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INDUSTRY STATUS REPORT

BASED ON
THE ONLY
COMPREHENSIVE
QUARTERLY
INDUSTRIAL
SURVEY OF NEPAL

ALTERNATIVE
FINANCING IN NEPAL



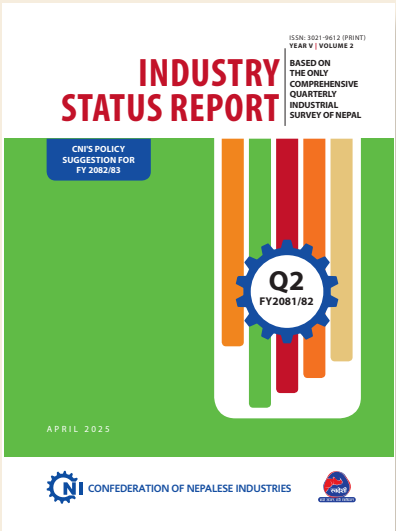
JULY 2025



CONFEDERATION OF NEPALESE INDUSTRIES



INDUSTRY STATUS REPORT (PREVIOUS EDITIONS)



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TABLE OF CONTENTS

KEY STATISTICS	2
METHODOLOGY	4
BUSINESS PERFORMANCE	5
Industry Capacity Utilization: Key Industry Insight I	5
Revenue Trends: Key Industry Insight II	5
Growth in Market Demand and Market Competition: Key Industry Insight III & IV	6
Share of Raw Materials Imported: Key Industry Insight V	6
Export: Key Industry Insight VI	6
FINANCE	5
Share of Loan on Working Capital: Key Industry Insight VII	7
Interest rates: Key Industry Insight VIII	7
SKILLS AND EMPLOYMENT	8
Total Employment: Key Industry Insight IX	8
Skill Gap and Training: Key Industry Insight X	8
INDUSTRIAL ECOSYSTEM	9
Experience with Government Online Service: Key Industry Insight XI	9
Constraint to Current Operations of Business: Key Industry Insight XII	9
Utilities: Key Industry Insight XIII	10
BUSINESS OUTLOOK	11
Business Confidence: Key Industry Insight XIV	11
New Investment Plans: Key Industry Insight XV	11
ALTERNATIVE FINANCING IN NEPAL	12

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The team would like to extend sincere gratitude towards Dr. Ghanashyam Ojha for his valuable insights. Also, many thanks to Moti Marasini for designing the ISRs impeccably.

About Industry Status Report

The Industry Status Report (ISR) provides a comprehensive analysis on the state of various industries in Nepal, leveraging an in-house survey. In Nepal, what explains misdirected policy interventions aimed at private sector growth? The absence of periodically available primary data on Nepali industries is one of the key reasons. Against this backdrop, ISR is produced as an effort to promote evidence-based policy-making. Each quarter, CNI Research Cell conducts an industrial survey and publishes this report to tease out changes across critical variables that either promote or stifle growth in industries.

What does the survey cover?

1 Business Performance: industry capacity utilization, revenue trends, demand in domestic market and market competition, trade	2 Finance: interest rates, the share of the loan, access to finance	3 Skills and Employment: employment, share of employees that received training	4 Industrial Ecosystem: regulation and industry administration, transportation and infrastructure	5 Business Outlook: confidence in the industrial sector, new investment plans.	6 Alternative Financing in Nepal
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Industry Status Report (FY 2081/82, Q3 Edition)

The Industry Status Report (FY 2081/82, Q3 Edition) has the benefit of comparing survey data from four consecutive quarters. The current report covers the third quarter of the fiscal year 2081/82. (i.e Magh to Chaitra 2081). The data was gathered from the survey conducted from 15 January 2025 to 13 April 2025.

Apart from presenting the findings of the survey, each ISR covers one theme in depth. The Third Edition of Fiscal Year 2080/81 covers Private Sector in Industrial District (ID). Fourth Edition of Fiscal Year 2080/81 covers 'Nepal Infrastructure Summit 2024'. First edition of Fiscal Year 2081/82 covers Current Economic Scenario and Way Forward. The second edition of Fiscal Year 2081/82 covers Budget Suggestion for Fiscal Year 2082/83. This third edition of Fiscal Year 2081/82 covers Alternative Financing in Nepal.

KEY STATISTICS (FY 2081/82, Q3 EDITION)



Number of surveyed industries:

64 (Q2 64)



Total employees covered:

20003 ↑ (Q2 18496)



Average employment per company:

312.55 ↑ (Q2 289)



Average operational capacity utilization:

73.00% ↑ (Q2 62.35%)



Share of loan on working capital:

38.41% ↓ (Q2 43.19%)



Average interest rate on loans:

9.11% ↓ (Q2 9.18%)



Average revenue growth rate:

13.27% ↑ (Q2 12.33%)

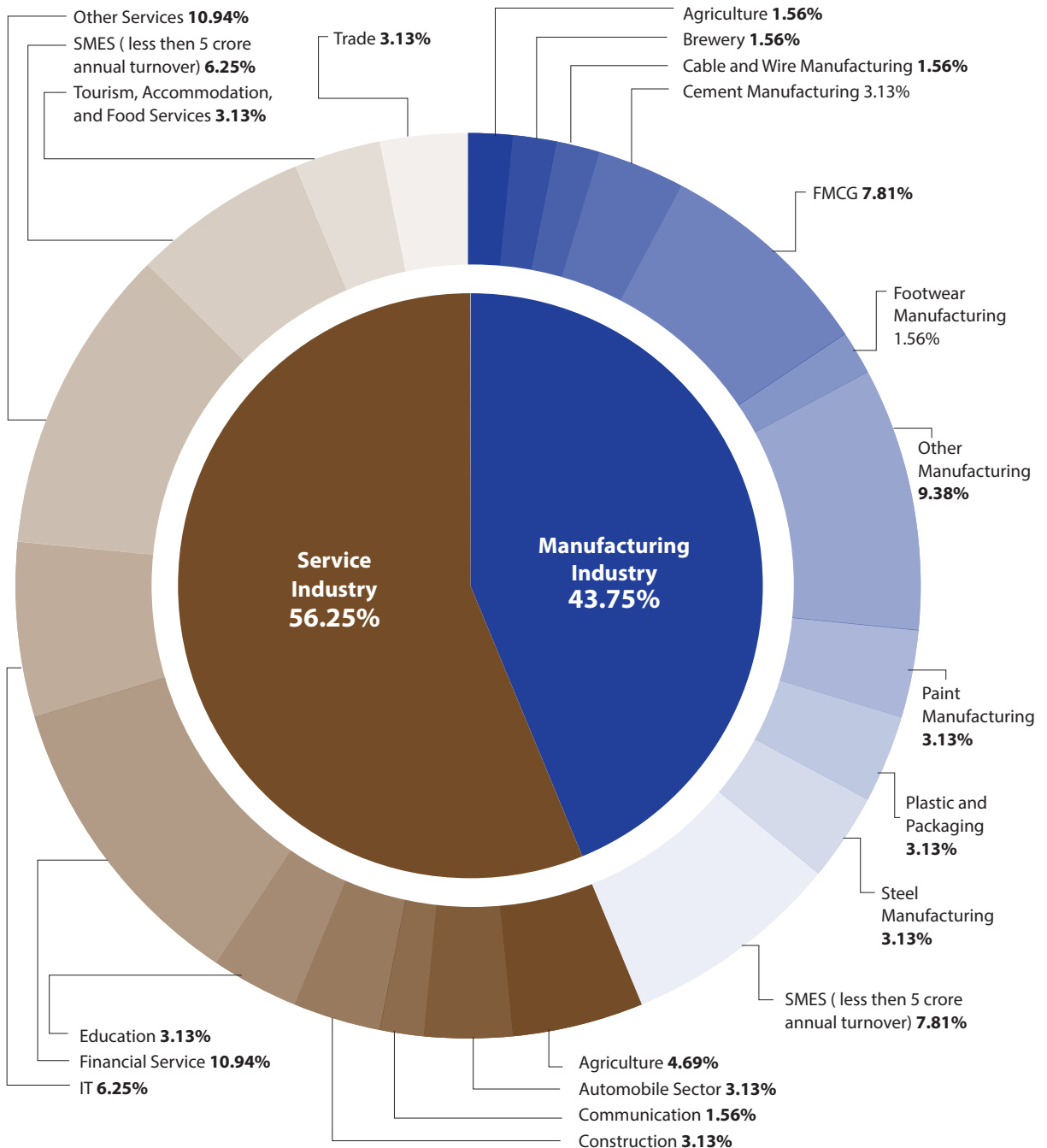


Average share of imported raw materials by the manufacturing industry:

45.68% ↓ (Q2 51.72%)

Note: Q2 in the parenthesis denotes the Second quarter of the FY 2081/82

COMPOSITION OF THE INDUSTRIES SURVEYED



METHODOLOGY

The Industrial Status Report (FY2081/82, Q3 Edition) is based on a quarterly survey of 64 industries.

