

Conflict of Interest in Natural Resources: Challenges for Climate Change Adaptation and Mitigation



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Conflict of Interest in Natural Resources: Challenges for Climate Change Adaptation and Mitigation

Report : Conflict of Interest in Natural Resources: Challenges for Climate Change Adaptation and Mitigation

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The Climate Governance Integrity Programme (CGIP), implemented by Transparency International, is designed to ensure that climate finance is governed with integrity, transparency, and accountability, so the most vulnerable communities can adapt to the climate crisis in 25+ countries around the world.

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FORWORD

Transparency International (TI) Nepal is a civil society organization dedicated to enhancing public accountability and integrity in Nepal. It was established in 1996 as the national chapter of Transparency International, an NGO that leads a global movement against corruption. Through research, advocacy, intervention, and cooperation, TI Nepal contributes as a catalyst in the fight against corruption in Nepal.

In its mission to promote integrity and governance, TI Nepal implements various thematic and sectoral programs. One of its program, the Climate Governance Integrity Program (CGIP) Nepal, aims to ensure that climate finance is governed with integrity and accountability, as Nepal faces governance challenges in the climate agenda. This study is an attempt of the CGIP Nepal program to map conflicts of interest and governance challenges in natural resource management, so as to propose strategies for ethical and sustainable management practices in line with climate resilience goals. Under the CGIP Nepal program, studies on Conflict of Interest in the Energy Sector and Climate Finance Management in Nepal have also been conducted in the year 2023.

This study reveals several conflict of interest and governance challenges, including mismanagement in forest revenue, inequities in natural resource distribution, and systemic mal-practices. Similarly, climate finance allocation is found to be ineffective, with misreporting of adaptation funds and unmet local-level commitments. Governance gaps in the energy and forestry sectors are seen as hindering equitable resource utilization and climate adaptation.

The study on natural resources sector emphasizes the need for enhanced transparency in climate finance, stronger anti-corruption measures, equitable resource distribution, and improved governance mechanisms to minimize conflict of interest challenges. In addition, sustainable forest and energy management, coupled with local-level capacity building, are also seen as critical elements in addressing the challenges effectively.

TI Nepal appreciates the efforts of the research team, comprising Dr. Mohan Bahadur Chand and Mr. Anil Bhandari, as well as those who provided information and opinions to the research team. Their effort to support TI Nepal's efforts to explore the interplay between climate change, governance, and economic development in Nepal, with a specific focus on conflicts of interest in managing natural resources, is praiseworthy.

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Madan Krishna Sharma

President

Transparency International (TI) Nepal

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ACRONYMS AND ABBREVIATIONS

LDC	Least Developed Countries
LDCF	Least Developed Countries Fund
GDP	Gross Domestic Product
NDC	Nationally Determined Contribution
USD	United States Dollar
OC	Degree Centigrade
GHG	Green House Gases
CIAA	Commission for the Investigation of Abuse of Authority
EIA	Environmental Impact Assessment
IEE	Initial Environmental Examination
IMCCCC	Inter-Ministerial Climate Change Coordination Committee
GLOFs	Glacial Lake Outburst Floods
CFUGs	Community Forest User Groups
BCM	Billion cubic meters
DHM	Department of Hydrology and Meteorology
UNFCCC	United Nations Framework Convention on Climate Change
RCP	Representative Concentration Pathway
LAPA	Local Adaptation Plan of Action
NAPA	National Adaptation Plan of Action
NAP	National Adaptation Plan
MoFE	Ministry of Forest and Environment
DRR	Disaster Risk Reduction
SDGs	Sustainable Development Goals
CPI	Corruption Perception Index
ATF	Aviation Turbine Fuel
LPG	Liquid Petroleum Gas
EV	Electrical Vehicle
LTS	Long-Term Strategy for Net-Zero Emissions
NDCIP	Nationally Determined Contribution Implementation Plan

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EXECUTIVE SUMMARY

Nepal stands at a critical juncture, facing the intertwined challenges of climate change, economic development, and governance. This report provides a comprehensive analysis of these issues, offering insights into the country's current situation and potential pathways forward. Nepal has experienced significant warming over recent decades, with temperature increases outpacing the global average. From 1975 to 2005, the country warmed at about 0.6°C per decade, higher than the global average. Future projections indicate continued warming with mean annual temperatures expected to increase by 0.9-1.1°C in the medium term and 1.3-1.8°C in the long term compared to the 1986-2005 baseline. These changes, coupled with shifting precipitation patterns and increased extreme weather events, pose substantial risks to Nepal's ecosystems, water resources, agriculture, and communities.

The country's economic landscape reveals significant vulnerabilities with a large trade deficit and heavy reliance on remittances. Despite rich forest resources covering 45.31% of its land area, Nepal paradoxically imports wood products worth billions of rupees due to mismanagement and uneven distribution. This situation is exacerbated by the absence of forests at 106 local levels, primarily in the Madhesh, Koshi, and Lumbini Provinces. The energy sector promises growing hydropower capacity, reaching 2,818.91 megawatts as of 2024, yet rapid development raises environmental concerns. Meanwhile, the transport sector's dependence on imported fuel underscores the urgent need for sustainable alternatives.

Climate finance in Nepal presents a complex picture. While the country has received significant international funding, with commitments for 609 climate-related projects totalling \$1.92 billion from 2013 to 2017, a study revealed that 59% of reported adaptation of finance was over-reported. This raises serious questions about the effectiveness and transparency of climate fund allocation. Nepal's climate change policy commits to allocating 80% of international climate funds to local levels, yet this target often remains unmet. These issues are compounded by persistent corruption. The Commission for the Investigation of Abuse of Authority reported that 51.42% of corruption complaints in 2079/80 were against local-level institutions.

Nepal has demonstrated commitment to addressing climate change through various initiatives, including the Long-Term Strategy for Net-Zero Emissions and the NDC Implementation Plan. However, the country faces significant challenges in translating these commitments into action. The LDC Graduation Smooth Transition Strategy, while comprehensive in many aspects, notably lacks robust provisions for governance reform and anti-corruption measures. This oversight could potentially undermine the effectiveness of climate initiatives and the country's ability to meet its climate commitments.

The mounting public debt of the country, reaching 42.65% of GDP (approximately USD 18.3 billion) in the fiscal year 2080/81, further complicates climate action by potentially diverting resources from critical adaptation and mitigation efforts. This financial burden exemplifies the

"double burden" faced by many developing countries, caught between debt repayment obligations and pressing climate adaptation needs. Implementing climate change projects in Nepal involves a complex network of agencies, including international organizations. While aiming to leverage global expertise, this structure challenges effective climate finance governance and limits the development of domestic capacity.

Addressing these interconnected challenges requires a comprehensive approach focusing on climate-resilient development, transparent governance, and sustainable economic growth. Nepal must enhance transparency and effectiveness in climate finance management, strengthen anti-corruption measures, implement sustainable and equitable natural resource management practices, develop climate-resilient economic strategies, improve policy coherence, and enhance domestic expertise for climate project implementation. The distribution of natural resource royalties needs reform to consider disaster vulnerability and climate change impacts, addressing a critical gap in resource management policies.

कार्यकारी सारांश

प्राकृतिक स्रोतहरूमा जलवायु परिवर्तनसँग सम्बन्धि स्वार्थको द्वन्द्व र अनुचित प्रभाव

नेपाल जलवायु परिवर्तन, आर्थिक विकास र सुशासनका अन्योन्याश्रित चुनौतीहरूको सामना गर्दै एउटा महत्वपूर्ण समय आएको छ। यस प्रतिवेदनले देशको वर्तमान अवस्था र अगाडि बढ्ने सम्भावित मार्गहरूबारे अन्तर्दृष्टि प्रदान गर्दै यी मुद्दाहरूको विस्तृत विश्लेषण प्रदान गरेको छ। विश्वव्यापीरूपमा औसत तापक्रम बढिरहेको छ र नेपालले पनि हालैका दशकहरूमा उल्लेखनीय तापक्रम बृद्धिको अनुभव गरेको छ। सन् १९७५ देखि २००५ सम्ममा, नेपालमा प्रतिदशक लगभग ०.६ डिग्री सेल्सियसले न्यानोपना बढी सकेको छ, जुन विश्वको औसतभन्दा बढी रहेको छ। भविष्यका प्रक्षेपणहरूले पनि निरन्तर तापक्रम बृद्धिको संकेत गरेको छ, जसअनुसार १९८६ - २००५ आधारभूत अवधिको तुलनामा औसत वार्षिक तापमान मध्यम अवधिमा ०.९ - १.१ डिग्री सेल्सियस र लामो अवधिमा १.३ - १.८ डिग्री सेल्सियसले बढ्ने प्रक्षेपण गरिएको छ। यी परिवर्तनहरू, परिवर्तनका ढाँचाहरू र बढ्दो चरम मौसमी घटनाहरूले नेपालको प्राकृतिक स्रोत, पारिस्थितिक प्रणाली, जलस्रोत, कृषि र समुदायहरूमा उल्लेख्य जोखिम खडा गर्ने आँकलन गर्न सकिन्छ।

देशको आर्थिक परिदृश्यले ठूलो व्यापार घाटा र रेमिट्यान्समा भारी निर्भरता हुँदा उल्लेख्य संकटासन्नाटा हुने प्रबल सम्भावना देखाएको छ। जंगलले नेपालको ४५.३१ प्रतिशत भू-भाग ओगटेको र वनस्रोतको धनी भए तापनि अव्यवस्थित र असमान वितरणका कारण नेपालले अबैको काठ आयात गर्नुपर्ने अवस्था रहेको छ। मुख्यतया मधेस, कोशी र लुम्बिनी प्रदेशका करिब १०६ स्थानीय तहमा वनको अभावले यो अवस्था भन्नु जटिल बन्दै गएको छ। विगत केही वर्षदेखि ऊर्जा क्षेत्रमा उल्लेख्य विकास भइरहेको र आजसम्म करिब ३००० मेगावाट जलविद्युत् उत्पादन भइरहेको छ। आउँदा केही वर्षमा उक्त क्षमतामा उल्लेख्य वृद्धि हुने देखिन्छ र द्रुत विकासका कारणले केही महत्वपूर्ण वातावरणीय चिन्ताहरू खडा गरेको छ। जस्तै, उच्च हिमाली क्षेत्रमा रहेको हिउँ तथा वरफको भण्डार जलवायु परिवर्तनले पग्लिदै जाँदा, केही अवधिमा नदीमा उपलब्ध पानीको मात्रामा कमी आई जलविद्युत् उत्पादनमा उल्लेख्य असर पर्ने देखिन्छ। यसका साथै, सरकारले अवलम्बन गरेको लक्ष्यअनुसार काम नहुँदा आयातीत इन्धनमा यातायात क्षेत्रको निर्भरता बढ्दै गइरहेको र यसले दिगो विकल्पको तत्काल आवश्यकतालाई जोड दिन्छ।

नेपालमा जलवायु वित्तको जटिल अवस्था रहेको छ। नेपालले २०१३ देखि २०१७ सम्म कुल \$ १.९२ बिलियन डलर को ६०९ जलवायु-सम्बन्धित परियोजनाहरूका लागि प्रतिबद्धताहरूसहित महत्वपूर्ण अन्तर्राष्ट्रिय कोष प्राप्त गरेको छ। तर, एक अध्ययनले रिपोर्टका अनुसार अनुकूलन वित्तको ५९% अतिरिजित तवरले रिपोर्ट गरिएको छ। यसले जलवायु कोषको विनियोजनको प्रभावकारिता र पारदर्शितामाथि गम्भीर प्रश्न खडा गरेको छ। नेपालको जलवायु परिवर्तन नीतिले अन्तर्राष्ट्रिय जलवायु कोषको ८० प्रतिशत स्थानीय तहलाई विनियोजन गर्ने प्रतिबद्धता गरे पनि यो लक्ष्य प्रायः पूरा हुन सकेको छैन। अख्तियार दुरुपयोग अनुसन्धान आयोगले २०७९/८० मा करिब ५१.४२% भ्रष्टाचारका उजुरी स्थानीय तहका संस्थाविरुद्ध भएको देखाएको छ भने यी मुद्दाहरू निरन्तर भ्रष्टाचारले थप जटिल बन्ने देखिन्छ।

