabler of growth. During the construction phase, investments stimulate other sectors such as transportation and construction. Once operational, the sector generates export revenues while powering industries that form the backbone of Bhutan's economy. Export revenues from hydropower have been a critical source of government revenue (Nu 17.3 billion in 2023)<sup>24</sup>, enabling the financing of key social and development programmes.

Hydropower has provided affordable, reliable energy for domestic and industrial consumption (Nu 6.4 billion in sales in 2023), driving the growth of industries in Bhutan.<sup>25</sup>

According to the Power System Master Plan 2040,<sup>26</sup> Bhutan has a hydropower potential of 36,900 MW, of which 32,600 MW are techno-economically viable. Installed capacity of hydropower generation is 2,334 MW in the country including small, mini, and micro hydropower plants.<sup>27</sup>

Of about 12,000 MU (Million Units, one MU is one million kilowatt-hours) of energy generated annually, 50 percent is domestically consumed and the rest exported to India. However, Bhutan imports more than 1,000 MU per year in the lean winter months. Bhutan has a 2040 plan of an

additional 15 GW of hydro and 5 GW of solar, which would require significant investments.

Bhutan's hydropower sector faces challenges especially from climate change which threatens to reduce river flows during the autumn and winter months. The hydropower sector's long-term contribution to the economy will depend on how effectively revenues are reinvested into infrastructure, industry, and non-hydropower sectors to enable diversification.

More recently, hydropower has been leveraged for cryptocurrency mining. With access to low-cost energy and cool climate conditions, Bhutan holds a comparative advantage in crypto asset mining. Mining, primarily of Bitcoin, began at DHI's 420 MW facility in 2022 and expanded further in 2023 as Bitdeer Technologies Group, a Singapore-based company, commenced crypto asset mining operations in Bhutan with a 100 MW facility. A second Bitdeer mining site (500 MW) is under construction and is expected to begin operations in 2025.<sup>28</sup>

While there is a need to diversify Bhutan's economy and explore other growth drivers, hydropower will remain a strategic asset contributing significantly to Bhutan's long-term growth and job creation potential in ancillary sectors.

#### Objectives

Hydropower will enable a conducive ecosystem to drive industrialisation, develop alternative energy infrastructure and advance our capabilities in energy related industries. There are four objectives

<sup>23</sup> National Statistical Bureau. (2024). *National Accounts Report, 2024*.

<sup>24</sup> Royal Monetary Authority of Bhutan. (2025). *Monthly Statistical Bulletin*.

<sup>25</sup> *ibid*

<sup>26</sup> Ministry of Economic Affairs. (2019). *Bhutan Power System Master Plan 2040*

<sup>27</sup> DHI 10X discussions

<sup>28</sup> International Monetary Fund, Asia and Pacific Dept. (2024). *Bhutan: 2024 Article IV consultation-Press release; staff report; and statement by the executive director for Bhutan*. (IMF Staff Country Reports No. 2024/298). Washington, DC: International Monetary Fund

for the hydropower sector together with energy:

1. Underpin our energy security and drive a clean energy mix, supporting the development of a green sustainable economy.
2. Provide the foundations for development of manufacturing and other emerging sectors by delivering affordable and competitive energy.

3. Extend Bhutan’s expertise in hydropower technology, capable of exporting services to regional and international markets.
4. Power data and computing centres which are in demand due to the need for processing power for AI driven sectors.

The following indicative metrics will be tracked for hydropower.

Metrics	Current Baseline (2023)	2035	2050
Installed capacity (MW)	2,326	10,000	25,000
Share of GDP, hydroelectricity, and linked sectors (percent)	11.6 percent	>12 percent	12-15 percent
Employment (estimated)	4,600	19,900	>50,000

Table 2: Milestones for Hydropower

### Strategic Initiatives

It is imperative for Bhutan to adopt a robust approach to the development and management of its hydropower assets.

#### Accelerate hydropower generation

Initiative	Horizon	Owner
Develop large and mega hydropower projects to deliver at least 25,000MW of installed capacity by 2050 through public and intergovernmental models.	Medium- to Long-Term	DHI
Revise and implement power allocation frameworks to optimise industrial usage to support the priority sectors.	Short- to Medium-Term	MoENR
Strengthen partnerships with environmental agencies to ensure sustainable practices are integrated into all hydropower and energy projects.	Continuous	MoENR, all relevant agencies

#### Develop expertise in hydropower and energy

Initiative	Horizon	Owner
Accelerate the development of specific expertise around hydropower and energy — conducting feasibility studies, project management and maintenance — to support projects internally and subsequently for export into other markets.	Short- to Medium-Term	DHI
Establish a research centre for energy and hydropower to focus on next generation technologies in energy and hydroelectricity.	Medium-Term	DHI, MoENR, all relevant agencies
Assess and review policies and develop mechanisms to attract domestic and international investors and increase private sector participation in hydroelectricity and broader energy projects.	Short- to Medium-Term	MoENR

## Capitalise synergies with other sectors

Initiative	Horizon	Owner
Identify energy-intensive products and services that can be enabled by our low-cost and renewable hydroelectricity and develop plans for manufacturing.	Short- to Medium-Term	MoICE, all relevant agencies
Integrate hydropower with other sectors such as agriculture, tourism, digital and municipalities to identify and drive synergies (e.g. smart agriculture).	Short- to Medium-Term	All relevant agencies

### Envisaged Outcomes

By 2050, Bhutan’s hydropower sector will serve as the backbone of the nation’s energy security and a cornerstone of Bhutan’s green, sustainable economy. Increased hydropower generation, coupled with investments in alternative renewable energy sources like solar, wind, and green hydrogen, will reinforce Bhutan’s carbon-negative status and enhance energy reliability.

Strategic partnerships and regional trade agreements (refer 5.5. Market Access) will diversify Bhutan’s export markets, increasing revenues from energy and energy enabled product and services exports to India, Bangladesh, and broader Southeast Asia. Simultaneously, Bhutan will develop its expertise in hydropower technology, creating exportable capabilities in feasibility studies, project management, and maintenance, further strengthening its regional leadership in sustainable energy.

The integration of hydropower with other sectors such as agriculture, tourism, and manufacturing will enable the development of energy-intensive industries. With a robust, climate-resilient energy

infrastructure, Bhutan will achieve significant industrial growth, ensuring long-term economic resilience and sustainable prosperity.

### 3.2 Agriculture

Agriculture, comprising crops, livestock and forestry and logging, contributed about 12.6 percent of real GDP in 2023<sup>29</sup> and employed 39.9 percent of the working population in Bhutan.<sup>30</sup> However, contribution to Bhutan’s GDP and proportion of people engaged in agriculture has been gradually decreasing. The shares in 2011 for GDP contribution was 14.3 percent and that of employment was 57.5 percent.<sup>31</sup>

Much of farming in Bhutan is subsistence agriculture characterised by the household sector (more than 96 percent of 69k holdings) with average holding size of 3.7 acres.<sup>32</sup> Two-thirds of landholders own less than an acre of wetland, while about one-third own less than an acre of dryland. Commercial farming is limited to a few contract farming projects such as Mountain Hazelnut, Bio Bhutan and ventures in coffee and vineyards.

<sup>29</sup> NSB, GDP in Constant Prices

<sup>30</sup> National Statistics Bureau. (2024). *Fourth Quarter Labour Force Survey*.

<sup>31</sup> National Statistics Bureau. (2012). *2011 Labour Force Survey*. Thimphu, Bhutan

<sup>32</sup> National Statistical Bureau. *Integrated Agriculture and Livestock Census Report 2023*. Thimphu, Bhutan; Ministry of Agriculture and Forests. (2019). *Renewable Natural Resources Census of Bhutan, 2019*. Thimphu, Bhutan

Bhutan's topography presents significant challenges for agriculture. Only about 7 percent<sup>33</sup> of Bhutan's land surface is classified as agricultural, which includes arable land, permanent crops, and permanent pastures. Overall, Bhutan's harvested area has declined consistently over the last decade, from approximately 214,000 acres in 2009 to 96,000 acres in 2021.<sup>34</sup> Over 31 percent of the agricultural land is on slopes, making cultivation difficult and leading to soil and nutrient losses.

Bhutan's traditional crops, paddy and maize, account for over half of the harvested area (excluding fruits) and ~48 percent of production (excluding fruits). While cardamom and potato cover harvested area of ~10 percent each, the production quantum differ with Cardamom at 0.8 percent and potato at 27.6 percent of the total.<sup>35</sup>

Most cereal production in Bhutan operate on a small scale, with farm sizes averaging about 2.5 acres. For traditional cereals, output declined across the board, with the most pronounced decrease in wheat production, which dropped by 72 percent between 2004 and 2021. Paddy and maize output over the same period declined by 25 percent and 66 percent, respectively.

Over the last twenty years, the composition of agricultural products has changed, reflecting a move towards crops of high value and better export potential. The number of fruit trees planted has more than doubled, from 1.5 million to 3.4 million, a 126 percent increase. Areca nut trees number ~5.8 million with ~2 million bearing

fruits, which produced ~11.1 million kg in 2022 (2023 production of 11.4 million kgs), ranking within the top 10 producers globally.<sup>36</sup> Further, the harvested area for spices increased by 96 percent between 2004 and 2021, driven by increased cardamom production, which grew by 98 percent.

Bhutan stands out as one of the few countries in the region that has experienced slow productivity growth in agriculture. Bhutan's value-add per worker in agriculture experienced only a modest increase between 1997 and 2019, by about 20 percent.<sup>37</sup>

World Bank analysis shows that the largest reduction in the share of labour employed in agriculture occurred in areas close to the Indian border, followed by areas surrounding Paro, Thimphu, and Punakha. In contrast, the share of agricultural employment increased in rural and mountainous areas. This points to market access, whether domestic or export, as a crucial factor for competitive advantage and growth of productivity in agriculture.

The agriculture sector in Bhutan faces several challenges including but not limited to fragmented land holding, climate change resulting in crop loss from unusual outbreak of diseases and pests, erratic weather patterns and human-wildlife conflict. Other challenges include lack of irrigation, unproductive land, shortage of land and labour, limited access to markets, difficulty in transport and logistics among others.

<sup>33</sup> Fallow land bank for productive land use, Kuensel (March 2023)

<sup>34</sup> World Bank. (2024). *Bhutan Country Economic Memorandum: Maximizing Bhutan's Potential for Economic Diversification and Structural Transformation*. Washington, DC: World Bank.

<sup>35</sup> Analysis based on Integrated Agriculture and Livestock census of Bhutan

<sup>36</sup> Production of Areca Nut, Tridge. <https://www.tridge.com/intelligences/areca-nut/production>

<sup>37</sup> World Bank. (2024). *Bhutan Country Economic Memorandum: Maximizing Bhutan's Potential for Economic Diversification and Structural Transformation*. Washington, DC: World Bank.

## Objectives

Agriculture will remain a strategic sector for Bhutan ensuring food security, providing employment and serving as a potential source of external revenue. The aspiration is for agriculture to evolve to a high-value, high-quality and modernised sector.

The government’s goal is to increase the value of exports by threefold from Nu 3 billion in 2024 to Nu 9 billion by 2034. While the share of agriculture in GDP will decrease to 3-4 percent by 2050, reflecting Bhutan’s economic diversification, the sector’s efficiency, and productivity, and overall growth of the economy.

The key objectives are:

1. Strengthen national food security through sustainable production, strategic food reserves and resilient supply chains to mitigate risks from disruption.

2. Enhance productivity of key crops and livestock through improved techniques, application of modern technologies and efficient farm management practices.
3. Optimise mix of high-value crops and organic produce to increase farmer’s incomes and create opportunities for commercial farming and the private sector.
4. Establish Bhutanese agricultural products as high-quality premium offerings in regional markets (e.g. India, Bangladesh, Thailand) and gradually expanding to global markets (e.g. Australia, and Europe).
5. Enable agri-processing industries by supplying primary inputs for value addition. Opportunities include dairy processing, other food manufacturing and speciality agricultural products (Refer 4.4. Manufacturing).

## Strategic initiatives

To enable the agriculture sector to play a pivotal role in Bhutan’s economic transformation, several strategic initiatives have been identified.

### Strengthen the agricultural ecosystem

Initiative	Horizon	Owner
Invest in improved extension, supported by targeted research to improve yields, adopt sustainable practices, and adapt to climate change.	Short- to Medium-Term	MoAL, FMCL
Optimise and scale the use of existing post-harvest infrastructure such as cold storage and warehousing facilities to minimise losses.	Short- to Medium-Term	MoAL
Improve transport infrastructure and capability (including air freight) to connect agricultural production centres with key domestic nodes (e.g. Phuentsholing, Thimphu, SamdrupJongkhar) and external markets.	Medium-Term	MoAL, MoIT
Enhance domestic (e.g. with agri-processing farms) and international market linkages (e.g. Singapore, Thailand, and UAE through trade partnerships) and enable partnerships with agricultural enterprises and agri-businesses within Bhutan and in target countries.	Medium-Term	MoAL

### Enhance productivity and drive economies of scale

Initiative	Horizon	Owner
Promote technology packages (use of power tillers and other mechanical tools via AMC), mechanisation and digital tools, and use of innovative technologies (IoT, precision farming) to improve effectiveness and efficiency from planting through to harvesting.	Short- to Medium-Term	MoAL, FMCL
Review and strengthen cooperative models to improve resource sharing and market access.	Short-Term	MoAL
Expand irrigation facilities to reduce dependency on rainfed agriculture and to drive year-round productivity and optimise inputs such as water.	Short-Term	MoAL

### Create a globally recognised Bhutanese agricultural brand

Initiative	Horizon	Owner
Position Bhutan’s agricultural products as premium offerings in the regional and global markets.	Short- to Medium-Term	MoAL
Progress Bhutan’s transition to an organic agriculture by 2035 balancing the potential reduction in yield.	Medium-Term	MoAL
Strengthen accreditation and certification of agricultural produce, and upgrade laboratory facilities within Bhutan — critical to fulfil traceability requirements (SPS) and reduce Technical Barriers to Trade (TBT).	Short- to Medium-Term	MoH
Establish research partnerships and leverage College of Natural Resources, AMC, and external partnerships.	Short-Term	MoAL, RUB

### Evolve mix to high-value crops with significant export potential

High-value crops offer better returns and have significant export potential. Bhutan must select high-value products after a thorough analysis to assess feasibility and viable export markets. Key factors that need considering are the needs of the target markets and our agri-processing sector. High-value crops include fruits (e.g. avocado, strawberries, raspberries, apple, kiwi), vegetables (e.g. asparagus, tomatoes, mushroom and garlic), crops (e.g. quinoa, buckwheat, millet) and spices (cardamom, ginger, black pepper) — some of which Bhutan already cultivates.

The global medical cannabis market, currently at USD 24.9 billion in 2024 is forecast to grow to USD 159.2 billion by 2033,<sup>38</sup> driven by individuals turning to medical cannabis as an alternative treatment and decriminalisation across many countries. Bhutan should investigate the potential for commercialising cannabis cultivation and processing it for medicinal and pharmaceutical purposes. This will require review of existing legal and regulatory frameworks (e.g. The Narcotic Drugs, Psychotropic Substances, and Substance Abuse Act of Bhutan 2015), exploring licensing models and export-focused regulations. This aligns well with the initiative on developing health and pharma manufacturing in Bhutan.

<sup>38</sup> Market Data Forecast, <https://www.marketdataforecast.com/market-reports/medical-cannabis-market> (22 Feb 2025)

Initiative	Horizon	Owner
Prioritise strategic (high-value, high-potential) crop varieties for productivity enhancement. Consider crops with potential for high-export, value addition (for agri-processing) and central to food sufficiency (rice, potatoes, pork production).	Short- to Medium-Term	MoAL, NBC
Invest into medical cannabis - cultivation, processing, and export.	Short- to Medium-Term	MoAL

### Scale domestic meat production by establishing and supporting farms for local production, with a focus on pork and chicken

In 2023, the value of Bhutan’s total meat and fish imports was Nu. 1.4 billion, highlighting the potential for increased self-reliance.<sup>39</sup> Efforts should be prioritised in accelerating initiatives outlined in the 2022 Transformation Plan to achieve this goal.

Initiative	Horizon	Owner
Scale domestic meat (pork and chicken) production by establishing and supporting farms for production.	Short- to Medium Term	MoAL, NBC

### Increase private sector participation in the agriculture industry

Private sector participation in agriculture is broadly contained to farmers with marginal involvement in transportation and some contract farming ventures. To drive innovation, investments and commercialisation, Bhutan must create opportunities for greater private sector participation in areas such as supply of inputs, operations of warehouses and operations of contract firms.

In summary, the strategic initiatives will create an innovative, productive, and market-oriented agricultural sector. These initiatives should be supplemented by developing market access for the agriculture sector (Refer 5.5. Market Access) and provision of financial instruments (financing and protection) for the sector participants.

### Envisaged Outcomes

By 2050, Bhutan’s agriculture sector will become a high-value, high-quality, and export-oriented

industry, balancing food security, economic growth, and environmental sustainability. The sector will focus on high value crops and premium agricultural products, supported by modern technologies, resilient infrastructure, and sustainable farming practices.

Agri-processing industries will thrive, adding value to primary products and supporting sectors like dairy processing and speciality food manufacturing. Improved logistics, cold storage facilities, and export processing centres, along with air freight connectivity, will streamline access to regional and international markets.

The Bhutanese National Agricultural Brand will position Bhutan as a global leader in premium agriculture produce, starting with India and Bangladesh, and expanding into Thailand, Australia, Europe, and the United States. By 2035, Bhutan aims to achieve considerable proportion of agriculture to be organic, strengthening its

<sup>39</sup> Ministry of Finance. (2024). *Bhutan Trade Statistics 2023*. Thimphu, Bhutan

premium positioning. Additionally, regulated cannabis cultivation for medical purposes could emerge as a new revenue stream under strict legal frameworks.

Private sector participation will grow through greater participation, fostering innovation, financing, and commercialisation. Contract farming and agri-entrepreneurship hubs will become prominent, driving sectoral growth.

### 3.3 Tourism

Tourism is the single largest source of convertible currency (receipts of USD 345 million in 2019) and employs over 67,000 people, enabling growth of adjacent sectors such as hospitality and transportation. Overall, tourism contributes at least 10 percent to GDP — based on the Tourism Satellite Account in 2019.<sup>40</sup>

Bhutan is an attractive destination renowned for its natural beauty, distinct culture, traditions, and unique approach to development. Bhutan's tourism policy has been instrumental in establishing a strong national brand. Since Bhutan's reopening in September 2022, the total number of arrivals in 2023 reached 103,066, of which 65 percent were Indian tourists.<sup>41</sup>

Bhutan charges a Sustainable Development Fee (SDF) as part of its “high-value, low-volume” tourism policy. The current SDF is set at USD 100 per person per night, effective until 2027. For tourists from India, the SDF is set at INR 1,200 per person per night. International arrivals are highly seasonal, with about 72 percent typically visiting in Autumn and Spring. Bhutan receives the

highest number of visitors from the US, China, Singapore, UK and Thailand outside India and Bangladesh.

In 2019, about 56 percent of all tourist arrivals (176,436) were concentrated in three Dzongkhags: Thimphu, Paro, and Punakha, which historically accounted for 80 percent of total bed nights.<sup>42</sup> On average, tourists stayed 7 nights in 2020. European travellers tended to stay longer (e.g., Swiss visitors stayed an average of 10.75 nights, and French visitors 9.39 nights). Bhutan's average length of stay is shorter than in peer countries, due to daily SDF fees. For comparison, average stays are around 21 nights in India, 12-15 days in Nepal and 9 days in Thailand.

Paro Airport is the primary gateway for international tourists providing direct international flights to India, Singapore, Thailand (Bangkok), Nepal (Kathmandu), Bangladesh (Dhaka), and the UAE (Dubai). While there are connectivity options for Asian markets (via Singapore or Bangkok), the Middle East (via Dubai), the West Coast of the United States (via Singapore, Bangkok, New Delhi, or Kathmandu), and continental Europe (via the same hubs), itineraries can be complicated for travellers from Europe or the United States. The construction of an international airport in Gelephu within GMC will accommodate larger, long-range aircraft which will help with connectivity.

Bhutan's tourism sector offers a broad range of products — from trekking and cultural tours (e.g. Tiger's Nest, Punakha Dzong) to wellness and mindfulness experiences. However, more

<sup>40</sup> Department of Tourism. (2019). *2019 Bhutan Tourism Satellite Account*.

<sup>41</sup> Department of Tourism data.

<sup>42</sup> National Statistics Yearbook. (2023). *Statistical Yearbook*.

specialised offerings like high-end wellness or spiritual retreats are primarily found in luxury five-star hotels. Products, such as the “Snowman Trek” and the “10 Day Tour of the Dragon,” have gained international renown.

MICE tourism remains limited, largely because of high SDF fees and the lack of large-scale conference facilities. The MICE market globally, estimated at over USD 590 billion, is forecast to grow to over USD 1 trillion by 2032.<sup>43</sup>

A 2019 survey of arrivals found that a strong majority (86 percent) visited Bhutan for cultural attractions, followed by those interested in adventure activities (12 percent). Fewer than 1 percent were drawn by spiritual or wellness offerings, and about 1 percent were motivated by nature.<sup>44</sup>

The Tourism Master Plan (2025-2034) aims to enhance Bhutan’s status as a premium global destination and attract high-value travellers. It targets a controlled increase in annual visitors to 300,000 by 2029, with 50 percent coming from regional markets. The plan also seeks to promote tourism in less-visited regions and includes exploring the feasibility of additional airports in eastern and southern Bhutan.

