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Alternative Financing in Nepal

Mobilizing Resources for Sustainable Development and Economic Resilience in Nepal



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ALTERNATIVE FINANCING IN NEPAL

**Mobilizing Climate Finance, Green Finance, and Innovative Mechanisms
For Sustainable Development and Economic Resilience in Nepal**

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FOREWORD



Nepal stands at a defining crossroads in its development endeavours. As the country strives to graduate from least developed country status while confronting the intensifying impacts of climate change, constrained fiscal space, and evolving global financial conditions, the question of how we finance development has become as important as what we seek to achieve. In this context, alternative financing is no longer a peripheral discourse; it is a strategic imperative. The legal framework for mobilising alternative development finance is currently being established, following the endorsement of the Alternative Development Finance Mobilisation Bill by the House of Representatives.

Against this backdrop, this research-based publication, *Alternative Financing in Nepal: Mobilising Climate Finance, Green Finance, and Innovative Mechanisms for Sustainable Development and Economic Resilience*, arrives at a timely and critical moment. It responds to a growing recognition that traditional sources of public finance, development assistance, and conventional banking alone are insufficient to meet Nepal's expanding investment needs – particularly in climate adaptation and mitigation, infrastructure, energy transition, urban resilience, and inclusive growth.

The Management Association of Nepal (MAN) has long advocated for evidence-based policy dialogue, institutional reform, and private sector engagement as pillars of sustainable economic transformation. This publication reflects that commitment. By combining analytical rigour with policy relevance, it contributes meaningfully to the national discourse on financing for development and complements Nepal's commitments under the Sustainable Development Goals and its national development plans.

Importantly, this work underscores that alternative financing is not merely about new instruments, but about new ways of thinking – strengthening governance frameworks, enhancing institutional capacity, improving project bankability, and fostering collaboration between the public sector, private sector, development partners, and financial institutions. Without these enabling conditions, innovative finance will remain aspirational rather than transformational.

With this objective, MAN has undertaken this comprehensive study led by Mr. Madhu Paudel, Executive Member of MAN as Team Leader. We extend our gratitude to Mr. Paudel along with author Mr. Nishant Khanal for accepting our request and spearheading the study. We are thankful to our co-authors of this astounding study, Ms. Alsha Regmi, Mr. Ayush Man Tamrakar, Mr. Pradeep Parajuli, Mr. Sagar Pathak, Ms. Smriti Sharma, Ms. Shreya Pokharel, Ms. Srishti Vaidya and Mr. Prakrish Acharya for their enormous support in the study.

I am confident that the distinguished commentators and MAN members will engage in highly productive and insightful deliberations on this theme paper. I believe that this document, enriched by their valuable comments and inputs, will serve as an invaluable reference that inspire informed action toward a more resilient, green, and inclusive Nepali economy.

Thank you!

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Table of Contents

CHAPTER 1	1
Introduction: Understanding Alternative Financing for Nepal's Development	1
1.1 What is Alternative Finance?	1
1.2 Key Components of Alternative Finance Relevant to Nepal	1
1.3 Nepal's Development Financing Gap: Scale and Urgency	2
1.4 Infrastructure Investment Needs	3
1.5 Climate Finance Imperative	3
1.6 Fiscal Space Constraints	4
1.7 The Untapped Potential: Remittances and Diaspora Capital	4
1.8 Nepal's Policy Response: The Alternative Development Finance Mobilization Bill 2025	5
1.9 The Case for Private Sector Participation	5
1.10 Objectives and Limitations of This Study	6
1.11 Scope and Structure of This Publication	
CHAPTER 2	7
Climate Finance in Nepal	7
2.1 Understanding Climate Finance	7
2.2 Nepal's Climate Vulnerability: The Case for Urgent Climate Finance	8
2.3 Nepal's Climate Finance Requirements	9
2.4 National Climate Finance Policy Framework	11
2.5 Accessing International Climate Finance	12
2.6 Challenges and Opportunities	13
CHAPTER 3	14
Green Finance in Nepal	14
3.1 Defining Green Finance in Nepal's Context	14
3.2 Nepal Green Finance Taxonomy	15
3.3 Green Banking Framework and Implementation	16
3.4 Green Bonds and Sustainable Debt Instruments	17
3.5 Green Finance in Action: Evidence from Nepal	17
3.6 Regulatory Environment and Institutional Framework	18
3.7 Challenges and the Way Forward	19

CHAPTER 4	20
Blended Finance	20
4.1 The Imperative for Blended Finance	20
4.2 Blended Finance Instruments	23
4.3 Blended Finance in Nepal: Evidence from Practice	25
4.4 Designing Bankable Blended Finance Structures	28
4.5 Challenges, Risks, and Mitigation Strategies	29
4.6 Way forward	30
CHAPTER 5	31
Other Innovative Financing Mechanisms	31
5.1 Introduction: Expanding the Alternative Finance Toolkit	31
5.2 Carbon Markets and Carbon Finance	31
5.3 Impact Investment and ESG-Linked Financing	32
5.4 Diaspora Bonds and Remittance-Linked Finance	32
5.5 Development Impact Bonds and Results-Based Financing	33
5.6 Municipal Bonds and Subnational Financing	33
5.7 An Integrated Alternative Finance Architecture	34
CHAPTER 6	35
Enabling Environment and Strategic Implementation Roadmap	35
6.1 From Framework to Implementation: The Policy Imperative	35
6.2 Legal and Regulatory Framework: Current State and Gaps	35
6.3 Institutional Capacity: Building the Implementation Infrastructure	37
6.4 Risk Management and Investor Confidence	37
6.5 Strategic Implementation Roadmap	38
6.6 Monitoring, Evaluation, and Adaptive Management	40
6.7 Toward a Transformed Development Finance Landscape	41
REFERENCES	42

CHAPTER 1

Introduction: Understanding Alternative Financing for Nepal's Development

1.1 What is Alternative Finance?

Alternative finance refers to financial channels, processes, and instruments that have emerged outside of the traditional finance system, such as regulated banks, conventional stock markets, and bilateral or multilateral official development assistance. The United Nations Development Programme (UNDP) defines alternative finance as "non-traditional ways to finance [UNDP, 2024] and deliver development outcomes from private or public sources," encompassing mechanisms such as crowdfunding, social and development impact bonds, pay-for-success systems, forecast-based financing, and equity-based investments in social good projects.

In the context of development finance, alternative financing mechanisms represent a paradigm shift from dependence on conventional public resources and concessional development assistance toward more diversified, innovative, and catalytic approaches to mobilizing capital. These mechanisms leverage the informational, collateral, and incentive advantages inherent in social, business, and virtual networks compared to finance relying solely on traditional financial intermediaries.

The global alternative finance landscape has expanded dramatically in recent decades. According to the State of Blended Finance 2024 report by Convergence, the international network for blended finance, over 1,123 blended finance transactions have been recorded globally, with a total investment of USD 213 billion. In 2024 alone, 123 deals reached close totalling USD 18 billion in financing, with median deal sizes increasing from USD 38 million (Convergence, 2024) in the year 2020-2023 to USD 65 million (2024), reflecting growing ambition and scale in development financing.

1.2 Key Components of Alternative Finance Relevant to Nepal

For a country like Nepal, facing a massive development financing gap while aspiring to graduate from Least Developed Country (LDC) status and achieve middle-income country goals, understanding the taxonomy of alternative finance mechanisms is essential. The alternative finance components that are particularly relevant to Nepal's context are presented in the table below.

Table 1.1: Key Alternative Finance Mechanisms for Development

Mechanism	Description	Nepal Application
Blended Finance	Strategic use of development/ philanthropic capital to mobilize private investment toward sustainable development	Hydropower, infrastructure PPPs, climate adaptation projects
Green/Climate Finance	Financing for climate mitigation and adaptation, including GCF, GEF, and carbon markets	Clean energy, disaster risk reduction, climate-resilient agriculture
Impact Bonds	Results-based financing where investors fund services and repayment depends on achieving outcomes	Education, health, employment programs

Diaspora Finance	Mobilizing remittances and savings of overseas workers through bonds, investment platforms, and structured products	Diaspora bonds, NRN investment funds, productive remittance channels
Crowdfunding	Raising capital from large numbers of individuals via online platforms for specific projects	SME financing, social enterprises, community projects
Green Bonds	Fixed-income instruments earmarked for climate and environmental projects	Renewable energy financing, sustainable infrastructure

Source: Compiled from UNDP, Convergence, and World Bank definitions

1.3 Nepal's Development Financing Gap: Scale and Urgency

Nepal faces an increasingly urgent and widening development financing gap as the country simultaneously pursues middle-income status, climate resilience, and the Sustainable Development Goals (SDGs). The scale of this gap has grown dramatically in recent years, reflecting both expanding ambitions and compounding vulnerabilities that have outpaced the country's fiscal capacity.

According to the National Planning Commission's (NPC) 2025 report on "Sustainable Development Goals: Needs Identification (National Planning Commission, 2025), Cost Estimation and Fiscal Strategy," Nepal requires a total investment of NPR 21.065 trillion (approximately USD 155 billion) to implement the SDGs by 2030. This translates to an average annual investment of NPR 3.023 trillion (approximately USD 22 billion) from 2024 to 2030, representing approximately 45.4% of the projected Gross Domestic Product during this period.

Table 1.2: Nepal's SDG Investment Requirements by Priority Goal (2024-2030)

SDG Goal	Share (%)	Est. Amount (NPR Trillion)
Goal 9: Industry, Innovation, Infrastructure	24%	5.06
Goal 7: Affordable and Clean Energy	12%	2.53
Goal 1: No Poverty	11%	2.32
Other SDG Goals Combined	53%	11.16
Total Investment Required	100%	21.065

Source: National Planning Commission, Government of Nepal, 2025

The NPC's fiscal strategy estimates an average annual financing gap of NPR 755 billion (approximately 11.1% of GDP) over the period 2024-2030. Of this, the public sector gap is estimated at NPR 426 billion annually (National Planning Commission, 2024), while the private sector gap is approximately NPR 329 billion. The largest fiscal gaps are seen in infrastructure, sustainable cities, education, health, and water and sanitation sectors.

This financing challenge places Nepal squarely within the global development financing crisis. According to the UN's 2024 Financing for Sustainable Development Report, developing countries collectively face an annual SDG financing gap of USD 4.0-4.3 trillion, up from USD 2.5 trillion before the COVID-19 pandemic, representing a more than 50% increase. As the UN Secretary-General emphasized, "the Sustainable Development Goals are hanging by a thread (United Nations, 2024).

1.4 Infrastructure Investment Needs

Nepal's infrastructure investment needs are particularly acute, reflecting decades of chronic underinvestment. The World Bank's Nepal Infrastructure Sector Assessment (World Bank, 2019) estimates that closing foundational deficits in transport connectivity, hydropower generation, irrigation systems, urban services, and digital networks will require annual investments equivalent to 10-15% of GDP over the next decade.

In the energy sector alone, the assessment projects total investment needs of USD 29-46 billion during 2018-2040 (World Bank, 2019). This includes over USD 16 billion in transmission and distribution infrastructure and USD 2 billion in solar and wind energy. The estimated annual need of USD 1.3-2.1 billion is two to four times higher than historical investments in recent years. As the government has set an ambitious target of generating 11, 769 megawatts of electricity through the 16th Periodic Plan, the hydropower sector alone will require between USD 20-25 billion by 2030, with an additional USD 4.8-8.5 billion needed for transmission infrastructure.

Table 1.3: Nepal's Key Infrastructure Investment Needs

Sector	Investment Need	Time Frame
Total Infrastructure (all sectors)	10-15% of GDP/year	Next decade
Energy Sector (total)	USD 29-46 billion	2018-2040
Hydropower Generation	USD 20-25 billion	By 2030
Transmission & Distribution	USD 4.8-8.5 billion	By 2030
Annual Energy Sector Need	USD 1.3-2.1 billion	Per year

Source: World Bank Nepal Infrastructure Sector Assessment, 2019; Country Climate and Development Report, 2022

1.5 Climate Finance Imperative

Climate change further widens Nepal's financing gap. As one of the world's most climate-vulnerable countries, Nepal faces escalating losses from floods, landslides, droughts, and glacial lake outburst floods. The World Bank's Country Climate and Development Report (World Bank, 2022) (CCDR) for Nepal, released in 2022, estimates that without comprehensive and scaled-up climate action, Nepal's GDP could decline by 7% by 2050 solely due to climate impacts.

Nepal's climate finance requirements are substantial. The country's third Nationally Determined Contribution (NDC) submitted under the Paris Agreement outlines mitigation and adaptation targets for 2025, 2030, and 2050, with total implementation costs estimated at USD 73.74 billion, nearly double Nepal's entire GDP. Nepal's National Adaptation Plan estimates that achieving adaptation goals will require USD 47.4 billion by 2050, translating to approximately USD 2 billion annually. For mitigation-related conditional goals, Nepal anticipates needing USD 25 billion from external (Government of Nepal, 2021) sources.

Between 2012 and 2020, Nepal received approximately USD 4.4 billion in climate finance (Green Climate Fund, 2024) through various international, bilateral, and multilateral sources. However, the country faces persistent challenges in accessing global climate funds. Accessing resources from the Green Climate Fund (GCF), Global Environment Facility (GEF), and Adaptation Fund requires meeting stringent standards for project preparation, institutional capacity, fiduciary standards, and demonstrable climate impact, all areas where Nepal continues to strengthen its readiness.

The Green, Resilient and Inclusive Development (GRID) framework, supported by development partners and the Government of Nepal, has committed an indicative USD 7.4 billion of ongoing and future support. However, Nepal expects more than 92% of the cost to meet its climate targets from external sources,

while about 69% of public climate finance globally comes as loans (UNDP, 2024) rather than grants, creating a challenging dynamic for a country already managing debt sustainability concerns.

1.6 Fiscal Space Constraints

Nepal's development trajectory is increasingly shaped by the structural limits of its fiscal space. Despite gradual improvements in public financial management, the government's ability to generate sufficient domestic revenue has not kept pace with the scale of development and climate-related spending needs. Revenue mobilization remains heavily dependent on import-based taxes, making the fiscal system vulnerable to external shocks and economic fluctuations.

Public debt dynamics add further pressure. Over the past decade, Nepal's public debt levels have risen steadily as the government has relied on borrowing to meet development commitments and respond to crises such as earthquakes, pandemics, and climate-induced disasters. While debt remains moderate compared to some regional peers, concerns around debt sustainability are emerging due to rising interest payments, slower revenue growth, and the growing need for large-scale investments.

External financing, long a backbone of Nepal's development spending, is becoming less reliable. According to the Development Cooperation Report 2024 (Government of Nepal, Ministry of Finance, 2024), Nepal received total aid commitments of around USD 2.5 billion in FY 2023/24, of which approximately USD 1.58 billion (63%) was disbursed, pointing to persistent absorption challenges. Nepal's government has set a target of receiving approximately USD 2.05 billion in foreign assistance in FY 2024/25, comprising USD 397 million in grants and a significant USD 1.65 billion in loans, indicating continued and growing reliance on borrowed funds.