The respondents are categorised under the Nepal Standard Industrial Classification (NSIC) Code for the purpose of the survey and further aggregated into two distinct industrial sectors: the manufacturing industry, and the service industry. Since most of the agro-based industries in the survey sample were involved in the agro-processing business, they have been subsumed under the manufacturing category.

The sample was drawn from CNI member's network located across Nepal.

Questions are tailored to specific industries. Respondents were asked questions, depending on their respective industries, using a survey platform called KoBoToolbox. The survey questions are available online.

The basic assumption in this report rests on the fact that the respondents have provided correct information.



THE UNIT OF ANALYSIS

The unit of analysis is one industrial establishment.

BUSINESS PERFORMANCE

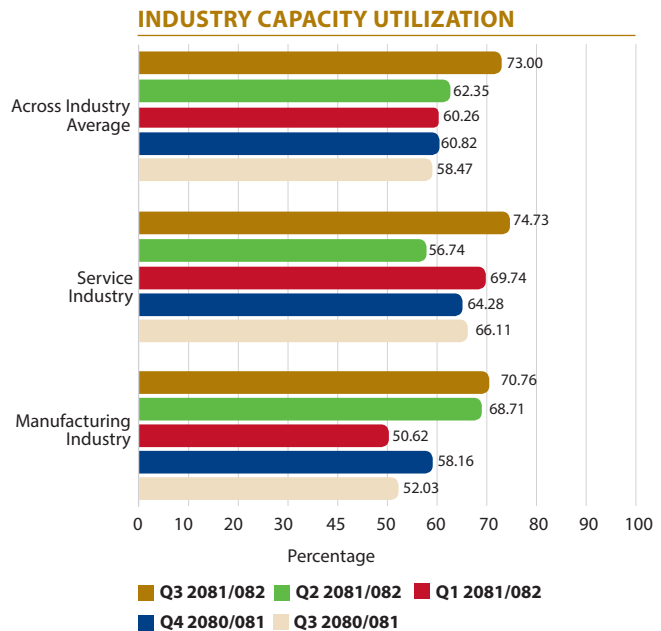
Periodic performance measurement is a vital part of monitoring the growth and progress of any business. This section summarises the performance of industries within key variables in Q3 2081/82 and compares it with the survey responses from previous quarters.

INDUSTRY CAPACITY UTILISATION: 73%

KEY INDUSTRY INSIGHT I

On average, the industries were operating at **73%** in Q3 81/82 whereas they were operating at 62.35% in Q2 81/82. During Q3 81/82, the service industry was operating at **74.73%** which has increased from 56.74% in Q2 81/82.

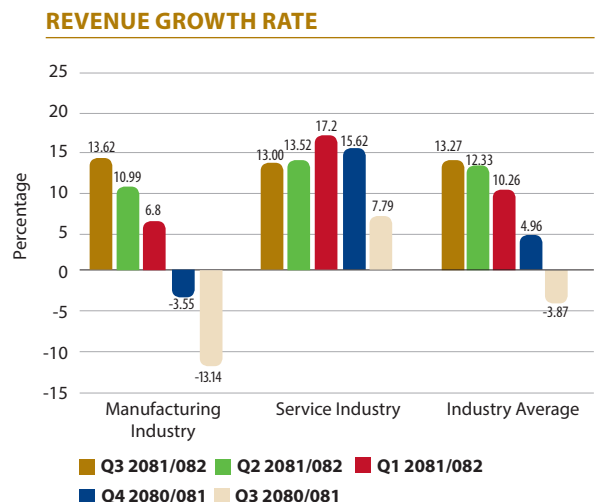
The capacity utilisation of the manufacturing industry in Q3 2081/82 remained at **70.76%** while it was **68.71%** in Q2 81/82.



REVENUE TRENDS: REVENUE GROWTH: 13.27%

KEY INDUSTRY INSIGHT II

In Q3 81/82, the across-industry-average revenue growth rate was **13.27%**, whereas it was 12.33% in Q2 81/82. The revenue growth in the manufacturing sector in Q3 81/82 experienced a rise by **13.62%** It was 10.99% in Q2 81/82.



GROWTH IN MARKET DEMAND **24.25%** AND *MARKET COMPETITION **89.47%**

(* PERCEPTION-BASED QUESTION)

KEY INDUSTRY INSIGHT III & IV

The survey result shows that the average growth of demand for goods and services was **24.25%**. The highest recorded growth rate was an impressive **100%**, while the largest decline observed was a significant **52%**. The demand of manufacturing industries has increased by **20.82%**

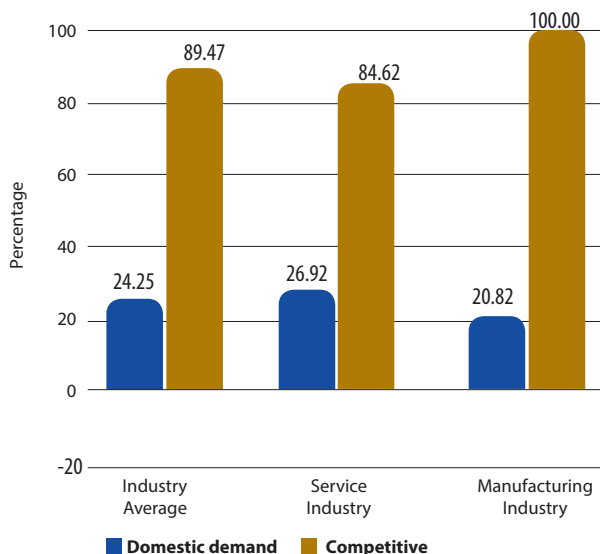
Furthermore, on average **89.47%** of the surveyed industries perceived their goods to be competitive in the market in relation to imported goods, which gives optimism to the domestic industries. The confidence among the domestic businesses regarding their competitiveness and sufficient market demand for domestic products is a critical factor for expanding a broader industrial base in Nepal.

SHARE OF RAW MATERIALS IMPORTED: **45.68%**

KEY INDUSTRY INSIGHT V

The survey results show that manufacturing industries significantly rely on raw materials sourced from global markets. Out of the total raw material required, on average **45.68%** of raw materials was imported from the global market in Q3 81/82. There has been an decrease in imports of raw materials as compared to Q2 80/81 which was 51.72%.

DOMESTIC MARKET DEMAND AND COMPETITIVENESS

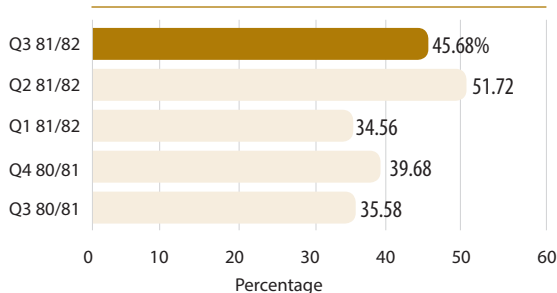


EXPORT: **33.33%**

KEY INDUSTRY INSIGHT VI

In Q3 81/82, **33.33%** of the respondent manufacturing industries successfully exported their goods. Compared to the previous quarter, which recorded an export rate of 31.25%. The export in this quarter has increased. The average proportion of exports out of their production has decreased from 35.78% in Q2 81/82 to 33.34% in Q3 81/82. These findings suggest that firms are engaging in exporting their products, the overall share of exports is experiencing a rise.