### Objectives

Bhutan has a proven model of tourism enabling the sector to make substantial contributions to the broader economy. Looking forward, Bhutan must maintain the quality and distinctiveness of its tourism offerings. Key objectives for the sector are:

1. Establish Bhutan as a destination of choice for culture, adventure, and nature tourism with sustainability at the centre.
2. Expand tourism offerings and develop Bhutan into a preferred destination for MICE for global companies in the region including Thailand and Singapore and further build new products in medical, education and agritourism.
3. Build resilience into the sector by strategically improving the mix of products, target source countries (regional vs global mix), expanding to other parts of Bhutan and strengthening business preparedness for future shocks.
4. Design tourism products and exclusive offer packages to attract tourists in Summer and Winter for managing seasonality.

The tourism industry will track several KPIs such as contribution to GDP, number of tourist arrivals and employment generated. Bhutan will monitor major trends impacting the industry such as changing demographics, demand for more sustainable and green products, connectivity, and offerings by countries in the region.

<sup>43</sup> MICE Market Size, Share & Industry Analysis, By Event Type (Meetings, Incentives, Conventions, and Exhibitions), and Regional Forecast, 2024-2032, Fortune Business Insights, <https://www.fortunebusinessinsights.com/mice-market-108653>

<sup>44</sup> National Statistics Yearbook. (2023). *Statistical Yearbook*.

## Strategic Initiatives

The following strategic initiatives outline Bhutan’s priorities to enhance tourism offerings, infrastructure, and branding in line with its long-term economic ambitions.

### Expand and diversify tourism offerings

Initiative	Horizon	Owner
Expand MICE offerings targeting regional and international companies in the region with the view to establishing our brand as a MICE destination.	Medium-Term	MoICE
Assess other forms of tourism offering which will drive synergies with the other sectors. Accelerate growth in wellness, religious tourism and adventure sports followed by education and agri-tourism.	Medium-Term	MoICE
Identify and invest into anchor destinations (e.g. in East) to drive product and destination diversification and enable repeat visitors into Bhutan. Build on existing products such as weaving in Lhuentse and bird watching in Mongar.	Short- to Medium-Term	MoICE
Explore developing premium gaming and leisure destination that will complement Bhutan’s tourism offering targeting high net worth and affluent guests.	Medium-Term	MoICE

### Invest into tourism infrastructure

Initiative	Horizon	Owner
Assess requirements for air connectivity with target source destinations.	Medium-Term	MoIT, BCAA, MoICE
Continuously monitor capacity and experience across key land entry points of Phuentsholing, Gelephu and SamdrupJongkhar.	Medium-Term	MoICE
Continuously benchmark quality of accommodation and infrastructure, invest to ensure superior quality, and improve hotel and accommodation infrastructure especially outside Western Bhutan.	Ongoing	HRAB, MoICE
Embed digitalisation across the end-to-end journey — from prospecting, booking through to completion — to make the experience (for visitor and travel agents) as seamless as possible.	Ongoing	MoICE, GovTech
Build a Tourism Centre of Excellence to support the sector to develop products, evolve business models, and embed resilience in their business.	Continuous	MoICE, ABTO

### Targeting, branding, and marketing

Initiative	Horizon	Owner
Review source countries to target emerging markets such as the Middle East and Eastern Europe. Align tourism products (leisure, MICE, and festivals), marketing and branding spend to their needs and timing (e.g. school holidays).	Immediate	MoICE, ABTO,
Identify strategies to increase the proportion of USD paying tourists. In 2019, regional tourists formed ~70 percent of the total visitors into Bhutan.	Immediate	MoICE, ABTO
Review tourism policy and approach to align to the long-term ambitions of the GMC.	Medium-Term	MoICE
Implement government backed tourism protection mechanisms for tour operators (e.g. general / business liability insurance). Work with the insurance sector to develop relevant solutions for the sector.	Medium-Term	MoICE

### Envisaged Outcomes

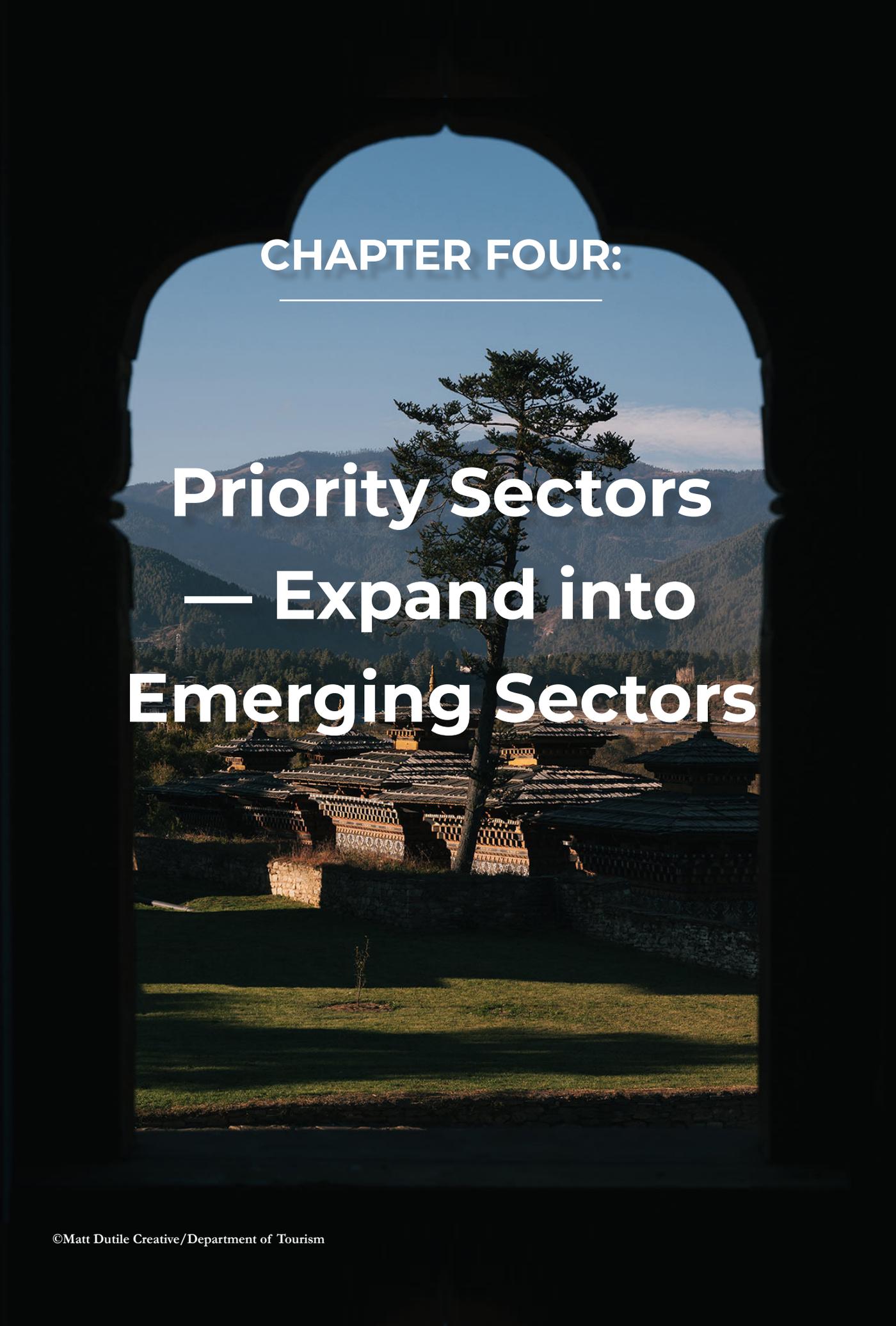
By 2050, Bhutan will be recognised as a premier global destination for sustainable and experiential tourism, underpinned by our unique cultural heritage, natural beauty, and innovative offerings. Tourism will significantly enhance its share of GDP (10 to 15 percent), employment, and foreign exchange earnings.

The diversification of tourism products, such as wellness, MICE, and agri-tourism, will attract high-value visitors and encourage repeat tourism. Bhutan's investments in tourism infrastructure, including expanded air and land connectivity, high-quality accommodations, and digitalised visitor experiences, will ensure seamless end-to-end journeys for tourists. Broader Bhutan will emerge as a vibrant hub for tourism, enabling regional development and product diversification.

Through strategic branding and marketing, Bhutan will establish itself as a benchmark for sustainable tourism, targeting high-value markets globally while increasing the proportion of USD-paying tourists. The Tourism Centre of Excellence will enhance industry capabilities, foster innovation, and provide market intelligence, ensuring the sector's resilience against global disruptions.

Overall, the tourism sector will strengthen Bhutan's international reputation, stimulate adjacent industries such as hospitality and transportation, and create sustainable livelihoods, reinforcing Bhutan's commitment to GNH and environmental stewardship.



A scenic view of a traditional village with tiled roofs and a large tree, framed by a dark archway. The scene is set against a backdrop of rolling hills and mountains under a clear blue sky. The text is overlaid on the image in a clean, white, sans-serif font.

**CHAPTER FOUR:**

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**Priority Sectors  
— Expand into  
Emerging Sectors**

A key to achieving tenfold GDP growth is evolving the economy to participate in the industries of the future. Bhutan has identified five emerging sectors which will enable diversification and create jobs while integrating Bhutan into regional and global value chains.

Sector	Focus Areas	Indicative 2050 GDP Contribution
Digital Economy	<ul style="list-style-type: none"> <li>AI-ready Data Centres</li> <li>Digital Businesses targeting multiple sectors</li> </ul>	10 to 17 percent
Services	<ul style="list-style-type: none"> <li>Holistic Living and Wellness Hubs</li> <li>Education Services</li> <li>BPO and KPO Services</li> </ul>	8 to 12 percent (excluding digital businesses)
Energy	<ul style="list-style-type: none"> <li>Renewable Energy</li> <li>Sustainable Energy</li> <li>Green Technologies</li> </ul>	Refer to hydropower
Manufacturing	<ul style="list-style-type: none"> <li>Forestry-based Manufacturing</li> <li>Agriculture-based Manufacturing</li> <li>Pharmaceuticals and related sectors</li> <li>R&amp;D-driven Manufacturing</li> </ul>	15 to 20 percent
Mining	<ul style="list-style-type: none"> <li>Critical Resource Materials (CRM) and Rare Earth Elements (REE)</li> <li>Mineral Processing</li> </ul>	>4 to 5 percent

**Table 3: Emerging Sectors Focus Areas**

Within the digital economy, there is a global race to build sufficient data centres to power the rapid growth of computing, artificial intelligence (AI) and data storage. Bhutan’s abundant, renewable hydropower is an important comparative advantage, which aligns with the ambitions of leading data centre providers such as Amazon, Microsoft, and Google to operate using green energy. The Government will also prioritise the development of the technology and digital businesses across the priority and other sectors.

In the services sector, Bhutan is well positioned to offer a distinctive blend of wellness, retirement, and health tourism services. Its rich spiritual heritage, mindfulness traditions, and peaceful environment also align with growing global interest in holistic health driven by aging populations and increasing health care costs. Bhutan will develop into a regional education hub, providing services, attracting students and institutions. Further, Bhutan will also develop capability centres for business and knowledge processing targeting regional and global brands. This will leverage the

capabilities developed via the innovation ecosystem enabler (Refer 5.7. Innovation Ecosystem).

Bhutan will transform its energy sector by diversifying beyond hydropower and strengthening energy security. Bhutan will harness its vast renewable energy potential, including 12,000 MW in solar, 761 MW in wind, and waste-to-energy solutions. Bhutan will accelerate its Hydrogen Roadmap, pilot energy storage solutions, enhance electric vehicle adoption, and modernise the energy grid. Further, Bhutan will explore the growing carbon markets. The aim is to create a diversified, resilient energy mix, reducing fossil fuel dependence while boosting clean energy exports and maintaining Bhutan’s carbon-negative status.

Manufacturing will target export-oriented products focused on the high-end, premium segments in India and the broader markets. A focus area of manufacturing will be the sustainable production of engineered wood and other products (e.g. bamboo based) within forestry. Engineered timber can supply emerging needs in the construction

sector within Bhutan, GMC, India and other markets.

Bhutan will also pursue agri-based manufacturing, leveraging Bhutan's brand in sustainability and organic agriculture. Agri-based manufacturing will encompass the processing of superfoods and packaging of 'Made in Bhutan' organic and sustainable agriculture produce. Bhutan will venture into manufacturing pharmaceuticals including generics and medical cannabis. Finally aligned to our ambitions to be an R&D driven economy, DHI will pursue opportunities in R&D-driven manufacturing to embed Bhutan within high-value tech-led value chains.

Within mining, Bhutan will explore the presence of CRMs and REEs by accelerating geological surveys and subsequently establishing processing centres targeting CRMs, REEs and other minerals. Through these, Bhutan will participate in green technologies — such as solar panels and electric vehicles — critical to global Net Zero transition.

A concerted and targeted approach to catalyse structural transformation will be required to realise these opportunities. In many developing countries, market failures, steep learning curves, coordination challenges, and information externalities, mean that private sector actors alone may take longer or are unable to invest in more sophisticated goods and services.<sup>45</sup> Therefore, in the short to medium-term, the State via DHI will take the lead in paving the way for the economy in some of these sectors.

A coordinated, state-led strategy to diversify into new economic sectors will yield high-quality employment opportunities, mitigating the

emigration of talent and encouraging the return of Bhutanese diaspora.

Two primary pathways are likely to succeed: proactively attracting flagship FDI projects to jump-start targeted industries and leveraging SOEs to establish initial footholds in these sectors. Once a critical mass and basic ecosystem are established, private companies can follow and play more prominent roles.

Bhutan will deliver between 30 and 50 percent of the 2050 GDP from these sectors. These new sectors, together with Bhutan's core industries, will form a robust and diversified economic base, ensuring resilience and economic prosperity.

### 4.1 Digital Economy

Digital Economy encompasses technologies such as the internet, cloud computing, artificial intelligence and data analytics, 3D printing, and autonomous technologies, which are transforming the supply and value chains of different sectors.

Exploiting these technologies will improve efficiency and transparency in the public sector, support existing sectors and drive growth in adjacent sectors thereby creating new jobs and stimulating economic development.

By 2050, the digital economy alongside data centres will contribute between 10 and 17 percent of GDP, a substantial increase from its current levels.

Bhutan's digital economy will focus on two key areas

1. Data centres: Establishing AI-ready and green data centres

<sup>45</sup> Hidalgo, C. A., Klinger, B., Barabási, A.-L., & Hausmann, R. (2007). *The product space conditions the development of nations*. Science, 317(5837), 482–487.

2. Digital businesses enabled by modern technologies. Refer 5.7. Innovation Ecosystem enabler for further details.

Developing expertise and capabilities in data centres and digital businesses will enable Bhutan to keep pace with global technological advancements and integrate seamlessly with regional and international markets.

### 4.1.1 Data Centres

The global race to expand data centre capacity to support the proliferation of AI, cloud computing and data storage is intensifying.

The surge in energy demand from data centres is outpacing the available power supply in many parts of the world. Currently there are more than 11,000 data centres built or in various stages of development, which require upwards of 508 TWh of electricity per year. By 2034, global energy consumption by data centres is expected to top 1,580 TWh, almost equivalent to India's consumption. The global demand for data centre capacity could rise at an annual rate of 19-22 percent from 2023 to 2030, reaching 171 to 219 GW.<sup>46</sup>

With an installed capacity for hydroelectricity generation of approximately 2,326 MW (2023) and plans to increase commissioning of more hydroelectricity capacity, Bhutan is well positioned to take advantage of the data centre boom. Bhutan's abundant renewable hydro energy aligns with the goals of leading data centre providers including hyperscalers such as Amazon, Microsoft Corp., and Alphabet to run their data centres entirely on green energy.

Big Tech companies such as Amazon, Meta, Microsoft, and Alphabet forecast over USD 320 billion in 2025 capital expenditure alone in AI as they compete to build data centres.<sup>47</sup> The world's largest companies are expected to invest up to USD 60 billion in Southeast Asia's data centres over the next few years, driven by the hyperscalers' projected share of global revenue from this region, which is forecast to reach 11 percent by 2028.<sup>48</sup> Comparatively, India's share of hyperscalers' global revenue is forecast to be 5 percent in 2028, suggesting a potential investment of approximately USD 27 billion.

Bhutan will build mid to large scale — between 50MW and 100MW — data centres targeting markets in India and broader South Asia. While data centres can take up to four years to construct, they employ people during construction and then subsequently during operations. For instance, a 50 MW data centre could employ 800 to 1,000 people during construction with 300 to 500 people for operations. Further data centres can also create additional indirect and induced jobs.<sup>49</sup>

Bhutan will attract partners for investments in data centres (the estimated cost of building a data centre can be as high as USD 10 million per MW), enhance its technological infrastructure, and foster sustainable economic growth.<sup>50</sup>

### Objectives

The vision for data centres is to position Bhutan as a green and eco-friendly destination for technology investments, aligning with GNH and global sustainability trends.

<sup>46</sup> AI power: Expanding data center capacity to meet growing demand, McKinsey, <https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/ai-power-expanding-data-center-capacity-to-meet-growing-demand>

<sup>47</sup> Big Tech lines up over \$300bn in AI spending for 2025, Financial Times, <https://www.ft.com/content/634b7ec5-10c3-44d3-ae49-2a5b9ad566fa>

<sup>48</sup> Bloomberg News. (2024, May 11). Tech giants start to treat Southeast Asia like next big thing, <https://www.bloomberg.com/news/articles/2024-05-11/tech-giants-start-to-treat-southeast-asia-like-next-big-thing?embedded-checkout=true>

<sup>49</sup> Analysis based on market research

<sup>50</sup> Costs on the Rise, Savills, [https://www.savills.co.uk/research\\_articles/229130/362695-0](https://www.savills.co.uk/research_articles/229130/362695-0)

Bhutan’s value proposition for data centres will include competitive energy prices, renewable hydroelectric power, and cooler temperate climate which can reduce cooling costs. Cooling costs account for more than 40 percent of total energy consumption in large data centres.<sup>51</sup>

As a result, data centres will:

1. Position Bhutan within the global technology landscape by partnering with leading regional and international technology firms.
2. Build skills and capability and create employment during both the construction and the operation phases.
3. Reduce Bhutan’s dependence on traditional sectors like hydroelectricity and agriculture by transitioning into the digital economy.

1. Data centres demand a steady 24/7 power supply, which cannot always be met by renewable energy sources alone. While Bhutan’s hydropower generation is optimised during the monsoon season, it diminishes during the dry winter months (November to March) necessitating imports from India.
2. Fiber density and quality are crucial for data centre operations. Bhutan will need to upgrade fibre connections to India and Bangladesh to meet the demands of future data centres.
3. Bhutan is in a seismically active region, with most areas classified under seismic zones IV and V (Severe and very severe intensity earthquake zones as per Bureau of Indian Standards). This necessitates robust seismic-proof construction for data centres or selecting locations with lower seismic risks.

However, Bhutan must address three key challenges to realise its data centre ambitions.

## Strategic Initiatives

Initiative	Horizon	Owner
Complete a detailed feasibility study for establishing data centres in Bhutan covering: <ul style="list-style-type: none"> <li>▪ Data centre market including trends and potential demand.</li> <li>▪ Baseline of an energy allocation framework.</li> <li>▪ Identification of potential sites, key infrastructure and facilities, and talent required.</li> <li>▪ Frameworks for partnership, investment and commercial agreement, operational approach, governance structures and FDI requirements.</li> </ul>	Short-Term	GovTech, DHI
Engage with potential data centre partners (Data centre providers, AI players, solution providers and corporates) who could establish data centres.	Short- to Medium-Term	GovTech

## Envisaged Outcomes

Data centres will be a key component of Bhutan’s digital economy attracting foreign investments and enhancing our technological capabilities by partnering with leading players. Overall, through

the provision of data centre services, Bhutan will become an attractive location for green digital technology investments.

<sup>51</sup> McDonald, R., & Ballan, S. (2023). *Green Data Centres: Towards a Sustainable Digital Transformation - A Practitioner’s Guide*. Washington, DC: World Bank Group

### 4.1.2 Digital Business

Digital development is intrinsically linked to a country’s competitiveness and GDP per capita. The global ICT sector is experiencing rapid growth presenting opportunities for countries aiming to transform their economies. The worldwide technology spending is estimated at USD 5.7 trillion in 2025, an increase of 9.3 percent from 2024. Spending on software is also expected to

grow by 14 percent to reach USD 1.2 trillion in 2025, while IT services are expected to grow to USD 1.73 trillion in 2025.<sup>52</sup>

Bhutan will participate in emerging global ICT and digital sector through the development of tech-led and digital business (see Table 4).

Potential Areas (non-exhaustive)	
Agritechs	Health Tech
eCommerce and online marketplaces	Software Services (e.g. Analytics)
Fintech	Sustainability Tech
Energy Technology	Travel Tech
Game Development	

Table 4: Potential Areas of Digital Businesses

Bhutan will aim to create at least 75 start-ups annually (equivalent to over 100 start-ups per 1 million population, average for top 20 countries range between 189 to several thousand per million population) and create at least 2 unicorns within the next decade and scale up to 5 by 2050. Refer 4.2.3 for BPO / KPO initiatives and 5.7. for the Innovation Ecosystem initiatives.

integrate tourism, health, and retirement services, positioning Bhutan as a destination for wellness and medical tourism — in response to a growing global demand for wellness and post-retirement living solutions. Bhutan can offer a distinct proposition covering spiritual, mental, and physical wellbeing, rooted in its traditional Sowa Rigpa medicine, mindfulness practices, and pristine environment. Through initial investment into wellness hubs and retirement villages, Bhutan will develop capabilities to extend into elderly care and healthcare services targeting high-value visitors.