The NPC's SDG financing strategy outlines contributions from multiple sources: the public sector is expected to mobilize 57.5% of total investment [National Planning Commission, 2024] requirements, with the federal government contributing 70%, provincial governments 9%, and local governments 21%. The private sector is projected to contribute 34.35%, cooperatives and NGOs 4.18%, and households 3.95%. However, this financing strategy faces implementation challenges across all tiers of government.

1.7 The Untapped Potential: Remittances and Diaspora Capital

Nepal's large diaspora community represents a powerful but underutilized source of private capital. In the calendar year 2025 Nepal received approximately 13.6 Billion USD in remittances (Nepal Rastra Bank, 2025), exceeding the combined inflow from both official development assistance and foreign direct investment. This makes Nepal one of the highest recipients of remittances relative to GDP globally, with the world average being only 5.13%.

Despite this substantial inflow, only a marginal share flows into productive investment. Remittances play an important role in funding household consumption and spending in SDG-relevant areas such as education and healthcare, but their potential to catalyze infrastructure investment, clean energy projects, and community resilience initiatives remains largely unrealized. By developing instruments such as diaspora bonds, blended finance vehicles, impact investment funds, and structured savings products, Nepal can tap into diaspora wealth as a catalytic resource for national development.

Foreign direct investment (FDI) inflows to Nepal remain structurally low. According to Nepal Rastra Bank's Survey Report on Foreign Direct Investment (2024), net FDI inflows amounted to approximately USD 75 million in FY 2022/23 equivalent to less than 0.2 percent of GDP reflecting one of the lowest FDI-to-GDP ratios in the region. While approved FDI commitments have grown in recent years, particularly in energy, tourism, and manufacturing, actual realized inflows continue to lag behind commitments. This gap is driven by persistent investment climate challenges, including regulatory unpredictability, slow project approvals, weak investment facilitation, and broader political uncertainty. As a result, Nepal's investment pipeline remains active on paper but thin in terms of actual capital inflows. This further highlights the importance of the Alternative Financing in Nepal.

1.8 Nepal's Policy Response: The Alternative Development Finance Mobilization Bill 2025

Recognizing the urgency of bridging its development financing gap, the Government of Nepal has taken a significant legislative step. In April 2025, the Ministry of Finance registered the Alternative Development Finance Mobilization Bill (Government of Nepal, 2025) in Parliament, establishing a legal framework for mobilizing alternative development finance through innovative mechanisms.

The Bill proposes establishing an Alternative Development Finance Mobilization Fund as an autonomous body with an authorized capital of NPR 100 billion (Government of Nepal, 2025) (approximately USD 740 million) and paid-up capital of NPR 25 billion (approximately USD 185 million). The Government of Nepal will hold a 51% stake, with the remaining shares distributed among the Employees Provident Fund, Citizens Investment Trust, Social Security Fund (collectively 25%), and life insurance, non-life insurance, and reinsurance companies (24%).

The Fund will focus on mobilizing resources for high-economic-return projects through bonds, equity funds, hybrid instruments, remittance pools, and guarantees. Priority investment areas include information technology parks, special tourism infrastructure, sports infrastructure, urban infrastructure, digital infrastructure, cable cars, ropeways, and other strategic projects. The Bill represents Nepal's recognition that traditional financing models are insufficient and that innovative, diversified approaches are essential for achieving development goals.

One of the Bill's strategic objectives is to reduce government reliance on direct budgetary support and concessional debt for financing development. To this end, the Fund is empowered to mobilize resources through bonds, equity funds, hybrid instruments, guarantees, remittance pools, and other innovative modalities. This mix of instruments is designed to broaden Nepal's access to investment capital from domestic savers to global markets while providing risk-sharing mechanisms and structured financing options for project developers.

The enactment of the Bill reflects Nepal's acknowledgement that traditional financing sources alone are insufficient to achieve the nation's development aspirations, particularly as it approaches graduation from LDC status. By institutionalizing a diversified finance platform, the government seeks to leverage private sector capital, deepen domestic capital markets, and attract long-term investment aligned with national priorities. Policy provisions also anticipate a gradual reduction in the government's shareholding in the Fund over time as it becomes more financially robust and self-sustaining.

1.9 The Case for Private Sector Participation

Nepal's development needs and climate ambitions have reached a scale that cannot be financed through public budgets or concessional development assistance alone. Rising fiscal pressures, shifting global aid dynamics, and intensifying climate vulnerabilities have made it increasingly evident that private-sector participation is no longer optional but indispensable.

The private sector offers resources, innovation, operational efficiency, and longer investment horizons that the public sector cannot provide on its own. For a nation seeking to transform its economy and strengthen resilience, crowding in private investment represents one of the most strategic pathways forward. Nepal's financial system, spanning commercial banks, development banks, microfinance institutions, cooperatives, and insurance companies, holds substantial liquidity. However, most investments remain concentrated in low-risk, short-term lending, while long-term infrastructure and climate-related projects receive limited attention.

A crucial enabler of private-sector investment, both domestic and international, is the creation of effective risk-sharing mechanisms. Large, long-term infrastructure and climate adaptation projects carry policy, operational, and climate-related risks that private investors are often unwilling to bear alone. Instruments such as public-private partnerships (PPPs), government guarantees, viability gap funding, first-loss capital, and blended finance structures can help distribute risk more equitably between the public and private sectors.

1.10 Objectives and Limitations of This Study

The principal objective of this study is to map the landscape of alternative financing mechanisms available to Nepal and assess their applicability to the country's development and climate financing gaps. Specifically, it seeks to establish a conceptual foundation for understanding climate finance, green finance, blended finance, and other innovative instruments within Nepal's policy and institutional context. It also aims to document the current state of alternative finance practice in Nepal including the Alternative Development Finance Mobilization Bill 2025, the Nepal Green Finance Taxonomy 2024, and landmark transactions such as the NIFRA green bond and the Upper Trishuli-1 blended finance structure while identifying the regulatory, institutional, and capacity constraints that impede scaling. In doing so, the study provides a strategic implementation roadmap grounded in evidence from national planning documents, multilateral assessments, and emerging market experience. The analysis achieved what it set out to do: it synthesizes a fragmented body of knowledge across climate finance, green finance, blended finance, carbon markets, impact investment, diaspora finance, and subnational instruments into a coherent framework that policymakers, private sector actors, and development practitioners can use as a reference for decision-making and further inquiry.

Several limitations should be noted. This study is not a methodological policy paper, nor does it claim to be exhaustive in its coverage of every dimension of alternative finance. The analysis is grounded primarily in a literature review drawing on official government documents, multilateral reports, regulatory frameworks, and published datasets supplemented by consultations with practitioners and sector experts. It does not employ original quantitative modelling, primary survey data, or econometric analysis. As such, the findings and recommendations are indicative rather than prescriptive; they are intended to guide understanding of a complex and rapidly evolving policy area, not to serve as a definitive cost-benefit analysis or investment blueprint. Certain dimensions including detailed project-level financial structuring, provincial-level fiscal capacity assessments, and granular analysis of political economy dynamics fall outside the scope of this work and warrant dedicated investigation. The study should therefore be read as a foundational guiding resource: one that consolidates the current state of knowledge, identifies critical gaps, and points the way for more targeted empirical research, policy analysis, and stakeholder engagement in the years ahead.

1.11 Scope and Structure of This Publication

This publication provides a comprehensive overview of alternative financing mechanisms as a critical response to Nepal's substantial development financing needs. Drawing on the recently introduced Alternative Development Finance Mobilization Bill 2025 and the latest national and international data, the chapters that follow explore alternative financing options suitable for Nepal beyond traditional sources.

The publication is structured to provide both conceptual understanding and practical guidance. Subsequent chapters examine climate finance mechanisms, green finance instruments, blended finance structures, and other innovative mechanisms in detail. Each chapter provides global context, Nepal-specific applications, case studies, and recommendations for implementation. As a knowledge resource for members of the Management Association of Nepal and other stakeholders, this work aims to inform policy discussions, promote private sector engagement, and guide practical implementations for inclusive and sustainable development.

CHAPTER 2

Climate Finance in Nepal

2.1 Understanding Climate Finance

Before examining Nepal's climate finance landscape, it is essential to establish a clear understanding of what climate finance entails. The concept has evolved significantly since its emergence in international climate negotiations and now encompasses a broad spectrum of financial flows, instruments, and mechanisms designed to address the climate crisis.

Defining Climate Finance

The UNFCCC Standing Committee on Finance defines climate finance as "finance that aims at reducing emissions (UNFCCC Standing Committee on Finance, 2024), and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts." This definition captures the dual mandate of climate finance: supporting both mitigation efforts to reduce greenhouse gas emissions and adaptation measures to build resilience against climate impacts.

UNFCCC Standing Committee on Finance: Official Definition

Climate finance refers to local, national, or transnational financing drawn from public, private, and alternative sources of financing that seeks to support mitigation and adaptation actions that will address climate change. It encompasses financial resources and instruments used to support action on climate change, including grants from multilateral funds, concessional and market-rate loans, sovereign green bonds, carbon market revenues, and private sector investments.

In practice, climate finance flows through multiple channels and takes various forms. International climate finance primarily refers to financial transfers from developed to developing countries, reflecting the principle of "common but differentiated responsibilities" enshrined in the UNFCCC. However, domestic public budgets, private sector investments, and innovative financing mechanisms such as green bonds and carbon markets are increasingly important components of the overall climate finance ecosystem.

Sources and Instruments of Climate Finance

Climate finance can be categorized by source, instrument, and purpose. By source, it includes public finance from government budgets and multilateral institutions, private finance from commercial investors and corporations, and blended finance that combines public and private resources. Key instruments include grants (particularly important for adaptation in vulnerable countries), concessional loans with below-market interest rates, guarantees and risk-sharing mechanisms, equity investments, and results-based payments such as those under carbon markets.

Table 2.1: Sources and Instruments of Climate Finance

Source	Key Instruments	Examples
Multilateral Funds	Grants, concessional loans, technical assistance	GCF, GEF, Adaptation Fund, CIF
Bilateral ODA	Grants, loans, budget support	FCDO, GIZ, JICA, EU, climate programs
MDB Climate Portfolios	Loans, guarantees, equity, policy lending	World Bank, Asian Development Bank, International Finance Corporation (IFC) climate investments

Domestic Public	Budget allocations, climate-tagged expenditure	Nepal's climate budget (NPR 871.6 billion)
Carbon Markets	Results-based payments, carbon credits	FCPF, Article 6, voluntary carbon markets
Private Sector	Green bonds, ESG investments, PPPs	Renewable energy investments, green loans

Source: Compiled from UNFCCC, IPCC AR6, and Climate Policy Initiative data

The Global Climate Finance Gap

According to the IPCC Sixth Assessment Report, current climate finance flows need to increase three to six times to meet average annual investment needs between 2020 and 2030 to limit global warming to 2°C or below. The 2024 Biennial Assessment by the UNFCCC Standing Committee on Finance estimates global climate finance flows at approximately USD 1.3 trillion annually a significant increase from previous years but still far below the estimated USD 4.3 trillion needed annually by 2030 (UNFCCC Standing Committee on Finance, 2024). For developing countries, the financing gap is particularly acute: NDC financing needs identified by 78 countries amount to approximately USD 5.8 trillion until 2030, while adaptation finance remains critically underfunded, receiving only about 10% of total climate finance despite strong economic rationale for investment.

For Nepal, understanding these global dynamics is essential. As a least developed country with high climate vulnerability, Nepal is positioned to access grant-based and concessional climate finance from multilateral funds. However, the country must also develop domestic systems to track, mobilize, and effectively deploy climate resources a challenge that requires strengthened institutions, robust project pipelines, and enhanced coordination across all tiers of government.

2.2 Nepal's Climate Vulnerability: The Case for Urgent Climate Finance

Nepal occupies a unique and precarious position in the global climate landscape. Rising dramatically from 60 meters above sea level in the Tarai plains to 8,848 meters at Mount Everest, the country's extreme elevation gradient creates one of the most environmentally diverse yet climate-sensitive terrains in the world. This geographic complexity, combined with the country's low adaptive capacity, makes Nepal one of the most climate-vulnerable nations globally. Understanding this vulnerability is essential to grasping why climate finance is not merely a development priority for Nepal but an existential necessity.

Key Climate Vulnerability Indicators for Nepal

Global Climate Risk Index: 10th most climate-affected country worldwide | ND-GAIN Vulnerability Index: 44th most vulnerable nation | ND-GAIN Readiness Index: 64th least ready to adapt | Projected temperature increase: 0.5°C to 2.0°C by 2030s | Hindu Kush Himalaya glacier loss projection: up to one-third by 2100 under high-emission scenarios

The Himalayan cryosphere, which serves as Asia's water tower, is undergoing rapid transformation. Nepal's National Adaptation Plan (Government of Nepal, 2021) confirms that warming in high-mountain regions is occurring significantly faster than the global average, with pronounced increases during winter months. This accelerated warming is driving unprecedented cryosphere changes: glaciers are shrinking, snowpacks are diminishing, and permafrost is destabilizing.

Glacial Lake Outburst Floods: A Growing Threat

The formation and expansion of glacial lakes represents one of Nepal's most acute climate risks. As glaciers retreat, meltwater accumulates behind loosely consolidated moraine dams, creating potentially dangerous water bodies that can catastrophically drain without warning. A joint ICIMOD-UNDP inventory has mapped 3,624 glacial lakes across the Koshi, Gandaki, and Karnali river basins, of which 2,070 are located within Nepal. Critically, 47 of these lakes have been classified (ICIMOD & UNDP, 2020) as potentially dangerous, requiring immediate monitoring and risk mitigation.

Table 3.2: Glacial Lake Inventory and Risk Assessment (Koshi, Gandaki, Karnali Basins)

Location	Total Glacial Lakes	Potentially Dangerous Lakes
Nepal	2,070	21
Tibet Autonomous Region (China)	1,509	25
India	45	1
Total	3,624	47

Source: ICIMOD/UNDP Glacial Lake Inventory, 2020

Since 1977, Nepal has experienced 26 recorded GLOF events (ICIMOD & UNDP, 2020), of which 14 originated within the country. The August 2024 Thame Valley GLOF, triggered by the breach of Thyanbo glacial lake in Solukhumbu, destroyed 14 properties including one school, one health post, and displaced 135 people.

Recent Climate Disasters: The Economic Toll

The human and economic costs of climate-induced disasters have escalated dramatically in recent years. Between 2018 and mid of 2024, Nepal experienced over 32,375 disaster events (NDRRMA, 2024) resulting in 3,672 deaths (including missing numbers) and NPR 23.6 billion in economic losses. The September 2024 floods and landslides alone claimed 249 lives, destroyed over 4,400 houses, and caused economic losses of NPR 46.68 billion approximately 1% of Nepal's GDP.

Table 3.3: Economic Losses from September 2024 Floods and Landslides

Sector	Loss (NPR Billion)	Loss (USD Million)
Roads and Highways	27.98	208.3
Agriculture and Livestock	5.88	43.8
Water Supply and Sanitation	5.91	44.0
Energy Infrastructure	4.35	32.4
Total Estimated Losses	46.68	347.7

Source: NDRRMA Preliminary Loss and Damage Assessment, November 2024

2.3 Nepal's Climate Finance Requirements

The scale of Nepal's climate finance requirements reflects the country's dual challenge: safeguarding vulnerable populations from intensifying climate impacts while transitioning toward a low-carbon development pathway. National planning documents including the NDC Implementation Plan, National Adaptation Plan (Government of Nepal, 2021), and the recently submitted NDC 3.0 provide detailed estimates of the investments required across adaptation, mitigation, and loss and damage.