RAW MATERIALS IMPORTED



FINANCE

This section provides insights into the ability of industries to access credit and prevailing interest rates.

SHARE OF LOAN ON WORKING CAPITAL: 38.41%

KEY INDUSTRY INSIGHT VII

The result of the survey shows that in Q3 81/82, **38.41%** of working capital was met through credit from banks and financial institutions whereas it was **43.19%** in Q2 81/82.

The average rate of interest in working capital loan stands at **9.29%** in Q3 81/82 which is a decrease from 9.31% in Q2 81/82.

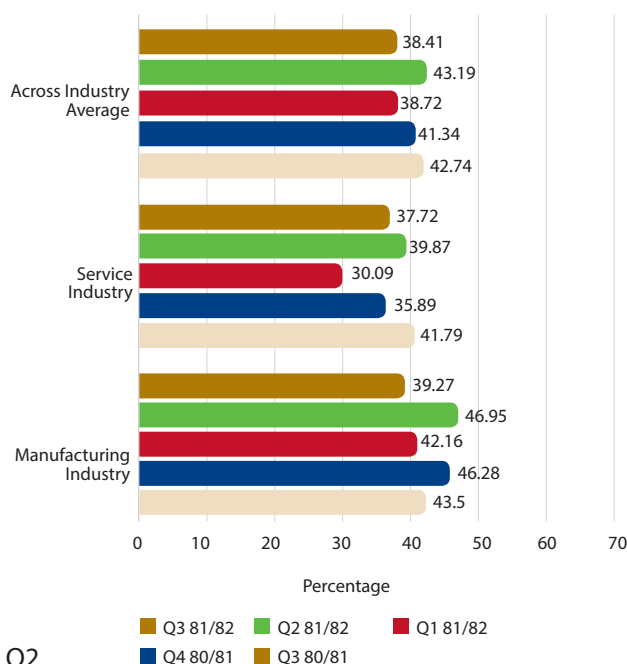
AVERAGE INTEREST RATE: 9.11%

KEY INDUSTRY INSIGHT VIII

In Q3 81/82, the average interest rate on loans was **9.11%** whereas it was **9.18%** in Q2 81/82.

In Q3 2081/82, average interest rates on loans for manufacturing industries was **9.18%** while for service industries it was **9.05%**.

SHARE OF LOAN ON WORKING CAPITAL



INTEREST RATES

	Q3 80/81	Q4 80/81	Q1 81/82	Q2 81/82	Q3 81/82	WCL Interest
Across Industry Average	11.5	10.52	9.86	9.18	9.11	9.29
Service	11.24	10.52	10	9.58	9.05	9.26
Manufacturing	11.71	10.59	9.73	8.75	9.18	9.33

SKILLS AND EMPLOYMENT

This section highlights the trends in employment and skills of the employees in the industries.

TOTAL EMPLOYMENT: 20003

KEY INDUSTRY INSIGHT IX

The surveyed industries employed **20003** staff in total. On average, an industry establishment employed **312.55** individuals, with the range being **3-4500**. This indicates, on average, CNI member networks comprise large business enterprises.

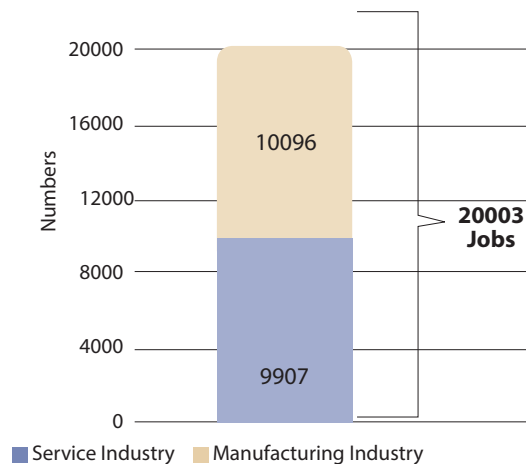
With **10096** employees, the manufacturing industry is the largest employing sector, followed by the service with **9907** employees.

Average employment among sectors: The manufacturing industry was at the top with **360.57** jobs while the service sector was right behind with **275.19** jobs.

New Hiring: 220

The surveyed industries collectively hired a total of **220** new staff members, while the number of applicants were **2273**. This indicates that, on average, more than **9.68** individuals applied for one announced position.

EMPLOYMENT IN SURVEYED INDUSTRIES

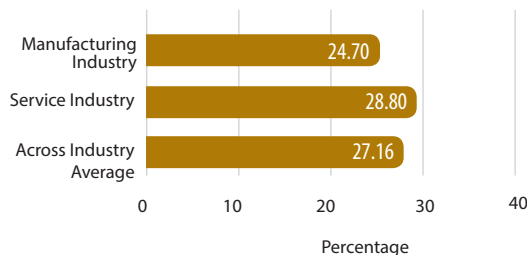


SKILL GAP AND TRAINING: 27.16% RECEIVED TRAINING

KEY INDUSTRY INSIGHT X

The survey result shows that across sectors **27.16%** of the total employees received training during Q3 of FY 81/82. The service industry sector trained around **28.80%** of the total workforce, while the manufacturing industry sector provided training to **24.70%** of its employees.

SHARE OF EMPLOYEE THAT RECEIVED TRAINING



INDUSTRIAL ECOSYSTEM

This section focuses on the various aspects of the regulatory environment, transportation and infrastructure that have a direct bearing on the competitiveness of industries.

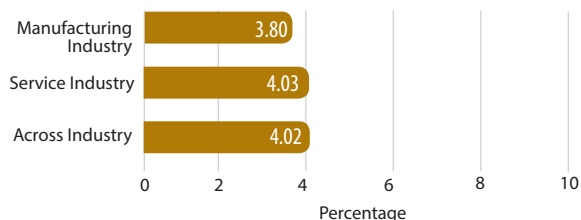
EXPERIENCE WITH GOVERNMENT ONLINE SERVICE

KEY INDUSTRY INSIGHT XI

Although the government has been prioritising digitization of the economy, the survey results reveal that respondents on average were not delighted with the quality of online services provided by various public entities. When asked to rank the quality of services on a scale of 1 to 10 (with 1 being the lowest and 10 being the highest) 25 respondents ranked the service. The average score of respondents was **4.02**. The manufacturing-industry responded with a score of **3.80**, while the service industry with an average score of **4.03**.

Online	Q3 81/82
Manufacturing Industry	3.80
Service Industry	4.03
Across Industry Average	4.02

GOVERNMENT ONLINE SERVICE



CONSTRAINT TO CURRENT OPERATIONS OF BUSINESS

KEY INDUSTRY INSIGHT XII

The surveyed respondents identified that the top three constraints for the business operations in the Q3 of FY 81/82 were, tax administration, political instability, and prevailing tax rates

For the manufacturing and service sector the top issue was **tax administration**.

Constraint to current operations of Business

- Tax Administration
- Political Instability
- Prevailing Tax Rates

UTILITIES

ELECTRICITY: 5.72 OUT OF 10 FOR QUALITY OF ELECTRICITY SUPPLIED

KEY INDUSTRY INSIGHT XIII

The survey result showed **61.67%** of the industries still use generators as the quality of electricity is not reliable. The respondents also mentioned, since the electricity supply provided by NEA is from a common feeder for an area, this reduces the reliability so a separate feeder is essential for commercial purposes. Those manufacturing industries using generators as alternative sources of energy stated there is an additional **9.40** of cost increase due to the use of generators.

In response to the question that was asked to the respondents to rate the quality of electricity provided in the scale of 1 to 10, with one being the worst and 10 being the best, the average response was **5.72**.