### 4.2 Services

Bhutan has the potential to develop a dynamic services sector that aligns with global trends by leveraging its unique cultural and natural assets. The services sector can support economic diversification, create knowledge-intensive jobs, and establish Bhutan’s brand in the global services market.

Bhutan’s Education Services will attract international students and academic institutions, providing education in emerging disciplines such as sustainability, tourism, digital, entrepreneurship and business, and other demand areas. Bhutan will establish international partnerships, improve research capabilities, and expand educational infrastructure. Further, synergies with other sectors will ensure that education services contribute directly to workforce development and innovation for Bhutan’s ambitions.

Holistic Living and Wellness Hubs, Education Services, and Business and Knowledge Process Capability Centres will be the key focus areas.

The Holistic Living and Wellness Hubs will

<sup>52</sup> Gartner. (2024, October 23). *Gartner forecasts worldwide IT spending to grow 9.3% in 2025.*

Finally, the Business and Knowledge Process Capability Centres will aim to develop a thriving outsourcing sector. Business Process Outsourcing (BPO) and Knowledge Process Outsourcing (KPO) centres can integrate Bhutan into the global knowledge economy, supporting industries such as data analytics, AI, finance, and research. Importantly, this sector will complement Bhutan's education services, ensuring that universities and technical institutes produce graduates with the skills required by global industries.

Collectively, these sub-sectors will contribute 8-12 percent (excluding digital sector) of 2050 GDP.

### 4.2.1 Holistic Living, Wellness and Retirement Services

Building on Bhutan's reputation as a premier travel destination, Bhutan can establish a holistic and integrated ecosystem that caters to affluent individuals seeking wellness, health management and retirement living solutions.

Wellness and medical tourism are rapidly growing globally. Wellness tourism involves travellers who seek destinations that help them maintain or improve their health and wellbeing. Such destinations provide activities related to exercise, meditation, nutrition, relaxation, and holistic health, all intended to proactively sustain mental, physical, and spiritual wellness.

The global wellness market, estimated at about USD 4.2 trillion, is driven by demographic

changes, failing and costly healthcare systems and evolving consumer values. Wellness tourism, where individuals travel to enhance their personal wellbeing generated an estimated USD 830 billion in 2023 and continues to grow.<sup>53</sup>

Medical tourism focuses on travel for medical procedures, surgical interventions, and treatments related to improving or restoring health. Examples range from orthopaedic surgeries to complex organ transplants and specialised therapies within traditional systems of medicine. The size of the medical tourism market is estimated at over USD 100 billion in 2024 and is forecast to grow between 15 and 25 percent per annum.<sup>54</sup> Increasing healthcare costs, out of pocket expenses and long waiting times in home countries drive the growth of medical tourism. Leading destinations such as Thailand, Singapore, India, and Turkey have developed high quality medical facilities with well-trained health professionals to attract patients globally.

The global population is aging. For example, Europe is projected to have 130 million citizens above the age of 65 by 2050<sup>55</sup> and Japan's elderly population (aged 65 or older) has reached a record high of 36 million people.<sup>56</sup> Retirees increasingly seek affordable, experience-rich retirement villages and communities abroad. The costs for nursing homes and retirement villages ranges between USD 1,800 and USD 3,000 per month, with countries such as Poland, Lithuania, Portugal, Costa Rica, and Mexico leading in this space.<sup>57</sup>

<sup>53</sup> Global Wellness Institute. (2024), <https://globalwellnessinstitute.org/>

<sup>54</sup> Medical Tourism Association, 2024

<sup>55</sup> Eurostat. (2020). Ageing Europe-Statistics on population developments. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Ageing\\_Europe\\_-\\_statistics\\_on\\_population\\_developments#:~:text=Ageing%20Europe%20%E2%80%94%20looking%20at%20the%20lives%20of,lives%20of%20the%20European%20Union%E2%80%99s%20%28EU%29%20older%20generations.](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Ageing_Europe_-_statistics_on_population_developments#:~:text=Ageing%20Europe%20%E2%80%94%20looking%20at%20the%20lives%20of,lives%20of%20the%20European%20Union%E2%80%99s%20%28EU%29%20older%20generations.)

<sup>56</sup> Al Jazeera. (2024, September 16). Japan's elderly population rises to record 36.25 million. <https://www.aljazeera.com/economy/2024/9/16/japans-elderly-population-rises-to-record-36-25-million#:~:text=Japanese%20aged%2065%20or%20older>

<sup>57</sup> MedClinics. (2025). Nursing home & elderly care. <https://medclinics.com/nursing-home-elderly-care/>

Bhutan can offer a distinctive blend of wellness, retirement, and health tourism services. Existing luxury five-star hotels already offer wellness services, including spa treatments, herbal healing, traditional hot stone baths, yoga, and meditation. Bhutan’s national healthcare system integrates the centuries-old Sowa Rigpa tradition which offers a unique combination of Indian Ayurvedic principles and Buddhist philosophy.

Additionally, Bhutan’s spiritual heritage and mindfulness traditions align well with the growing interest in holistic health. Bhutan can extend these

**Strategic Initiatives**

Initiative	Horizon	Owner
Refine Bhutan’s offering in wellness tourism to include physical, mental, and spiritual wellness. Integrate mindfulness activities, traditional medicine and alternative therapies, sports and adventure, and social and community activities.	Short-Term	MoICE
Conduct a feasibility study into the development of retirement villages, provision of post-treatment recovery centres and establishment of elderly care services.	Medium-Term	MoICE
Develop medical tourism offerings building on wellness and retirement villages, recovery centres and elderly care services. Establish internationally accredited medical facilities, address critical issues such as air connectivity and consider regulations required.	Medium- to Long-Term	MoICE

**Envisaged Outcomes**

Bhutan will have emerged as a global leader in holistic living and wellness tourism, renowned for its unique integration of traditional practices, spiritual heritage, and modern wellness services. Bhutan will have leading wellness hubs, retirement villages, and medical facilities, attracting affluent global travellers, retirees, and patients seeking physical, mental, and spiritual rejuvenation.

In the long-term, Bhutan will also be recognised as a trusted destination for medical tourism, offering internationally accredited healthcare facilities and exceptional post-treatment recovery services. Bhutan will be seen as an attractive, experience-rich destination for holistic health, relaxation, and long-term retirement living.

offerings to visitors and retirees with options to live in Bhutan for extended periods of upto three to five years.

**Objectives**

The primary objective of developing holistic living and wellness services would be to optimise Bhutan’s tourism offering while creating new growth sectors. The initial focus will be to extend into wellness, progressing into retirement villages and elderly care and finally expanding into medical tourism. Building a credible brand will be a phased approach which will enable the development of relevant capabilities and infrastructure.

**4.2.2 Education Services**

In an interconnected world, transformation of economies relies heavily on the availability of a highly skilled talent pool. As economies pivot towards knowledge-intensive industries, the global demand for higher education continues to grow. Education hubs such as those in Hong Kong and Singapore, have emerged globally as centres for higher learning and knowledge development. These hubs cater to both international and local students, offering high-quality education, fostering research, and supporting talent development to drive sustainable economic growth.

Bhutan could position itself as an attractive destination for students from neighbouring countries and beyond. Over five million students

pursued degree programmes outside their home countries in 2017 rising to 6.4 million in 2020. Projections indicate an annual growth rate of 4 to 4.5 percent to 2030,<sup>58</sup> reflecting a slower pace aligned with global economic trends. China and India will continue as leading sources of international students. Other countries such as Bangladesh, Indonesia, the Philippines, Vietnam, Nepal, Malaysia, and Thailand will also contribute significantly to global student mobility.

International students often prioritise fields such as Business and Management Studies, Finance, Computer Studies, Economics, and emerging disciplines in sustainability and ESG (Environmental, Social, and Governance). Student mobility patterns are also becoming more multidirectional with students exploring educational opportunities not only in the West but also in neighbouring regions.

Growing reputation of educational institutions, cost-effectiveness, and robust support systems offered by host countries also drive this trend.

### Objectives

Bhutan's ambition for developing education services will complement our broader goals by developing a deep talent pool and capabilities across the priority sectors. It will also drive revenue by attracting international institutions, faculty, and students.

Bhutan with several strategic advantages — political stability, brand recognition as a GNH country and English-speaking population — provide a good foundation. The existing infrastructure, including the Royal University of Bhutan (RUB) and its affiliated colleges, offers an initial platform for growth.

Bhutan's education services strategy will focus on fields closely aligned with Bhutan's unique strengths and economic priorities, such as tourism, sustainability, natural sciences, digital economy, business, and forestry. Bhutan can initially target regional markets such as India, Thailand, Malaysia, and Bangladesh, which represent significant pools of prospective international students.

Key objectives are:

1. Develop a world-class education services centre comprising a critical mass of education and knowledge actors across Bhutan, including several regional and international institutions through branches/offshore campuses, collaboration or partnership offering dual degrees and programmes in Bhutan.
2. Position Royal University of Bhutan as a top academic institution in Asia through investments in programmes — technology, business management and innovation, research and teaching — to attract international students and reduce outbound student migration.
3. Attract international students and faculty to Bhutan, increasing international students in higher education (up to 50 percent of the student population).

Within 15 years, Bhutan should establish itself as a recognised destination for international students, with RUB ranked at least among the top 250 universities in Asia.

### Strategic Initiatives

Building a world-class education services will require a phased approach. This opportunity will build on the initiatives within the Human Capital Development enabler.

<sup>58</sup> The outlook for international student mobility: amidst a changing global macroeconomic landscape, British Council, March 2024, <https://opportunities-insight.britishcouncil.org/short-articles/reports/global-economic-trends-affecting-student-mobility>

Initiative	Horizon	Owner
Develop and implement a robust governance and policy framework for education services, covering focus areas, approach to inward investments and quality assurance systems.	Short- to Medium-Term	MoESD
Invest in educational infrastructure, including state-of-the-art campuses, advanced research facilities, and high-quality student accommodations with enhanced physical and digital connectivity.	Medium-Term	MoESD
Attract leading regional and global institutions to establish presences and develop offerings in Bhutan.	Short- to Medium-Term	MoESD
Drive teaching, research excellence and innovation and increase contributions to global knowledge production. Align curricula with international standards while integrating Bhutanese cultural and economic priorities.	Medium- to Long-Term	MoESD
Build a skilled academic workforce and attract high-quality students considering incentives such as competitive salary packages, long-term contracts, and robust tenure policies.	Medium- to Long-Term	MoESD
Integrate work-integrated learning opportunities (internships and apprenticeships) into academic programmes. Collaborate on R&D in sectors such as sustainability, tourism, and agriculture.	Medium- to Long-Term	MoESD
Ensure equitable access to educational opportunities by targeting scholarships and financial assistance programmes specifically at marginalised and underprivileged groups.	Medium- to Long-Term	MoESD

### Envisaged Outcomes

Bhutan’s education services strategy aims to establish it as a regional leader in higher education by increasing international student enrolment, enhancing global reputation, and driving economic diversification. Key outcomes include world-class infrastructure, industry-academia collaboration, and a skilled workforce in priority sectors. The initiative also focuses on sustainability, cultural integration, and social equity, ensuring graduates contribute to Bhutan’s economic goals.

#### 4.2.3 Business and Knowledge Process Capability Centres

The global market for business services grew from USD 624 billion in 2022 to USD 681 billion in 2023 and is expected to grow at a compound annual growth rate (CAGR) of 8 percent through 2027.<sup>59</sup> Global companies across different sectors continue to offshore and nearshore services, seeking

cost-effective and scalable talent pools. The rise of remote work has further accelerated this trend.

Providing BPO/KPO services domestically and internationally will complement and accelerate the development of technology and knowledge-led sectors which are currently at a nascent stage.

This will require aligning education with global industry standards, enhancing STEM education, and fostering an enabling environment. The potential benefits in terms of economic diversification, employment generation, and integration into the global digital economy are immense.

### Objectives

Over the next five to seven years, Bhutan will establish multiple capability centres, providing services to leading global and regional companies.

<sup>59</sup> Kearney. (2023). *Global Services Location Index (GSLI) 2023: Full Report*. <https://www.kenarney.com/service/digital-analytics/gsl/2023-full-report>

The capability centres will focus on Business (e.g. Finance, HR, and Marketing) and Knowledge (e.g. data analytics, AI, research, and design) processing services in selected sectors of agri-

tech, sustainability, wellness, and other services (see table 5). Bhutan will monitor trends in global capability centres and incorporate technology, digital and AI capabilities to remain relevant.

Target Sectors	Functional Capabilities
<ul style="list-style-type: none"> <li>▪ Financial Services</li> <li>▪ Technology and Software Development</li> <li>▪ Healthcare and Pharmaceuticals</li> <li>▪ Retail and e-commerce</li> <li>▪ Manufacturing and Automotive</li> <li>▪ Sustainability and ESG</li> <li>▪ Energy and Utilities</li> <li>▪ Travel and Tourism</li> </ul>	<ul style="list-style-type: none"> <li>▪ Technology and Digital</li> <li>▪ Data Analytics and AI Services</li> <li>▪ UX / UI Design</li> <li>▪ Software Development</li> <li>▪ Market Research and Insights</li> <li>▪ Regulatory Compliance and Support</li> <li>▪ HR, Marketing and Sales</li> <li>▪ Competitive Intelligence</li> <li>▪ Finance and Accounting</li> </ul>

Table 5: Areas for KPO and KPO services (non-exhaustive)

Through this, Bhutan will build a brand and presence in the technology and digital value chains, and position Bhutan to move up the value chain

(e.g. to provide more sophisticated services) while expanding broader market reach.

## Strategic Initiatives

Delivering the ambition will require a comprehensive set of strategic initiatives. This includes building the digital and technology ecosystem (refer 5.7. Innovation Ecosystem), and significantly improving our education curriculum.

Initiative	Horizon	Owner
Develop BPO / KPO capability by <ul style="list-style-type: none"> <li>▪ Detailing Bhutan’s BPO / KPO approach, key sectors, value chain focus and relevant incentives.</li> <li>▪ Identify anchor companies that Bhutan can target for providing BPO and KPO services and establish capability centres (see box 1).</li> </ul>	Short- to Medium-Term	MoICE OPMC
Plan and implement capability building programmes within Government and the private sector.	Short- to Medium-Term	MoICE OPMC
Expand Thimphu Tech Park as a platform to develop a centre for BPO / KPO capability.	Short- to Medium-Term	MoICE OPMC

## Envisaged Outcomes

Bhutan has established capability centres providing BPO / KPO services to global organisations employing several thousand people with relevant capabilities, supported by vibrant innovation ecosystem.

### Box 1: Developing BPO and KPO capabilities

To jump-start Bhutan's service industry, Bhutan should aim to attract one or two international anchor firms by facilitating the establishment of captive Global Capability Centres (GCCs). This approach can rapidly scale Bhutan's ICT / service sector and integrate it into global value chains from the outset.

An international anchor firm would introduce best practices and insights into global markets, while a captive GCC represents a long-term commitment by its owner. Leading international companies with significant operations in regional countries should be approached to establish such centres in Bhutan.

Scaling the number of qualified graduates to several hundred per annum is crucial for the success of this strategy. Achieving this goal will require substantial investment in higher education and addressing shortages in physical infrastructure and teaching personnel. In the medium-term, Bhutan should attract faculty from countries with leading IT education systems, such as Singapore, South Korea, Japan, and India. This would lay the foundation for the internationalisation of ICT education at the university level and pave the way for developing in-country BPO and KPO capabilities.

## 4.3 Energy

Bhutan's total energy supply in 2022 was 793,263 tons of oil equivalent (TOE), with 62.4 percent derived from thermal energy sources such as coal and its derivatives, biomass, and petroleum products and 37.6 percent from electricity. Electricity formed the largest proportion, followed by biomass (25.2 percent), coal and its derivatives (19.6 percent), and petroleum products (17.6 percent). Alternative renewable energy sources (solar, wind, embedded hydro) accounted for less than 1 percent of total electricity generation.<sup>60</sup>

Hydropower is the dominant electricity source, contributing over 95 percent of Bhutan's power generation. Bhutan's reliance on hydropower exposes it to seasonal generation fluctuations, requiring imports of electricity from India during winter.

Bhutan has untapped potential in renewables beyond hydropower: solar, estimated at 12,000 MW of feasible development potential with current generation at 745.7 MWh in 2022, wind with a potential of 761 MW (only 427.7 MWh

generated in 2022) and waste-to-energy potential of 49 MWh/day using solid waste.<sup>61</sup>

Bhutan is also considering green hydrogen as a sustainable energy source that will play a key role in decarbonising transportation, industry, and power generation.<sup>62</sup> DHI has plans to explore the potential of geothermal energy and green hydrogen, aiming to develop binary geothermal plants with a capacity of 5 to 6 MW by 2028 and green hydrogen plants by 2029.

Bhutan is heavily dependent on fossil fuel imports due to a lack of domestic reserves. In 2022, Bhutan imported 107,643 kilolitres of diesel and 36,697 kilolitres of petrol. The total cost of petroleum imports reached Nu 14,263 million in 2022, with 82 percent spent on petrol and diesel. Bhutan also imported 39,389 MT of sub-bituminous coal while producing 133,501 MT domestically. The Transport Sector is the largest consumer of petroleum products, accounting for 14.5 percent of total consumption. Bhutan has been promoting electric vehicles (EVs), but uptake remains slow.<sup>63</sup>

<sup>60</sup> Ministry of Energy and Natural Resources. (2022). *Bhutan Energy Data Directory*.

<sup>61</sup> *ibid*

<sup>62</sup> Ministry of Energy and Natural Resources. (2024). *Hydrogen Roadmap of Bhutan*.

<sup>63</sup> Ministry of Energy and Natural Resources. (2022). *Bhutan Energy Data Directory*.

As a result, Bhutan’s energy sector has multiple challenges

1. Dependence on seasonal hydropower where Bhutan’s run-of-river plants experience lower generation during winter, leading to power imports.
2. Low adoption of alternative renewable energy due to minimal deployment of alternative renewable energy despite vast potential in solar, wind, and waste-to-energy.
3. Heavy reliance on fossil fuels spending huge portion of its electricity export revenue on fossil fuel imports.
4. Limited private sector participation across projects outside hydroelectricity (led by DHI) due to lack of incentives and expertise.
5. Vulnerability to climate change which could

reduce glacier-fed river flows and impact long-term hydropower sustainability.

## Objectives

The energy sector is crucial for overall economic growth. Key objectives are to:

1. Improve energy mix whilst managing energy demand.
2. Reduce dependence on fossil fuel through adoption of innovative technologies.
3. Drive renewable and sustainable energy adoption.

These initiatives outlined below will need to be considered together with the strategy for hydropower sector.

## Strategic Initiatives

Initiative	Horizon	Owner
Increase investments in renewable energy sources like solar and wind, and biomass and in sustainable energy sources (biofuels, green hydrogen, and biogas).	Ongoing	MoENR
Accelerate the implementation of the Hydrogen Roadmap of Bhutan (June 2024) and demand-side management programmes identified in the Energy Efficiency Roadmap.	Short-Term	MoENR
Pilot advanced energy storage technologies, such as liquid metal battery banks, to enhance energy reliability and optimise both domestic and export energy usage.	Long-Term	MoENR
Strengthen incentives for electric vehicles adoption through investment into charging infrastructure and incentives.	Short-Term	MoF, MoENR
Assess the existing energy grid and invest in a reliable and adaptive energy grid to support planned industries, high-value manufacturing, and digital economy initiatives.	Medium-Term	MoENR
Explore opportunities to leverage Bhutan’s carbon negative / neutral status through participation in global carbon markets including trading carbon credits and using green bonds to fund renewable energy projects.	Short- to Medium-Term	MoENR
Develop guidelines and infrastructure to enable ‘prosumer’ approach for individuals and entities to generate energy.	Short- to Medium-Term	MoENR
Increase the participation of the private sector within the energy sector.	Short-Term	MoENR, Private Sector

## Envisaged Outcomes

Bhutan's energy initiatives will deliver a diversified, secure, and sustainable energy mix that reduces dependence on seasonal hydropower while enhancing economic resilience. Solar, wind, and green hydrogen production can strengthen Bhutan's energy security, lower fossil fuel imports, and create new economic opportunities in clean energy exports.

Additionally, improving energy efficiency, electrifying transport, and implementing smart grid solutions will contribute to a low-carbon, resilient economy while preserving Bhutan's carbon-negative status and supporting clean energy trade.

### 4.4 Manufacturing

Manufacturing contributed approximately 5.4 percent to Bhutan's real GDP in 2023,<sup>64</sup> a significantly lower share compared to developed markets such as Singapore, where manufacturing accounted for about 19 percent of GDP in 2023.<sup>65</sup>

Between 2013 and 2023, Bhutan's manufacturing sector (as share of GDP) recorded an annual growth rate of only 0.9 percent, lagging the overall economic growth rate (4 percent per annum) and the 2.5 percent per annum for agriculture during the same period.<sup>66</sup>

The 2024 Industry Census shows that manufacturing and production establishments comprise only 10.4 percent of Bhutan's total 13,008 establishments. Of these, 47 percent are forest-based, 29.2 percent Agro-based, and 15.3 percent mineral-based, with the rest categorised as others. Sole proprietorships dominate the sector,

accounting for over 87 percent of establishments, while private limited companies represent less than 7 percent.