Adaptation Finance Requirements

Adaptation financing constitutes the most substantial component of Nepal's climate finance needs. According to the National Adaptation Plan (2021-2050), Nepal requires USD 47.4 billion in adaptation (Government of Nepal, 2021) financing by 2050, of which USD 45.9 billion (97%) is expected from international sources.

Table 2.4: Sectoral Adaptation Finance Requirements (NAP 2021-2050)

Sector/Priority Area	Requirement (USD Billion)	Share (%)
Agriculture and Food Security	11.2	23.6%
Forests, Biodiversity and Watershed Conservation	8.7	18.4%
Disaster Risk Reduction and Management	8.05	17.0%
Water Resources and Energy	7.8	16.5%
Health and WASH	5.4	11.4%
Total Adaptation Requirements	47.4	100%

Source: National Adaptation Plan 2021-2050, Government of Nepal

Mitigation Finance Requirements

Nepal's third Nationally Determined Contribution NDC 3.0 (Government of Nepal, 2025), submitted in May 2025, presents the most ambitious climate targets in the country's history. The total estimated cost of quantified mitigation targets is USD 73.74 billion through 2035, of which USD 10.82 billion (14.68%) represents unconditional domestic commitments while USD 62.92 billion (85.32%) is conditional upon international climate finance and technical support.

Nepal's NDC 3.0: Key Mitigation Targets for 2030-2035

Electricity Generation: Scale from 3,500 MW to 28,500 MW by 2035 | Electric Vehicles: 90% of private and 70% of public vehicle sales by 2030 | Electric Cooking: 1.9 million households and 15,000 institutions by 2035 | Electric Rail: 300 km national electric rail network | Industry: 70% of boilers electrified by 2035 | Forest Cover: Maintain 46% of total land area under forest | Net Zero Target: Carbon neutrality by 2045

Table 2.5: Summary of Nepal's Climate Finance Requirements

Category	Total (USD Bn)	Unconditional	Conditional
NDC 3.0 Mitigation (to 2035)	73.74	10.82 (14.7%)	62.92 (85.3%)
Energy Sector (to 2035)	65.50	9.52 (14.5%)	55.98 (85.5%)
NAP Adaptation (to 2050)	47.40	1.50 (3.2%)	45.90 (96.8%)
Combined Total	121.14	12.32 (10.2%)	108.82 (89.8%)

Source: NDC 3.0 (2025) and National Adaptation Plan (2021)

2.4 National Climate Finance Policy Framework

Nepal has developed a robust national policy architecture to translate climate commitments into actionable investments. The Climate Change Policy 2019 provides the overarching mandate, emphasizing resilient, low-carbon development and institutionalized climate-responsive budgeting across all three tiers of government.

Climate Budget Tagging: A Pioneer System

Nepal pioneered climate budget tagging in 2012/13 (Prakriti Resources Centre, 2025), becoming one of the first developing countries to systematically track climate-related public expenditures. The system, integrated into the Line Ministry Budget Information System (LMBIS), classifies government spending based on climate relevance using a three-tier coding system: 'highly relevant' (more than 60% of budget directly addressing climate change), 'relevant' (20-60%), and 'neutral' (less than 20%).

A 2025 review by the Prakriti Resources Centre found that 47% of the federal budget was climate-tagged (Prakriti Resources Centre, 2025) in FY 2024/25, with approximately NPR 871.6 billion allocated to climate-relevant programs roughly one-third of the national budget. Of this amount, 47% remained at the federal level while 36% was transferred to local governments. Budget allocations to climate programs have increased significantly over recent years, growing from USD 3.2 billion in FY 2017/18 to USD 4.7 billion in FY 2023/24, peaking at USD 5.2 billion in FY 2022/23.

Table 2.6: Federal and Provincial Climate Budget Performance (FY 2024/25)

Government Level	Total Budget (NPR Bn)	Climate-Tagged Share	Performance Rating
Federal Government	1,860.0	47%	PEFA Grade: C
Gandaki Province	32.0	62% (Highest)	Good
Lumbini Province	38.96	~45%	Moderate
Koshi Province	35.28	~40%	Moderate
Madhesh Province	43.89	~38%	Moderate
Karnali Province	31.41	~35%	Developing
Sudurpashchim Province	33.47	~32%	Developing
Bagmati Province	65.0	<25% (Lowest)	Weak

Source: Prakriti Resources Centre Climate Budget Review 2025; Provincial Budget Statements FY 2024/25; Nepal Economic Forum

However, significant implementation challenges persist. The FY 2024/25 mid-term review showed climate change expenditure with the lowest budget utilization among all SDG-categorized expenditures. The World Bank has noted that despite important advances in public finance management, measures to support comprehensive climate-responsive expenditure tracking in Nepal are still developing and existing systems have not been used effectively. Legislative scrutiny remains weak, with parliamentary committees mainly reviewing revenue and expenditure figures without discussing climate-related fiscal risks.

Climate Budget Trend Analysis

Table 2.7: Federal Climate Budget Trend (FY 2017/18 - FY 2024/25)

Fiscal Year	Climate Budget (USD Bn)	Annual Growth	Key Development
FY 2017/18	3.2	-	Baseline year
FY 2018/19	3.6	+12.5%	Federal transition
FY 2020/21	4.1	+13.9%	Local govt. allocation +35%
FY 2022/23	5.2	+26.8%	Peak allocation
FY 2023/24	4.7	-9.6%	Fiscal consolidation
FY 2024/25	~6.5 (NPR 871.6 Bn)	+38.3%	Post-flood response

Source: Nepal Economic Forum; Ministry of Finance Budget Statements; Prakriti Resources Centre

2.5 Accessing International Climate Finance

Nepal's ability to mobilize climate finance is shaped by its engagement with the evolving global climate finance architecture. As a least developed and climate-vulnerable country, Nepal is positioned to access multiple multilateral, bilateral, and thematic financing windows.

Green Climate Fund: Nepal's Access and Projects

The Green Climate Fund represents the most significant multilateral channel for Nepal's climate finance. Nepal has three nationally accredited Direct Access Entities: the Alternative Energy Promotion Centre (AEPCC), the National Trust for Nature Conservation (NTNC), and Nepal Investment Mega Bank Ltd.

Table 2.8: Green Climate Fund Approved Projects for Nepal

Project Title	GCF Grant (USD Million)	Implementing Entity
GLOF Risk Reduction and Climate-Induced Flooding Protection	36.1	UNDP
Building Resilient Churia Region in Nepal (BRCRN)	39.3	FAO
Improving Climate Resilience in Gandaki River Basin	27.4	IUCN/WWF
Total GCF Funding Approved	105.8+	-

Source: Green Climate Fund Project Database, 2025

Carbon Markets and Results-Based Finance

Nepal has demonstrated significant capacity to participate in international carbon markets. In November 2025, Nepal received its first payment of USD 9.4 million from the World Bank's Forest Carbon Partnership Facility (FCPF) for reducing approximately 1.88 million tonnes of CO₂ under its REDD+ Emission Reductions Program in the Terai Arc Landscape. This milestone marks the first results-based payment under Nepal's Emission Reductions Payment Agreement, which could unlock up to USD 45 million for reducing 9 million

tonnes (World Bank, 2025) of CO₂ through 2025.

To strengthen this pathway, Nepal endorsed the Carbon Trade Regulation, 2082 (2025), establishing a comprehensive legal framework for developing, authorizing, and trading carbon credits under both Article 6 cooperative approaches and voluntary carbon markets.

2.6 Challenges and Opportunities

Institutional Capacity Constraints: Technical expertise in climate risk assessment, proposal development, safeguards compliance, and MRV systems remains uneven across ministries, provinces, and local governments.

Project Bankability Challenges: Many proposals lack feasibility studies, engineering designs, safeguard assessments, and credible financial models required by climate funds.

Emerging Opportunities: Article 6 carbon markets, the Loss and Damage Fund operationalized in 2025, and expanding adaptation finance create favourable conditions for scaling Nepal's climate finance in the coming decade.

Nepal's climate finance landscape reveals both the scale of the challenge and the pathways for addressing it. With combined adaptation and mitigation requirements exceeding USD 121 billion (Government of Nepal, 2021; Government of Nepal, 2025) through 2050 of which nearly 90% is conditional on international support bridging the climate finance gap requires sustained engagement with global climate finance architecture, strengthened domestic systems, and innovative mechanisms to mobilize private capital. Moving forward, Nepal must focus on professionalizing technical review functions, strengthening proposal-preparation capacity, upgrading MRV and climate budget systems, and engaging early with emerging opportunities such as Article 6 markets and the Loss and Damage Fund.

CHAPTER 3

Green Finance in Nepal

Building on the foundations established in earlier chapters Nepal's USD 21 trillion SDG financing gap the proposed Alternative Finance Mobilization Bill, and the USD 121 billion climate finance requirements through 2050 this section of the report examines green finance as a critical mechanism for channelling capital toward environmentally sustainable investments. Green finance represents both a conceptual framework and a practical toolkit for aligning Nepal's financial system with its climate commitments, national development priorities, and emerging international standards.

3.1 Defining Green Finance in Nepal's Context

Green finance, for the purposes of Nepal's evolving alternative financing architecture including the Alternative Finance Mobilization Bill, 2081, is best understood as the part of the financial system that channels capital into activities generating measurable environmental benefits while managing climate-related financial risks.

UNFCCC Standing Committee on Finance: Green Finance Definition

Green finance is "finance that aims at reducing emissions, and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts."

For Nepal, this encompasses local, national, and transnational financing—from public, private, and alternative sources that supports mitigation and adaptation actions addressing climate change.

Within this broad definition, three conceptual strands are particularly relevant for Nepal's alternative financing agenda. First, green finance covers capital flows into discrete "green" projects such as renewable energy, energy-efficient transport, and climate-resilient infrastructure sectors explicitly prioritized in the Alternative Finance Mobilization Bill. Second, green finance involves adjusting traditional risk assessment so that climate-related physical and transition risks are properly priced into lending and investment decisions, a theme emphasized in Nepal Rastra Bank's Environmental and Social Risk Management (Nepal Rastra Bank, 2022) (ESRM) Guidelines. Third, green finance is increasingly embedded within a broader sustainable finance agenda that considers environmental, social, and governance (ESG) outcomes, as reflected in international frameworks and Nepal's emerging regulatory architecture.

Sectoral Focus: From Global Standards to Nepal's Priorities

The International Capital Market Association's Green Bond Principles (GBP) provide the most widely used reference for sectoral classification, listing eligible categories including renewable energy, energy efficiency, pollution prevention and control, clean transportation, sustainable water management, climate change adaptation, and green buildings. Nepal's Green Finance Taxonomy 2024 (Nepal Rastra Bank, 2024), developed by Nepal Rastra Bank, maps these global categories onto the national context, identifying seventeen broad sectors aligned with the Nepal Standard Industrial Classification.

Table 3.1: Mapping Alternative Finance Bill Sectors to Green Finance Categories

Bill Sector	GBP Category	Nepal GFT Status
Electricity Generation	Renewable Energy	Green (if hydro/solar/wind)
Transmission & Distribution	Energy Efficiency	Green/Amber
Road & Rail Networks	Clean Transportation	Conditional screening
Urban Water & Sewerage	Water Management	Green (with thresholds)
Solid Waste Management	Pollution Prevention	Green (with standards)
Industrial & SEZ Development	Green Buildings	Project-level screening
Agriculture & Livestock	Sustainable Land Use	Green (organic/agroforestry)
Tourism Infrastructure	Resource Efficiency	Conditional screening

Source: ICMA Green Bond Principles 2021; Nepal Green Finance Taxonomy 2024; Alternative Finance Mobilization Bill 2081

3.2 Nepal Green Finance Taxonomy

Nepal Rastra Bank's Green Finance Taxonomy, issued in October 2024 with technical support from the Alliance for Financial Inclusion (Alliance for Financial Inclusion, 2025) and peer review by Bangko Sentral ng Pilipinas and Bank Negara Malaysia, represents a landmark development in Nepal's sustainable finance architecture. The taxonomy provides a standardized framework to classify economic activities and mobilize green investments, directly supporting the issuance of green bonds, climate risk reporting, and identification of capital needs for climate-vulnerable sectors.

Core Principles and Classification Framework

The taxonomy is built on four core environmental objectives that guide green investment classification: (1) Climate Change Mitigation reducing greenhouse gas emissions and enhancing carbon sinks; (2) Climate Change Adaptation building resilience against physical climate risks; (3) Pollution Prevention and Control reducing air, water, and soil pollution; and (4) Protection of Ecosystems and Biodiversity conserving natural resources and biodiversity. The "Do No Significant Harm" (DNSH) principle remains central, ensuring that activities contributing to one objective do not undermine others.

Nepal Green Finance Taxonomy: Three-Tier Classification System

GREEN (Transformative): Activities clearly aligned with a 1.5°C pathway, meeting all technical screening criteria and DNSH requirements. Examples include run-of-river hydropower with lifecycle emissions below 100 gCO₂e/kWh, solar PV, and certified green buildings. | **AMBER (Transitional):** Activities partially meeting standards or where climate compatibility is uncertain, requiring time-bound transition plans. | **RED (Excluded):** Activities fundamentally incompatible with environmental objectives, including fossil fuel extraction and generation, deforestation, and high-emission industrial processes.

The taxonomy covers seventeen sectors aligned with the Nepal Standard Industrial Classification, including Agriculture and Forestry, Construction, Power and Water, Transport, Real Estate, and Healthcare and Waste Management. For each sector, technical screening criteria specify quantitative thresholds for instance, hydropower projects must comply with Environmental Impact Assessment procedures, implement the International Hydropower Association's Sustainability Guidelines, and maintain lifecycle emissions compatible with a 1.5°C pathway.

3.3 Green Banking Framework and Implementation

Green banking has become the backbone of Nepal's emerging green finance architecture. Nepal Rastra Bank's progressive regulatory actions joining the Sustainable Banking and Finance Network (Sustainable Banking and Finance Network, 2024) in 2014, issuing the ESRM Guidelines in 2018, integrating ESRM into Unified Directives in 2020, and adopting the Green Finance Taxonomy in 2024 have established a comprehensive framework for sustainable lending.

ESRM Guidelines

The Environmental and Social Risk Management Guidelines (Nepal Rastra Bank, 2022) require all banks and financial institutions to integrate E&S risk analysis into credit appraisal and portfolio management. Key requirements include: (1) Board-approved ESRM policies; (2) Screening all business loans against an exclusion list; (3) Detailed E&S due diligence for higher-risk sectors and larger loans; (4) Third-party E&S due diligence for project finance, including EIA review; and (5) Periodic reporting to NRB on E&S performance.