नेपालले नेट-जिरो उत्सर्जनका लागि दीर्घकालीन रणनीति र एनडीसी कार्यान्वयन योजनालगायत विभिन्न पहलहरू मार्फत जलवायु परिवर्तनलाई सम्बोधन गर्न प्रतिबद्धता देखाएको छ। यद्यपि, यी प्रतिबद्धताहरूलाई कार्यमा रूपान्तरण गर्न देशले महत्वपूर्ण चुनौतीहरूको सामना गरिरहेको छ। अतिकम विकसित देशबाट विकासशील मुलुकमा सहज स्तरोन्नति रणनीतिअनुसार धेरै पक्षहरू उपयुक्त भए तापनि, शासन सुधार र भ्रष्टाचारविरोधी उपायहरूको लागि बलियो प्रावधानहरूको अभाव रहेको देखिन्छ। यस्ता कमजोरीले देशको जलवायु पहलहरूको प्रभावकारिता र जलवायु प्रतिबद्धताहरू पूरा गर्ने क्षमतालाई कमजोर पार्न सक्ने अवस्था रहेको छ।

आर्थिक वर्ष २०८०/८१ मा कुल ग्राहस्थ उत्पादनको ४२.६५% (लगभग १८.३ बिलियन अमेरिकी डलर) पुग्ने देशको बढ्दो सार्वजनिक ऋणले सम्भावितरूपमा महत्वपूर्ण अनुकूलन र न्यूनीकरण प्रयासहरूबाट विचलन गर्ने सक्ने र उक्त

कार्यलाई थप जटिल बनाउँछ। यो वित्तीय बोझले धेरै विकासोन्मुख देशहरूले सामना गर्नुपरेको 'दोहोरो बोझ' को उदाहरण दिन्छ, जहाँ एकातिर ऋण चुक्ता गर्ने दायित्वहरू र अर्कोतिर जलवायु अनुकूलन आवश्यकताहरूको परिपूर्ति गर्नुपर्ने दबाव परेको छ। नेपालमा जलवायु परिवर्तन परियोजनाहरू कार्यान्वयन गर्न अन्तर्राष्ट्रिय संस्थाहरूसहित विभिन्न एजेन्सीहरूको जटिल नेटवर्क रहेको छ। यो संरचनाले प्रभावकारी जलवायु वित्त शासनलाई चुनौती दिन्छ र अनुकूलनका परियोजनाहरूलाई कार्यान्वयन गर्न भन्कटिलो बनाउने देखिन्छ।

यी अन्तरसम्बन्धित चुनौतीहरूलाई सम्बोधन गर्न जलवायु-उत्थानशील विकास, पारदर्शी शासन, र दिगो आर्थिक वृद्धिमा केन्द्रित व्यापक दृष्टिकोण आवश्यक छ। नेपालले जलवायु वित्त व्यवस्थापनमा पारदर्शिता र प्रभावकारिता अभिवृद्धि गर्न, भ्रष्टाचारविरोधी उपायहरूलाई सुदृढ गर्न, दिगो र समतामूलक प्राकृतिक स्रोत व्यवस्थापन अभ्यासहरू कार्यान्वयन गर्न, जलवायु-उत्थानशील आर्थिक रणनीतिहरू विकास गर्न, नीतिगत सुसंगतता सुधार गर्न र जलवायु परियोजना कार्यान्वयनका लागि स्वदेशी विशेषज्ञता अभिवृद्धि गर्नुपर्छ। स्रोत व्यवस्थापन नीतिहरूमा रहेको महत्वपूर्ण अन्तरलाई सम्बोधन गर्दै प्राकृतिक स्रोत रोयल्टीको वितरणमा विपद् जोखिम र जलवायु परिवर्तनको प्रभावलाई विचार गर्न सुधारको ढङ्कारो आवश्यकता रहेको छ।

1. Introduction

1.1 Background

Nepal, a country marked by its rich natural resources and diverse geography, is increasingly grappling with the impacts of climate change. These impacts are particularly pronounced in its high-altitude regions where glacial melting, shifting precipitation patterns, and temperature variations are causing significant changes. The accelerated melting of glaciers, a critical source of water for both rural and urban populations, is altering water availability and increasing the risk of glacial lake outburst floods (GLOFs), which pose severe threats to downstream communities and infrastructure. Forests, too, are under stress, facing degradation due to changes in temperature and precipitation, which make them more susceptible to pests, diseases, and forest fires. These changes not only impact biodiversity but also the livelihoods of forest-dependent communities. Agriculture, the backbone of Nepal's economy, is being hit hard by erratic weather patterns, unseasonal rainfall, and prolonged droughts, which threaten food security and economic stability.

Conflicts of interest and undue influences in natural resource management are emerging as significant challenges in this context. The allocation of water resources is a contentious issue, with competing demands from agriculture, hydropower, and domestic use often leading to conflicts. The upstream-downstream dynamics add another layer of complexity to the equitable distribution of water. Land use and development pressures are also a major concern. There is often a tug-of-war between the need for infrastructure development and the imperative to conserve ecologically sensitive areas. Development projects, driven by political or economic interests, sometimes overshadow environmental considerations, leading to unsustainable resource management practices. Governance and policy inconsistencies further exacerbate these issues. Weak institutional capacity and lack of coordination among various sectors create gaps that vested interests can exploit, undermining efforts for sustainable resource management.

In practical terms, hydropower projects in Nepal illustrate these conflicts vividly. While hydropower is crucial for Nepal's economic growth, it often clashes with local communities over water rights and environmental impacts. The increased frequency of GLOFs due to climate change has raised concerns about the safety and sustainability of these projects. Forest management also faces challenges from external commercial pressures for timber and non-timber forest products, despite the success of community forest user groups (CFUGs) in managing forests.

Addressing these challenges requires robust policy frameworks, improved governance, and active community engagement. Sustainable management of natural resources, effective adaptation strategies, and resilience-building measures are essential to mitigate the adverse impacts of climate change and ensure equitable resource distribution in Nepal. The evolving

threat of climate change necessitates continuous monitoring, dynamic policy adjustments, and proactive measures to safeguard Nepal's natural resources and the communities that depend on them.

1.2 Statement of Problem

Nepal, a country endowed with abundant natural resources, including forests, rivers, and mineral deposits, is highly vulnerable to the impacts of climate change. The increasing frequency and intensity of climate-related events, such as floods, landslides, and unpredictable weather patterns, are placing additional stress on these resources. Simultaneously, the governance and management of these natural resources are often subject to conflict of interest, undue influence, and corruption. These conflicts arise from competing interests among stakeholders, ranging from government officials, business entities, international investors, and local communities. These complexities lead to mismanagement and exploitation of resources.

Conflict of interest in natural resource governance can undermine efforts to combat climate change and adversely impact the livelihoods of local communities. For example, regulatory loopholes or lax enforcement can allow commercial interests to exploit natural resources in ways that are unsustainable or environmentally damaging. This can exacerbate climate-related risks, such as deforestation, loss of biodiversity, and reduced water quality, further compromising communities' resilience to climate change.

Understanding and addressing these conflicts of interest is crucial to ensure natural resource management in Nepal that aligns with sustainable practices and climate resilience goals. This research report seeks to investigate the sources of conflict of interest, identify their impact on natural resource management, and propose measures to enhance transparency and accountability. Further, the report aims to recommend for developing policies and practices that foster ethical governance, promote environmental sustainability, and mitigate the effects of climate change in Nepal.

1.3 Objectives

The broad objective of this study is to explore the sources and impact of conflicts of interest and undue influence in the context of climate change on Nepal's natural resources. This investigation identified key stakeholders, examined how their influence exacerbates climate-related challenges, and proposed strategies to promote sustainable practices and transparency.

The specific objectives are as follows:

- To thoroughly review current policies, regulations, and governance structures to uncover areas where conflicts of interest are most likely to emerge, particularly climate change and its impact on natural resources.
- To investigate how conflicts of interest within natural resources affect smallholder farmers, indigenous groups, and other local communities.
- To map out the primary stakeholders involved in Nepal's natural resources and evaluate their roles with a focus on determining how these roles may lead to undue influence or conflicts of interest in the context of climate change.

- To identify and recommend effective strategies to enhance transparency, accountability, and ethical governance in these sectors to mitigate undue influence.

2. Methodology

The methodology applied for assessing the conflict of interests in climate change governance in Nepal involves several key steps. It focuses on a comprehensive review of relevant documents and reports related to climate change policies, projects, and governance practices.

2.1 Literature Review of Policy Documents

The first step involved a review of the literature of existing policy documents relevant to climate change in Nepal. This includes national, provincial, and local-level policies, regulations, and frameworks that govern climate change adaptation and mitigation efforts. By examining these documents, the study aimed to identify explicit or implicit references to conflicts of interest and understand the overall policy frameworks.

2.2 Review of Climate Change Projects

The second step was to review reports of climate change adaptation and mitigation projects implemented in Nepal. This included an assessment of project objectives, results, and implemented processes. The goal was to identify potential areas where conflicts of interest might have influenced project decisions, funding allocations, or stakeholder engagement.

3. Natural Resources of Nepal

Nepal is endowed with a rich diversity of natural resources, largely due to its unique geography and varied climatic zones. These resources are critical for the country's economy, livelihood, and ecological sustainability.

Water Resources: Nepal is rich in freshwater resources. The country is home to numerous rivers, lakes, and springs that originate from the Himalayas. Major river systems include Koshi, Gandaki, and Karnali, which are not only vital for irrigation and drinking water but also hold significant potential for hydroelectric power generation. Nepal's rivers contribute to one of the largest renewable sources of freshwater in those regions. Approximately 6,000 rivers in Nepal comprise a total drainage area of 191,000 square kilometers, i.e. 74% of which lies within the country. Among these, 33 rivers have drainage areas exceeding 1,000 square kilometers (WECS, 2011). The nation has an estimated surface water availability of about 225 billion cubic meters (BCM) annually, equating to an average flow of 7,125 cubic meters per second across all basins, with 173 billion cubic meters specific to Nepal (WECS, 2011). The country's average annual precipitation is around 1,530 millimeters, with roughly 10% falling as snow (WECS, 2011). As of 2010, the central Himalayas of Nepal contained 796 glacial lakes covering a total area of 119.4 square kilometers (Zhang et al., 2015a, b). These water resources are unevenly distributed between seasons and regions and these patterns are worsening with climate

change (Sijapati et al., 2023). The storage of water in terms of frozen water are snow, glaciers, permafrost; lakes, ponds, and wetlands; groundwater; rivers and built storage systems.

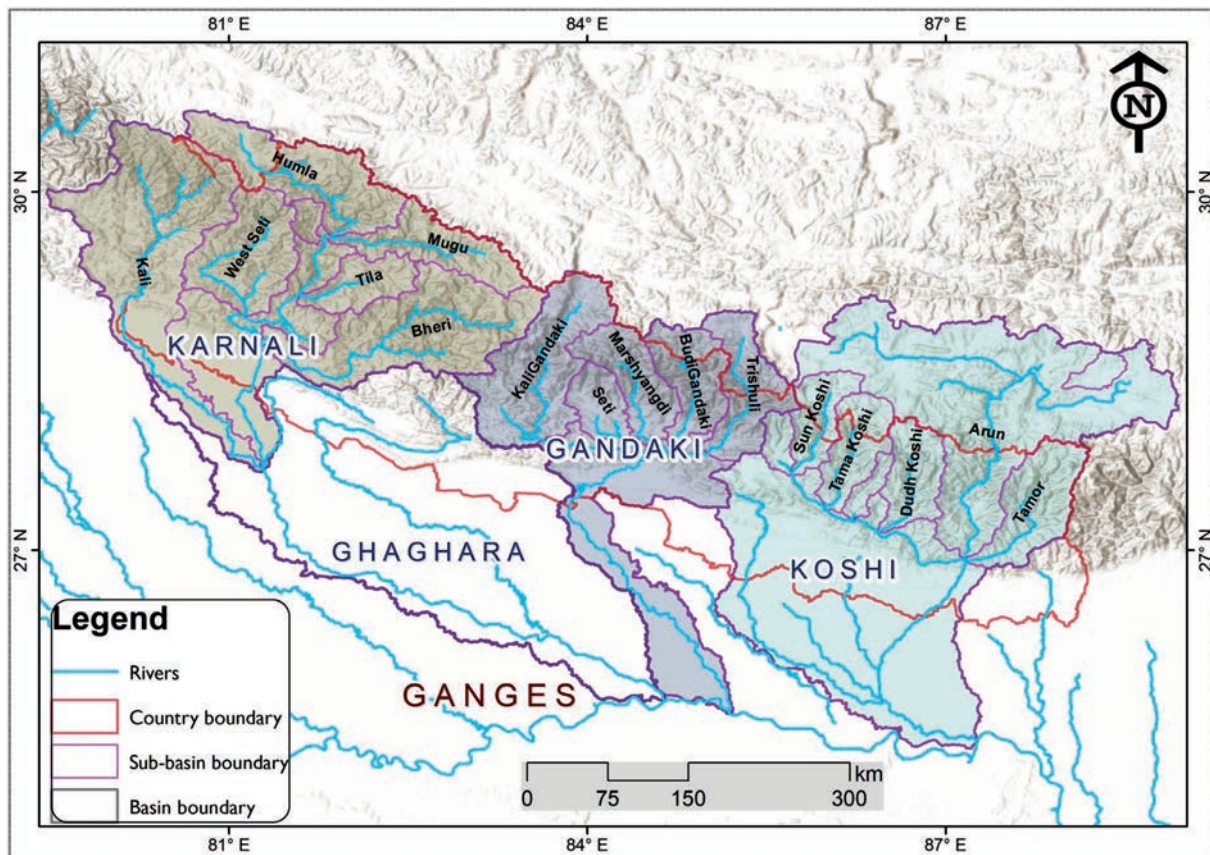


Figure 1. Nepal Himalaya region showing major river basins and sub-river basins. The major river basins are Karnali, Gandaki and Koshi river basins.