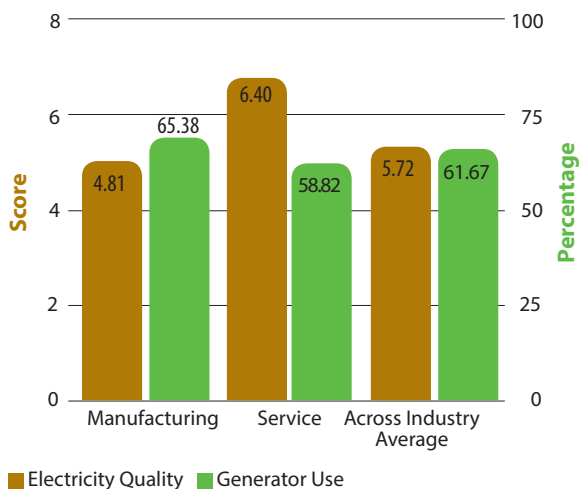
Major challenges

Out of the **64** respondents, **41** responded to the question, and they had the option to select up to 3 choices from a total of 11 options regarding major challenges of business. Among the responses, excess competition affecting price margins, low disposable income among Nepali consumers and unauthorized goods in the market and were the most common responses that respondents wanted to solve.

Major Challenges

Excess Competition Affecting Price Margins
Low Disposable Income Among Nepali Consumers
Unauthorized goods in the market
Consumer Bias for Foreign Goods/Services

ELECTRICITY QUALITY



Transportation and Logistic Hurdles

The respondents identified major challenges of transportation and logistics as administrative hassles on road, quality of roads and frequent road blockage.

Major Hurdles

Quality of Roads
Administrative Hassles on Road
Arbitrary Prices

Share of Logistic Cost

Among the 64 respondents, **46.88%** responded, indicating that the average share of logistics costs in total production costs is **11%**.

BUSINESS OUTLOOK

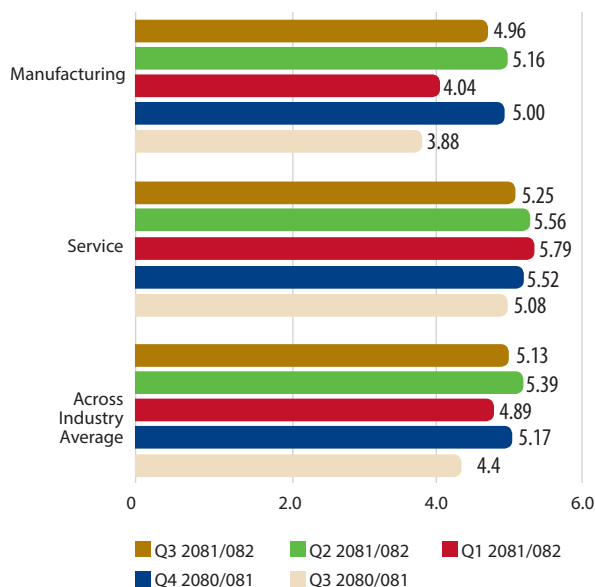
This section presents the confidence level of surveyed industries for their own business and aggregates responses regarding investment plans for the next quarter.

BUSINESS CONFIDENCE: MODERATE

KEY INDUSTRY INSIGHT XIV

On the whole, industrialists are not optimistic that their business is going to perform well for the next 3 months. When asked to rank the favorability (confidence measures) for their business on a scale of 1 to 10 (with 1 being the least favourable and 10 being the most favourable) in terms of revenue and investment opportunities, regulatory environment, access to finance, labour and better utility facilities, the across-industry-average score is **5.13**. The manufacturing industry is comparatively less confident as per the survey respondents. This can be a result of the unfavourable macroeconomic situation. Key Indicator XIV does not paint a conducive environment for businesses currently.

HOW FAVORABLE IS REST OF THE FISCAL YEAR FOR YOUR OWN BUSINESS?

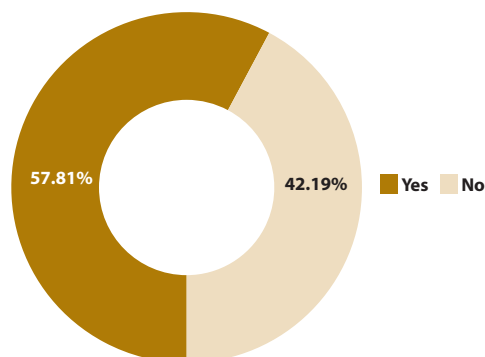


57.81% HAVE NEW INVESTMENT PLANS

KEY INDUSTRY INSIGHT XV

The survey result shows that **57.81%** of respondents have new investment plans for the upcoming quarter. Among respondents from the manufacturing sector, **57.14%** have a new investment plan. Similarly, among respondents from the service sector **58.33%** have planned for new investment. However, **42.19%** of respondents said they do not have any plans for new investment in the upcoming quarter.

NEW INVESTMENT PLANS





ALTERNATIVE FINANCING IN NEPAL

INTRODUCTION

Nepal is at a crucial juncture in its developmental journey, facing significant funding challenges that impede its growth potential. As a landlocked, least developed nation, Nepal navigates a complex economic landscape marked by limited domestic capital formation, low foreign direct investment, and a heavy reliance on unstable remittance inflows. This report analyzes feasible financing strategies, integrating global best practices and tailoring solutions to Nepal's unique circumstances. The discussion encompasses both established and innovative financing methods, evaluating their applicability across Nepal's vital sectors such as energy, transportation, tourism, and digital infrastructure.

CURRENT ECONOMIC LANDSCAPE

The inherent structural characteristics of Nepal's economy are decisive in shaping its available financing avenues. Nepal maintains a relatively limited formal economic structure, with tax revenues accounting for only 18% of its GDP, significantly lower than the regional average of 22% to 25%. These fiscal limitations restrict the government's capacity to fund extensive infrastructure projects through traditional budgetary

allocations. Concurrently, the nation possesses substantial untapped potential, particularly in hydropower, currently installed capacity 3602 MW which constitutes less than 10% of the financially feasible capacity i.e. 45000Mw, has been harnessed. Furthermore, its financial sector remains underdeveloped, characterized by capital markets struggling with low resources and a restricted pool of investors. These conditions present a combination of formidable challenges and promising opportunities in the pursuit of financing Nepal's developmental objectives.

TRADITIONAL FINANCING MECHANISMS

Mobilizing domestic resources serves as the foundational pillar for sustainable development finance. Beyond conventional taxation, Nepal could more effectively utilize its substantial remittance inflows, which currently constitute nearly 30% of GDP but primarily support consumption rather than productive investment. Establishing specialized investment vehicles, such as diaspora savings, could redirect these funds into critical infrastructure development projects. Despite its strategic location Nepal has yet to leverage foreign direct investment opportunities fully. In 2022, Nepal attracted only about USD 200 million

in FDI, a mere fraction of its potential. Investors are often deterred by complex approval procedures, inconsistent policy implementation, and significant infrastructure deficiencies. Malaysia's success in transforming Penang into a global electronics hub through focused incentives and simplified regulations provides a replicable model for Nepal. Similarly, Nepal could concentrate on key sectors like hydropower and tourism by developing specialized investment corridors accompanied by customized incentive schemes.

BUDGET DEFICIT AND FINANCIAL GAPS IN INFRASTRUCTURE

Globally, governments have generally engaged in deficit financing of their economies, with only a few exceptions like Qatar, Singapore, Brunei, Switzerland, Estonia, and Norway running surplus budgets for short periods since 2000. Nepal has consistently run a fiscal deficit since its first annual budget in 1951. This trend persists in Nepal due to low sources of capital and limited capital formation.

TABLE 1: NEPAL'S BUDGET DEFICIT

Fiscal Year	Budget*	Total Expenditure	Total Revenue	Grants	Budget Deficit	Deficit as % of GDP (Nominal)	Sources (Official Documents)
2015/16	819.47	819.46	475	85.4	259.06	9.70%	MoF Budget Speech 2015/16, NRB Annual Report 2015/16
2016/17	1048.92	1048.92	565.21	58.8	190.13	3.10%	FCGO Financial Statements 2016/17, NRB Annual Report 2016/17
2017/18	1278.99	1278.99	730.45	62.5	222.72	3.40%	MoF White Paper 2017/18, NRB Macroeconomic Report 2017/18
2018/19	1315	1315	831.26	55	206.19	2.90%	MoF Budget Speech 2018/19, NRB Annual Report 2018/19
2019/20	1533 (rounded)	1532.00	889.5	48	273.8	3.80%	MoF Fiscal Report 2019/20, NRB Economic Bulletin 2019/20
2020/21	1474.64	1474.64	889	45	390	5.20%	MoF Revised Budget 2020/21, NRB Annual Report 2020/21
2021/22	1647	1632.83	1,024.00	40	365	4.30%	NRB Annual Report 2021/22, FCGO Expenditure Report 2021/22
2022/23	1,93.83	1793	1,152.00	35	392	4.20%	MoF Budget Speech 2022/23, NRB Monetary Policy Report 2022/23
2023/24	1751.31	1751.31 (Budget)	1,100.00#	30.00#	621.31	6.5%#	MoF Budget Speech 2023/24, NRB Q3 Report 2023/24
2024/25	1860.3	1,980.00#	1,300.00#	35.00#	645.00#	~5.8%#	

Values marked are provisional from the government agencies or projected during the consolidated budget.