Table 3.2: Nepal's Green Finance Regulatory Timeline

Year	Milestone	Significance
2014	NRB joins Sustainable Banking & Finance Network (SBFN)	International commitment to sustainable finance
2018	ESRM Guidelines issued for BFIs	E&S risk management becomes standard practice
2020	ESRM integrated into NRB Unified Directives	Mandatory compliance for all BFIs
2022	World Bank \$150M Finance for Growth credit line approved	International support for green finance infrastructure
2024	Nepal Green Finance Taxonomy issued	Standardized classification for green investments
2025	NIFRA Green Energy Bond 6%-2088/89 issued (NPR 5B)	First publicly-listed green bond in Nepal

Source: Nepal Rastra Bank; SBFN Country Progress Reports; GGGI

Directed Lending Requirements

NRB mandates minimum energy sector lending thresholds that have increased progressively: 6% of total credit by mid-July 2022, 7% by mid-July 2023, 8% by mid-July 2024, and 10% by mid-July 2025. As of mid-April 2022, commercial banks had allocated NPR 220.08 billion (Nepal Rastra Bank, 2025) (5.51% average) to the energy sector, with several banks exceeding requirements Prime Commercial Bank at 11.70%, Sanima Bank at 11.43%, and Kumari Bank among the leaders.

Table 3.3: Green Finance Market Data (Nepal)

Indicator	Value	Period/Source
Concessional loans outstanding	NPR 215.91 billion (6.2% of loans)	Mid-June 2022, NRB
Energy sector bank lending	NPR 220.08 billion	Mid-April 2022, NRB
Energy project commitments (8 months)	NPR 86.98 billion (17 projects, 500 MW)	FY 2025/26, DoI
Hydropower turnover (NEPSE)	NPR 160.31 billion	2025, fastest-growing sector
IFC climate-smart opportunity	USD 46 billion (2018-2030)	IFC Nepal Assessment
Climate finance needs (to 2050)	USD 121 billion	Second NDC estimate

Source: NRB Monetary Policy Reports; Department of Industry; IFC; Government of Nepal NDC

Green Lending Performance

According to IFC analysis, Nepal has a substantial climate-smart investment opportunity (International Finance Corporation, 2020) of USD 46 billion from 2018 to 2030, capable of filling a 15% investment gap in GDP by attracting new finance. Current green lending by commercial banks, while still modest as a share of total portfolios, is concentrated in renewable energy (particularly hydropower), electric vehicles and charging infrastructure, energy-efficient housing, sustainable agriculture, and climate-resilient infrastructure.

3.4 Green Bonds and Sustainable Debt Instruments

Green bonds provide the most immediately actionable bridge between green finance principles and alternative financing practice. On June 1, 2025, Nepal Infrastructure Bank Limited (NIFRA) issued the country's first publicly-listed green bond, marking a watershed moment in Nepal's sustainable finance journey.

Nepal's Historic First Green Bond: NIFRA Green Energy Bond 6%-2088/89

Issuer: Nepal Infrastructure Bank Limited (NIFRA) | Value: NPR 5 billion (approximately USD 36 million) | Maturity: 7 years | Coupon Rate: 6% annual | Use of Proceeds: Exclusively for renewable energy initiatives | Framework: Aligned with ICMA Green Bond Principles 2021, EU Taxonomy, and Nepal Green Finance Taxonomy 2024 | Second-Party Opinion: Sustainable Fitch Inc. ("Excellent" rating) | Approvals: NRB (April 13, 2025), SEBON (May 13, 2025) | Technical Support: GGGI and KOICA

The NIFRA Green Bond Framework establishes detailed criteria, procedures, and standards to ensure funds are directed only toward eligible green projects and are monitored and reported in line with international standards. The framework's alignment with both global principles and Nepal's national taxonomy creates a replicable model for future issuances by other infrastructure entities, utilities, and corporations with taxonomy-aligned project pipelines.

Expanding the Sustainable Debt Market

Beyond green bonds, Nepal's sustainable debt architecture is positioned to expand into social bonds (financing affordable infrastructure, healthcare, and education), sustainability bonds (combining green and social objectives), sustainability-linked bonds (where financial terms vary based on achieving predefined KPIs), and blue bonds (targeting watershed conservation, river basin management, and water infrastructure—particularly relevant given Nepal's hydropower-dependent economy).

3.5 Green Finance in Action: Evidence from Nepal

Green finance in Nepal is no longer an abstract policy aspiration; it is visible in the balance sheets of commercial banks, in the financing structures of renewable energy projects, and in the dramatic transformation of the vehicle market. Several concrete developments demonstrate the practical application of green finance principles.

Electric Vehicle Revolution

Nepal has emerged as a global leader in electric vehicle adoption, demonstrating how green finance mechanisms can catalyze rapid market transformation. In fiscal year 2024-25, electric vehicles accounted for 73-76% of all new four-wheeler imports [Department of Customs, Government of Nepal, 2025]—the second-highest EV sales share globally, behind only Norway. This represents an extraordinary leap from just 236 EV imports in 2019-20.

Table 3.4: Electric Vehicle Adoption in Nepal (2021-2025)

Fiscal Year	Four-Wheeler EV Imports	Year-on-Year Growth	EV Share of 4-Wheeler Imports
FY 2021-22	~1,700	-	~15%
FY 2022-23	~4,050	+138%	~35%
FY 2023-24	11,701	+189%	~56%
FY 2024-25 (H1)	7,349	Continued growth	73-76%

Source: Department of Customs; Nepal Economic Forum; Ember Global EV Data Explorer 2025

This transformation was enabled by a combination of green finance mechanisms: favourable tax treatment (10-15% customs duty on EVs versus 200%+ on conventional vehicles), bank financing up to 90% of vehicle cost, and rapid expansion of charging infrastructure from fewer than 50 stations in 2020 to over 1,250 by mid-2025. Bagmati Province mandated that all new taxis be electric from 2024 onward, and Sajha Yatayat plans to add 100 electric buses in FY 2082/83.

Hydropower and Renewable Energy Financing

Nepal's banking sector has channelled significant green lending into hydropower the backbone of the country's 90%+ renewable electricity mix. The Netherlands Development Finance Company (FMO) has collaborated with NMB Bank on renewable energy and hydropower financing, while IFC provided a USD 25 million loan to NMB [International Finance Corporation, 2020] in 2020 to finance green projects and SMEs, with the goal of expanding NMB's SME portfolio to over USD 1 billion by 2025 and generating 50,000 additional jobs.

The government's Energy Development Roadmap 2081 targets 28,500 MW by 2035 (Government of Nepal, 2025), requiring an estimated USD 46.5 billion in investment. Funding is expected from government sources, domestic banks, foreign direct investment, climate financing, and Nepali diaspora bonds a direct link to the Alternative Finance Mobilization Bill's objectives. In 2025, Nepal and India signed an agreement to construct new 400kV transmission lines to increase cross-border electricity trade capacity, with India targeting 10,000 MW imports from Nepal over the coming decade.

3.6 Regulatory Environment and Institutional Framework

Nepal's green finance regulatory architecture operates across multiple institutions with increasingly coordinated mandates. Nepal Rastra Bank leads on banking sector regulation through the ESRM Guidelines and Green Finance Taxonomy (Nepal Rastra Bank, 2024), while the Securities Board of Nepal (SEBON) governs capital market instruments including green bonds. The Ministry of Finance coordinates fiscal incentives, and the Ministry of Forests and Environment provides environmental policy alignment.

Tax and Fiscal Incentives

Current fiscal support for green investment includes income tax holidays and reduced rates for hydropower projects (typically full exemption for an initial period followed by reduced rates), customs and VAT concessions on imported electro-mechanical equipment for power projects, reduced customs and excise duties on electric vehicles, batteries, and solar equipment, and emerging concessions for green hydrogen technologies. However, these incentives are not yet systematically tied to taxonomy-based definitions of "green," creating an opportunity for the Alternative Finance Mobilization Bill to establish clearer fiscal criteria aligned with the Green Finance Taxonomy [Nepal Rastra Bank, 2024].

Disclosure and Reporting Requirements

The Green Finance Taxonomy (Nepal Rastra Bank, 2024) provides standardized templates for financial institutions to report green, amber, and red exposures to supervisors. NRB has begun collecting ESRM reports from commercial banks, and SEBON's corporate governance rules require listed companies to

disclose information on business activities and risk factors. However, there is not yet a single mandatory ESG reporting standard for all listed entities an area where international trends (EU Corporate Sustainability Reporting Directive, IFRS S1/S2 sustainability standards) are pushing rapid evolution.

3.7 Challenges and the Way Forward

Despite significant progress, Nepal's green finance agenda faces several practical constraints that must be addressed to scale effectively.

Capacity Constraints

Financial Institution Capacity: Many banks and financial institutions lack sufficient personnel and familiarity with climate-relevant technologies' risks and opportunities, nudging credit decisions toward traditional sectors. The Green Finance Taxonomy itself treats awareness and capacity-building as a cross-cutting need across actors.

Project Pipeline Bankability: Many project developers, including municipalities, cannot consistently develop proposals that commercial financiers find investable due to limited financial structuring expertise and inability to articulate risk, cashflows, and credible impact metrics to investment committee standards.

Verification Costs: High transaction costs for green certification and ongoing monitoring have been identified as barriers to scaling green investment vehicles. Building local verification capacity, including a recognized list of verifiers, is essential to reduce these costs.

Strategic Priorities

The way forward requires action on multiple fronts. First, scale training and supervisory expectations around climate and environmental risk appraisal, building on NRB's ESRM framework. Second, create a project-preparation and pipeline function to help municipalities and private developers bring investment-ready projects with standardized financial models, procurement plans, and impact metrics. Third, reduce verification friction by supporting local verifiers and providing targeted subsidies for external review costs for first-time green bond issuers.

The Alternative Finance Mobilization Bill provides a crucial enabling mechanism. The proposed Alternative Development Finance Fund can support co-investment structures bringing DFIs and private investors into taxonomy-aligned assets, and de-risking tools (first-loss layers, partial guarantees, results-based components) that correct the "high risk, low return" perception and crowd in private capital. This aligns with international best practice of using public funds strategically to internalize environmental externalities and reduce risk perceptions inhibiting green investment.

Green finance in Nepal has evolved from a nascent concept to an increasingly operational framework, anchored by the Green Finance Taxonomy 2024, the ESRM Guidelines, and the historic NIFRA green bond issuance. The dramatic success of electric vehicle adoption with Nepal achieving the world's second-highest EV sales share demonstrates that well-designed green finance mechanisms can catalyse rapid market transformation.

Looking ahead, the integration of green finance principles into the Alternative Finance Mobilization Bill's implementation will be critical. By requiring taxonomy alignment for funded projects, embedding ESG considerations into fund governance, and developing standardized reporting frameworks, Nepal can ensure that alternative financing genuinely advances both development objectives and climate commitments. The USD 46 billion climate-smart investment opportunity (IFC, 2020) identified by IFC remains within reach but realizing it requires continued regulatory innovation, capacity building, and strategic deployment of public resources to de-risk and scale private green investment.

CHAPTER 4

Blended Finance

4.1 The Imperative for Blended Finance

The Global Development Financing Crisis

The international development community confronts an unprecedented financing challenge. When the Sustainable Development Goals were adopted in 2015, the annual financing gap for developing countries was estimated at USD 2.5 trillion. A decade later, this gap has not narrowed it has widened dramatically. The 2024 Financing for Sustainable Development Report estimates the current annual SDG financing gap at USD 2.5-4 trillion, representing a 60% increase from 2015 levels. Without fundamental reform of global financing architecture, the OECD projects this gap could swell to USD 6.4 trillion annually by 2030 (OECD, 2025) the very year the SDGs are meant to be achieved.

Several factors have driven this expansion. Climate change has increased financing needs for both mitigation and adaptation, adding an estimated USD 1.4 trillion annually to developing country requirements. The COVID-19 pandemic depleted fiscal buffers and increased debt burdens across low- and middle-income countries. Geopolitical fragmentation has disrupted supply chains and investment flows. The 2024 opening of the Global Emerging Markets Risk Database (GEMs) revealed that actual default rates in emerging markets are significantly lower than commonly perceived yet this finding has not yet translated into commensurate capital flows.

Official Development Assistance (ODA), while reaching a record USD 223 billion in 2023, covers less than 6% of the financing gap. More concerning, the OECD projects a 9-17% decline in ODA for 2025 [OECD, 2025] following a 9% drop in 2024, as major donors including the United States, United Kingdom, Germany, and France have announced budget cuts. Closure of USAID one of the most frequent investors in blended finance among donor agencies has further disrupted the development finance landscape.

Table 4.1: Evolution of the Global SDG Financing Landscape

Indicator	2015	2020	2024	2030 (Projected)
Annual SDG Financing Gap	USD 2.5 trillion	USD 3.7 trillion	USD 4.0 trillion	USD 6.4 trillion
Official Development Assistance	USD 146 billion	USD 162 billion	USD 223 billion	USD 190-200 billion
Gap Coverage by ODA	5.8%	4.4%	5.6%	<3.5%
Private Finance Mobilized (DFIs)	USD 15 billion	USD 48 billion	USD 68 billion	Target: USD 200B+
Climate Finance Needs (Annual)	USD 0.4 trillion	USD 0.8 trillion	USD 1.4 trillion	USD 2.0+ trillion
Blended Finance Deals (Cumulative)	~400	~800	1,123	~1,500+
Total Blended Finance Volume	~USD 80 billion	~USD 150 billion	USD 213 billion	~USD 300 billion

Source: OECD Global Outlook 2025; UN FSDR 2024; Convergence State of Blended Finance 2024; Climate Policy Initiative

Against this backdrop, the arithmetic is clear: public resources alone cannot close the financing gap. Global private financial assets exceed USD 400 trillion, with approximately 21% held in developing countries. Redirecting even a small fraction of these assets toward sustainable development could transform financing prospects. The Convergence database has recorded 1,123 blended finance transactions

(Convergence, 2024) totalling USD 213 billion demonstrating proof of concept but also highlighting how far the market must scale. This is the fundamental premise of blended finance: using limited public and philanthropic resources strategically to mobilize multiples of private capital that would not otherwise flow to development objectives.

Blended Finance: Concepts and Principles

OECD DAC Definition (2025 Guidance)

Blended finance is the strategic use of development finance and philanthropic funds to mobilize additional private capital flows to emerging and frontier markets, resulting in positive outcomes for investors as well as for local economies, people, and the environment. The goal is not to subsidize private investors, but to optimize the allocation of risk and return so that commercially viable investments can advance in sectors and geographies where they would not otherwise occur.

The OECD definition emphasizes three critical elements. First, blended finance is strategic—it deploys concessional resources purposefully to address specific market failures, not as general subsidies. Second, it aims to mobilize additional private capital that would not otherwise invest, ensuring 'additionality' rather than simply substituting for commercial finance. Third, it seeks positive outcomes for both investors (appropriate risk-adjusted returns) and development objectives (measurable impact).

The DFI Working Group's complementary definition focuses on the operational dimension: blended finance combines 'concessional finance from donors or third parties alongside DFIs' normal own-account finance and/or commercial finance from other investors, to develop private sector markets, address the SDGs, and mobilize private resources.' This framing highlights the layered capital structure typical of blended transactions, where different investors accept different risk-return profiles based on their mandates and constraints.