All the water sources in Nepal are affected by a changing climate, and the problems are expected to worsen as meltwater flows increase due to snow melts from the glaciers, permafrost, and changes in precipitation patterns.

Forests and Biodiversity: Forests cover approximately 43% of Nepal's land area. These forests are diverse, ranging from tropical in the Terai region to temperate and alpine in the higher altitudes. The forests are home to a wide variety of flora and fauna, including endangered species such as the Bengal tiger and the one-horned rhinoceros. Community forest management practices have been successful in many parts of Nepal. Local communities are involved in the sustainable management and conservation of forest resources.

Nepal is bestowed with a remarkable range of biodiversity due to its altitudinal variation from lowland tropical forests to the alpine zone. It harbours more than 6,000 species of vascular plants, around 200 species of mammals, and nearly 900 species of birds. The country has established numerous protected areas, including national parks, wildlife reserves, and conservation areas, to safeguard its rich biodiversity.

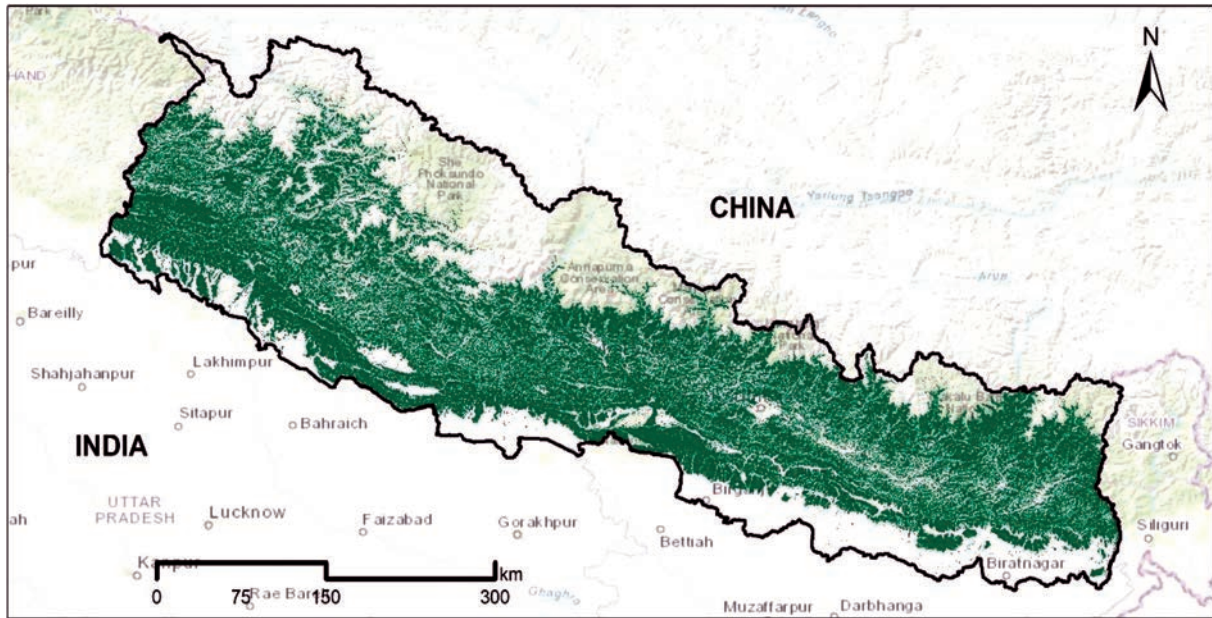


Figure 2. Forest Cover in Nepal in 2020 (Source: ICIMOD, 2022)

Mineral Resources: Nepal is rich in mineral resources, although much of them remain untapped. Some of the significant minerals include limestone, magnesite, dolomite, quartz, zinc, lead, and copper. The country also has deposits of precious and semi-precious stones. These minerals hold potential for economic development, although their extraction needs to be managed sustainably to avoid environmental degradation.

Renewable Energy Resources: Apart from hydroelectric potential, Nepal has significant prospects for other renewable energy resources, including solar, wind, and biomass. The varied topography and climatic conditions are conducive to harnessing solar and wind energy, which can play a crucial role in providing energy to remote and off-grid areas.

4. Climate Change

4.1 Status of Climate Change in Nepal

Nepal has experienced significant warming over the past few decades, with temperature increases surpassing global averages. From 1975 to 2005, the country warmed at about 0.6°C per decade, at least three times higher than the global average (MoFE, 2019). This warming trend has persisted in recent years. Analysis of temperature data from 1971 to 2014 reveals that the annual maximum temperature in Nepal has been increasing at a rate of 0.056°C/year, while the minimum temperature has shown a smaller increase of 0.002°C/year (DHM, 2017).

The warming trend in Nepal is not a uniform phenomenon. Higher-altitude regions are experiencing a more pronounced warming effect compared to lower-lying areas. For instance, night-time temperatures in Nepal's highest altitude areas (over 4,000 m) have been rising at a rate almost double that of temperatures in lower altitude (< 2,000 m) areas (Zhao et

al., 2019). This phenomenon, known as elevation-dependent warming, is in line with global observations in mountainous regions (Pepin et al., 2015), adding complexity to the issue.

Seasonal variations in warming are a significant aspect of climate change in Nepal. The DHM (2017) report indicates that the warming trend is most pronounced during the winter and spring months from November to May. This is reflected in the stronger projected rise in minimum temperatures, typically during winter, providing a comprehensive view of the issue.

Unlike temperature trends, precipitation patterns in Nepal are less predictable and show high spatial variability, adding to uncertainty. The country's Second National Communication to the UNFCCC (Nepal, 2014) suggests only minor changes to historical annual precipitation rates, with positive and negative movements observed in different regions. However, some notable trends have emerged. Western Nepal has experienced increased frequency and intensity of extreme precipitation events (Bohlinger & Sorteberg, 2018). There are also indications that wet areas are becoming wetter while dry areas are drier (Dahal et al., 2016). The Himalayan region has experienced increasing average annual precipitation at a rate of 6.5mm/yr between 1982–2006 (Shrestha et al., 2012).

Analysis of extreme climate indices reveals several significant trends in Nepal. Warm days and warm nights are increasing significantly in the majority of districts. For instance, the number of warm days has risen from 36 to 60 days a year in the medium-term period under the RCP4.5 scenario (MoFE, 2019). Conversely, cool days and cool nights are decreasing in most districts. The number of cold days is projected to decline by 42–53% under the RCP4.5 scenario over the medium and long-term periods (MoFE, 2019). The duration of warm spells, defined as periods of at least six days with high maximum temperatures, is increasing significantly in most districts (DHM, 2017).

Precipitation extremes also show notable trends. Very wet days and extremely wet days are decreasing significantly, mainly in the northern districts of Nepal (DHM, 2017). However, the number of rainy days is increasing significantly, primarily in the northwestern districts (DHM, 2017). These contrasting trends suggest a complex shift in precipitation patterns that may have significant implications for water resources and agriculture in the country.

4.2 Future Climate Change Scenarios for Nepal

Looking to the future, climate models project continued warming for Nepal throughout the 21st century. Mean annual temperature is expected to increase by 0.9–1.1°C in the medium-term (2016–2045) and 1.3–1.8°C in the long-term (2036–2065) compared to the 1986–2005 baseline (MoFE, 2019). Under the highest emissions pathway (RCP8.5), warming in Nepal could reach a staggering 5.0°C by the 2090s (MoFE, 2019). Maximum and minimum temperatures are projected to rise more than mean temperatures, with minimum temperatures in Nepal projected to rise by 5.0°C by the end of the 21st century under RCP8.5 (MoFE, 2019).

Seasonal variations in future warming are also projected. Warming is expected to be strongest during the winter months. The highest rates of mean temperature increase are projected for the post-monsoon season (1.3–1.4°C in the medium-term, 1.8–2.4°C in the long-term) and the winter season (1.0–1.2°C in the medium-term, 1.5–2.0°C in the long-term) (MoFE, 2019). High-

altitude regions are projected to experience faster warming rates, continuing the observed trend of elevation-dependent warming (MoFE, 2019).

Projections for future precipitation in Nepal are less certain than temperature projections, but some general trends emerge. Average annual precipitation will likely increase by 2-6% in the medium term and 8-12% in the long term (MoFE, 2019). Seasonal changes in precipitation are projected, with increases likely in the monsoon, post-monsoon, and winter seasons, but decreases in the pre-monsoon season (MoFE, 2019). The intensity of sub-daily extreme rainfall events is expected to increase with temperature, a finding supported by evidence from multiple regions of Asia (Westra et al., 2014). By the end of the century, precipitation could increase by 11–23% under RCP8.5 (MoFE, 2019).

Climate models also project significant changes in extreme events for Nepal. Warm days and warm nights are projected to increase substantially. Under RCP4.5, warm days could increase from 36 to 68 days per year in the long-term period (MoFE, 2019). Cold days and nights are projected to decrease significantly (MoFE, 2019). The duration of warm spells is likely to increase sharply under RCP4.5 and RCP8.5 scenarios (MoFE, 2019). Intense precipitation events are likely to increase in frequency, with extremely wet days (P99) expected to increase at a higher rate than very wet days (P95) (MoFE, 2019). However, the number of rainy days will likely decrease, combined with increased precipitation intensity, and may create more water-related hazards (MoFE, 2019).

While the warming trend for Nepal is highly confident, precipitation projections carry greater uncertainty. The MoFE (2019) report notes that agreement between different climate models is larger for temperature than precipitation. This suggests that temperature-related changes are more certain than projected changes in precipitation. Furthermore, Nepal's complex topography presents challenges for climate modelling. The extreme variations in altitude within the country may mean that model projections of future temperature rise are subject to above-average levels of uncertainty (Revadekar et al., 2013).

Nepal is experiencing significant climate change, with warming trends observed across the country and changes in precipitation patterns and extreme events. Future projections indicate continued warming, potential increases in annual precipitation, and more frequent extreme events. These changes will likely profoundly impact Nepal's ecosystems, water resources, agriculture, and human communities.

4.3 GHG Emission Scenario of Nepal

Greenhouse gas emissions in Nepal have been increasing in recent years. Although they decreased from 2000 to 2008, they have been rising since then. In the 2000s decade, Nepal emitted 21.8 million metric tons of greenhouse gases annually. In 2021, Nepal emitted 48.48 million tonnes of CO₂ equivalent, representing 0.10% of global emissions and 1.66 emissions per capita (tCO₂e/person)¹. The agricultural sector has consistently been the largest contributor to emissions. In 1990, greenhouse gas emissions from this sector accounted for 89.24 percent of the total. However, this figure has gradually decreased, dropping to 53.62

¹ https://www.climatewatchdata.org/countries/NPL?end_year=2021&start_year=1990

percent by 2020. Meanwhile, emissions from transportation, energy, and industrial sectors have increased. Figure 3 shows the spatial distribution of PM_{2.5}, BC, NO_x and CO emissions for 2011, which mostly correlates the density of population with a few hotspots for point sources.