* Budget figure presented is initial consolidate budget

** Deficit Calculate with formula applied by GoN agencies

***All values in billion NPR

Nepal's consolidated budget presentation has consistently shown a deficit, and for the past nine years, this historical trend has been maintained. The average annual deficit for eight fiscal years, from 2015/16 to 2022/23, stood at 287.3625 billion NPR, with the budget deficit as a percentage of GDP averaging 4.58% for the same period.

Table 2: Nepal's capital expenditure

Fiscal Year	Budgeted Capital Expenditure (Rs. Billion)	Actual Capital Expenditure (Rs. Billion)	Source/Notes
2015/16	208.9	110	FCGO
2016/17	311.95	93.21	FCGO
2017/18	335.18	208	FCGO/NRB
2018/19	313.99	210	NRB/FCGO2
2019/20	408	96.48	NRB/FCGO2
2020/21	352.91	228.3	NRB/FCGO2
2021/22	302.8	174.5	NRB/FCGO2
2022/23	352.36	215.3	NRB/FCGO2
2023/24	302	192.21	FCGO/NRB45
2024/25*	352.35	34.53 (first 4 months); 82.33 (first 8 months)	FCGO/NRB45

The deficit incurred by the government is insufficient to address the country's development aspirations and economic growth needs. In fact, the government's capital expenditure is marginal, with a substantial amount diverted towards recurrent expenditure. Data from Table 2 indicates that the Nepalese government spent an average of 166.974 billion NPR from 2015/16 to 2022/23, while budgeted expenditures for the same period exceeded 200 billion NPR annually. The spending for the first four and eight months of the current fiscal year shows a similar pattern, with the government

spending 34.53 NPR billion and 82.33 billion NPR, respectively, against a targeted expenditure of 352.35 billion NPR for the year.

The country's persistent budget deficit has largely been funded by public debt. Deficit funding steadily increased after the need for financing earthquake reconstruction emerged in Nepal during 2015. This trend has continued, and according to the PDMO, the domestic debt-to-GDP ratio, which was 25.65 percent in 2015, reached 42.67 percent in FY 2022/23. Currently, for 2024/25, the ratio stands at 42.94 percent, with

internal loans comprising 22.20 percent and external loans 23.76 percent of GDP. At the current pace of burgeoning debt increase, Nepal may soon reach its historic debt-to-GDP ratio of 49.25 percent, which the country experienced in 2005/06. The impact of increasing debt and its servicing is critically in Nepal's development needs, as reflected in the failure to utilize allocated capital expenditure.

A joint study conducted by CNI and the Institute for Integrated Development Studies in September 2019, prior to the global COVID-19 pandemic, estimated annual investment need to achieve the SDG goals from 2019 to 2030 is a minimum of USD 16.54 billion and a maximum of USD 20.54 billion. USD 4.39 billion to USD 19.06 billion for energy, USD 48.8 billion for transport, USD 11.7 billion for water and sanitation, and USD 15.6 billion to USD 51 billion for urban development. The National Planning Commission's (NPC) recent report, "Sustainable Development Goals: Needs Identification, Cost Estimation, and Fiscal Strategy, 2081 BS," estimates a requirement of Rs 21.065 trillion to meet SDG targets. Furthermore, the report identified an annual gap of Rs 3.023 trillion from 2024 to 2030 to meet the SDG goals, which roughly translates to 45.4 percent of GDP. Affordable and clean energy (Goal 7) and poverty reduction (Goal 1) each will require 12 percent and 11 percent of the total trillion rupees budget, respectively. The vital collaborators in the private sector, which can significantly reduce the financing gap, necessitate 24 percent of the total budget to reach Goal 9, focused on industry, innovation, and infrastructure.

INNOVATIVE FINANCING APPROACHES

Public-private partnerships (PPPs) offer an effective mechanism to help bridge Nepal's infrastructure gap while simultaneously addressing fiscal constraints. The Hyderabad Metro project in India exemplifies how risk-sharing strategies can attract private capital for expansive infrastructure projects. To successfully implement PPPs, Nepal would need to strengthen its legal and institutional frameworks, particularly concerning contract enforcement and effective dispute resolution. Establishing transparent guidelines for risk distribution and revenue-sharing mechanisms would significantly enhance investor trust.

Additionally, diaspora bonds emerge as a compelling option, leveraging Nepal's extensive overseas workforce. Ethiopia's effective deployment of diaspora bonds for infrastructure financing highlights the potential of utilizing patriotic sentiments to secure capital on favourable terms. Nepal could consider designing similar financial instruments that incorporate features such as inflation-adjusted returns and tax benefits to attract diaspora investments. These bonds could be specifically earmarked to finance priority projects in sectors such as energy and transportation.

Green finance is rapidly gaining global importance and aligns exceptionally well with Nepal's vast hydropower and solar energy prospects, along with the need to mitigate climate risk. The development of a sovereign green bond framework, possibly with technical assistance from multilateral development banks, could open access to the growing pool of

environmentally conscious investors. However, this strategy would necessitate the establishment of stringent project selection criteria and rigorous reporting standards to maintain credibility in international financial markets.

VIABLE FINANCING MODELS FOR NEPAL

Building on the traditional and innovative approaches described earlier, Nepal can implement the following seven customized financing models:

Hybrid Annuity Model (HAM):

It is also a PPP model of financing, primarily used in infrastructure development, particularly road and highway projects. Generally, a 40:60 contribution ratio, between the government and the private developer, is in practice to cover the project cost. It reduces financial burden on developers which encourages more participation. This model reduces upfront government spending compared to EPC and also offers a predictable cash flow to private players with reduced risk exposure. Therefore, this can be one of the effective models for Nepal to attract the private sector and accelerate infrastructure development and address the gaps.

- **Structure:** The government covers a defined share (e.g., 40%) of project costs during construction in milestone-linked installments. The private developer may invest the whole 60% either as equity or by sourcing debt from institutional lenders. However, investment made by the private developer will be treated

as debt for the government. Hence, the government makes an agreement with the developer (private investor) defining a concessional period (generally 15-20 years) to pay back in the form of annuity payments (with interest), generally semiannually.

- **Cash Flows:** Upon completion, the government makes annuity payments over a 15–20 year concession while retaining toll-collection rights.
- **Lessons & Applicability:** India launched HAM under National Highway Authority of India (NHAI) in January 2016, driving a 60% expansion in its National Highway network (from 91,287 km to 146,145 km by 2023). Nepal can pilot HAM on key road corridors to enlist private players and mitigate upfront financing risks.

Value Capture Model (VCM)

- **Structure:** This model is based on the values of land and property generated by public infrastructure to finance project cost (e.g., through development charges, betterment levies, or land pooling).
- **Case Study:** In Tokyo's FutakoTamagawa Redevelopment, the population grew by 6% (1.2 times that of Setagaya) and nearby land values jumped 44.9%, justifying reinvestment into larger projects like Shibuya Redevelopment.
- **Applicability:** Municipalities in Kathmandu and Pokhara can leverage VCM by adjusting zoning regulations, imposing infrastructure levies on developers, and reinvesting proceeds into urban road and transit improvements.

Tax Increment Financing (TIF)

Tax Increment Financing (TIF) is a government funding technique where the anticipated growth in property taxes within a specified zone pays for new public works in that zone. A governmental body, often at state/provincial and local levels, passes the necessary authorizing laws and officially designates a TIF district. Within this designated area, an initial property tax income level is established; subsequently, any rise in property tax earnings beyond this starting point (termed “the increment”) is allocated to the project. Typically, a TIF district operates for a defined duration, frequently 20–25 years. The collected incremental taxes go towards repaying bonds or refunding initial development expenditures. The underlying principle is that the investment in public infrastructure will enhance nearby property values and stimulate private sector development, thereby generating the tax growth needed to pay for the project itself.