The Leverage Question: Evidence on Mobilization Effectiveness

A critical question for blended finance practitioners is: how much private capital can be mobilized per dollar of concessional capital? Convergence's analysis of 340 transactions found an average leverage ratio of 4.1 (Convergence, 2024) meaning USD 4.10 of commercial capital is mobilized for every USD 1 of concessional capital. However, this headline figure obscures important nuances:

Table 4.2: Blended Finance Leverage and Mobilization Ratios

Metric	Definition	Average Ratio	Implication
Overall Leverage Ratio	Commercial capital per \$1 concessional	4.1x	Concessional capital unlocks 4x commercial
Private Sector Mobilization	Private capital per \$1 concessional	1.8x	Only 44% of commercial is truly private
MDB/DFI Commercial Share	DFI commercial in leverage ratio	2.3x	56% of 'commercial' is other DFI capital
Climate Mitigation Leverage	For deals >\$500M with DFI presence	5.9x	Large climate deals show higher leverage
Without DFI Presence	Private mobilization without DFIs	0.8x	DFIs critical for mobilization
Latin America Average	Regional highest leverage	4.7x	Regional variation significant
South Asia Average	Regional leverage ratio	3.5x	Below global average

Source: Convergence Blended Finance Leverage Ratio Brief 2024; State of Blended Finance Climate Edition 2024

The private sector mobilization ratio of 1.8x significantly lower than the 4.1x overall leverage reveals that much of the 'commercial' capital mobilized by concessional finance comes from other development

finance institutions rather than truly private sources. As the Overseas Development Institute notes, every USD 1 of public money mobilizes less than USD 0.75 of private capital in developing countries (and only USD 0.37 in low-income countries (Overseas Development Institute, 2024). This gap between aspiration and performance underscores the need for more strategic structuring, standardized instruments, and coordinated approaches.

Why Blended Finance is Essential for Nepal

Nepal presents a compelling case for blended finance intervention. The country faces a convergence of development challenges that make purely commercial financing insufficient, while simultaneously offering investment opportunities that with appropriate de-risking can deliver both returns and impact.

Nepal's Development Financing Challenge: Key Statistics

Total SDG Investment Need (2024-2030): NPR 299.65 trillion (~USD 22.3 billion annually) Annual SDG Financing Gap: NPR 755 billion (11.1% of GDP) Public Sector Expected Contribution: 57.5% of total Private Sector Expected Contribution: 34.35% of total Infrastructure Share of Total Need: >50% Climate Finance Needs (to 2050): USD 121 billion Climate-Smart Investment Opportunity: USD 46 billion (2018-2030) GCF Finance Accessed: USD 112 million (vs. Mongolia USD 468 million) National Planning Commission SDG Financing Strategy 2024-2030; IFC; Green Climate Fund

The National Planning Commission's updated SDG Financing Strategy reveals that Nepal requires approximately NPR 299.65 trillion to meet SDGs between 2024 and 2030 averaging NPR 30.23 trillion (approximately USD 22.3 billion) annually. The largest investment needs are in industry, innovation, and infrastructure, followed by clean energy and poverty eradication. Despite planned contributions from the public sector (57.5%), private sector (34.35%), cooperatives/NGOs (4.18%), and households (3.95%), an annual shortfall of NPR 755 billion (National Planning Commission, 2024) persists representing 11.1% of GDP. This gap is especially acute in infrastructure, sustainable cities, education, healthcare, and water/sanitation.

To achieve middle-income status by 2030, the government's 16th Periodic Plan estimates total investment needs of USD 81.71 billion, with over 65% expected from the private sector. World Bank analysis suggests Nepal needs 10-15% of GDP annually for infrastructure investment over the next decade yet actual capital spending has averaged only 3.3% of GDP, with just 71-81% of budgeted allocations disbursed. This execution gap, combined with the financing gap, creates a dual constraint that blended finance can address.

Table 4.3: Nepal's Sectoral Investment Needs and Financing Gaps

Sector	Investment Need (to 2030)	Gap Estimate	Blended Finance Relevance
Hydropower Development	USD 46.5 billion (28,500 MW target)	USD 30+ billion	Very High - Long tenor, construction risk
Transmission Infrastructure	USD 3-5 billion	USD 2+ billion	High - NEA counterparty risk
Transport (Roads, Rail)	NPR 500+ billion	NPR 200+ billion	High - PPP structures needed
Water & Sanitation	NPR 200+ billion	NPR 80+ billion	Medium - Municipal capacity gaps
Climate Adaptation	USD 121 billion (to 2050)	USD 100+ billion	Very High - Public goods nature
MSME Finance	NPR 500+ billion	NPR 200+ billion	High - Perceived risk barrier
Agriculture Value Chains	NPR 100+ billion	NPR 40+ billion	Medium - Fragmented actors

Source: National Planning Commission; NEA Energy Development Roadmap 2081; IFC Nepal Assessment; Government of Nepal Second NDC

Nepal's specific investment barriers create clear opportunities for blended finance intervention. The absence of a sovereign credit rating compounds foreign investor risk perception. Currency volatility NPR has depreciated approximately 40% against USD over the past decade—creates uncertainty for projects with foreign currency obligations. Complex and lengthy approval processes deter time-sensitive private capital. Political transitions create regulatory uncertainty. These barriers are not insurmountable; they are precisely the risks that blended finance instruments are designed to address.

Connecting to Climate and Green Finance Frameworks

For Nepal, the USD 121 billion climate finance needed through 2050 cannot be met through ODA or public budgets alone it requires mobilizing private capital at scale. The Nepal Green Finance Taxonomy 2024 provides the classification framework that determines which projects qualify as 'green' and thus eligible for concessional support. Blended finance is the operational mechanism that connects climate/green finance demand with private capital supply.

The linkage operates at multiple levels. At the classification level, the Taxonomy's three-tier system (Green/Amber/Red) determines which activities merit concessional intervention. At the due diligence level, NRB's ESRM Guidelines establish minimum E&S risk management requirements that blended structures must meet. At the reporting level, the Taxonomy's disclosure templates enable tracking and verification of green claims. At the coordination level, alignment between domestic frameworks and international standards (ICMA Green Bond Principles (International Capital Market Association, 2021), Climate Bonds Initiative) enables access to global climate capital.

4.2 Blended Finance Instruments

Blended finance operates through a diverse toolkit of instruments, each designed to address specific market failures and investor constraints. The OECD's analysis of private finance mobilization from 2020-2023 identifies the most effective instruments: direct investment in companies and special purpose vehicles (29% of mobilized capital), guarantees (23%), syndicated loans (19%), shares in collective investment vehicles (13%), and credit lines (11%). Understanding how these instruments function and when to deploy them is essential for designing effective blended structures.

Concessional Loans and Grants

Concessional loans debt provided at below-market interest rates, extended tenors, or grace periods serve as the foundational instrument of blended finance. By reducing the weighted average cost of capital (WACC), concessional debt directly improves project financial viability. For infrastructure projects with 25-30 year operational lives, concessional long-tenor debt (15-20 years) from multilateral development banks can reduce WACC by 150-300 basis points compared to purely commercial structures.

The mechanics of concessional impact project economics significantly. Consider a 100 MW hydropower project in Nepal with total capital cost of NPR 15 billion (approximately USD 112 million). Under a purely commercial structure with 70:30 debt-equity, 10-year debt tenor, and 11% interest rate, the project might achieve equity IRR of 12-14% below typical investor hurdles. Introducing 30% of total debt from a DFI at 7% interest with 18-year tenor could improve equity IRR to 17-20%, making the project attractive to commercial co-investors.

Table 4.4: Impact of Concessional Finance on Project Economics (Illustrative)

Parameter	Commercial Only	With 30% Concessional	Impact
Senior Debt Interest Rate (Blended)	10-12%	8-9%	↓ 200-300 bps
Weighted Average Debt Tenor	8-10 years	12-15 years	↑ 4-5 years
Grace Period	1-2 years	3-4 years	↑ 2 years
Weighted Average Cost of Capital	12-14%	9-11%	↓ 250-350 bps

Equity IRR (Target)	12-15%	17-22%	↑ 500-700 bps
Debt Service Coverage Ratio (Min)	1.15-1.25x	1.35-1.50x	↑ 0.20-0.25x
Project NPV Improvement	Baseline	+15-25%	Significant uplift

Source: IFC Blended Finance Analysis; Author calculations based on typical Nepal hydropower parameters

Grants play a complementary role, typically funding project preparation, technical assistance, and viability gap financing. For early-stage projects, grants covering feasibility studies, environmental and social impact assessments, and legal structuring can transform conceptual ideas into investment-ready opportunities. The World Bank estimates that every USD 1 spent on project preparation (World Bank, 2024) can unlock USD 100 in investment a leverage ratio that justifies substantial grant deployment for pipeline development. In Nepal's context, the project preparation gap is particularly acute: ADB notes that only 71% of budgeted capital allocations are disbursed, partly due to inadequate project readiness.

Guarantees and Risk-Sharing Mechanisms

Guarantees transfer specific risks from private investors to entities better positioned to absorb them typically DFIs, multilateral agencies, or governments. Unlike concessional loans that reduce cost, guarantees address risk directly, enabling commercial lenders to participate in transactions they would otherwise decline. Convergence data shows that in climate financing deals exceeding USD 500 million, when DFIs and MDBs are present, USD 1 in concessional capital can mobilize USD 5.9 in private sector financing; without these institutions, this drops to USD 1 or less.

Several guarantee types are relevant for Nepal's context:

Table 4.5: Guarantee Instruments for Nepal Infrastructure

Guarantee Type	Risk Covered	Provider Examples	Nepal Application	Typical Coverage
Partial Credit Guarantee (PCG)	Default regardless of cause	IDA, GuarantCo, USAID DCA	Lower Solu (GuarantCo NPR 2.78B)	50-90% of debt
Partial Risk Guarantee (PRG)	Government/regulatory breach	World Bank, ADB	NEA payment obligations	Specific risks only
Political Risk Insurance (PRI)	Expropriation, war, transfer	MIGA, ATI	Upper Trishuli-1 (USD 135M)	Up to 90% equity
Currency Guarantee	FX depreciation beyond threshold	TCX, DFI treasuries	Limited in Nepal	Specified band
Portfolio Guarantee	MSME/SME loan portfolio losses	IFC, bilateral programs	SME lending programs	First-loss tranche

Source: MIGA; GuarantCo; IFC; World Bank; TCX Fund

First-Loss Capital and Subordination

First-loss capital represents the highest-risk tranche in a blended structure, absorbing initial losses before any senior investor bears impairment. By accepting this subordinated position, DFIs or philanthropic investors create a 'cushion' that significantly de-risks commercial participation. The mechanics are straightforward: if a project suffers losses of up to, say, 15% of total capital, the first-loss provider absorbs the entire impact while senior lenders remain whole.

The International Development Association Private Sector Window (IDA-PSW) has emerged as a major provider of first-loss capital for projects in IDA-eligible countries including Nepal. The IDA-PSW comprises several facilities: the Blended Finance Facility (BFF) combines concessional IDA funds with IFC investments; the Local Currency Facility provides hedging for currency risk; and the MIGA Guarantee Facility provides political risk coverage. For Nepal's Upper Trishuli-1 [International Finance Corporation,

2020] project, IDA-PSW deployed over USD 100 million specifically to absorb risks associated with the project's long development period.

Technical Assistance and Project Preparation

Technical assistance addresses a fundamental constraint in developing country infrastructure: the shortage of bankable projects. CrossBoundary (2024) observes that 'virtually every successful deal in emerging markets involves some form of blended finance instrument'—and technical assistance is often the starting point. TA facilities fund feasibility studies, engineering designs, environmental/social assessments, legal structuring, financial modeling, and procurement support.

The project preparation gap is acute globally (estimated USD 30-40 billion annually) and particularly severe in Nepal. Only 10-20% of projects that begin preparation ultimately reach financial close. Reasons include inadequate feasibility analysis, poor financial structuring, insufficient E&S due diligence, and weak institutional capacity. The Alternative Energy Promotion Centre (AEPC), as Nepal's first GCF-accredited Direct Access Entity, can channel TA grants to build the pipeline of bankable climate projects.

Currency and Political Risk Instruments

Currency risk represents a particularly acute challenge for Nepal infrastructure. Most large projects generate revenues in Nepali Rupees while debt obligations may be denominated in foreign currency (USD, EUR, JPY). The NPR-USD exchange rate has moved from approximately 75 (2010) to 135+ (2025)—a depreciation of over 80%. For a hydropower project with 20-year debt, unhedged currency exposure can transform a financially viable project into distressed assets.

Blended finance addresses currency risk through several mechanisms. Local currency lending by DFIs (such as ADB's planned NPR-linked bonds) eliminates FX risk entirely but requires DFIs to accept local currency exposure. Currency hedging facilities (such as TCX Fund) convert foreign currency debt to local currency at subsidized rates. Partial indexation of power purchase agreements to foreign currency as permitted under NEA's 2017 guidelines for Upper Trishuli and Rasuwa-Bhotekoshi—creates natural hedges. The Alternative Finance Mobilization Bill's provisions for Fund investment in foreign currency instruments could expand hedging options.

4.3 Blended Finance in Nepal: Evidence from Practice

Nepal's experience with blended finance, while still nascent, provides valuable evidence on what works and what challenges remain. This section examines major blended transactions in detail, assesses their effectiveness, and draws lessons for scaling blended finance under the Alternative Finance Mobilization Bill.

Hydropower: Flagship Blended Finance Applications

Hydropower represents Nepal's most significant application of blended finance, reflecting the sector's combination of large capital requirements (USD 1.5-2 million per MW), long development timelines (5-8 years), and strategic national importance. With 83,000 MW theoretical potential [Asian Development Bank, 2019] and less than 4,000 MW installed, the sector offers enormous investment opportunities alongside significant risk.

Upper Trishuli-1 (216 MW): Nepal's Landmark Blended Finance Transaction

Developer: Nepal Water and Energy Development Company (NWEDC, majority Korean-owned)
 Capacity: 216 MW run-of-river hydropower Total Project Cost: USD 650 million FINANCING STRUCTURE: • IFC-Organized Senior Debt: USD 453 million (9 international co-lenders) • MIGA Political Risk Guarantee: USD 135 million (covers expropriation, breach of contract, transfer restriction) • IDA-PSW Blended Concessional Finance: USD 100+ million (first-loss position absorbing development period risks) • Climate Finance: Finland-IFC Blended Finance for Climate Program; Climate Investment Funds (addresses GLOF risk) • Developer Equity: Remainder CONTRACTUAL STRUCTURE: • 30-year Power Purchase Agreement with NEA • Partially dollar-denominated tariff (addresses currency risk) • Fixed-price EPC contract with experienced contractor EXPECTED IMPACT: Power for 9 million people; largest FDI in Nepal's energy sector; demonstration effect for subsequent projects

The UT-1 transaction architecture addresses multiple investor concerns simultaneously. The MIGA guarantee covers political risks that foreign equity investors particularly fear expropriation, breach of contract, and transfer restriction. The IDA-PSW first-loss position absorbs early-stage development risks. The 30-year PPA provides revenue certainty, while partial dollar-denomination of tariffs addresses currency concerns. The inclusion of climate finance for GLOF risk directly connects to adaptation priorities discussed in Chapter 3.