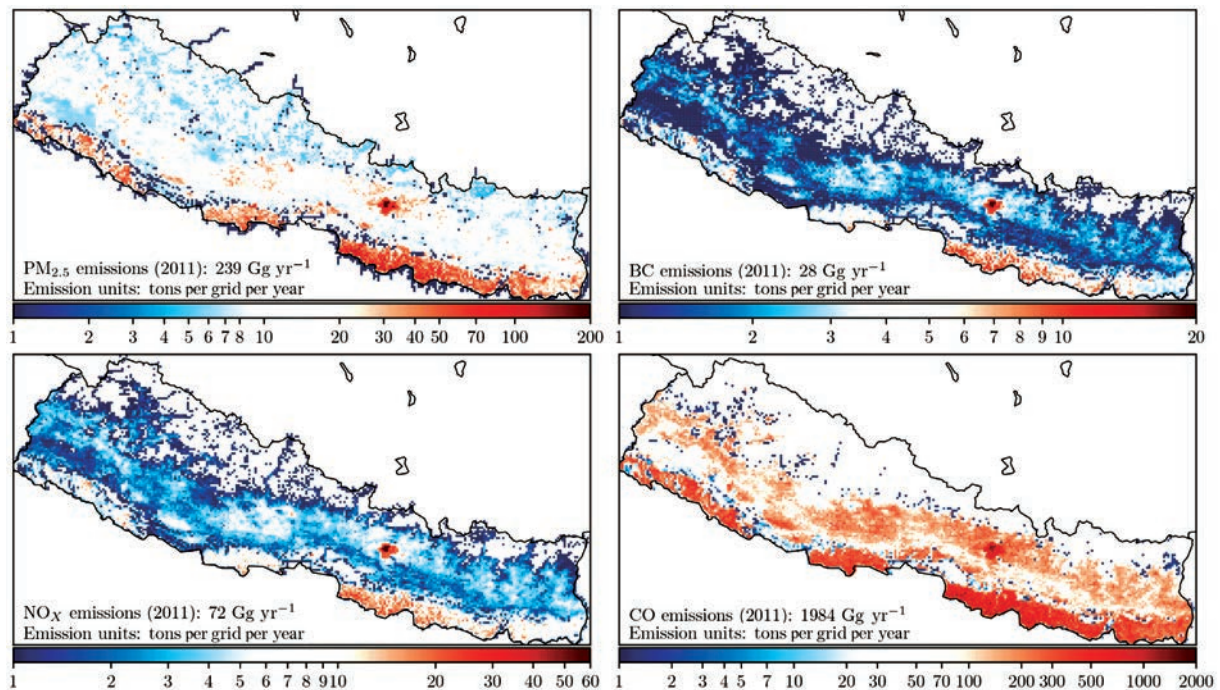


Figure. 3 Spatial distributions of PM_{2.5}, BC, NO_x, and CO emissions for year 2011 (Sadavarte et al. 2019).

4.4 Climate Impact on GDP

Country Climate and Development Report of Nepal (World Bank, 2022) analyses the potential economic impacts of climate change on Nepal. The model estimates future GDP losses under different climate scenarios (RCP 2.6, RCP 4.5, and RCP 8.5) compared to a baseline scenario with no additional climate change impacts beyond what has already occurred as of 2021.

Under the most severe warming scenario (RCP 8.5), the combined effects of climate change are projected to reduce GDP by nearly 7% by 2050 relative to the baseline. The most significant contributor to these losses is infrastructure damage from flooding, accounting for approximately half of the total GDP impact. Agricultural damages due to heat stress have the second most significant effect, reducing GDP by around 2.2% by 2050. Lower labour productivity from rising temperatures is projected to decrease GDP by 1.4% over the same period.

In the moderate warming scenario (RCP 4.5), total GDP losses will reach about 4.5% by 2050, while under the low-emissions scenario (RCP 2.6), the GDP impact is around 3.3%. Across all three scenarios, GDP losses accelerate over time, with the most severe impacts occurring after 2030. It is important to note that these projections are not forecasts of absolute GDP levels but estimates of how much lower GDP could be in a future year compared to a world without

additional climate change. In the baseline scenario, the model projects that the country's real GDP will grow from US\$31.6 billion in 2020 to US\$140 billion by 2050. However, under RCP 8.5, real GDP in 2050 would be 6.92% lower than this baseline projection, at around US\$130 billion.

The report cautions that these cost estimates are likely conservative, as they only consider a subset of potential climate change impacts and do not account for all of the complex interactions and feedback effects that could occur. Nonetheless, they highlight climate change's substantial economic risks to Nepal's long-term development prospects.

4.5 Evolving Climate Policies – Path to Climate Resilience

Nepal formally engaged with international climate change efforts by signing the United Nations Framework Convention on Climate Change (UNFCCC) on June 12, 1992, during the Earth Summit in Rio de Janeiro. The country ratified the UNFCCC on May 2, 1994, which entered into force for Nepal on July 31, 1994. Further demonstrating commitment to global climate action, Nepal signed the Kyoto Protocol on December 14, 2005, ratified it on September 16, 2005, and became the signatory of the protocol on December 14, 2005. While these international commitments laid the groundwork for climate policy, a significant milestone in national climate change assessment and planning came with the submission of the Initial National Communication to the UNFCCC in 2004 (Figure 4). This report provided the first comprehensive national assessment of greenhouse gas emissions, climate change impacts, and potential mitigation and adaptation measures, marking an important step in the country's climate change policy development process (Government of Nepal, 2004).

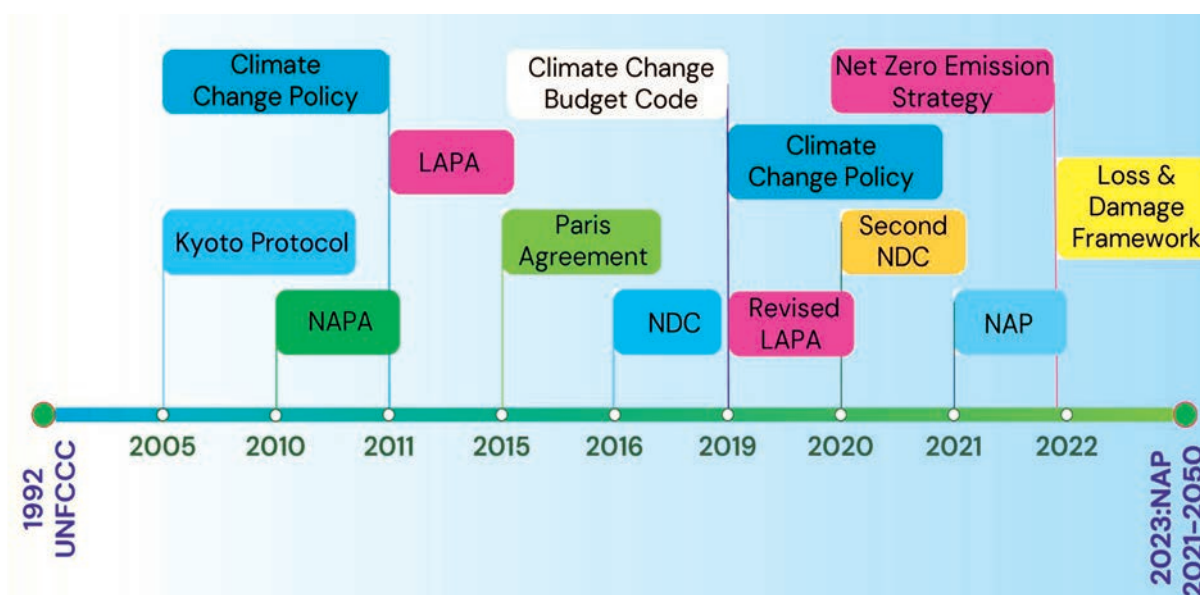


Figure 4. Development of climate change-related policies

In 2007, Nepal took a significant step forward by formally launching the process of planning for adaptation to climate change through the submission of a funding proposal to the Least Developed Countries Fund (LDCF) for the preparation of its National Adaptation Programme of Action (NAPA) (Government of Nepal, 2010).

The year 2009 witnessed a major milestone in reinforcing and nationalizing the climate change agenda in Nepal. In the lead-up to the Copenhagen climate change conference, Nepal organized several high-profile events, including the historic cabinet meeting at the base of Mount Everest, also known as the Kalapathar Cabinet Meeting (Government of Nepal, 2009). These events aimed to showcase the impacts of climate change on the Himalayas, garner international support, and raise awareness about the vulnerability of least-developed countries like Nepal in the face of climate change. The same year saw the establishment of the Climate Change Council, chaired by the Prime Minister, to provide high-level coordination and policy guidance on climate change issues, marking an important step in institutionalizing the climate change agenda in Nepal (Government of Nepal, 2009).

In 2010, the Government of Nepal further strengthened its institutional framework by establishing the Climate Change Management Division within the Ministry of Science, Technology and Environment (Government of Nepal, 2010). This division, with its Adaptation Section, was tasked with coordinating climate change-related initiatives in the country. The same year, Nepal endorsed its NAPA, which identified nine urgent and immediate adaptation priorities across six thematic sectors: agriculture, forest biodiversity, water resources, health, infrastructure, and disaster risk reduction (Government of Nepal, 2010). The Multi-Stakeholder Climate Change Initiative Coordination Committee was also formed to facilitate the involvement of multiple stakeholders in climate action (Government of Nepal, 2010).

Policy Frameworks and Local Adaptation: 2011-2015

The year 2011 marked another significant milestone with the formulation of the Climate Change Policy, providing an overarching framework for climate action in Nepal (Ministry of Forests and Environment, 2019a). The policy placed adaptation as a top priority and introduced a novel provision allocating 80% of total climate change funding to local action. In 2011, Nepal further localized its adaptation efforts by introducing the Local Adaptation Plans for Action (LAPA) framework, which aimed to integrate climate change adaptation into local development planning processes (Government of Nepal, 2011). Both the Climate Change Policy and LAPA framework were revised in 2019 policy due to significant changes in both national and international contexts. These changes necessitated a new policy to address emerging climate challenges and opportunities effectively.

To strengthen the tracking of climate change-related financing, Nepal introduced the climate change budget code in 2013 (Government of Nepal, 2013). This initiative aimed to designate climate change-related expenditures in the national budget based on three indicators: "highly relevant," "relevant," and "neutral." During this period, Nepal also initiated several adaptation projects with support from bilateral and multilateral organizations, demonstrating its commitment to translating policies into action.

Nationally Determined Contribution and NAP Process: 2016-2020

In October 2016, Nepal submitted its Nationally Determined Contribution (NDC) to the UNFCCC, outlining its commitments to both adaptation and mitigation (Ministry of Population and Environment, 2016b). The same year, the country launched its National Adaptation Plan

(NAP) formulation process to identify medium- and long-term adaptation needs and integrate climate change considerations into development planning and implementation (Ministry of Forests and Environment, 2018).

In 2019, Nepal took a crucial step by endorsing the new Climate Change Policy, which was revised to align with the country's new federal governance structure (Ministry of Forests and Environment, 2019a). The policy envisions contributing to the socio-economic development of Nepal through the development of climate-resilient societies. It seeks to build the resilience of social, economic, and ecological systems through integrated planning of climate change adaptation and mitigation actions across nine thematic areas and four cross-cutting themes (Ministry of Forests and Environment, 2019a). The same year, the Environment Protection Act was approved, with a dedicated chapter on Climate Change Management, further strengthening the legal framework for climate action in Nepal (Ministry of Forests and Environment, 2019b).

Institutional Arrangements and Policy Alignment: 2020 and Beyond

As Nepal continues to advance its climate change agenda, the need for effective institutional arrangements and policy alignment has become increasingly apparent. Nepal has established high-level coordination mechanisms for climate change, such as the Climate Change Council and the Climate Change Coordination Committee, as well as the Multi-Stakeholder Climate Change Initiative Coordination Committee at the executive level (Government of Nepal, 2020). The Ministry of Forests and Environment (MoFE) in 2020 initiated to establish an inter-ministerial climate change coordination committee (IMCCCC) to facilitate the integration of climate change into sectoral development planning and budgeting processes chaired by the Secretary at the MoFE (Government of Nepal, 2020).