- **Legal Authorization:** TIF requires approval via state or provincial law, along with a formal plan for the district. As a matter of practice, nearly all states in the U.S. authorize TIFs through statutes.
- **Defined Area:** Local government bodies, commonly a city or a specialized development agency, set the TIF zone’s boundaries and approve the strategies for infrastructure or redevelopment initiatives within those limits.
- **Funding Stream:** Once created, the current property tax collection level is documented as the baseline.

All property tax income generated afterwards within the district that exceeds this baseline is redirected to the TIF fund.

- **Paying for Projects:** The TIF fund is utilized to manage debt payments or cover project costs on an ongoing basis. Often, the district issues bonds secured by the forecasted tax increment. In some scenarios, private developers construct the infrastructure initially and are later paid back using the captured tax revenues.
- **Timeframe:** TIF districts are generally set up for a limited period (such as 20–25 years) to provide adequate time to generate the income required to offset the investment.
- **Focus Zones:** TIF initiatives frequently concentrate on underdeveloped or economically challenged areas where essential infrastructure might not otherwise be built. Legislation often mandates proof that the improvements are necessary and dependent on the TIF incentive (“but for” test).
- **Example – Atlanta BeltLine (USA):** This extensive urban revitalization effort (a 6,500-acre loop incorporating transit, parks, and trails) is partially funded using a TIF district. Authorities from the city, county, public schools, and transit system collaborated to direct the increased property tax earnings within the BeltLine vicinity towards project expenses. Notably, Atlanta successfully negotiated a revenue distribution pact ensuring the local school system also shares in the future tax benefits – a compromise that fostered broad acceptance.

- **Potential Use in Nepal:** Nepal has the option to pilot TIF by adopting similar procedures in regions showing high growth potential.
 - **Enact Authorizing Laws:** Introduce laws or regulations empowering local governments to establish TIF districts and issue bonds guaranteed by future local tax revenues.
 - **Pinpoint Target Areas:** Designate specific districts surrounding major planned initiatives (like Kathmandu's transit corridors, or new industrial/housing zones). In each designated zone, establish the current property tax baseline and earmark future increases for improvements.
 - **Secure Initial Funding:** Enable municipalities (or public-private collaborations) to borrow funds or pay for initial costs of roads, utilities, transit stops, etc., planning repayment with the anticipated tax increment. Private developers could potentially construct the initial infrastructure and receive reimbursement from the TIF increment later.
 - **Align Stakeholder Interests:** Engage provincial/federal bodies, school districts, and other relevant parties early on. Formulate agreements ensuring that when TIF captures new tax income, entities with overlapping jurisdictions still obtain an agreed-upon share (mirroring Atlanta's school agreement), thus minimizing potential opposition.

- **Focus on High-Yield Zones:** Prioritize TIF in underserved or rapidly growing urban locations where public investment is highly likely to significantly boost land values. This helps ensure the captured taxes genuinely reflect the value generated by the project.
- **Confirm Viability:** Undertake comprehensive studies (such as cost-benefit analyses and revenue forecasts) before officially creating a TIF district. Validate that the projected tax increment will be adequate to cover the project's financial obligations.

By embracing a TIF structure, Nepalese cities could harness future tax revenue growth to finance crucial infrastructure projects today, thereby facilitating development that might otherwise be impeded by limited financial resources.

Viability Gap Funding (VGF)

- **Structure:** Government grants or subsidies bridge the gap between economic viability and financial returns for high-impact yet low-yield projects.
- **Legal Basis:** Section 43 of Nepal's PPP and Investment Act (2019) and the PPP Policy (2015) endorse a national VGF, though operational guidelines yet to be formulated.
- **Applicability:** Critical road and rural electrification schemes, where direct revenue streams are limited but economic multipliers are high, can launch VGF pilots once operational protocols are in place.

Asset Monetization

- **Structure:** The government retains ownership while leasing or granting concessions to private operators who invest in and manage assets (e.g., airports, state-owned enterprises) in return for user fees or revenue sharing.
- **Models:** This can be achieved through lease agreements, PPP concessions, or management contracts.
- **Applicability:** Nonoperational industrial estates and underutilized airports (e.g., Rukum, Manang) could attract private investments for the purpose.

Blended Finance

- **Structure:** This approach conjoins public or philanthropic capital with private investment to de-risk projects that serve sustainable development goals.
- **Example:** Canadian pension funds (CPPIB, OTPP) invested CAD 595 million into India's NHIT, financing the expansion of 15 toll roads across central, eastern, and southern India.
- **Applicability:** Nepal's estimated USD 46 billion climate-smart investment potential (2018–2030) could be tapped by blending MDB concessional loans, philanthropic grants, and commercial debt for hydropower and resilience projects.

Thematic Bonds

- **Structure:** These are debt instruments earmarked for projects aligned with specific themes—green, social, or sustainable.

- **Rationale:** As the 10th most climate-vulnerable country, Nepal can issue green bonds to fund renewable energy, flood control, and sustainable urban infrastructure.
- **Requirements:** Robust environmental and social safeguards, transparent reporting, and third-party verification are necessary to meet global investor standards.

Green Bonds

- **Structure:** Green bonds are debt instruments issued to raise capital for projects with verified environmental benefits, including renewable energy, climate-resilient infrastructure, clean transportation, and sustainable urban development. Issuers include sovereign governments, multilateral development banks (e.g., World Bank, ADB), municipalities, and corporations. Investors range from institutional funds (e.g., pension funds) to ESG-focused private investors. To meet global investor standards, green bonds require:
 - Clear use-of-proceeds criteria aligned with recognized taxonomies (e.g., ICMA Green Bond Principles).
 - Robust environmental and social safeguards.
 - Transparent impact reporting and third-party verification.
- **Case Study:** The World Bank Group has pioneered green bond development since 2008, issuing over USD 20 billion across 28 currencies. Its bonds finance climate mitigation and adaptation

in developing countries, including sustainable urban projects in Mongolia and water resilience in Georgia. Ethiopia, with World Bank support, issued its first sovereign green bond to fund climate-resilient infrastructure. Georgia, a landlocked developing country (LLDC), received green bond funding from the Asian Development Bank (ADB) for climate-resilient water supply, showcasing how LDCs and LLDCs can access green finance with technical assistance and institutional backing.

- **Applicability:** As the 10th most climate-vulnerable country, Nepal can adopt green bonds to finance its ambitious climate and sustainability goals. Potential applications include:
 - Hydropower, solar, and clean energy generation.
 - Urban transit and flood control systems.
 - Climate-resilient roads and rural infrastructure.
- **Operationalization:**
 - Nepal Rastra Bank and the Ministry of Finance can collaborate to establish a national green bond framework aligned with ICMA principles.
 - Technical assistance from multilateral banks (e.g., World Bank, ADB) can support capacity building and first-time issuance.

Pilots can commence with concessional finance-backed bonds (e.g., blended with MDB guarantees or grants), ensuring investor confidence. Minimum Revenue Guarantee (MRG)

- **Structure:** The government guarantees a baseline revenue level, covering any shortfall between actual and guaranteed revenues to reduce private-sector risk.

Equity-Based Peer-to-Peer (P2P) Funding for Public Infrastructure

Peer-to-Peer (P2P) lending is an alternative source of finance that allows for the diversification of financial services innovatively. Internet-based lending platforms facilitate individuals and small businesses to lend and borrow without the mediation of traditional financial institutions, thereby decreasing their reliance on such institutions. P2P lending has become popular because it can be used to fulfill the needs of both lenders and borrowers. P2P lending typically appeals to borrowers due to streamlined application processes and easy, convenient access to credit for under-banked populations. Lenders, on the other hand, are attracted by the potential for better returns compared to traditional investment options, such as savings accounts or government bonds.