The World Bank-ADB collaboration on Upper Arun (1,061 MW, USD 1.75 billion) and Dudh Koshi (635 MW, ~USD 1.2 billion) represents the next generation of Nepal hydropower blended finance. The December 2023 MOU between the institutions—the first following the Marrakesh MDB joint statement—targets three areas: country-level collaboration, co-financing, and joint climate action. For Upper Arun, international financiers are expected to contribute USD 750 million (including USD 500 million from World Bank (Asian Development Bank & World Bank, 2023), with HIDCL-led domestic financiers providing USD 400 million.

Table 4.6: Major Blended Finance Hydropower Projects in Nepal (Detailed)

Project	MW	Cost (USD M)	Lead DFI	Blended Elements	Status
Upper Trishuli-1	216	650	IFC	MIGA PRI \$135M; IDA-PSW \$100M+; Climate funds	Construction
Lower Solu	82	~150	FMO	GuarantCo NPR 2.78B (90% coverage)	Operational
Upper Arun	1,061	1,750	World Bank	WB \$500M; domestic consortium \$400M	Preparation
Dudh Koshi	635	~1,200	ADB	ADB-led international consortium	Preparation
Manang-Marsyangdi	135	~175	China Exim	Exim Bank concessional lending	Construction
90 MW Marsyangdi	90	~115	Domestic banks	EPF participation; bank consortium	Financial close
Super Tamor	166	~260	Domestic	NPR 34.59B bank financing	Development

Source: IFC; World Bank; ADB; NEA; Project announcements and documentation

Green Bonds: Blended Finance in Capital Markets

As documented in Chapter 4, Nepal's emerging green bond market exemplifies how blended finance principles apply to capital market instruments. The two landmark issuances of 2025 demonstrate different blended approaches, each with lessons for scaling sustainable finance.

The NMB Bank USD 60 million [IFC, 2025] green bond, which is currently awaiting approval can become a game changer investor model. IFC served as anchor, with British International Investment (BII) and MetLife as co-investors. The DFI anchor served multiple blended functions: validated issuer credit quality for unfamiliar investors; demonstrated green bond viability in Nepal's market; provided comfort through association with rigorous IFC E&S standards; and signalled market development intent. The bond will be the first private placement by international investors in a local issuer will finance renewable energy and green projects creating 8,000 jobs.

The NIFRA Green Energy Bond NPR 5 billion, June 2025 took a different approach, relying on technical assistance rather than anchor investment. GGGI and KOICA provided grant-funded support to develop NIFRA's Green Bond Framework, ensuring alignment with ICMA Green Bond Principles and Nepal Green Finance Taxonomy (Nepal Rastra Bank, 2024). Sustainable Fitch provided a Second Party Opinion with 'Excellent' rating. NRB approved the framework on April 2025; SEBON registered the issuance in May 2025. The 3.8x oversubscription demonstrated strong domestic appetite when proper verification structures are in place.

Donor-Supported Blended Finance Facilities

Table 4.7: Donor-Supported Blended Finance Facilities Operating in Nepal

Facility	Donor(s)	Size	Instruments	Results (to 2025)	Sectors
NREP/SECF	UK Government	~GBP 25M	Partial guarantees, results-based grants	GBP 20M+ mobilized; 22 MW solar; 50+ EV chargers; 45,000 HH e-cooking	RE, e-mobility
Udaya (Koshi)	Swiss SDC 61.7%, Province 38.3%	NPR 1.149B	NPR 600M guarantee fund; NPR 280M challenge fund	Launched 2024; targeting MSMEs	SMEs
Finance for Growth	World Bank	USD 150M	Credit line to BFIs for SME lending	Expanding green SME finance	SMEs, green
IFC-NMB Partnership	IFC	USD 25M (2020)	Credit line, advisory	Target: USD 1B portfolio; 50,000 jobs	SMEs
GCF Readiness	Green Climate Fund	~USD 5M	TA grants	USD 112M accessed; AEPC accredited as DAE	Climate
GLOF Risk Reduction	GCF	USD 36.1M grant	Grant + GoN co-finance USD 14M	~USD 50M total; adaptation infrastructure	Adaptation

Source: NREP; SDC; World Bank; IFC; GCF; Program documentation

The Nepal Renewable Energy Program (NREP), launched 2019 by AEPC with UK Government support, operates the Sustainable Energy Challenge Fund (SECF). SECF provides partial guarantees (reducing bank exposure to unfamiliar technologies) and results-based grants (incentivizing adoption). By March 2025, it had mobilized GBP 20+ million [Alternative Energy Promotion Centre, 2024] private investment—demonstrating that relatively modest concessional resources can catalyze significant commercial capital when deployed strategically.

The Udaya program in Koshi Province (launched 2024) represents Nepal's first provincial-level blended finance initiative. The Provincial Guarantee Fund (NPR 600 million (Swiss Agency for Development and

Cooperation, 2024) de-risks commercial bank lending to MSMEs; the Challenge Fund (NPR 280 million) provides matching grants for business development. This provincial focus enables tailoring to local conditions while building subnational capacity—relevant for the federalized structure under which Nepal's Alternative Finance Mobilization Bill will operate.

4.4 Designing Bankable Blended Finance Structures

The OECD's 2025 Guidance acknowledges that blended finance has 'not scaled as rapidly as hoped' and 'remained a cottage industry with largely bespoke and fragmented interventions.' Convergence identifies 12 proven Private Investment Mobilization Models [Convergence, 2024] (PIMMs)—tested structures that should be replicated rather than reinvented. This section provides practical guidance for structuring bankable blended transactions in Nepal's context.

Additionality: The Foundational Principle

Additionality ensuring concessional resources mobilize private capital that would not otherwise invest is the legitimating principle of blended finance. Without additionality, blended finance becomes a subsidy to investors who would have participated anyway. The OECD distinguishes three types:

Financial additionality exists when private investment would not occur without public participation. For Nepal infrastructure, where commercial banks face concentration limits (single borrower exposure capped at 25% of core capital), tenor constraints (typically 7-10 years maximum), and risk appetite limitations, DFI participation demonstrably enables transactions that would not proceed commercially.

Value additionality exists when public participation improves non-financial outcomes beyond commercial requirements higher E&S standards, better governance, stronger community engagement. IFC Performance Standards and ADB Safeguards impose requirements that commercial investors don't typically demand.

Development additionality requires measurable impact: jobs created, emissions avoided, communities served. The NMB green bond's 8,000-job target exemplifies development additionality with quantified outcomes.

Risk Assessment and Optimal Allocation

Table 4.8 Risk Allocation Framework for Nepal Infrastructure Blended Finance

Risk Category	Key Concerns in Nepal	Typical Allocation	Mitigation Instruments
Construction	Cost overruns (avg. 30-50%); delays (avg. 2-4 years); geological surprises	EPC contractor / Developer	Fixed-price EPC; insurance; contingency reserves; DFI supervision
Operational	Performance below design; O&M capacity gaps	Operator / Developer	O&M contracts with experienced operators; performance bonds
Offtake/ Revenue	NEA payment delays; demand uncertainty; tariff disputes	Government / DFI guarantees	Long-term PPA; sovereign guarantee; PRG; escrow accounts
Currency	NPR depreciation (40%+ over decade); volatility	Shared / Hedging facilities	FX hedging (TCX); local currency lending; indexed PPA; natural hedge
Political/ Regulatory	Policy changes; license revocation; expropriation	Government / MIGA	PRI (MIGA, ATI); PRG; stabilization clauses; international arbitration
Environmental/ Climate	GLOF; landslides; E&S compliance; climate impacts	Developer / Insurer / Climate funds	E&S management; insurance; climate adaptation finance; GCF support

Source: Authors analysis based on Nepal project experience and international best practice

Enabling Environment Requirements

Blended finance effectiveness depends critically on the enabling environment. Nepal has made progress but gaps remain:

Regulatory strengths: Nepal Green Finance Taxonomy [Nepal Rastra Bank, 2024] 2024 provides classification standards; SEBON recognizes green bonds as distinct categories; NRB ESRM Guidelines ensure E&S risk integration; Electricity Regulatory Commission provides power sector framework; PPIA 2019 establishes PPP legal basis.

Remaining gaps: Fiscal incentives not systematically linked to Taxonomy; limited local currency hedging; complex/lengthy approval processes (average infrastructure project ongoing 11+ years per NPC data); coordination challenges across NRB, SEBON, MoF, and sector regulators; project preparation funding insufficient; municipal/provincial capacity for PPPs underdeveloped.

4.5 Challenges, Risks, and Mitigation Strategies

Persistent Challenges

Pipeline inadequacy: The binding constraint is not capital availability but investment-ready projects. Nepal's limited GCF access (USD 112M vs. available resources) reflects this gap. With average infrastructure project duration exceeding 11 years and only 71% budget disbursement, project preparation and execution capacity must improve dramatically.

Capacity constraints: Financial institutions lack expertise in climate project appraisal, Taxonomy application, and blended structure design. NRB has initiated capacity building, but 'success depends on accelerated implementation and stronger collaboration' (Rising Nepal analysis).

Transaction costs and complexity: Blended finance involves multiple stakeholders, complex legal structures, and lengthy due diligence. Convergence notes blended finance has 'remained a cottage industry with largely bespoke [Convergence, 2024] and fragmented interventions.' For smaller projects, costs can be prohibitive.

Currency risk solutions: Despite progress (TCX, partial PPA indexation), local currency hedging remains inadequate for Nepal's infrastructure scale. The NPR's 40%+ depreciation over a decade creates material risk for projects with foreign currency debt.

Coordination gaps: Despite the WB-ADB MOU, development partner coordination remains imperfect. Risk of duplication, inconsistent standards, and missed co-financing opportunities persists.

Strategic Recommendations

1. Establish dedicated Project Preparation Facility: Create a grant-funded facility under the Alternative Development Finance Fund to transform conceptual projects into bankable transactions. Target preparation of 15-20 projects annually. Leverage GCF Readiness, bilateral TA, and PPIAF resources.
2. Develop standardized instrument templates: Create replicable structures for common transaction types (hydropower project finance, green bonds, MSME portfolio guarantees). Publish standard term sheets, model documents, and pricing frameworks. Adopt Convergence's proven Private Investment Mobilization Models (Convergence, 2024).
3. Build institutional capacity systematically: Launch NRB/BFI training programs on climate project appraisal and Taxonomy application. Develop local SPO/verification capacity. Support SEBON in supervising innovative instruments. Partner with GGGI, IFC advisory, and bilateral programs.
4. Strengthen currency risk solutions: Negotiate expanded TCX/DFI treasury facilities for NPR. Advocate for further PPA indexation. Explore ADB's proposed NPR-linked bonds. Develop domestic institutional investor base (EPF, CIT) for local currency infrastructure bonds.
5. Institutionalize DFI coordination: Build on WB-ADB hydropower MOU to establish a comprehensive

coordination mechanism. Map DFI pipelines; identify co-financing opportunities; harmonize E&S standards; create information-sharing platforms for project sponsors.

6. Link fiscal incentives to Taxonomy: Work with MoF/IRD to align tax incentives (holidays, customs, VAT) with Green Finance Taxonomy [Nepal Rastra Bank, 2024] classifications. Create consistent signals for investors that Taxonomy-aligned projects receive preferential treatment.

4.6 Way forward

Blended finance is neither panacea nor silver bullet. The OECD acknowledges it 'has mobilised relatively limited private finance' relative to needs; leverage ratios for private capital (1.8x) fall well short of ambitions; and implementation remains characterized by 'bespoke and fragmented interventions.' The Stanford FSI cautions that 'every USD 1 of public money mobilizes less than USD 0.75 of private capital [Overseas Development Institute, 2024] in developing countries.'

Yet for Nepal, where the gap between financing needs and public resources is acute—NPR 755 billion annually for SDGs; USD 121 billion for climate through 2050; 83,000 MW hydropower potential largely untapped—blended finance offers a practical pathway to crowd in private capital at meaningful scale. The evidence from Upper Trishuli-1 [International Finance Corporation, 2020], Lower Solu, the NMB and NIFRA green bonds, and donor-supported facilities demonstrates that well-structured blended transactions can mobilize commercial investment in Nepal's priority sectors.

The USD 650 million UT-1 project—with its layered structure of IFC-led senior debt, MIGA political risk guarantee, IDA-PSW first-loss capital, 30-year PPA, and climate finance—provides a template for subsequent transactions. The USD 1.91 billion [Asian Development Bank, 2025] ADB commitment (2025-2028), the World Bank's return to Nepal hydropower after 28 years, and the emerging green bond market signal that international capital is available—if bankable projects can be developed.

Success requires systematic attention to enabling conditions: project pipelines must be built through dedicated preparation facilities; institutional capacity must be strengthened across regulators and financial institutions; standardized instruments must replace bespoke structuring; regulatory frameworks must provide clarity and predictability; and development partners must coordinate rather than fragment. The Alternative Finance Mobilization Bill, combined with the Nepal Green Finance Taxonomy and climate finance frameworks established in earlier chapters, provides Nepal with the institutional foundation to make blended finance a core pillar of its development finance architecture.

The challenge now is implementation: translating frameworks into transactions that deliver both returns and impact at the scale Nepal's development ambitions require. This requires political will, institutional commitment, and sustained execution over years—not months. But the prize is substantial: unlocking the private capital needed to achieve middle-income status, meet SDG targets, and harness Nepal's enormous renewable energy potential for domestic prosperity and regional energy trade.

CHAPTER 5

Other Innovative Financing Mechanisms

5.1 Introduction: Expanding the Alternative Finance Toolkit

The preceding chapters have established the conceptual and operational foundations for alternative finance in Nepal. Chapter 3 quantified the climate finance imperative USD 121 billion required through 2050 to meet Nepal's Nationally Determined Contributions. Chapter 4 introduced the Nepal Green Finance Taxonomy 2024 as the classification framework determining which investments qualify as environmentally sustainable. Chapter 5 examined blended finance as the primary mechanism for deploying concessional capital to crowd in commercial investment, demonstrating through cases like Upper Trishuli-1 (USD 650 million) how layered structures can mobilize private capital for infrastructure.

This chapter completes the alternative finance architecture by examining five additional innovative mechanisms that address specific financing gaps and capital sources not fully captured by blended finance alone. These instruments carbon markets, impact investment, diaspora finance, development impact bonds, and municipal bonds each offer distinct pathways to mobilize capital from non-traditional sources. Together with the frameworks established in earlier chapters, they provide Nepal with a comprehensive toolkit to close the NPR 755 billion annual SDG financing gap identified by the National Planning Commission.

5.2 Carbon Markets and Carbon Finance

Carbon markets operationalize the climate finance frameworks discussed in Chapter 3 by creating tradeable instruments that monetize emission reductions. The global carbon pricing architecture has expanded significantly: compliance markets now cover approximately 28% of global emissions and mobilized over USD 100 billion for public budgets in 2024, while the voluntary carbon market (VCM) reached USD 1.7 billion and is projected to grow to USD 7-35 billion by 2030 (World Bank, 2025; MSCI, 2025). For Nepal, carbon markets represent a mechanism to generate revenue from the climate mitigation activities particularly hydropower, forestry, and clean cooking that form the core of its NDC commitments.