Recognizing the synergies between climate change, disaster risk reduction (DRR), and sustainable development, Nepal is actively exploring opportunities for policy alignment. The country has established institutional arrangements for the coordination of climate change (led by the Ministry of Forests and Environment), DRR (led by the Ministry of Home Affairs), and the Sustainable Development Goals (SDGs) (led by the National Planning Commission) (Government of Nepal, 2020). Efforts are underway to enhance dialogue, information sharing, and coordination among these institutions to achieve the targets of the respective policy processes more effectively.

Nepal presents its enhanced second NDC for the period 2021-2030, in accordance with the Paris Agreement. Although its emissions are negligible, Nepal is highly vulnerable to climate change and is committed to taking action to limit warming to 1.5°C. The NDC includes both conditional and unconditional sectoral targets in the areas of energy, transport, agriculture, forestry, industry, and waste. Nepal aims to achieve net-zero greenhouse gas emissions by 2050 and is developing a long-term low-emission development strategy. The NDC was developed through a participatory and inclusive process involving various stakeholders. Nepal emphasizes the need for international support in terms of finance, technology transfer, and capacity building to achieve its conditional targets.

Nepal has been engaged in systematic climate change adaptation planning since 2010, starting with the NAPA. This was followed by the launch of the National Adaptation Plan (NAP) process in 2015, the development of LAPAs, and the promulgation of the National Climate Change Policy in 2019. The NAP 2021-2050 builds on these previous efforts and aligns with Nepal's commitments under the Paris Agreement, including its Enhanced NDC submitted in 2020. The NAP aims to systematically integrate climate change adaptation into existing policies, strategies, and plans, moving from a project-based approach to an integrated programmatic approach for building long-term resilience. It addresses eight thematic sectors and four cross-cutting areas identified in the National Climate Change Policy, adopting a multi-stakeholder, gender-responsive, and socially inclusive process.

5. Conflict of Issues: Corruption

5.1 Corruption Perception Index of Nepal (2012-2023)

Nepal's Corruption Perception Index (CPI) has fluctuated over the past decade, remaining below 50. In 2012, the country scored 27 out of 100, ranking 139th out of 176 countries, indicating significant public sector corruption. In 2013, the score increased to 31, improving the country's rank to 116th out of 177 nations. However, this progress was short-lived, with the CPI score dropping back to 27 in 2015, underscoring ongoing issues with corruption in Nepal's public institutions.

Since 2016, CPI has also experienced small fluctuations. The score remained at 31 in 2017 and 2018 before rising to 34 in 2019. However, the years 2020 and 2021 saw a slight decline, with the score dropping to 33, probably influenced by challenges from the global pandemic. In 2022, Nepal returned to a score of 34, and the most recent data from 2023 shows a CPI value of 35, with the country ranked 108th out of 180 countries, climbing two positions from the previous year².

² <https://www.transparency.org/en/cpi/2023/index/npl>

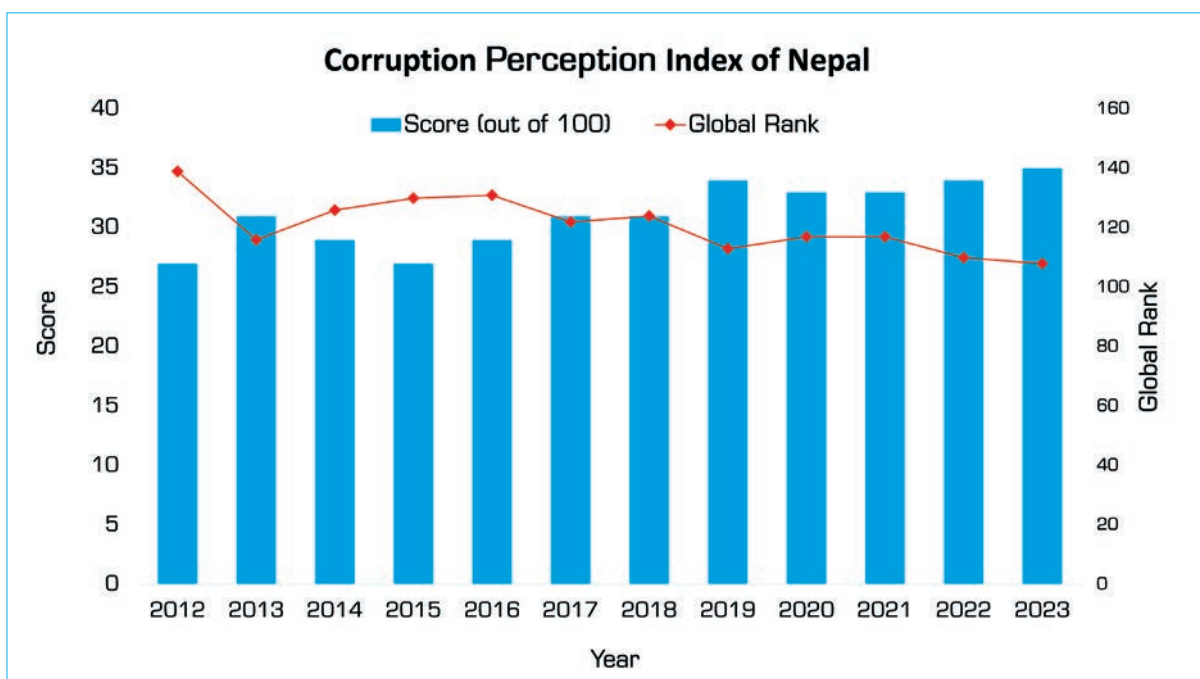


Figure 5. Corruption Perception Index of Nepal from 2012 to 2023.

Despite these minor fluctuations, it is essential to note that the country's score remains well below 50, which Transparency International considers the threshold for countries with relatively lower levels of corruption. This indicates that corruption remains a significant challenge for Nepal. The current score of 35 highlights ongoing challenges in addressing corruption within the public sector and a need for significant improvement remains. Strengthening anti-corruption measures, enhancing transparency, and reinforcing institutional accountability are essential steps for Nepal to combat corruption more effectively and build trust within the public sector. This continued effort is crucial for long-term governance reform and sustainable development in the country.

5.2 Trends in Corruption Complaints: Analysis of CIAA Data

The trend analysis of corruption complaints is based on data from six years from the Commission for the Investigation of Abuse of Authority (CIAA), covering fiscal years 2074/75 to 2079/80 (Figure 6). The study focuses on three key areas: total registered complaints, land administration cases, and forest and environment sector cases. These sectors were selected for their consistent presence and significance in the CIAA's annual reports, providing insights into specific areas of governance challenges in Nepal.

The number of complaints registered with the CIAA has shown significant fluctuations over the years. Starting from 11,769 cases in 2074/75, there was a sharp increase to 16,997 cases in 2075/76, representing a 44% rise. However, the following two years saw slight decline with 16,598 cases in 2076/77 and 14,425 cases in 2077/78. The trend reversed again in 2078/79 with 16,238 cases, and finally peaked at 20,905 cases in 2079/80. This overall upward trend might indicate either increased vigilance or a rise in reported irregularities.

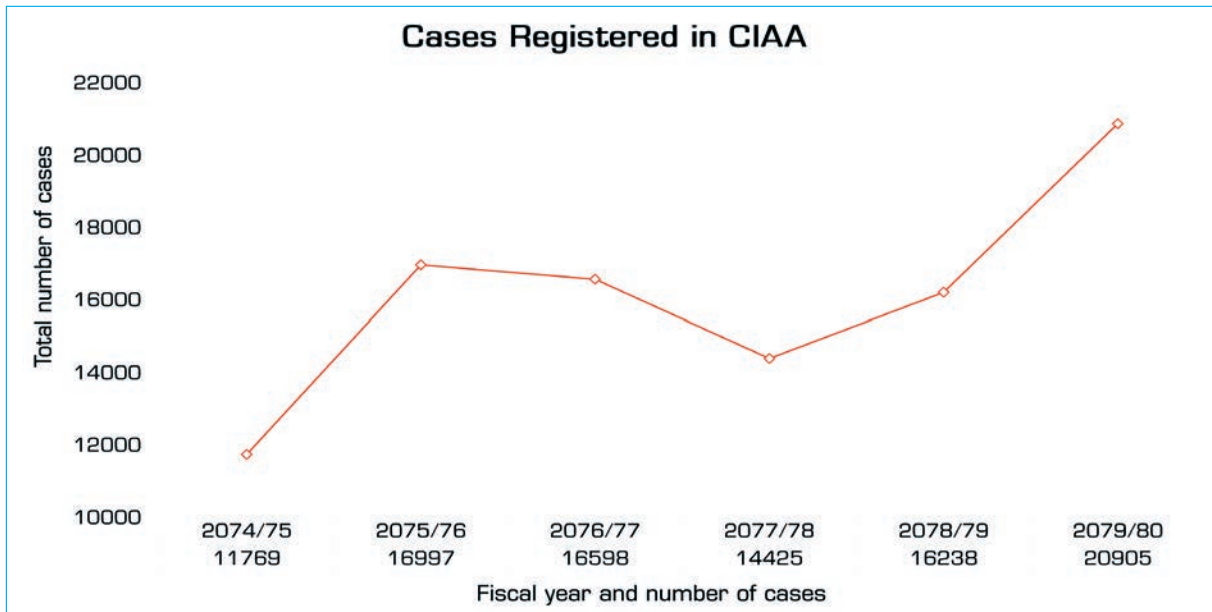


Figure 6. Number of corruption cases registered in CIAA.

Complaints related to land administration have remained a significant concern, though the percentage has fluctuated (Figure 7). The highest proportion, 9.09% of total cases, was observed in 2077/78, while the lowest was 6.09%, in 2079/80. The absolute number of land-related cases peaked in 2075/76 with 1,470 complaints.

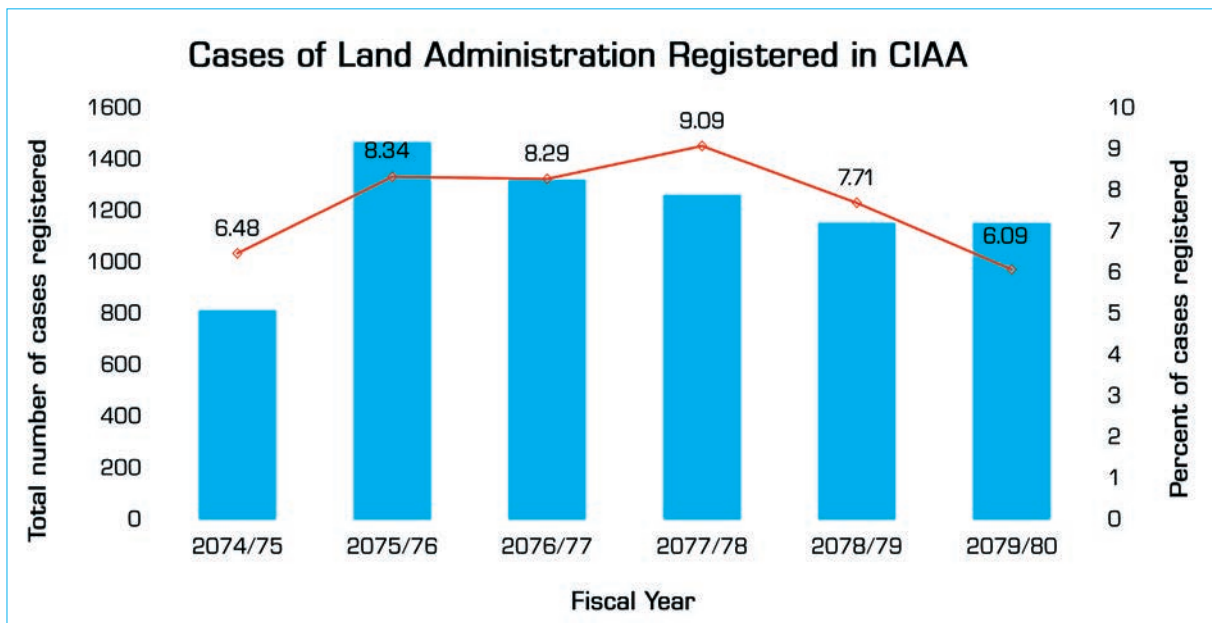


Figure 7. Cases of Land Administration Registered in CIAA

The forest and environment sector has consistently accounted for about 4-5% of complaints (Figure 8). The highest percentage was recorded in 2077/78 at 5.01%, while the lowest was in 2079/80 at 4.14%. The absolute number of cases in this sector has generally increased, from 667 in 2074/75 to 886 in 2079/80, with some fluctuations in between.