Furthermore, 91 percent of manufacturing firms cater exclusively to the domestic market, with only 1.3 percent focused on exports. Heavy reliance on imported raw materials exacerbates the sector's challenges. Manufacturers also face limited access to finance, skilled labour, raw materials including water, alongside policy and logistical constraints.

Manufacturing facilities are mostly located in the South. Unlike economies like Bangladesh, which leverages low-cost labour for manufacturing Bhutan faces higher labour costs, averaging USD 1.00 per hour compared to USD 0.51 per hour in Bangladesh.<sup>67</sup> Although Bhutan benefits from lower energy costs, its landlocked geography and high transportation costs significantly constrain competitiveness.

Bhutan's domestic market is small, hampering manufacturing growth. Urban areas such as Thimphu and Paro, with a combined population of around 200,000, represent the most viable markets.

Over the past decade, the government has made significant efforts to stimulate manufacturing through investments in industrial zones and startup centres, attracting FDI, and enhancing financing. In 2023, the government provided subsidies totalling Nu. 1.2 billion to support the sector, with tax exemptions being the largest component (Nu. 702.81 million), followed by interest rate subsidies (Nu. 292.27 million). Smaller subsidies included price support, machinery and

<sup>64</sup> National Statistics Bureau. (2023). *Statistical Yearbook*. Thimphu, Bhutan.

<sup>65</sup> Singapore Department of Statistics. (2024). *Economic Survey of Singapore 2023*. <https://www.singstat.gov.sg>

<sup>66</sup> Analysis based on the National Accounts Data.

<sup>67</sup> World Bank. (2021). *Gearing Up for the Future of Manufacturing in Bangladesh*. Washington, DC: World Bank.

equipment support, and capital grants, ranging from Nu. 23.12 million to Nu. 42.57 million.<sup>68</sup>

Investments in industrial parks, however, have seen mixed results. For instance, the 756-acre Jigmeling Industrial Park, projected to create up to 25,000 jobs, had only two operational industries by May 2023, with 28 plots under development and 15 remaining vacant. In contrast, the smallest park (33 acres) near Thimphu has been fully occupied for six years but struggles with labour accessibility due to limited public transport.<sup>69</sup>

DHI's 2018 ten-year strategy aims to increase non-hydro revenue to over 40 percent by 2030 (up from 15 percent in 2018) by investing in biopharmacy, agribusiness, and wood products.<sup>70</sup> Notable ventures include Azista Bhutan Healthcare Limited (a joint venture for pharmaceutical production), Menjong Sorig Pharmaceuticals (traditional medicine), and Koufuku International Ltd (dairy processing).

DHI is also exploring innovative manufacturing opportunities, such as producing electric vehicle (EV) components and humanoid robotic parts as a part of its future strategy. The plans also include studying the feasibility of producing “low-volume, low-weight, high-value” products and entering the space industry for design and manufacturing. It also aims to establish a magnesium production

plant and attract car manufacturers to set up EV assembly factories in Bhutan.

### Objectives

The manufacturing sector must become a major driver of Bhutan's 10X journey by focusing on export-oriented production. The ambition is to increase the share of GDP to between 15 and 20 percent.

Bhutan's aspiration is to be a niche player through investments in specific sub-sectors and by targeting the premium, high-end segments in the regional and global markets. However, this will require FDI alongside organic growth.

DHI as the commercial arm of the government, working with the private sector, will be instrumental in realising the manufacturing ambitions.

### Opportunities for Bhutan

Recognising Bhutan's small population, the manufacturing ambitions must consider the availability of natural resources, competitive energy prices, and access to the large and fast-growing market in India. Bhutan should also explore R&D-intensive manufacturing focused on technology, computing, and machinery components. Table 6 provides key areas of opportunity in manufacturing for Bhutan.

<sup>68</sup> Department of Industry & National Statistics Bureau. (2024). *Industry Census of Bhutan 2024*

<sup>69</sup> World Bank. (2019). *Bhutan's Business Infrastructure Policy and Industrial Parks*. Washington, DC: World Bank.

<sup>70</sup> DHI. (2018). *Into the next decade: A roadmap for DHI and group*. Thimphu, Bhutan.

Area	Focus Areas (non-exhaustive)
Forestry led manufacturing	<ul style="list-style-type: none"> <li>Engineered wood manufacturing using advanced technologies such as Cross-Laminated Timber (CLT) and Laminated Veneer Lumber (LVL)</li> <li>Bamboo and other forest resources-based industry</li> </ul>
Agriculture based	<ul style="list-style-type: none"> <li>Value addition to high-value agricultural and food products</li> <li>Processing and packing of superfoods</li> </ul>
Pharmaceuticals and cosmetics	<ul style="list-style-type: none"> <li>Traditional medicine</li> <li>Medicinal cannabis</li> <li>Ethical and organic based cosmetics</li> <li>Manufacturing of generics</li> </ul>
R&D driven manufacturing	<ul style="list-style-type: none"> <li>Low-volume, low-weight, high-value components for future industries</li> <li>Key industries — Electric vehicles, (humanoids) robotics, electronics and semi-conductors, high end commercial products and advanced materials</li> </ul>

Table 6: Focus Areas for Manufacturing

#### 4.4.1 Forestry-Based Manufacturing

Bhutan’s Constitution mandates maintaining a minimum of sixty percent of Bhutan’s total land’ under forest cover for all time, and currently, forests cover about 72.3 percent of Bhutan’s land area. The rich forestry resource provides a durable foundation for developing a sustainable forestry-based manufacturing subsector.

Forestry-based manufacturing already forms a significant part of Bhutan’s manufacturing sector with more than 47 percent of manufacturing establishments related to forestry. However these are low-value and focused on internal markets. This sub sector holds great promise for sustainable growth and economic diversification.<sup>71</sup>

#### Engineered Wood

Manufacturing engineered wood presents a significant opportunity for Bhutan to leverage Bhutan’s abundant forest resources sustainably. Bhutan can adopt advanced technologies like CLT and LVL to drive the growth of the industry.

In 2023, Bhutan harvested only 70,000 cubic meters of timber,<sup>72</sup> a modest proportion of forest cover compared to countries such as Sweden and Finland, who are global leaders in supplying engineered wood products. While harvesting timber in Bhutan is challenging due to terrain and the high transportation costs, Natural Resource Development Corporation Limited (NRDCL) estimates that Bhutan can sustainably harvest up to 2.5 million cubic meters annually.<sup>73</sup>

Engineered wood products like CLT and LVL offer high strength and durability, making them ideal for constructing sustainable and energy-efficient buildings. These products can cater to both domestic needs and export markets, particularly in South and Southeast Asia, where there is a growing demand for eco-friendly construction materials. Engineered wood can become a major input into the construction industry and for the development of the Gelephu Mindfulness City.

Bhutan should consider launching a flagship Wood Building Programme like Finland’s initiative,

<sup>71</sup> Department of Industry & National Statistics Bureau. (2024). *Industry Census of Bhutan 2024*

<sup>72</sup> NRDCL. (2023). *Annual Report 2023*. Thimphu, Bhutan

<sup>73</sup> *ibid*

which can increase the use of wood in urban development and public buildings. This initiative would ensure that a significant percentage of public buildings use wood as a primary material by a target year, such as 2035. The initiative would not only promote sustainable construction practices by encouraging the private sector to adopt wood-based construction using domestically sourced and locally produced materials but also create a market for the emerging wood processing sector.

### Other Forestry-Based Manufacturing

Other forestry-based manufacturing opportunities include the production of bamboo products and other high-value forestry-based products. Bamboo, known for its rapid growth and sustainability, can be used to manufacture a wide range of products such as furniture, flooring, textiles and biodegradable utensils, and paper.

#### 4.4.2 Agri-Based Manufacturing

Aligned to the core sector of agriculture and the ambitions to craft a premium brand in agriculture, Bhutan will develop the food processing sector. Key areas of focus will be the processing of high-value-added products, including dairy products such as cheese and yogurt. For instance, Bhutan could create niche products like Yak cheese, which has the potential to attract gourmet markets globally.

Agri and food processing will require premium packaging ensuring they meet international standards and appeal to overseas markets. Superfoods such as buckwheat, known for its nutritional benefits, can be processed, and packaged in eco-friendly materials, emphasising their organic nature. These products can be marketed in attractive, biodegradable packaging highlighting Bhutan's commitment to environmental sustainability.

Existing capabilities within the agri-manufacturing sector will be enhanced to include facilities for processing and packaging organic produce, such as dried fruits and nut mixes, which are increasingly popular among health-conscious consumers. Embracing advanced technologies and robust quality control measures will be essential to ensure that these products can compete on the global stage.

#### 4.4.3 Pharmaceuticals

Bhutan's unique biodiversity, particularly its wealth of medicinal herbs, also presents opportunities for the development of traditional medicines. Bhutan can produce high-quality traditional medicines that appeal to both local and international markets. Investment in research and development will be essential to standardise these products and ensure their efficacy and safety.

The global interest in medicinal cannabis offers another promising avenue for Bhutan. With appropriate regulatory framework and investment, Bhutan can cultivate and process medicinal cannabis, thereby tapping into a rapidly growing industry, thus providing substantial economic benefits.

Opportunities also abound in the cosmetics industry, particularly in the production of natural and organic products. Bhutan's pristine environment and rich biodiversity provide the foundation for developing high-quality cosmetics that cater to the increasing demand for natural beauty products. By focusing on value addition and premium packaging, Bhutan can position its cosmetics products as luxurious and environmentally friendly, appealing to discerning consumers worldwide.

Bhutan can also expand manufacturing into generic drugs. By leveraging licensing agreements

and attracting FDI, Bhutan can establish itself as a credible player in the generics market. This approach will not only enhance local capabilities but also diversify production, targeting both local and regional markets. DHI through its JV, Azista Bhutan Healthcare Limited, has made a start.

#### 4.4.4 R&D Focused Manufacturing

Bhutan will invest in R&D focused manufacturing to enhance its presence in high-tech and high-value industries. Developing capabilities in R&D focused manufacturing could help Bhutan remain competitive globally and create new opportunities for economic growth.

To achieve this, Bhutan will explore producing low-weight, low-volume, and high-value components, such as those used in the advanced automotive and EV industries, manufacturing and other technology sectors.

Achieving success in R&D-focused manufacturing and tech-led industries is likely to be a long-term endeavour. These will require substantial investments in R&D — both infrastructure and expertise. Collaboration with international experts and institutions will be necessary to build the required technical knowledge and capabilities. Attracting FDI from established global players will also facilitate technology transfer and provide insights into best practices.

Bhutan must invest in education and training programmes to develop a skilled workforce capable of supporting these advanced sectors. However, the potential benefits, including economic growth and an improved position in the global market, will make it a worthwhile investment.

### Strategic Initiatives

To realise Bhutan’s manufacturing ambitions, it is imperative to adopt strategic initiatives which will transform Bhutan’s manufacturing sector into a significant driver of economic growth.

These initiatives will be implemented alongside enablers and initiatives described in Chapter 5.

Initiative	Horizon	Owner
For selected manufacturing areas, target and attract international high-end producers / manufacturers who can bring specific technologies, expertise, and capital to accelerate the manufacturing strategy.	Short- to Medium-Term	MoICE
Create special-purpose ventures / partnerships to invest into specific manufacturing areas like bottled water, agro-food, timber-based goods, pharmaceuticals, and cosmetics.	Short- to Medium-Term	DHI, Private sector
Conduct feasibility study into establishing an engineered wood production facility. Also assess broader forestry-based manufacturing.	Short-Term	DHI, MoICE
Develop the food processing sector by identifying high-value-added products such as premium dairy items, superfoods, and organic produce.	Short- to Medium-Term	MoICE, MoENR
Accelerate Bhutan’s manufacturing capabilities in Pharmaceuticals and related sector. Consider traditional medicines, medicinal cannabis, cosmetics, and generics.	Short- to Medium-Term	MoICE
Invest in R&D to enhance Bhutan’s presence in high-tech and high-value industries. Explore producing low-weight, high-value components for advanced automotive and technology sectors.	Medium- to Long-Term	MoICE, DHI

## Envisaged Outcomes

Within the next five to fifteen years, Bhutan can expect to see a significant increase in GDP contribution from manufacturing, driven by high-value exports and job creation. The forestry-based manufacturing, agro-processing, pharmaceuticals, and R&D-focused industries will establish Bhutan as a regional leader in sustainable production.

Moreover, the collaboration between DHI, private sector ventures, and international players will ensure steady growth and knowledge transfer. Bhutan will not only diversify its economy but also uphold its commitment to environmental stewardship, while building a thriving high-end manufacturing sector.

## 4.5 Mining and Minerals

Bhutan possesses substantial industrial mineral resources, including dolomite, gypsum, and coal. These resources have facilitated the establishment of mineral processing and manufacturing industries, such as those producing ferro-alloys and cement. Additionally, Bhutan exports boulders to neighbouring countries.

In 2023, the mining sector contributed approximately 3 percent to Bhutan's GDP and grew at a CAGR of 3.8 percent between 2013 and 2023, accelerating to 15.2 percent between 2021 and 2023. There is significant potential for the mining and minerals sector to further contribute to Bhutan's economic growth.<sup>74</sup>

The 13<sup>th</sup> FYP outlines an ambitious annual growth target of 11.9 percent for the mining sector, which is significantly higher than historical growth rates.

Key opportunities to expand the sector include:

1. Development of mineral processing capabilities to add value to minerals. This will require identifying new value-addition opportunities for minerals mined in Bhutan or imported from third countries.
2. Exploration of Critical Resource Materials (CRMs) and Rare Earth Elements (REEs). CRMs and REEs are indispensable for clean energy technologies including batteries, semiconductors, advanced digital infrastructures, and strategic defence and space applications.

A key next step for mining would be to undertake a comprehensive geological survey to establish Bhutan's mineral deposits, including the identification of commercially viable deposits of CRMs, REEs, and other key minerals such as graphite, gold, tungsten, copper, molybdenum, and silica.

## Opportunities for Bhutan

Given the global context, Bhutan can carve out opportunities in the CRM and REE, subject to confirming economically viable deposits. Advances in AI-driven geological exploration technologies could make this process more cost-effective and precise.

Bhutan can also attract international investments by highlighting its political stability, good governance, and commitment to environmental sustainability. Collaborations with reputable mining companies can reduce initial costs and ensure high environmental standards. Strategic partnerships with entities in the EU, U.S., Japan, and Australia can secure stable export markets and integrate Bhutan into global supply chains as a reliable source of critical minerals.

<sup>74</sup> National Statistics Bureau. (2023). *Statistical Yearbook*. Thimphu, Bhutan.

Furthermore, Bhutan could explore developing sustainable processing capabilities for CRMs, REEs, and other minerals. This aligns with global trends towards environmentally friendly mineral refining. Bhutan can position itself as a leader in sustainable mining practices by adopting models from Nordic countries, enhancing its reputation and attracting environmentally conscious investors.

### Box 2: Critical Resource Materials and Rare Earth Elements

CRMs and REEs are essential for technologies in clean energy, digital infrastructures, and defense. For example, lithium, cobalt, and nickel are vital for lithium-ion batteries in electric vehicles; gallium and germanium are crucial for semiconductors; and titanium and neodymium-iron-boron magnets are key for aerospace and advanced military equipment.

The demand for these minerals has surged, driven by the rapid deployment of clean energy technologies. According to the International Energy Agency<sup>75</sup> the value of the energy transition minerals market doubled from 2017 to 2022, reaching EUR 300 billion (USD 320-330 billion). During this period, global demand for lithium tripled, cobalt demand increased by about 70 percent, and nickel demand rose by 40 percent. The IEA projects that demand for minerals required by clean energy technologies could increase two to three times by 2030.

### Strategic Initiatives

To deliver the strategy for mining sector, following initiatives will be implemented:

Initiative	Horizon	Owner
Conduct comprehensive nationwide magnetic, gravity, geochemical, and other mineral surveys to identify economically viable deposits of minerals, including CRMs and REEs.	Short-Term	MoICE, MoENR
Develop processing capabilities for minerals, including CRMs and REEs, to add value to raw materials and align with global trends towards environmentally friendly mineral refining.	Short- to Medium-Term	MoICE
Develop strategic partnerships with reputable international mining companies and key global markets such as the EU, U.S., Japan, and Australia to develop capabilities in mining, access export markets, and integrate into global supply and value chains.	Short- to Medium-Term	MoICE, DHI

These initiatives need to be undertaken sequentially. Surveying will require significant upfront costs given Bhutan’s challenging terrain, technological uncertainties, and environmental impact mitigation.

### Envisaged Outcomes

Achieving these objectives will position Bhutan as a reliable source of critical minerals and rare earths elements, enhance economic resilience, attract environmentally conscious investors, and boost technological advancements in clean energy and digital infrastructures.

<sup>75</sup> International Energy Agency. (2023). *Critical Minerals Market Review 2023*. Paris: IEA.



CHAPTER FIVE:

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# Strategic Enablers

Bhutan will require foundational capabilities to deliver the sectoral ambitions underpinning the 10X National Economic Vision. Bhutan will invest into seven cross-cutting enablers spanning “horizontal”, macro-level priorities which are critical for creating the conditions necessary for the growth of priority sectors.

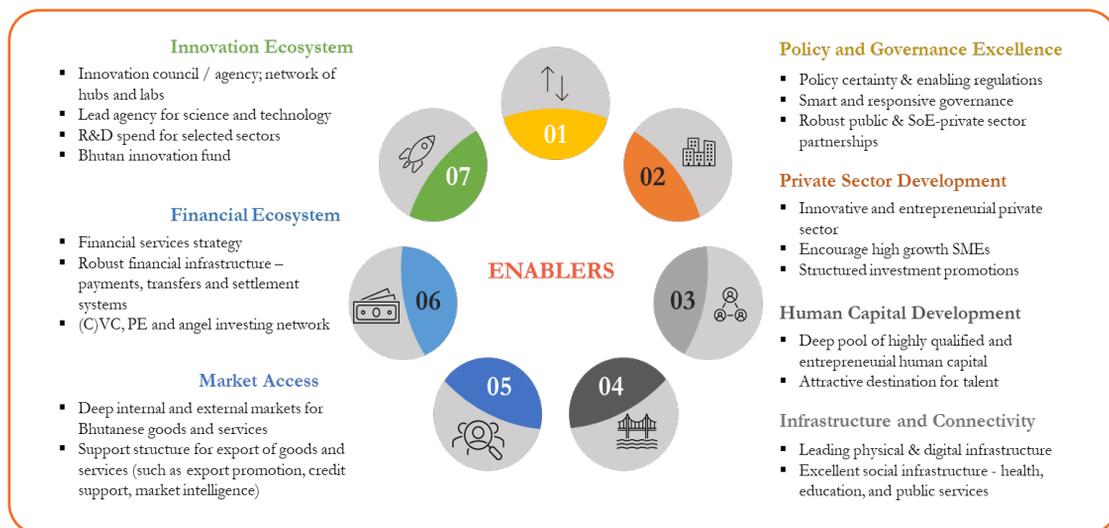


Figure 6: Strategic Enablers

Delivering the seven strategic enablers will be fundamental to the success of Bhutan’s 10X National Economic Vision. Achieving them will remove structural constraints and enable transformative growth resulting in a resilient economy that truly makes the benefits of economic and social development accessible to all. Through these, Bhutan can ensure that Bhutan’s economy is considered among the most dynamic, open, and successful economies of the world within two decades.

## 5.1 Policy and Governance Excellence

Peace, stability, and good governance together with long-term policies have created a conducive environment for sustained development. Bhutan’s strong governance framework is reflected in its 2024 ranking among the top 20 countries on the Corruption Perceptions Index,<sup>76</sup> a remarkable milestone for a developing nation.

Despite these accomplishments, Bhutan’s economy faces critical challenges, including high administrative costs, policy uncertainty, and a lack of clarity in its economic direction. There is a need for Bhutan to adopt a robust business environment with business-friendly and transparent regulations, and sector-specific policies to encourage entrepreneurship, attract FDI, strengthen trust and create opportunities for both local talent and global expertise.

By balancing governance oversight with facilitation, Bhutan can build a resilient and innovative economy. Proactive policies, institutional efficiency, and a predictable regulatory framework will be key to overcoming current challenges and positioning Bhutan as a competitive and thriving economy. Policies implemented across sectors must be minimally intrusive while actively supporting growth.

<sup>76</sup> Transparency International. (2024). *Corruption Perception Index*.

Creating a business-friendly environment will also support the government fiscally as the private sector develops and tax base grows. Tax revenue accounts for only about half of Bhutan’s total public revenue with hydropower and SOEs contributing remainder of the public revenue. SOEs contribute over 85 percent of corporate income tax revenue, with seven of the top ten companies in Bhutan being SOEs while 1 percent of registered businesses account for 60 percent of business income tax revenues.<sup>77</sup>

External grants have declined from 11.6 percent of GDP in 2015/16 to 6 percent in 2022/23,<sup>78</sup> highlighting the need for Bhutan to mobilise domestic revenues and manage resources more effectively.

### Objectives

Through the Policy and Governance Excellence enabler, Bhutan aims to:

- 1. **Establish policy certainty:** Create a predictable and transparent policy environment that will provide confidence

### Strategic Initiatives

To deliver these objectives, the Government will implement the initiatives outlined below.