Nepal possesses significant institutional experience through the Clean Development Mechanism (CDM). The Biogas Support Program (Alternative Energy Promotion Centre, 2024), implemented by the Alternative Energy Promotion Centre (AEPC) beginning in 2005, became Nepal's first registered CDM project and demonstrated how carbon finance could be bundled with development co-benefits: reduced indoor air pollution, improved sanitation, and organic fertilizer production. The Programme of Activities (PoA) modality enabled bundling of micro-scale interventions biogas digesters, improved cookstoves, micro-hydro that would individually be too small for carbon market transaction costs. This experience built institutional capacity within AEPC and the Designated National Authority (now under the Ministry of Forests and Environment) that remains directly applicable to emerging carbon market mechanisms.

Article 6 of the Paris Agreement — New Carbon Market Architecture

Article 6.2 (Cooperative Approaches): Enables bilateral/multilateral trading of Internationally Transferred Mitigation Outcomes (ITMOs). Requires Corresponding Adjustments to prevent double counting—selling country deducts ITMOs from national inventory. Article 6.4 (Sustainable Development Mechanism): Successor to CDM with stricter environmental integrity. Generates A6.4 Emission Reductions under UN supervision. Includes mandatory credit cancellation for Overall Mitigation in Global Emissions (OMGE) and Share of Proceeds for adaptation finance. COP29 Milestone (November 2024): Finalized Article 6 rules after nine years of negotiation; announced global two-tier registry integrating voluntary and compliance systems for 2025 launch. Nepal Opportunity: Hydropower (grid emission displacement), REDD+ (45% forest cover), clean cooking (CDM legacy) can generate credits under these frameworks.

The finalization of Article 6 rules at COP29 (November 2024) creates new opportunities for Nepal to monetize emission reductions. Under Article 6.2, Nepal can enter bilateral agreements with buyer countries to transfer ITMOs from hydropower projects, with corresponding adjustments ensuring environmental integrity. Under Article 6.4, projects can generate credits through the centralized UN-supervised mechanism with stricter additionality requirements than CDM. Nepal's REDD+ program, supported by the World Bank's Forest Carbon Partnership Facility (FCPF), positions the country to access results-based payments for forest conservation—directly linked to the green finance taxonomy's recognition of sustainable forestry as a priority activity.

5.3 Impact Investment and ESG-Linked Financing

While blended finance focuses on using concessional capital to de-risk commercial investment in infrastructure, impact investment represents a broader movement to align all investment with social and environmental outcomes. The Global Impact Investing Network (GIIN) estimates the global impact investing market at USD 1.571 trillion in assets under management, managed by over 3,900 organizations worldwide a 21% compound annual growth rate since 2019 (GIIN, 2024). Critically, 94% of surveyed impact investors report that both financial and impact performance meet or exceed expectations, demonstrating that the trade-off between returns and impact is less pronounced than traditionally assumed.

Impact investment is governed by the Operating Principles for Impact Management (OPIM), which require investors to define strategic impact objectives, assess expected impact of each investment, and actively manage and monitor impact performance. The Impact Management Project (IMP) framework operationalizes measurement across five dimensions: What (the outcome achieved), Who (affected stakeholders), How Much (scale, depth, duration), Contribution (additionality attributable to the investment), and Risk (likelihood of variance from expectations). These frameworks align directly with the Environmental and Social Risk Management (ESRM) Guidelines issued by Nepal Rastra Bank (discussed in Chapter 4), which require financial institutions to assess non-financial risks in lending decisions.

Building Nepal's impact investing ecosystem requires addressing structural constraints. The pipeline of bankable impact projects remains limited; SMEs with high impact potential often lack the governance structures and reporting capacity required by institutional investors. Local fund managers and commercial banks have limited expertise in ESG integration and impact assessment. The regulatory environment particularly the Foreign Investment and Technology Transfer Act (FITTA) creates friction for foreign impact investors through complex FDI approval and profit repatriation processes. Addressing these constraints through technical assistance, capacity building, and regulatory reform would position Nepal to capture a larger share of the growing global impact investment market.

5.4 Diaspora Bonds and Remittance-Linked Finance

Nepal's remittance economy represents a distinctive asset for alternative finance mobilization. Remittances reached 26.89% of GDP in 2023 approximately USD 11 billion annually and among the highest ratios globally (world average: 5.13%). The first quarter of fiscal year 2025-26 saw remittance inflows of NPR 553 billion, a 35.4% year-on-year (Nepal Rastra Bank, 2025) increase, with monthly inflows exceeding NPR 200 billion for the first time (Kathmandu Post, 2025). This stable, counter-cyclical capital flow has been crucial for poverty reduction and balance of payments stability, but remains largely channelled into consumption and housing rather than productive investment.

International Diaspora Bond Experience

Israel: Development Corporation for Israel bonds have raised over USD 40 billion since 1951, representing a stable, long-term source of foreign financing that strengthens diaspora ties. India: Resurgent India Bonds (1998) raised USD 4.2 billion; India Millennium Deposits (2000) raised USD 5.5 billion—both issued during crisis periods to bolster foreign exchange reserves, demonstrating 'patriotic capital' mobilization during national need. Key Success Factors: Patriotic motivation leveraged through transparent linkage to national priority projects; guaranteed repatriation of principal and returns in foreign currency; preferential interest rates; trust-building through offshore SPV ring-fencing of proceeds.

The Non-Resident Nepali (NRN) Act, 2064 (2007) provides the legislative framework for diaspora investment, including guaranteed repatriation of investment principal, profits, and dividends in convertible foreign currency. Building on international precedents—Israel's USD 40+ billion raised through Development Corporation bonds since 1951; India's USD 11+ billion through strategically-timed diaspora bond issuances—Nepal could mobilize NRN capital through sovereign diaspora bonds earmarked for infrastructure projects aligned with the Green Finance Taxonomy.

Remittance-backed securities offer an additional innovation: securitizing future remittance flows through offshore Special Purpose Vehicles (SPVs) to access international capital markets at better rates than sovereign credit alone. With USD 11+ billion in predictable annual flows, Nepal's remittance stream could collateralize bonds for infrastructure financing, linking the Alternative Finance Mobilization Bill's provisions for innovative instruments with the country's distinctive diaspora economy.

5.5 Development Impact Bonds and Results-Based Financing

Development Impact Bonds (DIBs) apply the accountability principles embedded throughout this report from taxonomy verification to blended finance additionality requirements to social sector financing. Unlike traditional aid that pays for inputs and activities, DIBs are results-based financing instruments where private investors provide upfront working capital and assume financial risk, receiving repayment only if an Independent Evaluator verifies achievement of pre-agreed outcomes. Over 250 impact bonds have been launched globally across 30+ countries, with 24+ specifically targeting low- and middle-income countries (Brookings, 2024; INDIGO, 2024).

The DIB structure aligns incentives across stakeholders: Outcome Payers (governments or donors) pay only for verified success, transferring non-performance risk to investors; Service Providers receive flexible upfront funding that encourages innovation and adaptation; Private Investors seek both social and financial returns for assuming operational risk; Independent Evaluators ensure credibility through rigorous outcome verification. This architecture directly addresses a persistent challenge in development finance: ensuring that resources translate into measurable outcomes rather than merely funding activities.

For Nepal, DIBs offer compelling applications in sectors where outcome verification is feasible and accountability gaps are significant. In education, DIBs could fund remote-area literacy programs with payments linked to verified improvements in student test scores moving beyond enrolment metrics to learning outcomes. In maternal health, payments linked to reductions in mortality rates or increases in facility-based deliveries could incentivize last-mile service delivery. For returnee migrant workers a priority given Nepal's labour migration patterns DIBs could fund skills training with payments contingent on verified 6-12 month job retention rather than mere training completion. These applications would enable Nepal to transition from receiving aid to procuring verified development results.

5.6 Municipal Bonds and Subnational Financing

Nepal's federal transition created 753 local governments with constitutional authority to raise domestic debt under the Inter-Governmental Fiscal Management Act (Government of Nepal, 2017) (IGFMA), 2017 exclusively for capital expenditure and infrastructure development. Municipal bonds represent a market-based pathway to close critical infrastructure gaps in water supply, urban roads, sanitation, and solid

waste management that currently depend on volatile federal transfers. The key benefit is asset-liability matching: bond maturity can align with infrastructure asset life, enabling long-term capital planning independent of annual budgetary cycles.

However, practical implementation faces significant constraints. Secondary regulations under IGFMA remain incomplete; SEBON disclosure rules for municipal issuers are not finalized; and a standardized credit rating framework for local governments has not been operationalized. Most municipalities have weak Own-Source Revenue (OSR) bases particularly property tax collection that restrict debt capacity under prudential limits. Capital expenditure execution nationally averages only 63% of budgeted allocations, reflecting broader capacity constraints. Initial municipal bond issuances will likely require credit enhancement through partial guarantees from development finance institutions to build market confidence and attract institutional investors such as the Employees' Provident Fund and Citizens Investment Trust.

5.7 An Integrated Alternative Finance Architecture

This chapter has examined five innovative financing mechanisms that complement the blended finance toolkit established in Chapter 5. Each addresses specific capital sources and financing gaps: carbon markets monetize emission reductions from climate mitigation activities; impact investment channels the USD 1.5+ trillion global market toward measurable social and environmental outcomes; diaspora finance mobilizes Nepal's distinctive remittance economy (26.89% of GDP) for productive investment; development impact bonds ensure accountability through results-based payment structures; and municipal bonds enable subnational governments to access capital markets for infrastructure.

Table 5.1: Integration of Innovative Finance Mechanisms with Alternative Finance Architecture

Mechanism	Linkage to Earlier Chapters	Key Enablers Required
Carbon Markets	Monetizes NDC commitments; Taxonomy-aligned forestry/energy.	Article 6 authorization; MRV capacity; DNA strengthening
Impact Investment	Applies ESRM Guidelines; Complements DFI blending	FITTA reform; local fund manager capacity; SME pipeline
Diaspora Finance	Funds Taxonomy-aligned infrastructure; NRN Act operationalization	Trust mechanisms; SPV structures; preferential rates
Development Impact Bonds	Results-based accountability; Private capital mobilization	Outcome metrics; evaluator capacity; outcome payer commitment
Municipal Bonds	Subnational infrastructure finance; DFI credit enhancement	IGFMA bylaws; credit ratings; OSR strengthening

Source: Authors synthesis based on preceding analysis

Together with the Nepal Green Finance Taxonomy and blended finance instruments, these mechanisms provide Nepal with a comprehensive alternative finance architecture capable of mobilizing diverse capital sources concessional, commercial, diaspora, carbon, and subnational toward verified sustainable development outcomes. The Alternative Finance Mobilization Bill creates the legal infrastructure to operationalize these instruments; success will depend on building the institutional capacity, regulatory frameworks, and project pipelines required to translate frameworks into transactions at scale.

CHAPTER 6

Enabling Environment and Strategic Implementation Roadmap

6.1 From Framework to Implementation: The Policy Imperative

The preceding chapters have established the analytical foundation for alternative finance in Nepal. Chapter 3 quantified the climate finance imperative USD 121 billion required through 2050, with an annual financing gap of NPR 755 billion for SDG achievement. The report has introduced the Nepal Green Finance Taxonomy 2024 and Environmental and Social Risk Management (ESRM) Guidelines as classification and risk management frameworks. It has also examined blended finance instruments, demonstrating through Upper Trishuli-1 (USD 650 million) how concessional capital can crowd in commercial investment, and has expanded the toolkit to carbon markets, impact investment, diaspora finance, development impact bonds, and municipal bonds.

This section addresses the critical question: how does Nepal translate these frameworks into operational reality? The Alternative Development Finance Mobilization Bill 2025, establishes the institutional architecture an Alternative Development Finance Fund (ADFF) with NPR 100 billion authorized capital but legislative enactment alone is insufficient. Successful implementation requires a coherent enabling environment encompassing legal frameworks, institutional capacity, risk management instruments, and market infrastructure. This chapter provides a policy-grounded assessment of Nepal's current enabling environment, identifies binding constraints, and presents a phased strategic roadmap for alternative finance mobilization.

6.2 Legal and Regulatory Framework: Current State and Gaps

Core Financial Sector Legislation

Nepal's financial sector operates under a legal architecture designed primarily for traditional banking. The Nepal Rastra Bank Act 2002 and Bank and Financial Institutions Act (Government of Nepal, 2017) (BAFIA) 2017 govern monetary policy, licensing, capital adequacy, and prudential norms. These frameworks maintain systemic stability but create structural barriers for innovative financing models. Banks and financial institutions (BFIs) mobilize over 85% of financial assets, with lending heavily collateralized against real estate—limiting credit access for asset-light enterprises, startups, and SMEs that form the target market for alternative finance instruments.

The Securities Act (Government of Nepal, 2006) 2063 (2007) governs capital markets but does not distinguish between equity and debt instruments in issuance and trading processes, nor does it recognize the distinct features of alternative financing models. Crowdfunding, venture capital, private equity, and specialized investment funds either lack explicit recognition or operate under regulatory uncertainty. The First Amendment Bill 2081 proposed recognition of specialized investment funds and derivatives, representing positive movement, but operational clarity and investor protection mechanisms remain underdeveloped.

Key Regulatory Gaps for Alternative Finance

Crowdfunding: No explicit legal framework for equity or debt-based crowdfunding; no licensing requirements for platforms; no investor protection norms for small-ticket investments. Private Equity & Venture Capital: Restrictive lock-in periods (proposed increase from 1 to 2 years); no clear tax treatment or incentives for specialized investment funds. Digital Platforms & Fintech: Securities Act does not address digital fundraising platforms, blockchain-based securities, or tokenized assets. Cash-Flow Lending: No framework for cash-flow-based lending or intangible asset valuation; CIB data focuses on negative reporting (defaults) rather than comprehensive credit profiles. Regulatory Sandbox: No formal mechanism for controlled testing of innovative financing models under SEBON/ NRB supervision.

Public-Private Partnership Framework

Nepal faces an annual infrastructure financing gap of USD 4 to 5 billion, thus requiring private investment mobilization at a large scale. The Public-Private Partnership and Investment Act (Government of Nepal, 2019) (PPPIA) 2019 provides the legal foundation, but implementation has been modest: since the Investment Board Nepal (IBN) establishment in 2011, only 38 Public-Private Partnership (PPP) projects, totalling approximately USD 9 billion, have been approved over more than a decade. Critical gaps include: absence of detailed guidelines for risk allocation and dispute resolution; lack of structured fiscal support mechanisms (viability gap funding, guarantees) common in comparator countries like India and Bangladesh; and limited PPP unit capacity at provincial and local levels.

These constraints directly affect the blended finance and infrastructure bond instruments discussed in Chapter 5. Without clear risk allocation frameworks and fiscal support mechanisms, private investors cannot accurately price project risks, making Nepal's infrastructure pipeline less bankable than regional competitors.