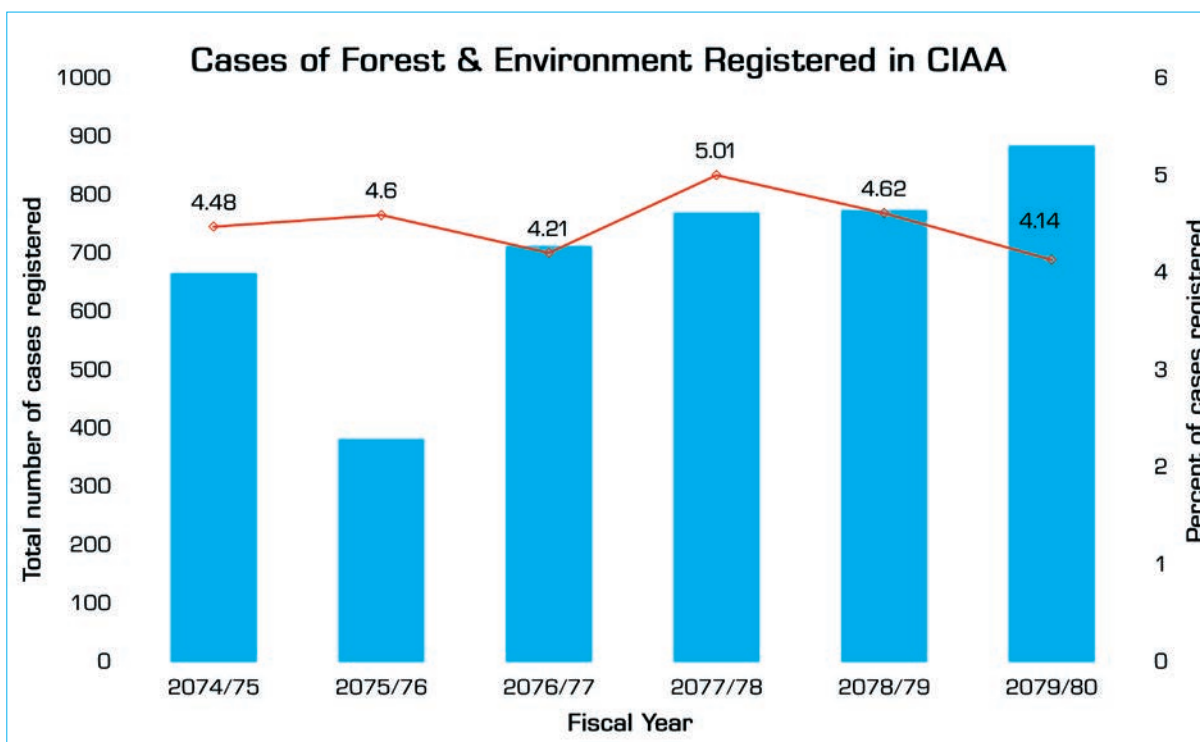


Figure 8. Cases of Forest and Environment Registered in CIAA

These trends suggest ongoing challenges in governance, particularly in the land administration and environmental sectors. They highlight areas where focused efforts might be needed to improve transparency and reduce irregularities.

6. Conflicts of Issues Related to Natural Resources

Corruption has flourished in various sectors within local governments. Among the 29 identified areas of corruption at the local level, one significant concern is the misuse of sand and gravel quarries (Pokharel, 2024). The irregularities observed in local governments can be classified into four main areas: issues related to political matters, challenges in human resource management, concerns regarding financial discipline, and various other miscellaneous problems. According to the 33rd Annual Report of the Commission for the Investigation of Abuse of Authority (CIAA) for the fiscal year 2079/80 (2022/23), an analysis of complaints filed against federal, provincial, and local public entities reveals a significant trend. Nearly half of all complaints, precisely 51.42 percent, were lodged against local-level institutions (Dahal, 2024).

This issue manifests when elected officials and representatives bypass competitive processes, directly involving themselves as quarry operators, contractors, traders, or equipment owners. They engage in revenue fraud and collude to award contracts to relatives, party workers, or election financiers. This growing trend not only undermines fair competition and governance but also represents a troubling form of corruption at the local level, highlighting the urgent need for increased transparency, accountability, and oversight in resource management and contract allocation (Pokharel, 2024). The extraction and sale of sand and gravel provide vital revenue for

many local governments in Nepal, as stipulated by the Local Government Operation Act. However, conflicting guidelines from the national government have created tension by suggesting these resources fall under shared jurisdiction with provinces. This has led to inconsistent practices, with some local bodies sharing revenues while others resist. The situation highlights the complex interplay between different levels of government and underscores the need for clear legislation (Rai, 2024)

6.1 Forest Sector

In Nepal, the forest area covers 61 lakh 66 thousand 7 hundred 66 hectares (6,166,766 hectares), and the shrubland area covers 5 lakh 35 thousand 1 hundred 79 hectares (535,179 hectares) of land. Out of the total land area, 41.69% is forest and 3.62% is shrubland and bushes, for a total coverage of 45.31%. There is 0.2 hectares of forest area per person. Based on Nepal's topography, the largest forest area is in the Chure region, while the smallest is in the Tarai region.

As of 2080 BS (2023/2024 AD), Nepal had established 20 protected areas, including 12 national parks, one wildlife reserve, one hunting reserve, and six conservation areas. These protected areas cover 23.4% of the country's total land area. Forest management within protected areas has been implemented across 194,556 hectares. By 2080 BS, 1,067 community forest user groups have been formed in buffer zones and protected areas, managing approximately 240,870 hectares of forest land.

Additionally, 588 collaborative forests in buffer zones manage 5,486.7 hectares of forest area. The management of protected and buffer zones has benefited 1,142,599 people. Community forest management has made significant strides, with 23,601 community forest user groups managing 2,508,236 hectares of forest area as of 2080 BS. About 44,398 hectares of forest are managed through 7,731 poverty-based groups (MoFE, 2022). This community-based approach has improved both livelihoods and forest conservation efforts. This comprehensive approach to forest management in Nepal combines national protected areas, community involvement, and targeted programs to balance conservation with sustainable use of forest resources. The system benefits the environment and local communities, showcasing Nepal's commitment to sustainable forest management. However, there are no forests in 106 local levels, including 84 in Madhesh Province, 13 in Koshi Province, and 9 in Lumbini Province.

6.1.1 Inequities and Challenges in Forest Management

The forest sector presents a complex and paradoxical situation. While the country boasts significant forest coverage at 45.31% of its total land area, including protected areas that cover 23.4% of the nation, there is a stark disparity in forest distribution. The existence of 106 local levels without forests, predominantly in Madhesh, Koshi, and Lumbini Provinces, highlight a critical imbalance in resource allocation. This uneven distribution impacts local ecosystems and livelihoods and potentially exacerbates regional inequalities. When viewed alongside the high incidence of corruption cases in local levels reported by the CIAA and the challenges in equitable revenue distribution from natural resources, including forests, a troubling picture emerges. Forest-rich areas may benefit from royalties and

conservation efforts, while forest-poor regions struggle with environmental degradation and limited economic opportunities. This situation underscores the need for a more refined and equitable approach to forest management and revenue sharing in Nepal. It calls for policies that preserve existing forests and promote afforestation in deprived areas, coupled with stringent anti-corruption measures and a more balanced distribution of forest-derived benefits across all regions. Additionally, incorporating disaster vulnerability and climate change risk factors into royalty distribution models could further enhance environmental justice and sustainable development throughout the country.

6.1.2 Timber Production, Supply and Demand

Despite vast forest resources, the country heavily relies on imported wood to meet its annual demand. While Nepal requires approximately 119 million cubic feet of wood annually (Kanel et al., 2012), the country's forests only produced about 14.35 million cubic feet in the last fiscal year, 2019/20 (MoFE, 2020), indicating a significant gap between supply and demand.

In the fiscal year 2079/80 (2022/23), a total revenue of 4 billion 77 crore rupees was collected from all forest areas, including protected regions. This substantial revenue highlights the forest's significant economic contribution, encompassing protected areas and managed woodlands. It underscores the importance of sustainable forest management in supporting the economy while balancing conservation efforts³.

The 61st Annual Report of the Auditor General, 2081, highlights issues regarding forest resource utilisation. The Forest Policy of 2075 aims to achieve self-sufficiency in forest products and promote value-added exports. However, there is an increasing trend of fallen, dead-standing, degraded, and mature trees in forest areas. Due to the inability to meet domestic demand through internal production, customs department data shows imports of timber and wood products valued at 2.33 billion rupees in 2077/78, 7.99 billion rupees in 2078/79, and 6.40 billion rupees in 2079/80. The underutilisation of timber resources has led to potential revenue loss, while billions of rupees are spent importing wood products. To address this, properly managing fallen and dead-standing trees should be implemented to ensure the appropriate use of timber and other forest products, thereby contributing to the national economy.

6.2 Electric energy production and consumption

As of Falgun 2080 BS (2024 AD), the installed hydropower capacity has reached 2,818.91 megawatts. In addition, solar energy contributes 97.04 megawatts, and thermal plant energy accounts for 53.41 megawatts of production. Furthermore, the Alternative Energy Promotion Center has produced 84.74 megawatts of electricity, and sugar mills have generated 6 megawatts through co-generation technology. Altogether, the total installed electricity capacity has reached 3,060.1 megawatts.

³ Ministry of Forest and Environment

Of the total installed capacity of 3,060 megawatts, the share of renewable energy sources was 5.9 percent as of Falgun 2080 BS (Feb-March 2024). This marks a decrease from 6.2 percent in 2079 BS (2022-2023 AD). In terms of overall energy consumption, clean energy sources account for 11.7 percent of the total. The Alternative Energy Promotion Center produces, 48.23 megawatts of electricity from solar plants. In the overall installed electricity capacity, hydropower accounts for 92.1 percent, while other sources contribute 7.9 percent. Solar plants specifically account for 4.7 percent of the total production.

This overview presents a comprehensive picture of the current energy production. It highlights the dominance of hydropower while also showcasing the growing contribution of alternative and renewable energy sources.

As of Falgun 2080 (February-March 2024), 2,965.36 megawatts have been added to the national grid. This includes 660.45 megawatts from projects operated by the Nepal Electricity Authority, 492.90 megawatts from projects run by subsidiary companies of the Electricity Authority, and 1,822.01 megawatts from privately operated projects. Regarding electricity consumers, including community users, the number stood at 5,648,482 by the end of Asar 2080 (mid-July 2023). By Falgun 2080 (February-March 2024), this number has increased to 5,672,607. As of Falgun 2080 (February-March 2024), 97.7% of the total population has access to electricity (including alternative energy sources). These data highlight the significant growth in power generation capacity, with contributions from both public and private sectors, as well as a steady increase in the number of electricity consumers, indicating expanding access to electrical services across the country. However, the electricity access in Koshi, Sudurpaschim, and Karnali provinces remain below national average⁴.

6.3 Construction status of Hydro-projects

By Ashar 2081 BS (June-July 2024), 57 hydropower projects were expected to be completed with an estimated total capacity of 811 megawatts. In the upcoming fiscal year, it is estimated that 53 projects under construction will be completed, adding 940.8 megawatts of hydropower capacity. As of the Falgun 2080 BS (February-March 2024), survey licenses have been issued to 14 hydropower projects from the private sector, with a combined capacity of 1,660.73 megawatts. To date (till February-March 2024), survey licenses have been issued for 87 projects with a total capacity of 8,512 megawatts.

The data show a significant increase in the number of hydropower projects and their total capacity in Nepal. The growth from 57 completed projects to potentially 53 projects (57 completed + 53 under construction) indicates a rapid expansion of the hydropower sector. Additionally, the issuance of survey licenses for 87 more projects suggests continued growth in the future. The rapid growth of hydropower projects underscores the need for careful environmental impact assessments and sustainable development practices to balance energy needs with ecological preservation.