#### Develop business-friendly regulations and policies

Initiative	Horizon	Owner
Develop smart and responsive policies and regulations by simplifying regulatory and licensing regimes.	Immediate- to Medium-Term	All relevant agencies
Establish regulatory sandboxes for innovation-driven sectors (e.g, fintech, agri-tech, travel-tech, AI led businesses) to encourage innovation in business models and accelerate regulatory approvals.	Short- to Medium-Term	All relevant agencies
Review and strengthen existing (or develop new) legislations / regulations. These include but are not limited to (1) Intellectual property (2) Data protection (3) e-commerce (4) FDI (5) Tax (6) Labour Laws (7) ESG and sustainability and (7) Policies for priority sectors. See appendix A1 for broader list of policies and regulations.	Short- to Medium-Term	All relevant agencies

<sup>77</sup> Khan et al. (2023). *Bhutan-Public Expenditure Review*. Washington, D.C.: World Bank Group.

<sup>78</sup> International Monetary Fund, Asia and Pacific Dept. (2024). Bhutan: 2024 Article IV consultation-Press release; staff report; and statement by the executive director for Bhutan. (IMF Staff Country Reports No. 2024/298). Washington, DC: International Monetary Fund

### Strengthen institutional capacity and governance

Initiative	Horizon	Owner
Align local government priorities with national development growth objectives through incentive-based resource allocation formulas that reward performance (e.g., employment generated, revenues increased).	Immediate	MoHA, OPMC
Review and implement processes and systems to ensure responsive and efficient service delivery, focusing on breaking silos, fostering inter-agency collaboration, and delivering measurable outcomes for the citizens and the private sector.	Short-Term	RCSC, all relevant agencies
Establish KPIs (e.g. Net Promoter Score, citizen satisfaction, service availability, budget variance, response times) across all public agencies to monitor performance, optimise resource allocation and reduce redundancies.	Short-Term	MoF, OPMC, all relevant agencies
Prioritise the digital transformation of high-impact services such as taxation, social services, and permits to enhance accessibility, transparency, and efficiency, aligned to the Government Digital Strategy.	Short- to Medium-Term	GovTech, all relevant agencies
Develop cross-agency data-sharing frameworks and infrastructure to enable data-led decision making.	Short- to Medium-Term	GovTech, NSB
Embed technology adoption and innovation as a key deliverable for every public department including SOEs.	Short- to Medium-Term	RCSC

### Optimise public finances

Initiative	Horizon	Owner
Improve tax administration by strengthening monitoring mechanisms to prevent tax evasion and under-reporting.	Short-Term	MoF
Develop and enforce fiscal benchmarks to control overspending (e.g. debt) while maintaining flexibility for essential projects and programmes.	Medium-Term	MoF
Mandate annual expenditure ceilings across departments to promote accountability and encourage efficient use of funds.	Medium- to Long-Term	MoF

### Refocus SOE priorities to optimise SOE contribution

Initiative	Horizon	Owner
Conduct a thorough review of SOE mandates to align with the Vision and the goals articulated in the Royal Charter. Refocus DHI and SOE initiatives in high priority sectors.	Short-Term	MoF, DHI
Establish joint ventures and partnerships between SOEs and private enterprises, embedding clear milestones for mutual accountability and shared benefits, and drive capability development.	Medium-Term	MoF, DHI
Mandate SOEs to access and create regional and international markets through strategic partnerships and targeted export promotion initiatives.	Medium-Term	MoF, DHI

### Envisaged Outcomes

Bhutan will be positioned as leading in policy and governance efficiency. A predictable and transparent policy environment will reduce uncertainty, instil confidence in investors and entrepreneurs, and attract FDI. Simplified regulations and clearer economic priorities will encourage sustainable and diversified economic growth.

Strengthened governance and institutional capacity through performance metrics and digital transformation with improved inter-agency collaboration and a data-driven governance approach will result in responsive, transparent, and efficient public services improving citizen satisfaction and trust.

Fiscal sustainability will be achieved through streamlined revenue streams, expenditure rationalisation, and fiscal discipline and adherence to robust fiscal benchmarks. Strengthened public fiscal management will support critical projects, minimise waste, and align with long-term economic goals.

## 5.2 Private Sector Development

Bhutan's private sector contribution to economic growth remains modest. Presently, the private sector's share of GDP is around 46.8 percent,<sup>79</sup> lower than 60% of GDP prevalent across emerging and developed countries.<sup>80</sup>

Cottage and small-scale enterprises make up over 95 percent of active industrial licenses. Sole proprietorships comprise around 96 percent of businesses with only 3 percent incorporated as companies.<sup>81</sup> The construction sector is a major contributor to the private economy but relies heavily on migrant workers from India, who constitute ~99 percent of the sector's workforce.<sup>82</sup> Large industrial groups are few and are concentrated in retail, domestic trade, and construction.

The private sector, excluding agriculture, employs 46 percent of the national workforce.<sup>83</sup> Bhutan's tax burden on the private sector as a percentage of GDP was approximately 13.8 percent in the 2022-23 fiscal year, higher than peers in South Asia: India at 11.1 percent in 2023-24, Bangladesh at 7.8 percent in 2023-24, and Pakistan at 9 percent in 2023-24.<sup>84</sup> The private sector has struggled to attract significant FDI, with inflows averaging a mere 0.4 percent of GDP since 2012 — well below regional benchmarks. FDI has remained heavily concentrated in the tourism and ICT sectors.

The private sector faces multiple structural and operational challenges. The small domestic market and limited connectivity to markets, intrinsic to a sparsely populated mountainous country, present significant barriers to export and market access. The regulatory framework imposes administrative burdens, compliance requirements, and sometimes arbitrary regulations, leading to high transaction costs, as corroborated by the World Bank's Doing Business rankings in 2020.

A sizeable portion of the labour force is engaged in agriculture (~39.9 percent in 2024),<sup>85</sup> which contributes ~15 percent to GDP.<sup>86</sup> The public sector offers attractive compensation packages, making it difficult for the private sector to attract and retain skilled labour. Surveys show a strong preference among youth to work for the government or SOEs. Additionally, businesses may choose to remain small to avoid regulatory scrutiny and compliance costs.

<sup>79</sup> Estimated based on National Accounts Statistics.

<sup>80</sup> Market Analysis

<sup>81</sup> Department of Industry & National Statistics Bureau. (2024). *Industry Census of Bhutan 2024*

<sup>82</sup> Ministry of Industry, Commerce, and Employment. (2024). *Annual Report: FY2023–2024*. Thimphu, Bhutan

<sup>83</sup> Estimated based on National Accounts Statistics.

<sup>84</sup> Department of Macro-Fiscal and Development Finance. (2024). *Macroeconomic Situation Report, 1st Quarter Update: FY 2024-25*.

<sup>85</sup> National Statistics Bureau. (2024). *Fourth Quarter Labour Force Survey*.

<sup>86</sup> National Statistics Bureau. (2023). *Statistical Yearbook*. Thimphu, Bhutan.

SOEs, including those under DHI, operate in diverse sectors ranging from real estate and construction to manufacturing and retail which add to competition. Vertical integration by SOEs in key industries limits opportunities for private sector growth. There is a potential need for a re-evaluation of the role of SOEs and a clearer demarcation of areas where private sector participation should be prioritised.

### Objectives

Achieving a tenfold increase in GDP will require the active participation of Bhutan’s private sector. However, given the current maturity, significant improvements to enable the private sector will be required in the form of supportive regulations, access to capital and markets, and talent to seize the opportunities presented by the 10X National Economic Vision.

The 13<sup>th</sup> Five Year Plan sets forth for a “government-facilitated and private-sector-led” growth model, aspiring to make it the “engine of

growth”. A thriving private sector will not only drive economic growth but also create capacity for the public sector, DHI and SOEs to focus on critical and strategic sectors of the future.

The key goals for private sector development are as follows:

1. Increase the private sector’s contribution to GDP from 46 percent currently to between 60 and 65 percent by 2050.
2. Develop a robust and dynamic private sector supported by business friendly and transparent regulations.
3. Strengthen sector-specific capabilities through organic growth and FDI, focusing on priority sectors to enhance Bhutan’s competitiveness.

### Strategic Initiatives

Several initiatives outlined below will support the development of the private sector. These initiatives should be read in conjunction with initiatives across other enablers and the sectors.

### Create a world-class business environment

A world-class business environment is essential for powering the private sector development. Benchmarking best practices from global leaders like Singapore, Denmark, New Zealand, and Estonia, which has a thriving private sector supported by advanced e-government solutions despite their small population, can guide efforts.

Initiative	Horizon	Owner
Establish a dedicated one-stop centre consolidating all government services under a single roof.	Short- to Medium-Term	OPMC GovTech MoICE

### Supercharge high growth SMEs

Supercharging Bhutan’s SMEs (~99 percent of enterprises)<sup>87</sup> will reduce economy’s exposure to risks, encourage innovation and create jobs. SMEs can enable growth in high-value-added economic sectors and create opportunities for entrepreneurs, business owners and venture capitalists.

<sup>87</sup> Department of Industry & National Statistics Bureau. (2024). *Industry Census of Bhutan 2024*

## Supercharge high growth SMEs

Initiative	Horizon	Owner
Develop and implement an SME Master Plan with a focus on high-growth, high-productivity, and export-oriented sectors. Consider programmes for capital, talent, and market access.	Short- to Medium-Term	MoICE, all relevant agencies
Foster SME integration into local, regional, and global value chains.	Medium-Term	MoICE

## Build private sector leadership and management capabilities

Initiative	Horizon	Owner
Develop and implement private sector leadership / managerial training including executive education programmes across diverse industries and organisational levels.	Short- to Medium-Term	MoICE, BCCI
Provide targeted leadership and mentoring schemes for emerging leaders in SMEs and start-ups.	Short- to Medium-Term	MoICE, BCCI

## Set up structured investment promotion mechanisms.

Bhutan must attract both domestic and foreign investors for capital, modern technology, and expertise to support private sector growth. Therefore, a robust investment promotion mechanism will be required. This initiative will complement and build upon existing efforts under Bhutan's FDI Policy and the Invest Bhutan Initiatives, ensuring seamless coordination and a unified approach to investment promotion.

Initiative	Horizon	Owner
Set up an investment promotion authority with the mandate to drive investments across priority sectors.	Short-Term	MoICE MoFAET
Create a collaborative marketplace / platform to facilitate linkages and foster partnerships between investors, peer companies, and public institutions.	Short-Term	MoICE, MoFAET
Streamline FDI approval processes and incentives (including tax benefits) to align with current and emerging business realities, ensuring competitiveness with regional peers. Refer to 5.1.Policy and Governance Excellence.	Short-Term	MoICE
Enhance aftercare services for foreign investors, providing ongoing support for talent needs, infrastructure, and operational needs to retain and grow investments.	Short-Term	MoICE

## Envisaged Outcomes

Bhutan's private sector will gradually develop and increase its participation across the whole economy, complementing the pursuits of DHI and SOEs. Over the long-term, Bhutan will have a dynamic private sector with several leading enterprises and SMEs focused on high growth sectors providing economic opportunities for all.

## 5.3 Human Capital Development

A country's economic development is intrinsically tied to its depth of talent. Bhutan's aspirations for accelerated growth, economic diversification and competitiveness depend on equipping the population with the skills and knowledge needed to excel in a fast-changing global economy. The fastest growing jobs are driven by technological

developments such as AI and robotics with clerical roles declining.<sup>88</sup> This requires Bhutan to develop a well-functioning education system that lays the foundation for building the talent pipeline by fostering critical thinking, problem-solving abilities, and technical expertise.

Over the past two decades, Bhutan has made major strides in education. Bhutan has achieved universal primary school enrolment, and literacy rates have increased from 55.5 percent in 2005 to 70.6 percent in 2022.<sup>89</sup> Bhutan invests more in education than many of its peers, ranking 68<sup>th</sup> out of 131 countries in education expenditure per school-age child.<sup>90</sup>

According to the OECD's Programme for International Student Assessment for Development (PISA-D, see Box 3) conducted in 2017, Bhutanese students' performance in reading, mathematics, and science is comparable to other low and middle-income countries. Specifically, Bhutanese students performed on par with students from top PISA-D countries but significantly below the OECD average and the best education systems in Asia.<sup>91</sup>

While Bhutan stopped participating in PISA-D, Paraguay, another PISA-D participant, joined the 2022 PISA round, offering a reference point for Bhutan's potential global standing. In 2017, Bhutanese students outperformed Paraguay in mathematics and science but lagged in reading. By 2022, Paraguayan students scored 338 in mathematics, 387 in reading, and 360 in science, while Singapore, the world's top performer, scored 569, 549, and 551, respectively.<sup>92</sup>

These results highlight significant efforts required to advance Bhutan's education system to a competitive global level.

### Box 3: OECD PISA-D Programme

PISA-D (Programme for International Student Assessment for Development) is an initiative by the Organisation for Economic Co-operation and Development (OECD) aimed at supporting developing countries in participating in the PISA programme, which assesses 15-year-olds' skills in reading, mathematics, and science. It is specifically designed to adapt the standard PISA framework for countries with lower-income economies or where education systems might not fully align with the original PISA structure.

Considerable variation in educational quality and learning outcomes exists across Bhutan's schools, partly due to a large proportion of the population who live in sparsely populated rural areas. The average teacher-student ratio in public schools is 1:15, but disaggregated data reveals a range from 1:3 to 1:28.<sup>93</sup> Schools in rural and remote areas struggle to recruit and retain qualified teachers and experience higher rates of student dropouts. Major reasons for students leaving school include remoteness and poverty; transitioning from lower to middle secondary school often requires relocating, a cost parents cannot afford. For example, 20 percent of secondary students in rural areas attend boarding schools.<sup>94</sup>

Early investments in education, particularly in Early Childhood Care and Development (ECCD), has a cascading effect on higher education and vocational training outcomes. Bhutan's current

<sup>88</sup> World Economic Forum. (2025). *The Future of Jobs Report*.

<sup>89</sup> National Statistics Bureau. (2023). *Bhutan Living Standard Survey 2022*. Thimphu, Bhutan.

<sup>90</sup> Khan et. Al. (2023). *Bhutan-Public Expenditure Review*. Washington, D.C.: World Bank Group.

<sup>91</sup> OECD. (2018). *PISA for Development Assessment and Analytical Framework: Reading, Mathematics and Science, PISA*. OECD Publishing, Paris

<sup>92</sup> *ibid*

<sup>93</sup> Royal Government of Bhutan. (2024). *Thirteenth Five Year Plan (2024–2029)*. Thimphu: Cabinet Secretariat.

<sup>94</sup> World Bank. (2020). *Bhutan - Systematic Country Diagnostic*. Washington, DC: World Bank.

ECCD enrollment (children aged 3-4 years old attending ECCD programmes) is only 38 percent.<sup>95</sup> Early-stage education systems deliver the most significant impact on improving the educational outcomes across countries.

Enrollment in Technical and Vocational Education and Training (TVET) is also low, with only 1,602 students — about 3 percent of higher secondary graduates — enrolled in public TVET institutions. TVET in Bhutan continues to suffer from poor public perception, an incoherent policy framework, unsustainable financing, and weak governance. Programmes are outdated and supply-driven, with weak or missing linkages to industry needs and limited pathways between high school, TVET institutions, and tertiary education.<sup>96</sup>

The talent shortage is compounded by emigration to countries such as Australia and Canada. Between July 2022 and June 2024, over 25,000 Bhutanese were granted visas to Australia.<sup>97</sup> The people who migrate are economically productive and well educated and are unlikely to return. Bhutan is already experiencing skills shortage across multiple sectors including the education sector. Bhutan needs to consider attracting Bhutanese diaspora and foreign talent.

## Objectives

Bhutan's progression toward becoming a developed country hinges on substantial and sustained investment in its human capital. The objectives of the Human Capital Development pillars are fivefold:

1. Establish a robust nationwide early childhood education system to provide every child in

Bhutan access to high-quality early childhood education. OECD studies show that early childhood education is critical for enhancing cognitive development, reducing social inequalities, and building a foundation for lifelong learning and employability.<sup>98</sup>

2. Transform Bhutan's school system into a global benchmark for excellence, comparable to top-performing nations such as Singapore, Finland, and Estonia. Bhutan can draw inspiration from Estonia's journey which adapted Finland's educational model to become one of the world's best. Bhutan will consistently focus on teacher training, empowering educators, and ensuring rural schools attract and retain high-quality teachers, and continuously benchmark against international standards.
3. Align education objectives and curriculum with economic and workforce needs. Bhutan's education system must meet the demands of the employers, emerging sectors, and the overall economic ambitions. Vocational education must be reimagined along global best practices such as Germany's dual education model. By 2029,<sup>99</sup> the goal is to ensure that at least 50 percent of the workforce receives training through higher education or vocational skills.
4. Develop a world-class higher education system that supports innovation and skills for the 21<sup>st</sup> century. Prioritise higher education areas that would support the priority sectors. Eventually, position Bhutan as a regional leader in higher education, exporting higher education and attracting international students.
5. Attract Bhutanese abroad and international talent to supplement Bhutan's workforce. As Bhutan accelerates development and seeks to

<sup>95</sup> Ministry of Education and Skills Development.

<sup>96</sup> Royal Government of Bhutan. (2024). *Thirteenth Five Year Plan (2024–2029)*. Thimphu: Cabinet Secretariat.

<sup>97</sup> The Bhutanese, <https://thebhutanese.bt/bhutan-loses-two-changlimithang-stadiums-full-of-people-to-australia-in-two-years/>

<sup>98</sup> OECD, Starting Strong Series. <https://www.oecd.org/education/school/startingstrong.htm>

<sup>99</sup> Royal Government of Bhutan. (2024). *Thirteenth Five Year Plan (2024–2029)*. Thimphu: Cabinet Secretariat.

build competitiveness, addressing potential talent shortages in key capability areas such as data and analytics, deep research skills will be essential. A balanced approach to integrating international talent can accelerate innovation, enhance workforce diversity, and engender innovative ideas to support Bhutan’s vision for economic and social development.

### Strategic Initiatives

Bhutan must undertake a comprehensive and phased approach to enhancing its educational and vocational systems, developing its workforce, and attracting global talent. Innovation ecosystem and sectoral initiatives will also supplement skills development across the economy.

Initiative	Horizon	Owner
Review existing ECCD implementation comparing against leaders (e.g. Nordic countries) and redesign the system.	Short- to Medium-Term	MoESD
Remodel Schools following global best practices from successful countries such as Finland. Consider producing world-class teachers, adopting relevant curricula (e.g. Cambridge Curriculum or similar) and investing in school infrastructure.	Short- to Medium-Term	MoESD
Benchmark Bhutan’s quality of education against peer and developed countries using OECD PISA or similar programmes.	Short-Term	MoESD
Enhance the TVET education programme through investing in relevant training programmes, infrastructure and capabilities of faculty aligned to 13 <sup>th</sup> FYP. Benchmark against leaders in TVET education (e.g. Germany).	Short-Term	MoESD, BCCI
Enhance the quality of Higher Education by investing in areas of demand such as the tourism, agriculture, construction, energy, industry, and the financial services sector, and skills of the future.	Medium-Term	MoESD, RUB
Develop a strategy targeting Bhutanese diaspora to leverage their skills and network and subsequently encourage them to contribute to economic development in Bhutan.	Short- to Medium-Term	MoICE, MoFAET
Attract international talent to supplement Bhutanese talent through a thorough review of talent needs and likely gaps aligned to the Vision.	Medium- to Long-Term	MoICE, OPMC

### Envisaged Outcomes

Through to 2050, Bhutan will continue to deepen the talent pool through transforming the education system, from early stage through to higher education, and making it comparable to leading education systems globally. Talent and skills development will also be enabled by the renewal of the TVET and vocational education. The Royal Government will accord the highest priority to developing Bhutan’s human capital which will enable the growth of the broader economy.

### 5.4 Infrastructure and Connectivity

Infrastructure is a critical enabler for economic growth, driving mobility, communication, and innovation. Strategic investments in infrastructure and connectivity will enhance competitiveness, create jobs, and stimulate the economy.

The infrastructure and connectivity enabler encompass physical, digital, and social infrastructure. High-quality transportation and digital infrastructure enhance delivery of goods and services, while robust social infrastructure

spanning health, education, and public service enhances the wellbeing of citizens and makes Bhutan an attractive destination for talent and investors.

For Bhutan, it will be critical to develop climate-resilient infrastructure to protect against natural disasters (e.g., landslides, floods) and ensure infrastructure resilience.

Bhutan’s 10X ambitions will require targeted and significant resource allocation to infrastructure development. Of the total expenditure of Nu. 68.8 billion in FY 2022–23, the Government spent 49 percent on infrastructure-related activities, representing about 14 percent of GDP.<sup>100</sup>

### Physical Infrastructure

Bhutan is landlocked, and its primary gateways to the outside world lie through India and Bangladesh primarily via road networks. The nearest major seaport is Kolkata in India, approximately 700 km from Bhutan’s southern industrial zones.

Paro International Airport is Bhutan’s main air gateway. Surrounded by mountains as high as 5,500 meters, it features a steep descent, a short runway, and unpredictable crosswinds, making it one of the most challenging airports in the world.

As of January 2025, Paro International Airport offers nonstop passenger flights to fifteen destinations across 6 countries and operates between 4 and 10 flights daily, depending on the time of the year. By comparison, Kathmandu Airport, which can manage wide-body aircraft, provides non-stop passenger flights to 45 destinations across 16 countries and operates more than 100 flights per day (including both domestic and international).

Reflecting these challenges in reaching international markets and attracting visitors, Bhutan ranks 97<sup>th</sup> in the 2023 World Bank’s Logistics Performance Index (LPI).<sup>101</sup> Bhutan’s overall LPI score (2.5) for 2023 is lower than that of its regional peers Bangladesh (2.6) and India (3.4), lagging peers across all the key components.