The Alternative Development Finance Mobilization Bill 2025

The Alternative Development Finance Mobilization Bill 2025 represents Nepal's most significant legislative initiative to institutionalize alternative finance. The Bill establishes the Alternative Development Finance Fund (ADFF) as an autonomous corporate entity with authorized capital of NPR 100 billion and initial paid-up capital of NPR 25 billion, with 51% government ownership and remaining shares open to institutional investors including the Employees' Provident Fund (EPF) and Citizens Investment Trust (CIT). The Fund is authorized to mobilize resources through bonds, equity funds, remittance-linked instruments, and climate/green bonds—directly operationalizing the instruments analysed in Chapters 5 and 6.

Table 6.1: Alternative Development Finance Fund — Key Provisions

Provision	Specification	Linkage to Earlier Chapters
Authorized Capital	NPR 100 billion	Scale for blended finance (Ch. 5)
Initial Paid-Up Capital	NPR 25 billion (51% government)	First-loss capacity for crowding-in
Institutional Investors	EPF, CIT participation enabled	Domestic capital mobilization
Instrument Authority	Bonds, equity funds, remittance-linked, green bonds	Diaspora finance (Ch. 6), Green bonds (Ch. 4)
Target Sectors	Infrastructure, digital infrastructure, IT parks	Taxonomy-aligned activities (Ch. 4)
FX Bond Authority	International bonds in foreign currency (NRB approval)	Currency risk management
Risk-Sharing Mandate	Blended finance models for project de-risking	Blended finance structures (Ch. 5)

Source: *Alternative Development Finance Mobilization Bill 2025; Author analysis*

6.3 Institutional Capacity: Building the Implementation Infrastructure

Financial Sector Capacity

Effective alternative finance requires capabilities beyond traditional banking. Banks and financial institutions need expertise in project finance structuring, ESG risk assessment (per the ESRM Guidelines in Chapter 4), green bond issuance, and blended finance participation. Nepal's pioneering green bond issuances demonstrate emerging capacity: NMB Bank's private placement (USD 60 million with IFC, BII, and MetLife anchoring) and NIFRA's publicly listed energy bond (USD 36 million, 7-year maturity) required technical assistance from the Global Green Growth Institute (GGGI) and second-party opinions from Sustainable Fitch to achieve market credibility.

Credit rating agency capacity remains underdeveloped. While ICRA Nepal and CARE Ratings Nepal operate domestically, specialized methodologies for infrastructure project ratings, municipal creditworthiness (essential for municipal bonds per Chapter 6), and green bond frameworks require strengthening. The CIB's planned integration of microfinance and cooperative databases, alongside incorporation of alternative data sources and psychometric credit scoring, would expand credit access for SMEs currently excluded from formal finance.

Government Capacity: Project Preparation and Structuring

Nepal's 'public services gap' where regulatory frameworks exist but implementation capacity lags is particularly acute in project preparation. Government agencies often lack technical, financial, and legal expertise for complex PPP contracts, feasibility studies, and risk-sharing arrangements. Capital expenditure execution nationally averages only 63% of budgeted allocations, reflecting broader absorptive capacity constraints. The World Bank estimates that USD 1 invested in project preparation can leverage USD 100 in downstream investment making preparation facility establishment a high-priority intervention.

Provincial and local government capacity is especially limited. The 753 local governments created under federalism have constitutional authority to raise domestic debt under IGFMA 2017, but most lack the financial management systems, own-source revenue bases, and technical expertise required for municipal bond issuance. Standardized financial reporting using Nepal Public Sector Accounting Standards (NPSAS), property tax administration reform, and dedicated capacity building programs are prerequisites for subnational market access.

Demonstration Projects — Building Track Record

Nepal's alternative finance market has achieved several proof-of-concept milestones: Green Bonds: NMB Bank's private placement (USD 60M, April 2025) with IFC/BII/MetLife anchoring; NIFRA's publicly listed energy bond (USD 36M, June 2025) aligned with ICMA Green Bond Principles and Nepal Green Finance Taxonomy. Carbon Finance: USD 9.4 million results-based payment from World Bank FCPF (November 2025) for verified forest carbon reductions under REDD+—proof of concept for Article 6 participation (Chapter 6). Blended Finance: Upper Trishuli-1 (216 MW, USD 650M) with IFC first-loss guarantee enabling commercial bank participation (Chapter 5). Digital Finance: Prabhu Management dairy digitization achieved 600% usage increase among rural farmers, demonstrating scalability of innovative models. These successes provide replicable templates for scaling through inter-provincial learning platforms.

6.4 Risk Management and Investor Confidence

Political and Regulatory Risk

Political instability and regulatory uncertainty remain primary deterrents for foreign investors. Research indicates over three-quarters of investors in emerging markets encounter political risks; in severe cases like expropriation, nearly half withdraw existing investments. In Nepal, this risk manifests through inconsistent rule interpretation, discretionary document requests extending approval processes beyond legal timelines, and an average 910 days for commercial dispute resolution. These factors directly affect the bankability of infrastructure projects analysed in Chapter 5.

Mitigation requires multiple instruments: political risk guarantees from the Multilateral Investment Guarantee Agency (MIGA) for contract repudiation and adverse policy changes; formal Investor Grievance Redress Mechanisms (IGRM) to resolve disputes before litigation; and operationalization of the 'automatic route' for FDI approval (instant approvals up to NPR 500 million in non-restricted sectors). The dual-approval bottleneck—where both Department of Industry (DOI) and NRB must approve fund repatriation—requires streamlining as a high-priority reform.

Currency Risk Management

Foreign exchange volatility creates a fundamental barrier to alternative financing: project revenues are earned in NPR while international financing is denominated in foreign currency. The Hedging Regulation 2022 provides a framework for currency risk sharing, but remains ineffective—no hedging entity has been incorporated in Nepal. This gap prevents large-scale projects, particularly in hydropower, from accessing international debt markets on competitive terms.

Innovative solutions under development include: NPR-denominated loans where lenders bear exchange risk (permitted under NRB Bylaw Second Amendment, though interest rates tied to domestic commercial bank base rates may not reflect actual risk profiles); ADB's exploration of NPR-linked bonds for international investors; PPA tariff indexation mechanisms; and ADFF authorization to issue international bonds in foreign currencies, centralizing FX risk management at institutional rather than project level. Strengthening the market for currency swaps, forwards, and options—currently nascent—is essential for project cash flow stabilization.

Project Risk Allocation

Effective alternative financing requires robust frameworks allocating risks to parties best positioned to manage them. The blended finance structures in Chapter 5 demonstrate this principle: first-loss capital from DFIs absorbs initial losses, reducing risk to senior commercial lenders; Special Purpose Vehicles (SPVs) enable project-specific debt secured by identifiable revenue streams; EPC contracts with fixed prices and time-bound clauses mitigate construction risk; and Power Purchase Agreements (PPAs) with sovereign guarantees address offtake risk.

The Nepal Green Finance Taxonomy (Chapter 4) provides the transparency framework preventing greenwashing classifying activities as Green (Transformative), Amber (Transitional), or Red (Non-compliant). Mandatory disclosure requirements enable investors to verify taxonomy alignment; Green Bond Principles compliance (clear use of proceeds, external verification, impact reporting) ensures market integrity. Nepal is working toward establishing recognized local verifiers and independent auditors to provide second-party opinions, reducing reliance on international rating agencies.

6.5 Strategic Implementation Roadmap

Translating Nepal's alternative finance frameworks into operational impact requires a phased approach that sequences reforms, builds institutional capacity progressively, and generates demonstration effects that catalyse market development. The following roadmap integrates the instruments and frameworks into an actionable implementation strategy.

Phase 1: Foundation Building (Year 1-2)

The immediate priority is completing the legislative and regulatory foundation while building on existing momentum from demonstration projects.

Table 6.2: Phase 1 Implementation Priorities (Year 1-2)

Priority Area	Specific Actions	Responsible Entities	Success Metrics
Legislative Completion	Enact ADF Bill; finalize IGFMA secondary regulations; complete SEBON disclosure rules	Parliament, MoF, SEBON	Bill enacted; regulations gazetted
ADFF Operationalization	Establish Fund; secure EPF/CIT participation; hire technical team	MoF, ADFF Board	Fund capitalized; team in place
Green Bond Scaling	Replicate NMB/NIFRA models; build local SPO capacity; streamline NRB/SEBON approvals	NRB, SEBON, BFIs	3-5 additional green bonds issued
Taxonomy Implementation	Mandatory BFI reporting; NRB supervision integration; training programs	NRB, BFIs	All BFIs reporting taxonomy exposure
Regulatory Sandbox	Establish NRB/SEBON sandbox for crowdfunding, P2P, tokenized securities	NRB, SEBON	Sandbox operational; 5+ pilots
DFI Coordination	Operationalize WB-ADB MOU; establish joint pipeline identification	MoF, IBN, DFIs	Coordinated pipeline of 10+ projects

Source: Author synthesis based on preceding analysis

Phase 2: Market Development (Year 3-5)

With foundations in place, Phase 2 focuses on scaling successful models, developing new instruments, and building market infrastructure.

Table 6.3: Phase 2 Implementation Priorities (Year 3-5)

Priority Area	Specific Actions	Responsible Entities	Success Metrics
Blended Finance Scaling	Establish Project Preparation Facility; standardize instrument templates (PIMMs); anchor 5+ major projects	ADFF, DFIs, IBN	USD 1B+ mobilized; 4:1 leverage
Carbon Market Entry	Secure Article 6 authorization; build MRV capacity; pilot bilateral ITMOs	MoFE, AEPC	First ITMO transaction completed
Municipal Bond Pilot	Credit rating framework; pilot with 3-5 creditworthy municipalities; DFI guarantees	MoF, MOFAGA, SEBON	First municipal bonds issued
Diaspora Finance	NRN bond pilot; remittance securitization feasibility; SPV structures	MoF, NRB, NRN Association	USD 100M+ NRN capital mobilized
Impact Investment	FITTA streamlining; local fund manager incubation; SME pipeline development	DOI, NRB, DFIs	3+ impact funds operational
DIB Pilot	Design education/health DIB; secure outcome payers; pilot in 1-2 provinces	MoF, Line Ministries, Donors	First DIB contracted and funded

Source: Author synthesis based on preceding analysis

Phase 3: Market Maturation (Year 6-10)

Phase 3 targets market maturation with diversified instruments, institutional investors as regular participants, and Nepal established as a regional alternative finance hub.

Table 6.4: Phase 3 Vision and Targets (Year 6-10)

Dimension	Current State (2025)	Phase 3 Target (2035)	Key Enablers
Green Bond Market	2 issuances (~USD 96M)	20+ issuances (USD 1B+)	Local SPO ecosystem; pension fund allocation
Blended Finance Pipeline	Project-by-project basis	Programmatic facilities (USD 5B+)	ADFF maturation; DFI coordination
Carbon Revenue	USD 9.4M FCPF payment	USD 50M+ annually	Article 6 operationalization; MRV systems
Municipal Bonds	None issued	50+ municipalities accessing markets	Credit ratings; OSR strengthening
Impact Investment AUM	Nascent (<USD 50M)	USD 500M+ domestic/international	FITTA reform; fund manager capacity
SME Credit Access	30-40% of businesses	60%+ of businesses	Cash-flow lending; CIB integration

Source: Author projections based on comparative analysis and Nepal trajectory

Quick Wins : Immediate Implementation Opportunities

Several actions can generate momentum within 12 months: 1. Green Bond Pipeline: Support 2-3 additional BFIs to replicate NMB/NIFRA frameworks using GGGI/DFI technical assistance 2. Taxonomy Reporting: Issue NRB circular mandating quarterly taxonomy-aligned exposure reporting by all BFIs 3. ADFF Board Formation: Appoint ADFF Board and management; begin EPF/CIT shareholding negotiations 4. Regulatory Sandbox Launch: Gazette sandbox regulations; invite applications from crowdfunding/P2P platforms 5. Article 6 Authorization: Designate national authority; develop authorization criteria for carbon credit transfers 6. Cash-Flow Lending Pilot: NRB directive enabling BFI pilots of cash-flow-based SME lending using digital transaction data 7. Investor Grievance Mechanism: Operationalize IGRM within DOI to reduce dispute resolution timelines.

6.6 Monitoring, Evaluation, and Adaptive Management

Effective implementation requires robust monitoring and evaluation (M&E) systems that track progress, identify bottlenecks, and enable adaptive management. The following framework aligns with the Nepal Green Finance Taxonomy's disclosure requirements and international best practices for alternative finance market development.

Table 6.5: Monitoring and Evaluation Framework

Indicator Category	Key Metrics	Data Source	Reporting Frequency
Capital Mobilization	Total alternative finance volume; leverage ratios; private capital mobilized	ADFF, NRB, SEBON	Quarterly
Instrument Diversity	Number of green bonds, blended finance deals, DIBs, municipal bonds	SEBON, MoF	Semi-annual

Taxonomy Alignment	% BFI assets taxonomy-aligned; green vs. amber vs. red exposure	NRB	Quarterly
Climate Finance	Climate finance flows (mitigation/adaptation); carbon revenue generated	MoFE, NRB	Annual
SME Access	% SMEs with credit access; average loan tenor; collateral requirements	CIB, NRB	Annual
Institutional Capacity	Trained personnel; accredited verifiers; project preparation quality	Line agencies, DFIs	Annual
Investor Confidence	FDI inflows; dispute resolution timelines; approval processing times	DOI, NRB, IBN	Quarterly

Source: Author framework based on international M&E best practices

Annual Alternative Finance Report publication by NRB/SEBON, with dashboard tracking of key indicators, would provide transparency and accountability. An inter-agency coordination mechanism potentially housed within ADFE should convene quarterly to review progress, address implementation bottlenecks, and adjust strategies based on M&E findings.

6.7 Toward a Transformed Development Finance Landscape

Nepal stands at a pivotal moment in its development finance trajectory. The scale of investment required NPR 755 billion annually for SDG achievement, USD 121 billion for climate commitments through 2050 far exceeds traditional ODA and public budget capacity. The alternative finance frameworks analysed in this report green finance taxonomy and ESRM guidelines, blended finance instruments, and innovative mechanisms including carbon markets, impact investment, diaspora finance, development impact bonds, and municipal bonds provide the conceptual architecture for transformation.

The enabling environment analysis in this chapter identifies both progress and constraints. Legislative momentum is evident in the Alternative Development Finance Mobilization Bill 2025; demonstration projects (NMB and NIFRA green bonds, FCPF carbon payment, Upper Trishuli-1 blended finance) prove concept viability; and institutional frameworks like the Nepal Green Finance Taxonomy provide classification standards aligned with international benchmarks. However, regulatory gaps persist in crowdfunding, fintech, and municipal finance; institutional capacity particularly at subnational levels requires systematic strengthening; and risk management instruments for currency, political, and project risks remain underdeveloped.

The strategic roadmap presented here sequences reforms across three phases: foundation building (Years 1-2) focusing on legislative completion, ADFE operationalization, and quick wins; market development (Years 3-5) scaling blended finance, piloting new instruments, and building market infrastructure; and market maturation (Years 6-10) establishing Nepal as a diversified alternative finance market with regular institutional investor participation.

Implementation will require sustained political commitment across government transitions, coordination across fragmented institutional mandates, and patience as market infrastructure develops. But the potential rewards closing the development financing gap, achieving climate commitments, and positioning Nepal as a regional leader in sustainable finance justify the effort. The frameworks are in place; the challenge now is execution.

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