⁴ Ministry of Energy, Water Resources and Irrigation

6.4 Issues of EIA and IEE

The Environmental Protection Rule (EPR)-2020 has provided a timeline for the approval period of the scoping document, Terms of Reference, Brief Environmental Studies, and Initial Environmental Examination report to be 15 days of report submission and approval of the EIA report to be 35 days of report submission. However, the 61st Annual Report of the Auditor General, 2081, reviews the Environmental Impact Assessment (EIA) process conducted by the Ministry of Forests and Environment. The audit reveals that EIA approvals take between 136 to 1,245 days. This includes 236 days for evidence collection, 1,010 days for resubmission after revision requests, and up to 267 days for secretary recommendations. The Auditor General identified several issues causing delays: incomplete documentation being recommended, late submission of revised reports, omission of public hearing feedback from affected local areas, and lack of precise data on forest area damage and tree felling. The report also notes that initiating contract management without EIA approval and delays in the approval process increase consultancy and construction time and costs. The Auditor General recommends that the Ministry should coordinate with stakeholders to address these problems and improve the efficiency of the EIA approval process.

6.5 Transportation and Energy Sector

Nepal heavily relies on imports, particularly in the energy and transportation sectors. The country imported petroleum products worth Rs. 300.28 billion in the last fiscal year, 2022/23, and Rs. 322 billion in the fiscal year 2021/22. During the first 11 months of the fiscal year (2080/81), the country imported petroleum products worth a staggering Rs 300 billion, more than double its total exports. This highlights the significant dependence on foreign fuel sources and the resulting strain on the trade balance.

Table 1. Imports of petroleum products in Nepal (Values are in thousand kiloliters but, for LPG it is in thousands of metric tons.)

Product	2077/78	2078/79	2079/80
Petrol	558	730	673
Diesel	1678	1728	1380
Kerosene	23	18	13
ATF	70	154	175
LPG	478	536	515

Source: Ministry of Industry, Commerce and Supplies, 2080

In addition to petroleum products, Nepal imported a substantial number of vehicles, totaling Rs 80.58 billion. This suggests a growing demand for personal and commercial transportation, further contributing to the reliance on imported fuel⁵.

⁵ Department of customs, 2023

6.6 Issue of Electric Vehicle Tax

Nepal's Second Nationally Determined Contribution outlines ambitious targets for the transport sector to reduce fossil fuel dependency and greenhouse gas emissions. By 2025, the country aims to have electric vehicles comprise 25% of private passenger vehicle sales (including two-wheelers) and 20% of four-wheeler public passenger vehicle sales. This new projection is expected to decrease fossil fuel energy demand by 9% and reduce emissions by 8% compared to business as usual.

The targets are more aggressive for 2030, with electric vehicles projected to account for 90% of private passenger vehicle sales and 60% of four-wheeler public passenger vehicle sales. These measures are anticipated to cut fossil fuel dependency by 28% and achieve a corresponding 28% reduction in emissions from the transport sector.

These goals demonstrate Nepal's commitment to sustainable transportation and climate change mitigation, aligning with global efforts to reduce carbon emissions in the coming decade.

Nepal's liberal tax policy on electric vehicle imports has led to a surge in sales, with EVs now comprising 65-70% of total vehicle sales, but also resulting in an estimated revenue loss exceeding Rs. One trillion. Government agencies suspect some tax evasion by understating vehicle motor capacities, potentially reducing reported peak power from 150 to 100 kilowatts. The Department of Customs and Revenue Investigation has initiated an inquiry comparing importer's documents with manufacturer specifications. If evasion is proven, importers will face legal consequences. This situation highlights the need for effective regulation and monitoring of the expanding EV sector in Nepal, emphasising the importance of balancing revenue security and consumer interests through a transparent and accountable tax system⁶.

Green Intentions, Gray Outcomes: The Policy Paradox in Climate Action

The implementation of seemingly beneficial policies can sometimes have unintended negative consequences, as evidenced by Nepal's recent experience with electric vehicle (EV) incentives. In an effort to promote clean energy and combat climate change, the government offered substantial tax breaks of up to 200% on EVs, resulting in the import of over 17,000 electric vehicles in a single year. While this initiative aligns with global environmental goals, it has led to significant revenue losses for the government. This situation raises important questions about the timing and scale of such incentives, especially considering a country's minimal contribution to global carbon emissions (0.04%), primarily from biomass use rather than fossil fuels. The contrast between Nepal's import of 17,000 EVs and India's production of 80,000 four-wheelers in 2023 highlights the disproportionate impact on country economy. While the policy has stimulated bank lending, it has simultaneously weakened the government's fiscal position. This case underscores the need for careful consideration of the broader economic implications when implementing environmentally-focused policies, particularly in developing economies where the balance between environmental goals and financial stability is crucial⁷.

⁶ <https://www.ratopati.com/story/435994/government-says-importers-of-electric-vehicles-evaded-taxes>

⁷ Based on the interview published in the Ratopati with Dr Anal Raj Bhattarai

6.7 Pollution Tax

The latest report from the Auditor General addresses concerns related to the management of pollution control fees. According to Section 13 of the Financial Act, 2076, a pollution control fee of Rs. 1.50 per litre is levied on petrol and diesel sold within Nepal. Rs. 3.09 billion was collected last fiscal year, bringing the total revenue from 2065/66 to 2079/80 to Rs. 19.60 billion, deposited into the consolidated fund. The government previously collected 0.50 Rs. per litre. However, from 2076/77 (2019/20), the Finance Act was amended to set the rate at 1.5 rupees. However, the audit found no clear records showing that this money was directly spent on pollution control and prevention activities. The Auditor General recommends that arrangements be made to ensure the collected fees are used for pollution control.

6.8 Emerging Green Economy: Taxation and Fund Utilization Dilemmas

The concepts of 'Green Economy', 'Green Finance', and 'Green Funds' have gained prominence worldwide. The idea of a 'Green Economy' implies that future development investments should be environmentally friendly or cause minimal harm to the environment. Based on this concept, the international community has initiated 'Green Funds' for investments. In this context, donor agencies have been seeking commitments from the Nepalese government for a 'Green Economy' in international forums⁸.

The Government of Nepal plans to introduce a green tax starting from the fiscal year 2024-25. A tax of One rupee per litre is levied on motor spirit petrol, hexane, and high-speed diesel, aiming to reduce fossil fuel consumption. Additionally, a 0.5% green tax is applied to furnace oil and base oil, while a One per cent tax is imposed on lubricant oil. Petroleum oil and oil derived from bituminous minerals, comprising 70% or more of petroleum oil, is also subjected to a 1% tax⁹.

It's worth noting that the 'Pollution Control Fund', collected from taxes on petroleum products, has not been utilized so far. Similarly, the government has been collecting an annual vehicle-renewal tax, with extra charges for older vehicles due to their higher contribution to air pollution. However, the exact amount collected and its utilization for air pollution control or related purposes remains unclear.

Nepal Oil Corporation has reported collecting 270 million rupees in green tax over a two-and-a-half-month period. This tax, announced in the budget on 28 May 2024, has been collected since then. During this period, 190 million rupees were collected from diesel and 80 million rupees from petrol¹⁰.

However, it remains unclear whether the government will use the collected green tax specifically for building a green economy or it will be spent like other taxes. The 'modality' for spending the green tax has not yet been established. The Ministry of Finance estimates that it can collect approximately 4 to 5 billion rupees annually from taxes on petroleum and coal products.

⁸ <https://www.ratopati.com/story/429919/budget>

⁹ <https://thenepalweekly.com/2024/06/18/20847/>

¹⁰ <https://gorkhapatraonline.com/news/120089>

This situation highlights the need for transparency and proper utilization of funds collected for environmental purposes ensuring that they contribute effectively to the development of a sustainable green economy in Nepal.

6.9 Tourism Sector

Except for Indian tourists arriving by land, there was an increase in tourist arrivals from 614,869 in 2022 to 1,018,662 in 2023, showing a significant growth of 65.0%. In the first three months of 2024, tourist arrivals increased by 33.8% compared to the same period in 2023, reaching 348,693.

In 2023, there was a slight increase in the average length of stay for tourists and their daily expenditure. During this period, the average length of stay for tourists was 13.2 days, and the average daily expenditure per tourist was 41.0 US dollars. In 2022, tourists' average length of stay was 13.1 days, and the average daily expenditure per tourist was 40.5 US dollars. In 2023, foreign tourists visiting Nepal for various purposes generated tourism revenue of 68 billion 700 million rupees, an increase of 45.6% compared to the 47 billion 260 million rupees earned in 2022.

The number of mountaineering expeditions (climbing teams) increased by 15.0% to 2,243 in 2023. The number of mountaineers grew from 8,468 in 2022 to 9,398 in 2023, showing an 11.0% increase. Along with this rise in mountaineering, the royalties earned from mountaineering also saw a significant boost, increasing by 42.0% to reach 999.3 million in 2023.

6.10 Mountain Royalty

The 61st Annual Report of the Auditor General, 2081, highlights issues in the distribution of mountaineering royalties in Nepal. According to the Inter-governmental Fiscal Management Act 2074, royalties from natural resources, including mountaineering, should be deposited in the Federal Divisible Fund and distributed among federal (50%), provincial (25%), and local governments (25%). A 2018 Cabinet decision assigned the Nepal Mountaineering Association to collect and distribute royalties from 27 peaks up to 6,000 meters until 2080. However, the report notes discrepancies in the distribution process. While 25% each should go to provincial and local governments and 5% to the Nepal Mountain Training Institute Development Committee, there is no provision for the Nepal Mountaineering Association to retain 45% of the collected royalties. From 2075/76 to 2079/80, about Rs. 321.25 million in royalties were deposited in the Federal Divisible Fund, but Rs. 69.11 million from the current year remains undeposited. This inconsistent handling and distribution of royalties potentially impacts the development initiatives of the intended recipient governments, highlighting the need for a more transparent and efficient system of royalty accounting and distribution through the divisible fund.

7. Climate Finance

The budget allocation for climate change programs has steadily increased, reflecting a growing commitment to addressing this critical issue. This increase aims to achieve the expected results by effectively implementing climate-related initiatives. In the fiscal year 2076/77 (2019/20), 5.21% of the total budget was earmarked for climate change mitigation and adaptation efforts. This proportion has significantly risen, reaching 5.96% in the fiscal year 2080/81 (2023/24). This upward trend assures the government's intensifying focus on tackling climate change challenges.

Table 2. Proportion of Climate Change Budget in Annual Budget

Description	2076/77	2077/78	2078/79	2079/80	2080/81*
Direct Allocation	5.21	5.31	5.71	5.90	5.96
Indirect Benefit	25.05	27.11	27.66	28.08	29.90

*Source: Ministry of Forest and Environment, 2080 (2023) (*Till Falgun, 2080)*

The indirect benefits, including broader environmental and sustainability programs, have also substantially increased from 25.05% to an estimated 29.90% over the same period. This suggests a more holistic approach to addressing climate change, recognising its wide-ranging impacts across various sectors.

The total figure, however, shows a slight decline over the years. This could indicate a shift in how climate-related expenditures are categorised or a reallocation of resources within the broader environmental budget heads. Data reflect a growing prioritisation of climate change in the national budget, with both direct and indirect allocations are increasing. This trend aligns with global efforts to combat climate change and suggests that Nepal is taking proactive steps to address this pressing global issue.

7.1 Climate Commitments: Strategies, Implementation, and Financial Needs

Nepal has demonstrated its commitment to addressing climate change through several key initiatives. In October 2021, the government endorsed and submitted the Long-Term Strategy for Net-Zero Emissions (LTS), which outlines Nepal's vision to "Minimise emissions and sustainably achieve net-zero emissions by 2045" (Government of Nepal, 2021).

The government of Nepal has approved the NDC Implementation Plan (NDCIP) to support the implementation of its NDC. This document is a crucial guide for policy-making, planning, monitoring, and translating NDC targets into actionable strategies.

The financial requirements for implementing Nepal's climate commitments are substantial. The total cost for public sector NDC implementation is approximately USD 33 billion. Of this, Nepal plans to mobilise around USD 3.4 billion from domestic resources to achieve its unconditional hydroelectricity generation target, as outlined in the country's Second NDC.

¹¹ <https://ndcpartnership.org/events/cop28-financing-nepals-ndc-implementation-plan>

However, most of the targets for reducing greenhouse gas emissions across various sectors are contingent on receiving adequate international support. This support is needed in the form of climate finance, technology transfer, and capacity-building assistance. This underscores the importance of global cooperation in helping Nepal achieve its ambitious climate goals and transition towards a low-carbon future¹¹.