- **Investment Terms:** Investments typically offer fixed annual returns over a set period. For instance, Southwark Council's green investment scheme offers a 4.6% annual return over five years, funding projects like LED street lighting and cycle hangars.
- **Risk Management:** Investments are structured to mitigate risk, often backed by the council's creditworthiness and the projected success of the infrastructure project.

■ Case Studies:

• **Southwark Council Green**

Investment: Southwark Council launched a crowdfunding initiative through Abundance Investment to raise funds for eco-friendly upgrades, including LED streetlights and cycle hangars. The scheme is projected to generate £6 million by 2030 with an annual return of 4.6%.

- **Camden Highline Project:** The Camden Highline is a proposed elevated park across a disused railway between King's Cross and Camden Town. This project attracted £62,652 from 302 backers via the Spacehive platform to cover feasibility studies and community engagement costs.

• **Mosaic Inc.'s Solar Projects:**

Mosaic financed investments in solar installations, including a 47kW installation for Oakland, California's Youth Employment Partnership, which offered a return of 6.38% per year for five years.

• **Sepa Jalgpallikeskus Football**

Centre: In Tartu, Estonia, the Sepa Football Centre collected €150,000 from over 3,000 backers in 71 days, marking the largest Estonian sports crowdfunding campaign in history. These funds were used to rebuild an aging stadium into a modern training complex.

• **Luchtsingel Bridge, Rotterdam:**

The Luchtsingel is a 390-meter walking bridge in Rotterdam, notable as the world's first public infrastructure project achieved

through crowdfunding. It reconnected three city districts, activating urban areas through community engagement.

- **+POOL, New York City:** +POOL is a design for a floating, water-filtering public swimming pool on the East River of New York. In 2010, it was funded on Kickstarter, exceeding \$40,000 in seven days to test its filtration system. It is slated to open in 2025, providing safe city swimming and promoting water stewardship.

- **Applicability in Nepal:** Nepal can access equity-based P2P financing for infrastructure through:

• **Establishing Legal Frameworks:**

Enacting legislation that permits cities to provide public investment opportunities in infrastructure projects.

• **Identifying Viable Projects:**

Prioritizing projects with clear community benefits, such as renewable energy installations, public transport upgrades, or community centers.

• **Engaging the Public:**

Using online platforms to provide transparent and accessible investment opportunities to prospective investors.

• **Ensuring Financial Viability:**

Performing detailed feasibility studies to estimate returns and appropriately control risks.

IMPLEMENTATION CHALLENGES AND SOLUTIONS

Translating these financing concepts into reality requires addressing several systemic constraints. Streamlining Nepal's bureaucratic processes can significantly enhance project implementation efficiency, minimize cost overruns, and boost investor confidence. Establishing a dedicated infrastructure implementation unit with authority to coordinate across ministries could improve execution efficiency. The country would also benefit from strengthening its financial regulatory framework to support more sophisticated instruments while protecting financial stability. Capacity building represents another critical need, particularly in areas of project preparation and financial structuring. Many potentially viable projects fail to attract financing due to inadequate feasibility studies or poorly designed revenue models. Creating a project development facility, possibly with support from development partners, could enhance the quality of project pipelines available to investors.

STRATEGIC RECOMMENDATIONS

A phased implementation approach would allow Nepal to systematically develop its financing ecosystem. In the immediate term (0–3 years), priority should focus on improving domestic revenue collection and establishing basic PPP frameworks. Medium-term efforts (3–7 years) could concentrate on developing capital markets and issuing inaugural diaspora bonds. The long-term vision (7–10 years) should aim to establish

sophisticated instruments like infrastructure investment trusts and sovereign wealth funds. Sector-specific strategies would maximize impact. For hydropower, a blended finance approach combining concessional loans with commercial debt could mitigate risks for private investors. In tourism, targeted FDI policies could spur integrated resort development while preserving cultural assets. Digital infrastructure might benefit from innovative models like infrastructure-as-a-service arrangements with technology firms.

CONCLUSION

Nepal possesses all the fundamental elements needed to accelerate its development—abundant natural resources, a strategic geographic location, and a young, entrepreneurial population. What remains is the systematic application of appropriate financing mechanisms tailored to the country's unique circumstances. By combining traditional and innovative approaches within a coherent strategic framework, Nepal can mobilize the capital required to realize its development aspirations. The path forward requires persistence in reform implementation and creativity in financial engineering, but the potential rewards justify the effort. With the right financing strategies, Nepal can transform from a landlocked to a “land-linked” economy at the heart of regional commerce and development. This comprehensive approach provides Nepal with a realistic roadmap to bridge its financing gap while building a more resilient and diversified economy. The solutions outlined here balance immediate needs with long-term sustainability, offering a pragmatic path toward prosperous development.

EXPERT OPINIONS

MUKTI BIKRAM CHHETRI

Project Development, Compliance and Post Accreditation Support Consultant, AEPC

The global climate finance system has advanced in line with the Paris Agreement, with developed countries committed to mobilizing climate finance. COP29 (2024) set a new target of at least USD 300 billion annually by 2035 for developing nations, and a broader goal of USD 1.3 trillion per year for global climate action.

Key funding mechanisms include the Green Climate Fund (GCF) and Adaptation Fund (AF), supporting both mitigation and adaptation with a focus on equity and country ownership. The GCF, the largest of these, provides grants, concessional loans, equity, and guarantees, especially prioritizing LDCs, SIDS, and African countries through Accredited Entities (AEs).

Nepal has actively participated in the GCF. AEPC became Nepal's first Direct Access Entity in 2019 for small projects. NTNC and NIMB followed with micro and medium project accreditation, while TDF and NIFRA are in progress. Till date, four GCF projects have been approved in Nepal, with one more under review.

The Adaptation Fund (AF), originally under the Kyoto Protocol and now serving the Paris Agreement, focuses on concrete

adaptation projects. It provides financing through National, Regional, and Multilateral Implementing Entities. In Nepal, NTNC is the accredited National Implementing Entity (NIE), and LI-BIRD is undergoing the accreditation process. The World Food Programme remains the sole Multilateral Implementing Entity active in Nepal.

Other climate funds such as the Global Environment Facility (GEF), Climate Investment Funds (CIF), and various bilateral initiatives complement the broader climate finance ecosystem.

AEPC's Role in Alternative Financing: Background, Evolution, and Future Outlook

Established in 1996 under the Ministry of Energy, Water Resources and Irrigation (MoEWRI), AEPC is the national focal agency for renewable energy and energy efficiency (RE/EE) in Nepal. Governed by a multi-stakeholder board, AEPC is recognized as Nepal's pioneer in clean energy and alternative financing. AEPC's alternative financing initiatives have evolved through:

- Over two decades of delivering off-grid clean energy solutions: micro-hydro, solar PV, improved cookstoves, and biogas systems, benefiting rural and remote communities.
- Pioneering carbon finance in Nepal: AEPC implemented eight CDM projects covering 95% of the country's carbon

S.N	Project Name	GCF Financing (USD million)	Co-financing (USD million)	Accredited Entity	Approval Date
1	Improving Climate Resilience in Gandaki Basin	27.4	5.32	IUCN	21 Aug 2020
2	Building a Resilient Churia Region	39.3	8.04	FAO	14 Nov 2019
3	Clean Cooking Solutions	21.13	28.1	AEPC	7 Oct 2021
4	E-Mobility Programme (Multi-country)	24.27	56.73	ADB	6 Mar 2024
Total		112.1	98.2		

compliance market, alongside Gold Standard and Verra voluntary market initiatives. As of FY 2024/25, over 6.59 million Certified Emission Reductions (CERs) have been generated, yielding more than USD 35 million in revenue. AEPC is also spearheading Nepal's Article 6.2 readiness.

AEPC follows a Public-Private Partnership (PPP) and demand-driven approach to RET promotion. Initially focused on subsidy administration, AEPC established the Central Renewable Energy Fund (CREF) to transition from subsidies toward credit-based financing. CREF operates as AEPC's core financial mechanism for delivering both subsidies and credit to the renewable energy sector.