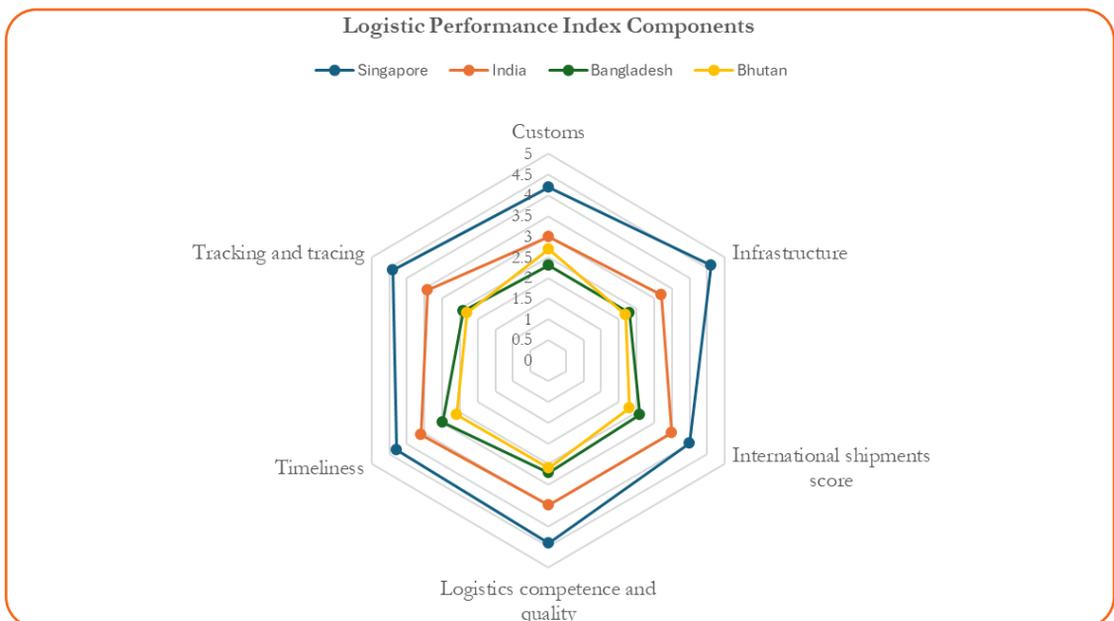


Figure 7: Logistics Performance Index and Its Indicators

<sup>100</sup> Ministry of Finance, [https://www.mof.gov.bt/wp-content/uploads/2023/10/AFS\\_YearEnded30June2023.pdf](https://www.mof.gov.bt/wp-content/uploads/2023/10/AFS_YearEnded30June2023.pdf)

<sup>101</sup> World Bank. (2023). *Logistics Performance Index*. <https://lpi.worldbank.org/international/scorecard>

In 2018, the Ministry of Economic Affairs invested in four new industrial parks — Bondeyma in Mongar, Dhamdum in Samtse, Jigmeling in Sarpang, and Motanga in Samdrup Jongkhar. These parks, although mostly complete, have only partially succeeded in attracting tenants. Two of them, Dhamdum in Samtse and Jigmeling in Gelephu, will eventually be connected to India by railroad.

The Final Location Survey for the 69 km Gelephu–Kokrajhar cross-border railway has recently been completed.<sup>102</sup> For the 16 km Samtse–Banarhat cross-border railway, the Ministry of Infrastructure and Transport is studying the best location and alignment in consultation with India’s Northeast Frontier Railway. Bhutan’s railway connection with India remains in an early field-level engineering study phase. Bhutan has now access to an Inland Water Transport Terminal on the Brahmaputra River in Assam – providing access to Bangladesh and India.<sup>103</sup>

As one of the first initiatives of the GMC, the domestic airport of Gelephu will be augmented as an international airport to accommodate larger, long-range aircraft.

## Digital Connectivity

Over the past two decades, Bhutan expanded its digital networks. In the early 2000s, internet access was confined to urban areas, relying on slow and costly dial-up connections. Mobile telephony was introduced in 2003. By the early 2010s, Bhutan had established a national fiber-optic backbone connecting all twenty districts (dzongkhags). Both major telecom operators, Bhutan Telecom

and TashiCell, expanded 4G services and began piloting 5G in key urban centres.

During the 12<sup>th</sup> FYP (2018–23), the RGoB launched the Digital Drukyul Flagship Programme to guide the nation toward becoming a digitally advanced and inclusive society. With a budget of Nu. 2.7 billion, the programme aimed, among other objectives, to provide universal access to high-speed internet. As a result, Bhutan achieved a high ranking in the UN Telecommunications Infrastructure Index (TII), scoring 6.31 in 2022 — outpacing countries like India and Bangladesh.<sup>104</sup>

Despite these advancements, barriers remain to achieving universal, high-quality digital connectivity. Bhutan’s mountainous terrain and dispersed population complicate infrastructure deployment and drive-up costs. Internet services remain more expensive than in many neighbouring countries due to small subscriber base relative to the prohibitive cost of infrastructure investment. A GovTech and UNDP (2023)<sup>105</sup> study found that the cost per GB of mobile broadband in Bhutan was six times higher than in India and almost ten times higher than in Vietnam.

While the domestic connectivity infrastructure is robust, international connectivity remains limited. Bhutan currently relies on two fiber-optic cables routed through India for global internet access. A third international internet gateway is under development. Digital connectivity is essential for new engines of growth, including data centres, digital businesses, and technology and knowledge-led sectors. Data centres depend heavily on high-quality fiber connections linking them to both end users and other facilities.

<sup>102</sup> Final location survey over for rail link to Bhutan, Telegraph. <https://www.telegraphindia.com/west-bengal/final-location-survey-over-for-rail-link-to-bhutan-69-04km-long-route-proposed-from-assam-at-an-estimated-cost-of-rs-3500-crore-prnt/cid/2086695>

<sup>103</sup> New inland waterway terminal to boost trade with Bangladesh and India, Kuensel (February 2025)

<sup>104</sup> United Nations Department of Economic and Social Affairs. (2022). *E-Government Survey 2022: Telecommunication Infrastructure Index 105*

<sup>105</sup> GovTech Agency & UNDP. (2023). *Kingdom of Bhutan Digital Economy Development and Transformation Strategy*. Thimphu, Bhutan

According to the GSMA Mobile Connectivity Index 2023, Bhutan is classified as a transition economy (see Figure 8) based on superior performance in consumer readiness and infrastructure.<sup>106</sup> Singapore and Estonia are considered as leaders with Malaysia and India as advanced. Bhutan's connectivity levels must significantly improve in the short and medium-term to be competitive in the digital economy.

### Social Infrastructure

While the government fully funds health and education, opportunities exist to improve their quality and efficiency. Social protection instruments such as insurance, savings, and retirement programmes are basic and will require enhancements.

### Objectives

The objectives of this enabler are to:

1. Develop and maintain leading physical and digital infrastructure that aligns with the economic ambitions, establishing regional benchmarks for cost-efficiency and connectivity.
2. Achieve a high level of digital connectivity that supports new engines of economic growth, including data centres, digital sectors, services, and e-commerce.
3. Strengthen social infrastructure in health, education, and public services to improve the quality of life for Bhutanese citizens, making Bhutan a desirable place to live, work, and invest.

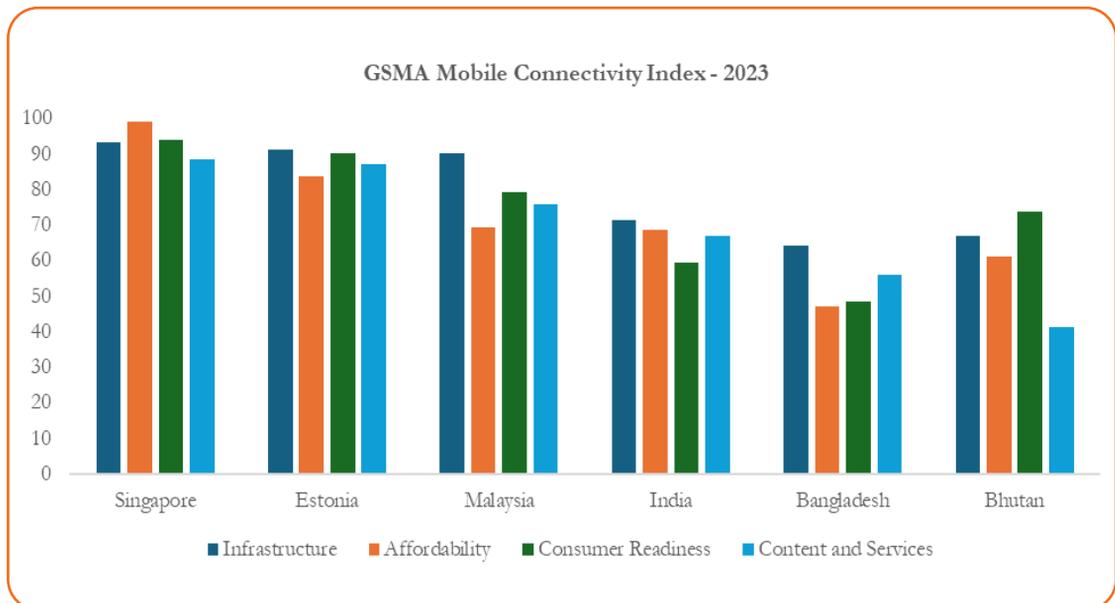


Figure 8: GSMA Mobile Connectivity Index, 2023

<sup>106</sup> The State of Mobile Internet Connectivity Report 2023 (GSMA)

## Strategic Initiatives

Multiple initiatives have been identified to significantly enhance infrastructure and connectivity.

### Enhance physical infrastructure

Initiative	Horizon	Owner
Review existing infrastructure (road and air) based on priority sectors' needs to enable market access for goods and services.	Short-Term	MoIT
Accelerate the development of a rail link with India to reduce trade costs and improve regional integration, aligned to the initiatives in the 13 <sup>th</sup> FYP.	Short-Term	MoIT
Optimise the use of the existing industrial estates and zones, address key shortcomings. Develop new industrial estates / economic zones aligned to the priority sector ambitions.	Immediate / Short-Term	MoICE

### Build and enhance technology and digital infrastructure

Initiative	Horizon	Owner
Develop a national technology strategy articulating priority technologies including artificial intelligence, which will be required for Bhutan's 10X ambitions. Refer 5.7 Innovation Ecosystem.	Immediate to Short-Term	GovTech
Prioritise the implementation of the third internet gateway, critical for the acceleration of the digital and other sectors and to bring connectivity at par with regional and international benchmarks.	Short- to Medium-Term	GovTech
Invest in digital and technology infrastructure and data infrastructure including data centre, cloud platforms, 5G and payment gateways.	Short- to Medium-Term	GovTech

### Expand social infrastructure

Initiative	Horizon	Owner
Invest into existing social infrastructure, such as housing and healthcare following review and benchmarking against similar markets.	Short- to Medium-Term	All relevant agencies
Assess existing social protection mechanisms including benefits, pensions and insurance while delivering the social protection plans identified in the 13 <sup>th</sup> FYs.	Short-Term	OPMC, all relevant agencies

## Envisaged Outcomes

Upgraded transportation networks, including optimised roads, air infrastructure, and rail links with India will reduce trade costs, enhance regional connectivity, and accelerate growth. Industrial estates and economic zones will drive innovation and attract investments. Investments in digital infrastructure, such as the third internet gateway,

cloud platforms, and 5G technology, will improve internet access, make costs competitive, and enable digital businesses. Enhanced healthcare, education, housing, and social protection systems will improve citizens' quality of life and make Bhutan more appealing to talent and investors.

## 5.5 Market Access

Bhutan faces significant challenges in market access due to its limited internal market size, which primarily focuses on goods, with services provided by the government. To achieve economic diversification, Bhutan must ensure adequate market access for the private sector.

Bhutan's export of goods in 2023 was valued at around Nu. 53 billion compared to an import spending of Nu. 108 billion during the same year. Hydroelectricity accounted for 32 percent of the total exports followed by ferro silicon at around 26 percent of the total exports.<sup>107</sup>

Strong bilateral arrangements with India underpins Bhutan's success in hydroelectricity exports. However, exports in other areas require significant development. Bhutan is a member of multiple international organisations (e.g. BIMSTEC, SAARC, Colombo Plan, World Tourism Organisation, United Nations Industrial Development Organisation). These memberships and relationships can provide the platform for Bhutan to engage in regional and international trade.

A more export-oriented economy supported by an enabling public sector is crucial for Bhutan's future economic trajectory. To facilitate this, the government must support businesses by identifying export opportunities through mechanisms such as free trade agreements, participation in trade fairs, diaspora engagement, and public marketing activities.

Further, the government, alongside DHI, must take an active role in identifying export opportunities within the immediate neighbourhood and beyond, including in the GMC.

## Objectives

Key aims around enhancing market access for Bhutan are:

1. Identify and develop attractive markets for Bhutan: Pinpoint both internal and external markets for Bhutanese goods and services, prioritising high-potential sectors. Within these markets, Bhutan will establish brand and reputation to create demand and recognition for offerings across sectors such as agriculture, mines and mineral processing, tourism, energy, and services.
2. Establish a robust structure to promote export: Recognise the need of exporters and businesses for market intelligence, training, and support to be able to understand and navigate the target markets and put in place a structure to facilitate exports.

## Strategic Initiatives

Key initiatives will be focused on creating markets, both internal and external, and promoting exports.

### Expand and create internal markets

The size of Bhutan's internal markets, using household consumption as a proxy, is estimated at Nu. 148 billion in 2023 (an increase of 12.6 percent from 2022).<sup>108</sup> The composition of the private sector indicates significant focus on the retail and trade sector which does not create meaningful employment or sustainable competitive advantages. Bhutan should focus on enabling new enterprises and high-growth SMEs as identified in the 5.2. Private Sector enabler.

<sup>107</sup> Ministry of Finance. (2023). *Bhutan Trade Statistics*.

<sup>108</sup> National Statistics Bureau. (2024). *National Accounts Statistics*.

Initiative	Horizon	Owner
Leverage public procurement and government spending to support the private sector. Consider local sourcing and use of the private sector in projects, service delivery and technology development.	Short-Term	All relevant agencies
Implement key initiatives identified across the sectors and enablers. All of these will support improve domestic demand	Medium-Term	All relevant agencies

### Develop external markets

Bhutan’s export of goods and services in 2023 was valued at Nu. 70,647 million, equivalent to over 28 percent of the GDP.<sup>109</sup> Exports consisted of electricity and ferro silicon which together nearly accounted for 58 percent of the total exports in 2023.<sup>110</sup>

Initiative	Horizon	Owner
Optimise Bhutan’s current trade partnerships (e.g. India, Bangladesh, Thailand) and membership in BIMSTEC, SAARC and SASEC to accelerate export of goods and services from Bhutan.	Ongoing	MoICE, MoFAET
Identify new markets and discuss bilateral trade agreements to support new sectors. Assess how DHI can spearhead development of external markets by establishing presence in specific markets and enhancing brand ‘Bhutan’.	Immediate	MoICE, MoFAET
Develop an approach and strategy for developing and winning in external markets, particularly for goods and services produced by the SOEs, with clear milestones for implementation.	Short- to Medium-Term	DHI

### Promote exports

Exporters require financing, infrastructure, and information about their export markets. Target markets also require certification of the quality of goods and services provided.

Initiative	Horizon	Owner
Develop and implement strategy for export promotion encompassing all priority sectors – identifying goods and services, target markets and customers and infrastructure required.	Short-Term	MoICE
Establish a marketing and product development agency within Department of Trade that will support entrepreneurs and SMEs with market research and product development.	Short-Term	MoICE
Set up a Centre of Excellence for Export (or Export Promotion Council) with the objective of providing support such as training, information (e.g., pricing, costs) and insights on navigating target export markets.	Short-Term	MoICE
Identify and establish export processing centres focused on priority sectors. Where possible, leverage existing capabilities.	Short- to Medium-Term	MoICE
Invest into a network of standards and certification labs (for relevant sectors such as agriculture and forestry) to establish trust in the quality in products and services from Bhutan. Alternatively explore how Bhutanese firms can access capabilities in India and other countries.	Medium-Term	All relevant agencies
Enable Embassies and Missions, and the Bhutanese diaspora community in a structured approach to support export development.	Immediate to Short-Term	MoFAET

<sup>109</sup> National Statistics Bureau. (2023). *Statistical Yearbook*. Thimphu, Bhutan.

<sup>110</sup> *ibid*

## Envisaged Outcomes

Bhutan's economic trajectory can transform through strengthening internal and external market access, promoting competitiveness, and expanding economic base.

The government and DHI will actively engage with the private sector to create demand for services and goods. Bhutan's exports should grow in volume and diversity as export promotion strategies, improved trade infrastructure, and targeted international partnerships create access to new regional and global markets. Bilateral agreements and enhanced connectivity will bolster trade with India, Bangladesh, and emerging markets.

The Centre of Excellence for Export / Export Promotion Council will provide exporters with critical information, training, and market insights. Investments in quality standards and certification systems will enhance the credibility of Bhutanese goods, while export financing mechanisms (see 5.6 Financial Ecosystem) will reduce barriers to entry. Branding initiatives and diaspora engagement will amplify Bhutan's presence globally.

Overall, Bhutan's integration into global trade networks through optimised regional partnerships and new trade agreements will enhance its economic resilience. Strategic use of international networks such as BIMSTEC, SAARC, and SASEC will ensure sustained market access and connectivity.

## 5.6 Financial Ecosystem

The financial services sector in Bhutan comprises six banks and four non-banks which include the three insurance companies and the National Pension and Provident Fund (NPPF). As of 2023, Banks dominated the financial services sector, holding 91 percent of total assets (Nu 298 billion) in 2023 and accounting for 81.7 percent of the total lending (Nu 227 billion). The Capital Adequacy Ratio across the banking sector has gradually increased from 14.25 percent in 2020 to 15.86 percent in Dec 2023.<sup>111</sup>

Access to capital is limited, especially for small businesses, due to collateral-based lending and high borrowing costs. Bhutan has the highest net interest margin in the region, with collateral requirements averaging 179 percent of the loan amount.<sup>112</sup> Lending practices prioritise fixed-asset collateral disproportionately benefiting established sectors, housing (30 percent), tourism (12.5 percent), and manufacturing (10 percent), which together made up over 52 percent of the loan portfolio in December 2023.<sup>113</sup> This often leaves emerging, high-growth areas like digital innovation and the majority of the SMEs underserved.

The National Credit Guarantee Scheme (NCGS) was introduced during the COVID-19 pandemic to support micro (cottage), small, and medium-scale enterprises (MSMEs), with Nu. 3 billion allocated for credit guarantees over three years.<sup>114</sup> The World Bank viewed the scheme positively with impact on employment, capital accumulation, and economic recovery, with policy-based lending support.

<sup>111</sup> Royal Monetary Authority, Core Financial Indicators, December 2018 to December 2023

<sup>112</sup> World Bank. (2020). *Bhutan - Systematic Country Diagnostic*. Washington, DC: World Bank

<sup>113</sup> Royal Monetary Authority, Core Financial Indicators, December 2018 to December 2023

<sup>114</sup> Economic and finance committee points out issues of budget allocation, Kuensel, (June 2021)

However, less than a third of the allocation funds (Nu. 875 million) was disbursed of which 20% became non-performing loans (NPLs), especially those extended by the National Cottage and Small Industry Development Bank. Despite its initial promise, the scheme was discontinued due to high NPL rates, unrealistic collateral expectations and the inclusion of high-risk startups.

Additional financial services related challenges include restricted access to foreign exchange, managed through an RMA approval process, and limits on profit repatriation for foreign partners unless their ventures generate foreign exchange revenue.

### Objectives

The primary objectives for Bhutan’s financial ecosystem are to:

1. Build a robust diversified and profitable financial services sector encompassing banking, insurance, and wealth management products.
2. Provide broader access to credit, insurance, and investment products for businesses and individuals, particularly SMEs and emerging sectors.
3. Introduce alternative mechanisms such as venture capital and private equity fostering innovation and economic diversification.

A healthy and resilient financial services sector can not only support the growth of sectors but also drive financial inclusion among the public and the SMEs.

### Strategic Initiatives

Implementing initiatives identified below will enable the development of a robust financial ecosystem.

Initiative	Horizon	Owner
Develop a comprehensive financial services strategy / blueprint encompassing banking, insurance, and wealth management to grow asset base, ensure profitability and develop relevant products.	Short-Term	RMA, MoICE
Diversify lending / financing into priority sectors by encouraging banks and non-banks to increase credit allocation. Introduce innovative instruments like green bonds and climate funds.	Medium-Term	Financial Institutions
Consider establishing Credit and Export Guarantee Schemes / Export Credit Agency. Incorporate lessons from 2020–23 NCGS scheme.	Short- to Medium-Term	MoF, RMA
Catalyse a critical mass of venture capital (VC) to support the development of the digital businesses / start-up ecosystem. Encourage financial institutions, DHI and large established private companies to set up CVCs.	Short- to Medium-Term	RMA, MoF
Leverage pension funds and insurance companies to provide long-term capital for critical infrastructure, renewable energy, and technology sectors.	Medium-Term	MoF
Establish a movable collateral registry to enable businesses to secure loans using movable assets.	Short-Term	MoF, FS Institutions
Enhance platforms for payment, transfers, and settlements to support inward investments, payments domestically and internationally.	Short- to Medium-Term	MoF, RMA
Monitor global financial regulations and invest in responsive regulations such as Anti-Money Laundering (AML) and Know Your Customer (KYC) policies aligned with global best practices.	Short-Term	MoF, RMA
Implement financial education schemes to improve financial literacy.	Short-Term	MoF

## Envisaged Outcomes

Implementing the strategic initiatives for Bhutan's financial ecosystem will enable a diversified and profitable financial services sector that provides accessible credit across all economic sectors, including underserved areas like digital innovation and SMEs. Venture capital and private equity investments, along with long-term capital from pension and insurance funds, will complement traditional bank lending, fostering innovation and economic diversification.