A key innovation under CREF is the Sustainable Energy Challenge Fund (SECF), supported by the British Embassy. SECF provides Viability Gap Funding (VGF) and operates through eight financing windows including PPP models, loan guarantees, interest rate buy-downs, and performance-based incentives. This mechanism is governed by detailed guidelines and is embedded within the updated CREF Operation Manual endorsed by MoEWRI. AEPC's financing mechanisms are supported by a robust policy and regulatory framework, including:

- Renewable Energy Subsidy Policy and Delivery Mechanism
- Rural Energy Policy (2006)
- National Climate Change Policy (2019)
- National Energy Efficiency Strategy (2018)
- National Renewable Energy Framework (2022)
- NDC Implementation Plan (2023)
- Green Hydrogen Policy (2024)
- The upcoming Renewable Energy and Energy Efficiency Bill, tabled in Federal Parliament, will institutionalize AEPC's mandate

Key Projects Funded through Alternative Financing Instruments

AEPC has implemented numerous programs in partnership with multilateral, bilateral, and UN agencies, and with Government of Nepal funding. Notable projects include:

- Micro Hydro Debt Fund and Biogas Credit Fund
- South Asia Subregional Economic Cooperation (SASEC) Energy Program
- Renewable Energy for Rural Livelihood (RERL)
- Renewable Energy and Energy Efficiency Programme (REEEP)
- Nepal Renewable Energy Programme (NREP)
- Nepal Private Sector-Led Mini-Grid Energy Access Project (MGEAP)
- AEPC/KfW-DKTI Solar Project
- GCF Clean Cooking Solutions Project
- GCF Readiness and Preparatory Support Programmes

Strategic Priorities and Policy Recommendations

Moving forward, AEPC aims to:

- Expand access to clean energy and energy efficiency through climate finance, blended finance, PPPs, and decentralized RE systems.
- Scale up the SECF model to catalyze private sector investment in underserved regions.
- Strengthen Article 6.2 readiness and explore new carbon market mechanisms.
- Mobilize vertical climate funds to finance transformative energy projects aligned with Nepal's NDC and Long-Term Strategy.

Recommended policy reforms include:

- Enactment of the Renewable Energy and Energy Efficiency Bill to solidify institutional mandates.
- Development of a national blended finance framework for climate and clean energy.
- Streamlining of financing guidelines to reduce barriers for private sector engagement.
- Strengthening data and MRV systems for carbon markets and result-based financing.

SUSHEEL KUMAR BHUJEL

Head-International Business, Treasury and Institutional Banking (Liabilities), NMB Bank

Nepal periodically faces a recurring liquidity crunch, primarily due to an underdeveloped capital market and the dominance of short-term deposits. This has created a significant mismatch when such short-term funds are used to finance long-term, capital-intensive projects, especially in priority sectors like hydropower and tourism infrastructure. In the absence of appropriate market instruments that can match the tenor of such investments, banks have started to explore alternative financing solutions remaining within the regulatory framework.

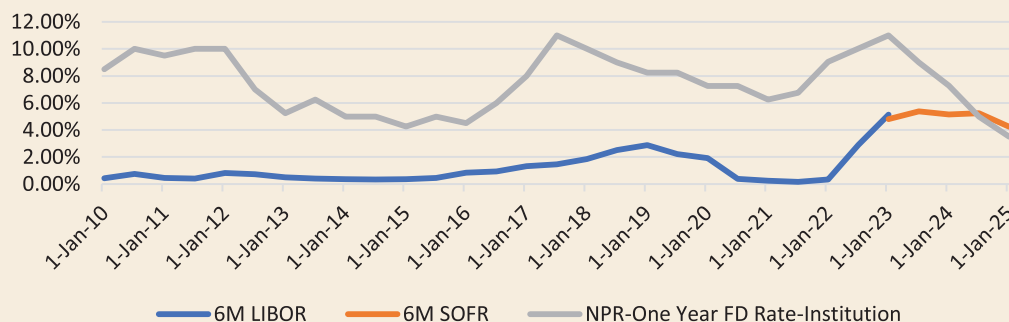
While Nepal's bond market is gradually emerging, it still remains insufficient to bridge the funding gap for large-scale projects. The public sector's journey in the issuance of Thematic Bond in Nepal is not very long. Agricultural Development Bank, in 2020, made a successful attempt to issue an Agri Bond bearing a significantly lower coupon rate followed by NMB Bank Limited with the issuance Energy Bond in 2021. The apex regulator, Nepal Rastra Bank, has played a vital role in making these attempts successful by facilitating required provisions through its regulation. Since then, we have witnessed couple of more attempts of such type in the market.

NMB Bank Limited has recently announced the issuance of a Green Bond amounting USD 60 Mio to be issued in Local Currency especially for foreign investors. This is the first of its kind in Nepal, which has opened the room for other market participants.

Since 2018, NMB Bank Limited actively mobilized foreign currency borrowing as an alternative source particularly for impact financing. However, the cost of such funds remains high, with combined interest and hedging costs pushing the effective rate to around 8%-10%, even for green financing initiatives. The addition of a nominal margin over borrowing costs makes the offshore funds less attractive for the project developers. To address this issue, Nepal has to focus on bringing subsidized and blended funds having a tenure of 10 years or longer which will also be helpful to manage the ALM Gap.

Historically, there has always been a visible gap between the Nepalese rupee interest rate and the USD Benchmark rate. The NPR rate used to be on a higher side which would make the foreign funds attractive in this market. The domestic market sitting in surplus liquid funds backed by sluggish credit demand has resulted in the NPR

Interest Rate: NPR 1 year Vs 6M USD Benchmark Rate



interest rate decrease significantly. Hence, a commercial foreign investment without tagging along the subsidized fund would not make any sense at the moment.

Equity financing could prove to be another viable option with projects/businesses like Lower Solu Hydropower, Worldlink Communications, and various MSMEs receiving equity financing through institutional partnerships such as FMO, International Finance Corporation-IFC and British International Investment-BII. However, for equity investments to grow, enabling policies and regulatory clarities are further necessary.

A loan syndication between domestic and international lenders could be another viable option that would create a big-ticket size fund thus sufficing the requirement of bigger projects. For this, we need to formulate an effective project assessment mechanism and efficient Escrow Management modality thereby assuring the lenders with considerable return on investment as well as safeguarding the principal investment amount.

To reduce risks and make long-term financing more attractive, a national hedging mechanism could be a game changer. A hedging pool of around NPR 100 Billion, jointly backed by the Nepal

Government, Nepal Rastra Bank, Banking and Financial Institutions, and Insurance Companies, could help manage forex risks more efficiently and encourage inflows of long-term foreign investment in Nepal. Nepal Rastra Bank has issued Swap Transaction Bylaw 2081 to facilitate Swap transactions to the BFIs, who have borrowed funds in foreign currency other than Indian Rupees. However, we are yet to witness the first transaction of this type.

Energy Development Roadmap 2024 has envisaged over 28,000MW of electricity by 2035. It is estimated that the country will need approximately USD 46.50 Bio (NPR 6.3 Trillion) of funds to unlock its full energy potential including Hydropower. As stated by Nepal Green Finance Taxonomy 2024, the country is going to need about USD 77 Bio (NPR 10 Trillion) to implement adaptation, mitigation, and sustainable development targets by 2030. Bridging this demand through internal resources is not possible and requires coordinated efforts, alternative financing tools including blended financing, access to global climate/challenge funds, and institutional collaboration. We at NMB believe that with the right ecosystem, alternative financing can play a critical role in building a more resilient, inclusive, and sustainable economy.

About CNI

The Confederation of Nepalese Industries (CNI) was established by the captains of Nepal's industrial and corporate sector on April 17, 2002. Its core mandate is to help enhance the business environment for the private sector.

It has a membership base consisting of nearly all of the big corporate houses of Nepal, Nepali blue-chip companies, joint venture companies, etc. spread across a wide and diversified spectrum of industries.

About CRC

CNI Research Cell was established due to a dearth of evidence-based research on Nepali industries, especially based on primary data. CNI aspires to be a trusted development partner of the Government of Nepal. The data and research generated by CRC is transparent, unbiased and will be kept confidential. The team comprises Director Mr. Ravi Kumar Prajapati, Officer Mr. Nikesh Man Napit and Senior Executive Mr. Chetman Syangtan.



CONFEDERATION OF NEPALESE INDUSTRIES