The financial sector will become more inclusive, offering a wider range of financial products and services to individuals and businesses, thereby empowering SMEs and promoting financial inclusion. Enhanced regulatory frameworks, aligned with global best practices, will increase transparency, reduce financial crimes, and boost investor confidence.

Overall, Bhutan's financial ecosystem will create a dynamic environment where individuals and companies can thrive, ensuring economic resilience and prosperity for the nation.

## 5.7 Innovation Ecosystem

Innovation is the lifeblood of an economy. It enables businesses to create new products and services, establish new markets and gain a greater share of existing markets. Innovative firms grow faster, drive economic competitiveness, and attract investment and talent.

Innovation must be central to delivering Bhutan's economic vision. High performing and developed countries such as Switzerland (1<sup>st</sup> in 2024 global innovation index), Singapore (4<sup>th</sup>), Israel (15<sup>th</sup>) and Estonia (16<sup>th</sup>) have consistently prioritised investment in innovation as a national strategy.<sup>115</sup>

Bhutan's current innovation ecosystem is nascent with a few start-ups, a startup centre, fabrication labs operated by DHI and few programmes focused on entrepreneurship. The Royal University of Bhutan offers ICT-related programmes through Gyalpozhing College of Information Technology and the government has introduced coding and digital courses in schools. The private sector has few companies that develop software, and supply technology services to the public and private sectors.

While Bhutan has made significant progress in digital innovation through GovTech Agency, a dedicated agency focused specifically on broader Science and Technology, along with a targeted R&D budget, will further enhance national innovation capacity.

The Thimphu Tech Park has laid the foundations for technology in Bhutan. Innovation thrives through collaboration among multiple stakeholders, including businesses, government agencies, financial institutions, universities, and international partners (see Figure 9). These stakeholders collectively drive discovery, invention, development, and commercialisation.

<sup>115</sup> World Intellectual Property Organisation. (2024). *Global Innovation Index 2024: Unlocking the Promise of Social Entrepreneurship*. Geneva: WIPO

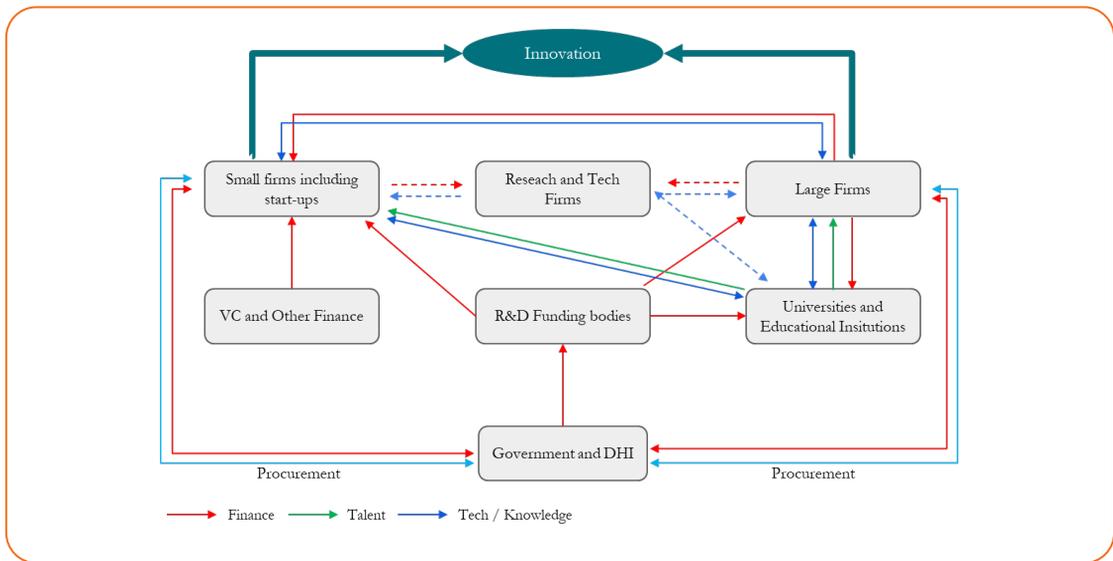


Figure 9: The Innovation Ecosystem<sup>116</sup>

### Objectives

Boosting innovation in the public and private sectors will be an essential part of Bhutan’s 10X National Economic Vision.

3. Promote Bhutan’s brand as an innovative economy with the aim to be in the top quartile of innovative economies in the next 10 to 15 years.

Key objectives include:

1. Develop and implement a national strategy for technology, science, and innovation.
2. Build a robust innovation ecosystem that empowers entrepreneurs and businesses to identify new opportunities, test solutions, commercialise products and scale efficiently.

Progress should be tracked using key indicators such as the number of start-ups per capita, number of unicorns by 2050, R&D expenditure and our ranking in the global innovation index (currently unranked).

### Strategic Initiatives

Eight strategic initiatives will enable Bhutan to establish a leading innovation ecosystem:

Initiative	Horizon	Owner
Establish a dedicated department for Science and Technology responsible for Bhutan’s strategy for science, technology, and innovation.	Medium-Term	OPMC, RCSC, MOESD, GovTech
Establish an Innovation Council / Agency with the responsibility to set out Bhutan’s innovation aspirations and ambitions, roadmap, and initiatives.	Short-Term	MoICE
Develop a policy and strategic plan for leveraging AI across the Government and private sector. Align with the Governments Digital Strategy.	Short-Term	GovTech
Develop sector focused creative clusters (e.g. textiles, agriculture, crafts, and digital services) supported by innovation and design hubs, incubators, ScaleUp labs and Accelerators across Bhutan.	Short- to Medium-Term	MoICE

<sup>116</sup> Adapted from graphic used in UK Innovation Strategy (2021)

## Strategic Initiatives

Initiative	Horizon	Owner
Invest in research and development by committing up to 5 percent of annual budget. Channel funding to relevant sectors, institutions within RUB and the private sector.	Short- to Medium-Term	MoF
Strengthen universities / institutions and industry collaboration by fostering partnerships between the private sector, public sector, and the academic institutions through Research Programmes between universities and industries and earmark and provide funding to educational institutions for R&D.	Short- to Medium-Term	RUB
Introduce incentives (tax breaks, training) to encourage innovation within the private sector.	Short- to Medium-Term	MoF
Establish a Bhutan Innovation Fund to support high-growth startups and SMEs.	Short- to Medium-Term	MoF, MoICE, DHI

The success of this enabler relies on complementary enablers, including effective policy and governance (e.g. Intellectual Property laws), human capital development through education and skill-building, a resilient financial ecosystem (on availability of financing for the start-up sectors) and broader infrastructure and market access.

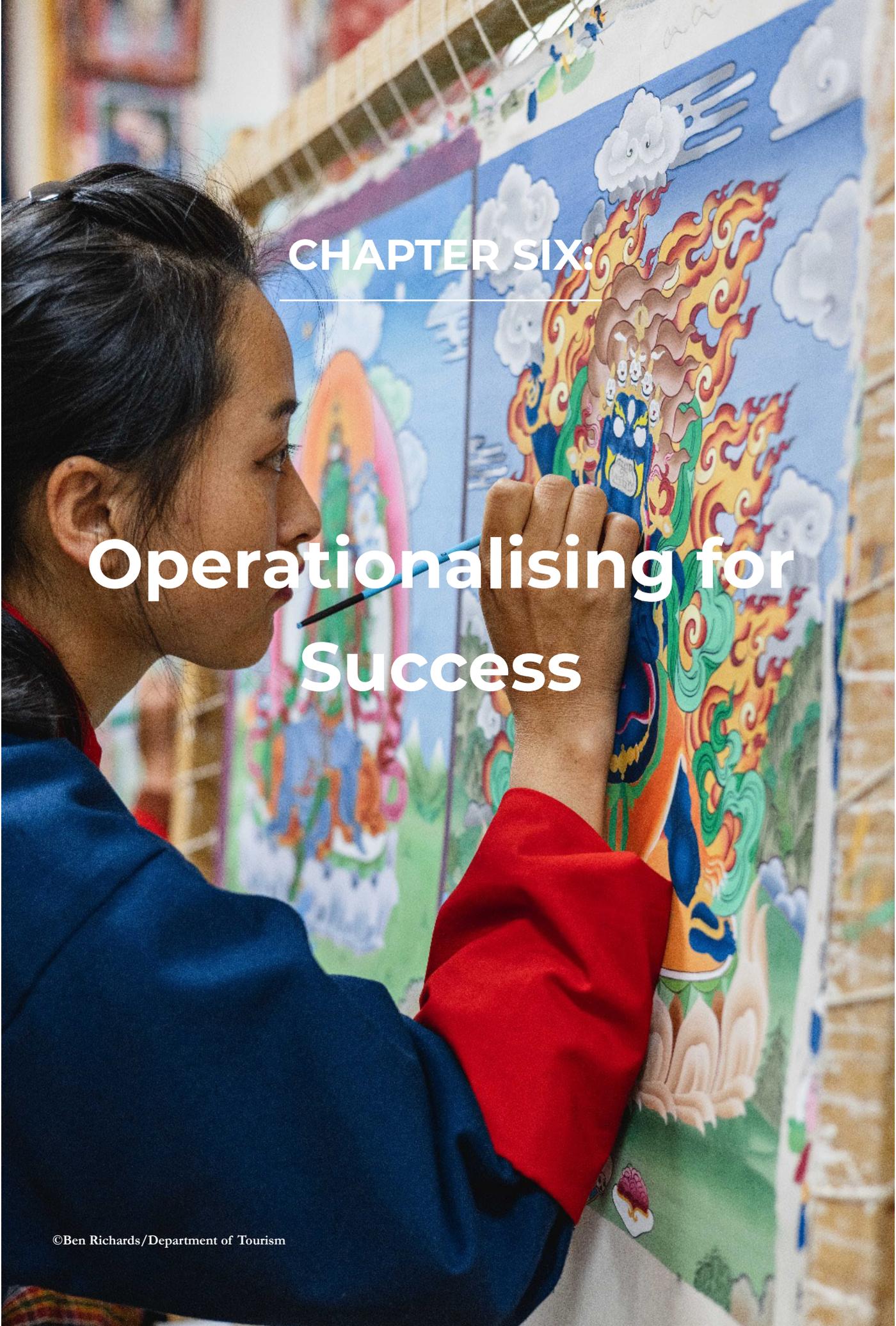
Across all these initiatives, DHI will have a significant role to play in supporting the development of the innovation ecosystem.

## Envisaged Outcomes

Bhutan aims to become a hub for innovation in sectors such as digital services, agriculture, tourism, and sustainable technologies. A robust innovation ecosystem will drive Bhutan's economic transformation, positioning it as a regional leader in sustainable, technology-driven growth. By fostering a culture of innovation, Bhutan will attract global talent, investment, and strategic partnerships while empowering local entrepreneurs to scale and compete globally.

With a focus on research and development (R&D) and strong public-private partnerships, Bhutan will achieve measurable progress in global innovation rankings, marked by a growing number of startups, unicorns, and increased R&D investment.



A woman with dark hair, wearing a blue and red traditional Chinese garment, is shown in profile, focused on painting a large, vibrant dragon on a scroll. The dragon is depicted with fiery orange and yellow scales, green and blue accents, and a white lotus flower at its base. The background of the scroll is blue with white clouds. The scene is set in a traditional Chinese environment, with a wooden lattice structure visible in the background.

CHAPTER SIX:

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# Operationalising for Success

Effective execution is principal to achieving Bhutan’s 10X National Economic Vision. This will require a robust governance framework that provides clear guidelines, oversees strategic plan implementation, and ensures seamless coordination among government agencies and the private sector.

Looking forward, annual plans and five-year plans will incorporate the ambitions identified within the Vision, specifying targets for each of the specific sectors.

Delivering the Vision is a collective responsibility, and all segments of the society must play a role. The Government will facilitate private sector led development and improve efficiency, transparency, and service delivery, and take decisive action to accelerate the implementation of the Vision.

### 6.1 Governance Structure

The successful operationalisation of the Vision will rely on a well-structured governance framework, empowered implementing agencies, and the

collaborative efforts of key partners. By fostering strong partnerships, ensuring strategic alignment, and maintaining transparent and accountable systems, Bhutan can effectively execute the Vision.

The proposed governance structure for implementation is provided in the Figure 10. Key elements include the constitution of a Vision Delivery Unit (VDU) within the Office of the Prime Minister. Key implementation of the Vision initiatives will be led by implementing agencies which are the relevant government agencies, the DHI and SOEs, Local Governments and the private sector.

The VDU, composed of members from OCASC and relevant departments, will play the lead role in mobilising and implementing the Vision initiatives and will report to the Prime Minister.

The VDU will also work with the Economic Development Board and the broader stakeholders.

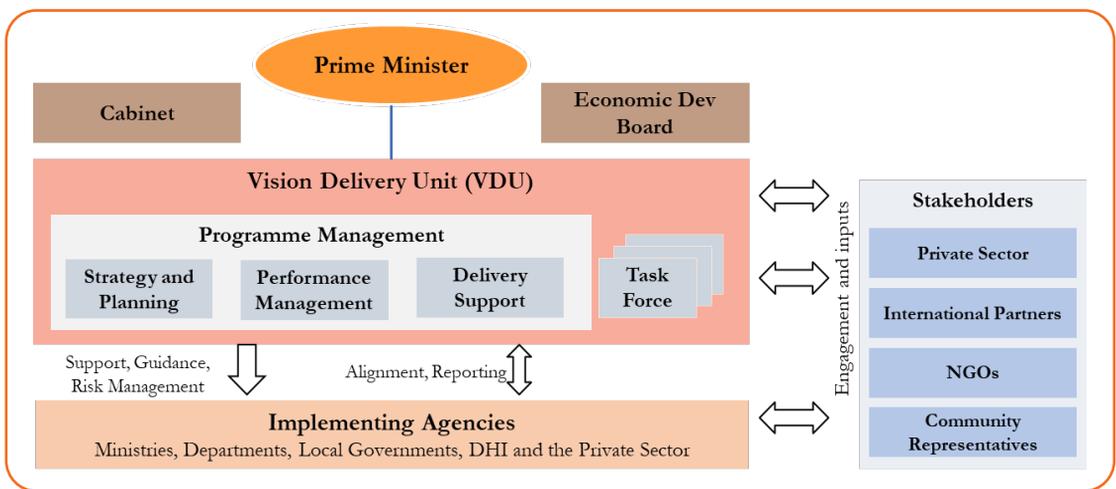


Figure 10: Governance Structure

The key roles and responsibilities of the VDU, among others, are:

1. Providing guidance on strategic planning by implementing agencies, identifying new initiatives, and reconciling activities stemming from the Vision with the medium-term and annual budgets within the 13<sup>th</sup> FYP, and any Ministry / Department Specific strategies.
2. Monitoring the progress of key initiatives, ensuring proper coordination among stakeholders, and resolving risks and issues (escalated by the implementing agencies).
3. Standardising the implementation and tracking of delivery of the Vision through common templates, tools, and frameworks.
4. Establishing relevant temporary task forces or capability teams to address skills gaps or to enable cross-sectoral initiatives.
5. Managing engagement with local and global stakeholders throughout the implementation of the Vision.
6. Tracking (agreed) key performance indicators related to the Vision and regularly reporting on progress and ensuring accountability and transparency.
7. Providing monthly updates to the Prime Minister and the Cabinet on the progress/delivery of the Vision initiatives and undertaking six monthly consultations.
8. Supporting and coordinating efforts to secure necessary resources for the delivery of the Vision initiatives by working with the Ministry of Finance.

## Implementing Agencies

Ministries, Departments, DHI, SoEs and Local Governments are pivotal in executing the 10X National Economic Vision. Ensuring implementing agencies have the required support, skills and resources is essential for successful delivery.

Key responsibilities of the implementing agencies are:

1. Take ownership of the Vision initiatives by aligning the 13<sup>th</sup> FYP activities, determining which initiatives to accelerate, discontinue or introduce.
2. Work closely with the VDU and stakeholders from the private sector to align initiatives with broader national plans and policies.
3. Implement agreed initiatives ensuring delivery within budget and timelines.
4. Provide regular (monthly) updates highlighting progress, key risks and issues which require resolution. Where required, provide updates directly to the Prime Minister and the Cabinet.
5. Align 14<sup>th</sup> FYP and subsequent plans with the Vision for continuity and coherence.
6. Appoint a single point of contact within the implementing agency responsible for coordinating the delivery of vision initiatives.
7. Implement a structured reporting mechanism linked to the VDU for consistent monitoring and accountability.

While the governance focuses on the VDU and the implementing agencies, successful delivery of the Vision will require collaborative and active participation from a diverse range of partners. Key partners and their indicative roles are identified in Table 7.

Agency	Key Role
<b>Private Sector and Entrepreneurs</b>	<ul style="list-style-type: none"> <li>▪ Invest in improving productivity, fostering innovation, and adhering to fair work practices, ensuring that the financial and business environments are responsive to their needs.</li> <li>▪ Engage and work with implementing agencies to provide inputs / feedback as required.</li> <li>▪ Capitalise on opportunities emanating from the Vision across priority sectors and the enablers.</li> </ul>
<b>Business Organisations (e.g. DoT, ABTO, BCCI)</b>	<ul style="list-style-type: none"> <li>▪ Represent the interests of businesses, function as critical partners in policy development, and collaborate with the government to implement effective strategies.</li> <li>▪ Coordinate and provide inputs into the Government and the implementing agencies.</li> </ul>
<b>NGOs and Community Organisations</b>	<ul style="list-style-type: none"> <li>▪ Identify and address local actions and opportunities, ensuring that economic success is shared broadly and benefits all communities.</li> </ul>
<b>International Partnerships</b>	<ul style="list-style-type: none"> <li>▪ Leverage connections with Bhutan’s global partners, and international organisations to enhance economic opportunities and advance global partnerships.</li> </ul>
<b>Bhutanese Diaspora</b>	<ul style="list-style-type: none"> <li>▪ Engage with the VDU in providing inputs into the implementation of the initiatives.</li> <li>▪ Consider investments and collaboration with Government and implementing agencies for inward investments.</li> <li>▪ Provide network and market knowledge to the Government and the Bhutanese industry – advocating Brand Bhutan.</li> </ul>

Table 7: Roles of Stakeholders

## 6.2 Key Success Factors for Implementation

In executing the Vision, implementing agencies will consider eight success factors to ensure maximum chance of success.

1. **Balance short-term initiatives with the long-term ambitions:** Balancing immediate actions with long-term sustainability is crucial. Ensuring that short-term initiatives contribute to enduring prosperity without hindering future growth will require regular reviews and strategic adjustments to stay aligned with evolving global and national trends. GNH principles and ‘GNH for Business’ certification will be used to ensure that initiatives align to what matters to ‘Bhutan’ and the Bhutanese people.
2. **Strategic alignment:** Harmonising governmental and sectoral plans with the Vision ensures coordinated and mutually reinforcing efforts across all sectors. Regular alignment workshops and strategy sessions with relevant ministries and departments, and the private sector will link sector-specific strategies directly to the Vision’s objectives, fostering seamless integration.
3. **Governance:** Strong leadership and policy alignment are essential for steering the Vision’s progress and maintaining coherence across all initiatives. An effective governance framework through the VDU will unify efforts towards common goals, minimise redundancy, and enhance efficiency through consistent decision-making and optimal resource allocation. Robust accountability

mechanisms and measurable outcomes will be tracked through clear KPIs, reported via digital platforms and regular audits to maintain integrity and accountability within the governance structure.

4. **Collaboration and synergy:** Promoting cross-sector and interagency partnerships leverages collective strengths, enhancing the effectiveness of initiatives. Active involvement of government ministries, the private sector, community organisations, and international partners will ensure better resource utilisation, knowledge sharing, and effective problem-solving. Further, synergies with GMC will be continuously explored across different areas.
5. **Private sector engagement:** The private sector will be a critical partner for delivering the Vision. The private sector will participate actively across both emerging and core industries embracing opportunities identified through the Vision. This will accelerate the delivery of the initiatives, drive competitiveness, create jobs, and create a dynamic economy.
6. **Optimised resource management:** Efficiently allocating financial, human, and technical resources will maximise the impact of initiatives and ensure adequate return on investments. Regular resource audits, strategic budgeting practices, and investment in capacity building will be required to prevent waste, enhance productivity, and direct resources toward high-impact areas.
7. **Effective communication:** Clear and consistent communications will keep all stakeholders informed and engaged throughout the implementation process. Developing comprehensive communication plans, using multiple channels to reach diverse audiences, and conducting regular updates and public awareness campaigns will be required to enhance transparency and stakeholder engagement.

8. **Implementation excellence:** Delivering effective execution through clear processes and focused approaches is vital for the successful delivery of Vision initiatives. Excellence in implementation will not only enhance Bhutan's brand in delivering initiatives but also improve trust and credibility with the private sector, citizens, partners and investors. Standardising project management processes, providing comprehensive training and support, and regularly monitoring and evaluating progress to effective and efficient delivery of the initiatives.

### 6.3 Financing Bhutan's Economic Growth

There is no doubt that Bhutan will require significant financing over the Vision horizon. The Royal Government of Bhutan will need to consider multiple mechanisms for financing covering:

1. **Increasing domestic revenue mobilisation and savings:** Countries that have developed successfully have done so on a foundation of high domestic savings. For example, both Singapore and Korea, gross domestic savings grew from around 10 percent of GDP in 1965 to around 40 percent in the mid-1980s and have remained at or above that level ever since. Bhutan must encourage a savings culture and facilitate the growth of pension funds and other long-term savings.
2. **Long-term finance for industry:** Transforming long-term savings into investment capital that is reasonably priced and accessible to the productive sectors is crucial for Bhutan's development. The Government should consider setting aside funds to be available on a long-term basis, supplemented by the mobilisation of resources on the international markets (e.g. through

issuance of bonds, commercial borrowing, green bonds). The Government will also generate savings from strategic sectors like hydroelectricity and trading carbon credit.

3. **Attracting FDI:** FDI will be key in financing Bhutan's economic development. Building on its strong governance and a stable political environment combined with a good business environment, Bhutan will implement policy changes and strategies to attract FDI and inward investments. This will also involve opening opportunities across different priority sectors, working together with DHI.
4. **Grants and Aid:** In addition to domestic and international financing efforts, grants and aid can play a significant role in financing. Bhutan will continuously collaborate with development partners, international donors, and organisations to secure and mobilise financial support to bolster key projects, particularly in sectors such as healthcare, education, and infrastructure. Leveraging these funds effectively can help bridge the gap between domestic savings and the required investment for sustainable growth.

## 6.4 Implementation Plan

Figure 11 provides a high-level implementation roadmap with detailed implementation plans in Appendix A1.

Embarking on the Vision journey requires achieving significantly higher real GDP growth rates — 10 to 12 percent — in the initial decade. Realistically, it will take at least two years to mobilise, build the foundations and attract

investments. Bhutan should prioritise selected anchor projects to jumpstart the Economic Vision. This could include:

1. Accelerate the commissioning of in-flight and planned hydropower projects.
2. Build a 40-50 MW data centre which will require an investment of ~USD 450 million with construction starting in 2027 and lasting three years.<sup>117</sup>
3. Invest into an engineered wood production facility which could require up to USD 90 million investment. Construction could commence in 2027 and lasting two years. This could generate export revenues of ~USD 50 million annually starting in 2029.<sup>118</sup>
4. Create 1,000 knowledge-based jobs annually, beginning in 2027, facilitated by partnerships with international technology outsourcing companies.<sup>119</sup>
5. Establish retirement and nursing homes for 1,000 elderly residents, starting in 2027, with annual growth of 20 percent.<sup>120</sup>

The AI data centre's GDP contribution will peak during construction but decline afterward, shifting to indirect impacts such as electricity purchases and local employment. Conversely, the engineered wood production facility's GDP impact will grow during its operational phase. The service sectors (IT and healthcare) will contribute increasingly over time as jobs and service capacities expand.

The VDU along with the implementing agencies will need to plan in detail to refine and select key initiatives that can accelerate GDP contribution.

<sup>117</sup> **AI Data Centre:** Total investment of USD 450 million, construction timeline of three years, direct effect on GDP is estimated at 60% of each dollar spent, with a fiscal multiplier of 2.0.

<sup>118</sup> **Engineered Wood Facility:** A USD 90 million total investment, with a 60% passthrough to GDP and a fiscal multiplier of 2.0. Construction is assumed to span two years. Significant export revenue of USD 50 million annually starting in 2029.

<sup>119</sup> **Knowledge-based jobs:** Assumes 1,000 jobs created annually, starting with a starting salary of 45,000 Nu per month in 2027. A total of 3,000 jobs will be created by 2030, with salaries remaining constant through 2029.

<sup>120</sup> **Retirement/Nursing Homes:** Assumes 1,000 placements created in 2027, with monthly fees of USD 3,000 per resident and 20% annual growth in capacity and revenue.

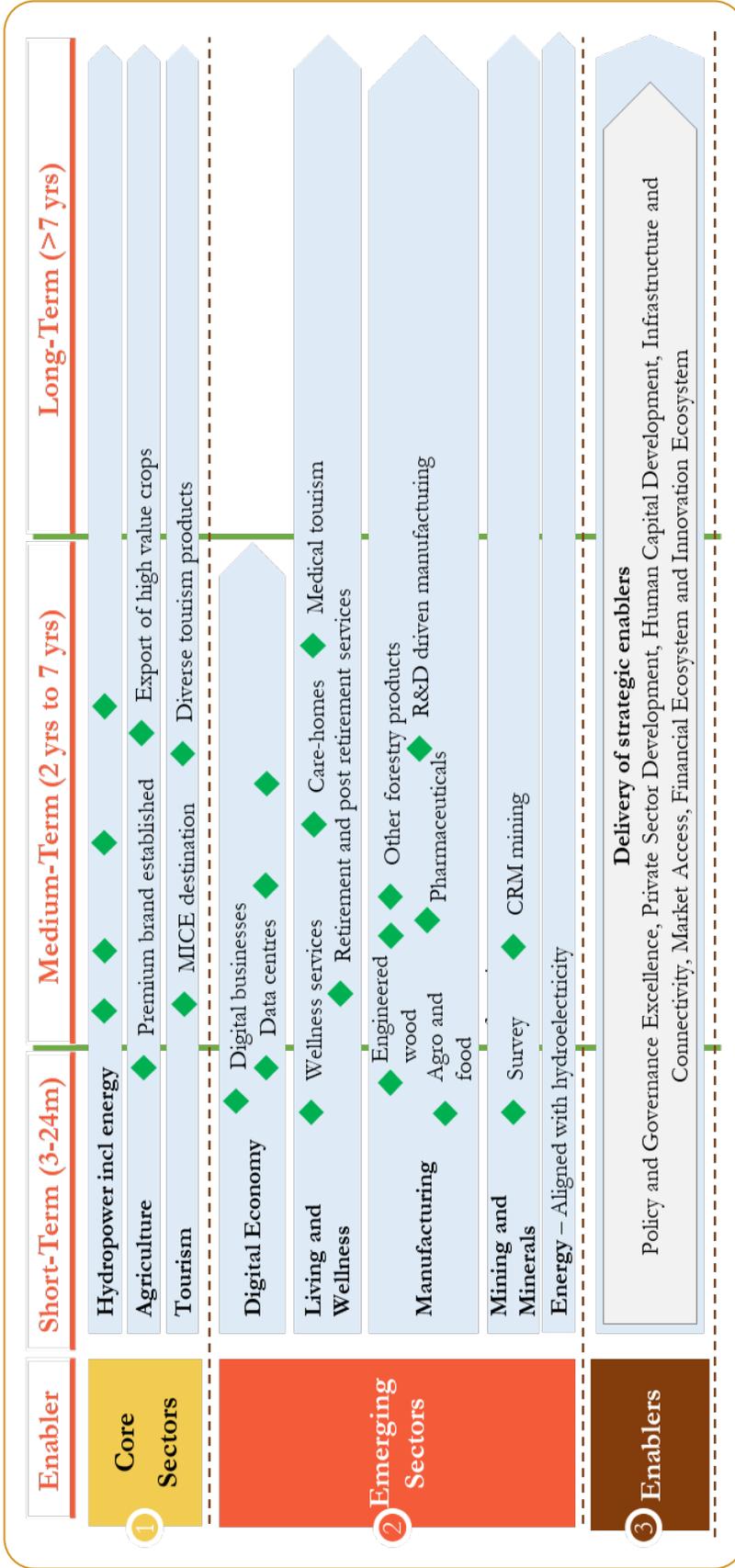


Figure 11: Vision Milestone



A scenic view of a snow-capped mountain peak reflected in a calm lake, with the word "Appendices" overlaid in white text. The mountain is the central focus, with its peak covered in snow and partially shrouded in mist. The surrounding landscape consists of rugged, brownish mountainsides and a clear blue sky. The water in the foreground is still, creating a perfect reflection of the mountain and sky.

# Appendices

## Appendices

### A1 Regulations, Legislation, and Policies

The table below provides a **non-exhaustive list** of regulations, legislation and policies required to enable a conducive business environment.

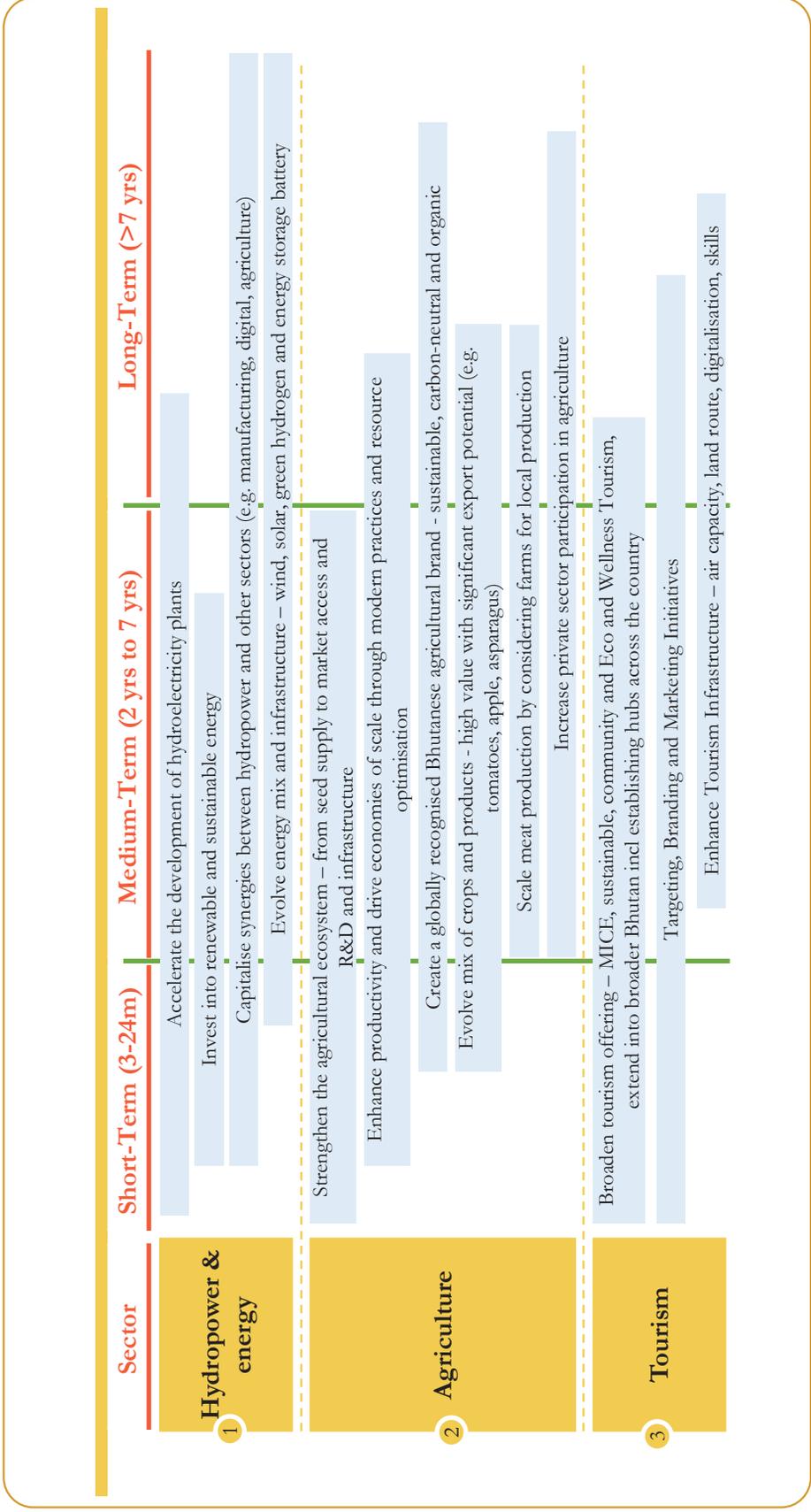
#	Legislation / Policy / Law	Action Required
1	AI and Technology Policy	Develop to position Bhutan's growth in AI and relevant technologies
2	Bankruptcy Act of the Kingdom of Bhutan - 1999	Review to assess if updates are required in the context of new businesses
3	Data Protection and Privacy Law	Required from the perspective of BPO / KPO, and general business
4	FDI Policy 2019	Review in the context of attracting investments especially into the sectors identified
5	Forest and Nature Conservation Act of Bhutan 2023	Review to assess how the forestry initiatives can be pursued under the existing act
6	Gaming Licence Laws	Review any existing laws, and develop relevant laws
7	Guidelines on eCommerce 2019	Review to assess how it can enable and accelerate digital business model
8	Health and Wellness Regulations and Policies	Develop to support wellness tourism and potentially into medical tourism
9	IP Law	Review to encourage R&D and innovative ideas
10	Labour policy and legislations / National Employment 2013	Review to ensure employment laws enable good working environment and ensure welfare of employees
11	Legislation related to VC / PE establishment (Fund Management Rules and Regulation 2019)	Review existing legislations
12	Mines and Minerals Management Act 1995, Mines and Minerals Management Regulations 2022	Review to assess how the mining initiatives can be accelerated
13	Policy framework for education services	Develop policy to kickstart education services
14	The Narcotic Drugs, Psychotropic Substances, and Substance Abuse Act of Bhutan 2015	Review to assess the development of medical cannabis market and broader pharma sector
15	Tourism Policy	Review for any amendments required to enable new products
16	Visa and Immigration Policies	Consider to review considering provision of education services, retirement hubs and medical tourism

Policies and Legislation that will require review / development

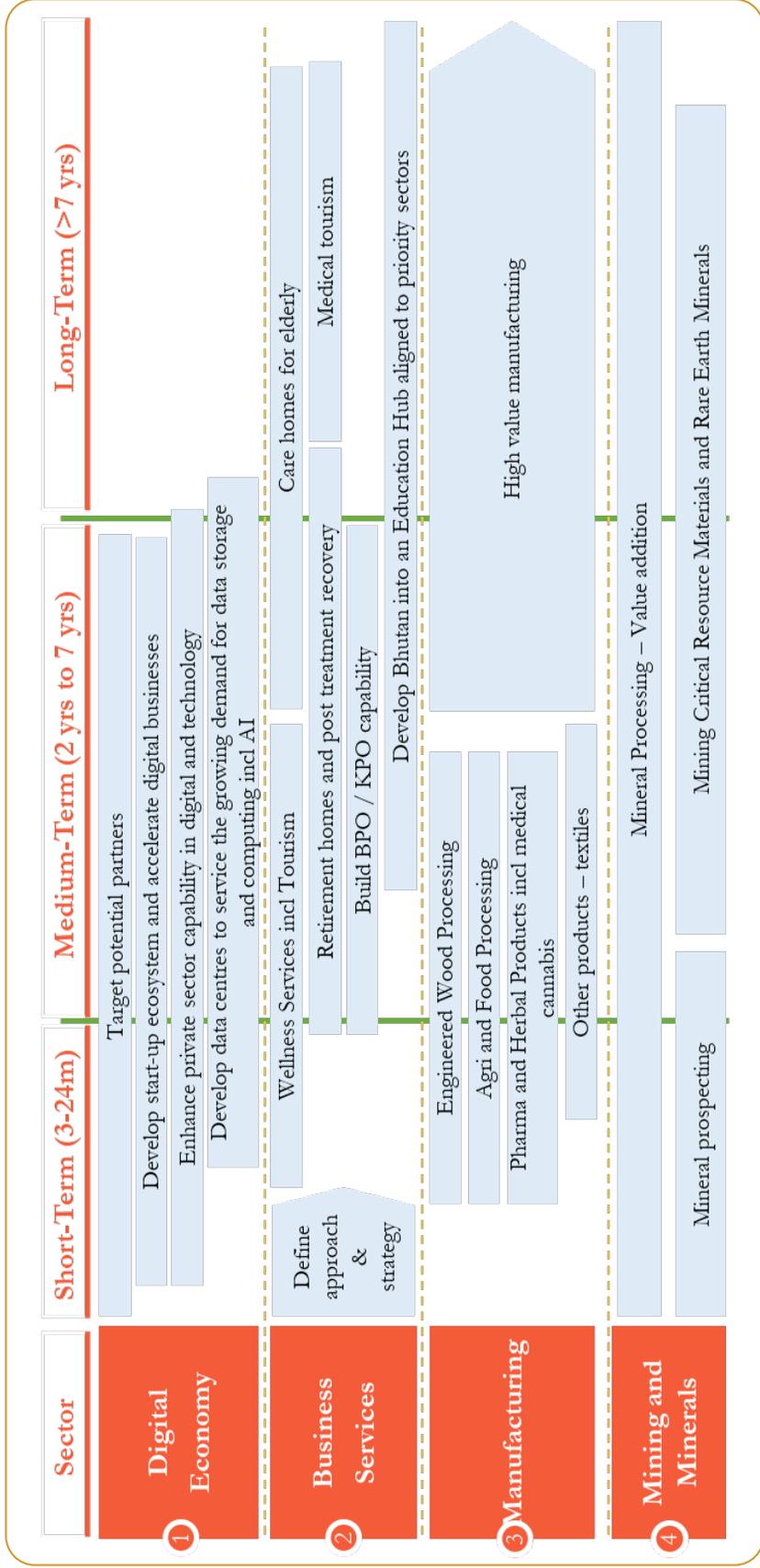
## A2 Implementation Roadmap

The roadmaps shown below are indicative, which will require detailed planning for delivery.

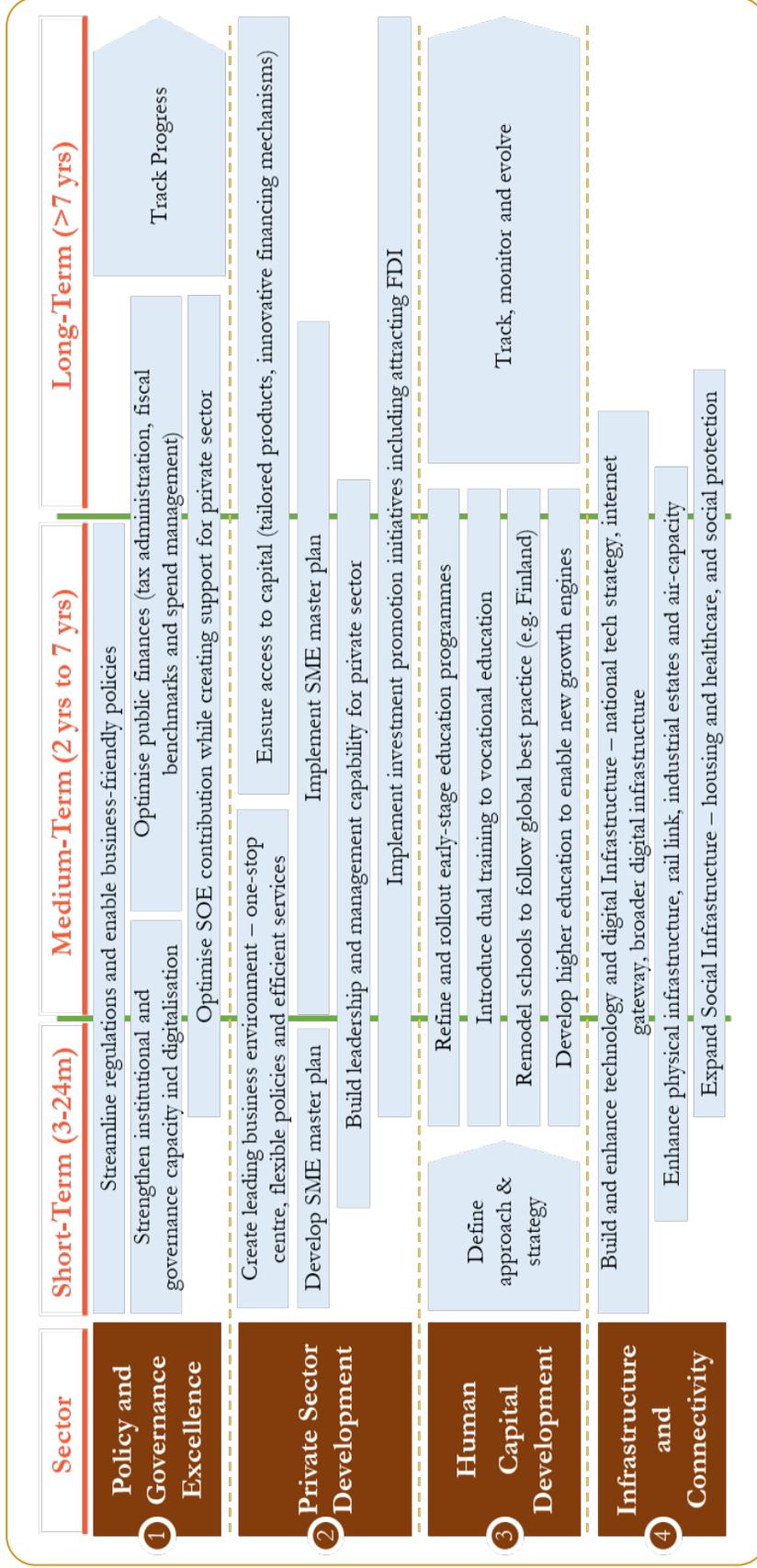
### Core Sectors



Emerging Sectors



Enablers (1/2)



Enablers (2/2)