7.2 Climate Finance in Nepal: Commitments and Reporting Challenges

Nepal, a landlocked Himalayan country highly vulnerable to climate change impacts, has received significant international climate finance to address these challenges. From 2013 to 2017, Nepal received commitments for 609 climate-related projects, totaling \$1.92 billion (Rai et al., 2020). The World Bank, Asian Development Bank, and European Investment Bank were the largest providers, contributing about 33%, 29%, and 11% of the total climate-related finance, respectively. The ratio of adaptation to mitigation finance was slightly skewed towards adaptation, with 53% for adaptation and 47% for mitigation. However, countries with the highest corruption risks are paradoxically receiving a significant portion of global climate finance. Specifically, these high-risk nations are allocated 41.9% of all climate-related overseas development assistance despite concerns about potential misuse of funds (Nest et al., 2020).

A critical issue emerged regarding the accuracy of reported climate finance. The study revealed significant discrepancies between reported and assessed adaptation finance. Out of \$649 million of adaptation finance reported by donors across 15 assessed projects, \$384 million (59%) was considered over-reported (Rai et al., 2020). This over-reporting was primarily observed in projects from multilateral donors, with a single World Bank project, the "Earthquake Housing Reconstruction Project," accounting for \$328 million (90%) of the over-reported amount. The assessment team found that many projects had lower adaptation relevance than reported, indicating a tendency to overestimate the portion of project budgets dedicated to climate adaptation.

This over-reporting raises concerns about the accuracy of climate finance reporting and the amount of funding reaching genuine adaptation activities in Nepal. It underscores the need for more transparent and accurate reporting mechanisms to ensure climate finance effectively addresses the country's adaptation needs.

7.3 Nepal Climate Finance Mirage: Policy vs. Reality

The climate financing landscape in Nepal, particularly the National Climate Change Policy commitment to allocate 80% of international climate funds to local levels, reveals a gap between policy intention and practical implementation. While this policy demonstrates a strong commitment to supporting local climate action, the reality on the ground falls short of this ambitious target. Project case studies show that the allocation of funds to local levels varies widely, ranging from 61% to 90%, indicating inconsistent adherence to the 80% policy target (MoFE, 2021). This variability points to a lack of standardized procedures and clear criteria for implementing the policy across different projects and funding sources.

7.4 Nepal's Mounting Debt and Climate Agenda

The public debt of Nepal has grown significantly, reaching 2,433 billion Nepalese Rupees (approximately USD 18.3 billion) in the fiscal year 2080/81 (2023/24). The debt has been increasing rapidly, particularly due to post-earthquake reconstruction efforts and economic challenges during the COVID-19 pandemic (Figure 9). As of the latest data, the total public debt amounts to 42.65% of Nepal's GDP. The government has struggled to meet its revenue collection targets, with the debt increasing as a result. For the current fiscal year, the government aims to cover 12,603 billion rupees from revenue, leaving a significant deficit. The debt burden translates to approximately 82,000 rupees (about USD 620) per Nepali citizen. The debt has been rising due to factors such as a small GDP base, low domestic savings, an import-dependent revenue structure, weak foreign aid absorption, and low returns on capital expenditure. Officials consider the current debt level to be manageable, despite economists' warning of potential risks. These include reduced fiscal space for the government, possible macroeconomic instability if the trend continues, and concerns about the effective utilization of borrowed funds due to issues in project management and transparency. The increasing allocation of the budget for debt servicing over capital expenditure is also highlighted as a worrying trend for Nepal's economic future.

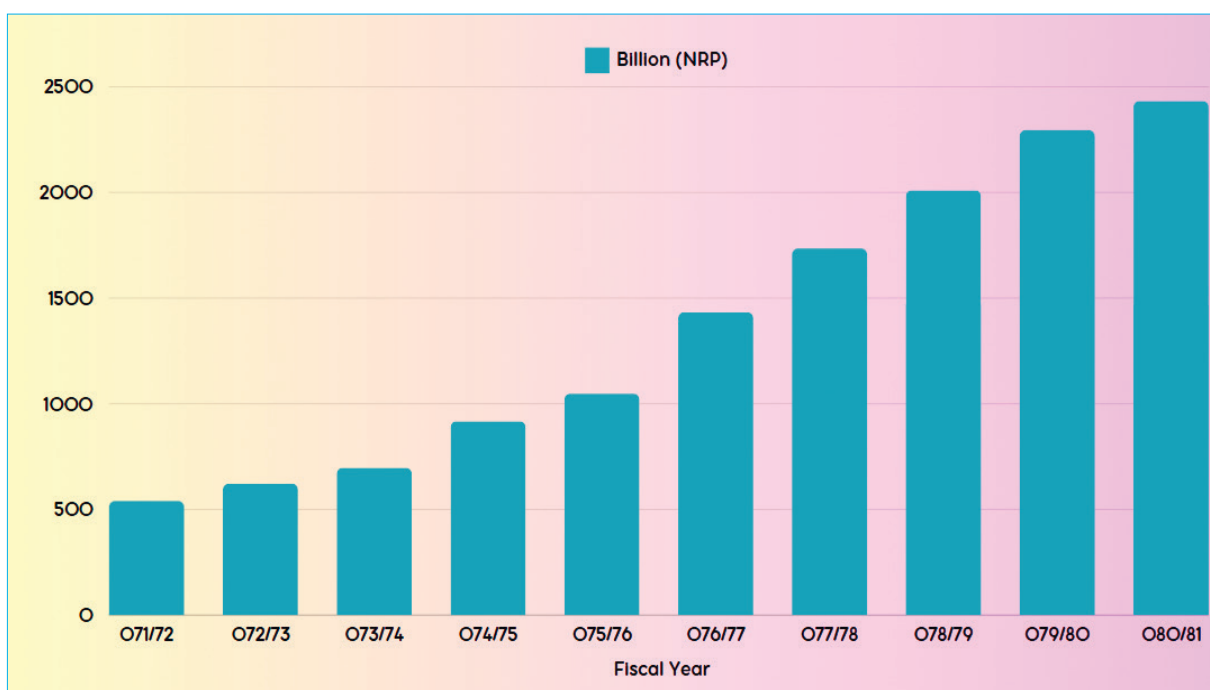


Figure 9. Public Debt trend in Nepal

The mounting public debt, reaching 2,433 billion Nepalese Rupees (42.65% of GDP), poses significant challenges for its climate change adaptation and mitigation efforts. This financial burden exemplifies the "double burden" faced by many developing countries, caught between debt repayment obligations and pressing climate adaptation needs (Volz et al., 2021). The situation is particularly critical for Nepal, given its high vulnerability to climate impacts such as glacial lake outburst floods and changing monsoon patterns. As debt servicing demands

increase, resources that could be allocated to climate-resilient infrastructure and green technologies are potentially diverted, exacerbating the country's climate vulnerabilities (Kling et al., 2021; Andrijevic et al., 2020).

The implications of this debt burden extend beyond immediate fiscal constraints. High levels of debt can significantly impair a country's ability to respond to climate-related disasters and implement long-term adaptation strategies (Buhr et al., 2018). For Nepal, this could mean reduced capacity to invest in critical areas such as climate-smart agriculture, resilient water management systems, and early warning mechanisms for extreme weather events. Furthermore, the high climate risk profile of the country may lead to increased borrowing costs, creating a vicious cycle where climate vulnerability and debt reinforce each other (Dibley et al., 2021). This dynamic not only threatens the progress of the country towards its Nationally Determined Contributions under the Paris Agreement but also undermines its overall sustainable development goals. The interplay between debt, climate vulnerability, and economic stability presents a complex challenge that requires careful consideration in both national policy-making and international climate finance discussions (Volz et al., 2021).

8. Policy Challenges

8.1 Royalty Distribution

The National Natural Resources and Fiscal Commission's fifth annual report (2023) highlights issues regarding the distribution of natural resource royalties in Nepal. According to the Intergovernmental Fiscal Arrangement Act, 2074 (2017), royalties from natural resources in the federal divisible fund should be distributed annually. However, the Nepal government has not deposited these royalties into the respective provincial and local government consolidated funds in the same fiscal year they were collected. While the Commission has recommended shares for natural resource contribution, it lacks detailed project-wise distribution information from the government, preventing analysis of royalty distribution implementation. Various legal provisions exist regarding investment, returns, and benefit-sharing in natural resource mobilisation. The Commission recommended formulating a unified national law on natural resource mobilisation, but this has not been implemented. These findings underscore the challenges in the timely and transparent distribution of natural resource royalties across different government levels in Nepal and the need for a comprehensive legal framework for natural resource management¹².

The Intergovernmental Fiscal Arrangement Act distributes natural resource royalties without explicitly considering disaster vulnerability or climate change impacts. While the Act allows for distribution based on areas affected by resource use, it does not incorporate the existing climate vulnerability and risk. To address this gap, policy should incorporate the factors of disaster and climate risks, integrate vulnerability data into the distribution scheme, and create a more flexible allocation model. Also, establishing a dedicated fund for climate adaptation and

¹² National Natural Resources and Fiscal Commission Annual Report, 2023

reducing disaster risk from royalty revenues could enhance resilience at the community level. These considerations would align royalty distribution more closely with environmental risks, potentially leading to more effective disaster preparedness and climate change adaptation across Nepal.

8.2 Economic Vulnerabilities amid Trade and Climate Challenges

Nepal's economic landscape reveals significant vulnerabilities, with a large trade deficit driven by iron and steel imports for infrastructure development, amounting to Rs 1.097 trillion. Substantial agricultural imports, including vegetables worth Rs 26 billion and tea and coffee valued at Rs 10.42 billion, highlight domestic production challenges. While remittances have played a crucial role in poverty reduction, accounting for 27% of all poverty reduction from 1996 to 2011, this dependence exposes the economy to external shocks (World Bank, 2021). These economic issues intersect with climate change risks, which could further strain agricultural production and exacerbate import reliance. Additionally, the potential for corruption in infrastructure projects and agricultural initiatives may hinder efforts to address these challenges effectively. Addressing these interconnected issues requires a comprehensive approach that focuses on climate-resilient agriculture, transparent governance in development projects, and sustainable domestic economic growth to reduce vulnerabilities and enhance resilience against both economic and environmental challenges.

8.3 Nepal Climate Fund Adrift

The implementation of climate change projects in Nepal involves a complex network of agencies, including international organizations. While aiming to leverage global expertise, this structure challenges effective climate finance governance. Nepal's climate change policy commits to allocating 80% of climate funds to climate-vulnerable communities, yet this target often remains unmet. The prominent role of international, profit-oriented organizations in project execution not only inflates costs but also raises concerns about accountability in achieving policy objectives. This approach limits local institutional capacity development, as Nepal-based organizations have fewer opportunities to lead climate change programs. Consequently, this situation risks prolonging dependence on external entities, potentially impeding progress towards the 80% fund allocation goal and undermining Nepal's ability to address climate challenges technically.

8.4 Nepal LDC Transition Strategy: Silent on Governance Reform

The LDC Graduation Smooth Transition Strategy, formulated by the Government of Nepal National Planning Commission in February 2024, presents a comprehensive roadmap for the country's transition from Least Developed Country (LDC) status to that of a developing nation by November 2026. Structured around six strategic pillars, the document outlines detailed strategies and action plans addressing various aspects of the nation's economy and society. It provides a thorough analysis of the potential impacts of LDC graduation on international trade, development cooperation, and policy space while establishing an institutional framework

for implementation that emphasizes partnerships between government, private sector, civil society, and development partners.

The strategy's strength lies in its comprehensive approach, which covers a wide range of economic and social sectors, and its alignment with existing national development plans, sectoral policies, and international commitments such as the Sustainable Development Goals. Clear institutional mechanisms for implementation, monitoring, and evaluation are established, which are crucial for effective execution. Furthermore, the emphasis on inclusive dialogue and partnerships can foster broad-based support and collaboration, while the incorporation of environmental concerns and climate change adaptation recognizes their importance for long-term development.

The most critical gap in the strategy is its insufficient attention to corruption and governance issues. This omission is particularly concerning, given the pivotal role of good governance in ensuring successful LDC graduation and sustainable development. Detailed anti-corruption measures, broader governance reforms, and explicit strategies to enhance transparency and accountability in government operations are lacking. The document also overlooks the importance of improving public sector efficiency, strengthening the judicial system, implementing civil service reforms, and addressing vulnerabilities in public procurement processes. The absence of provisions for whistleblower protection and the lack of discussion on strengthening or establishing dedicated anti-corruption institutions further underscore this critical oversight.

Despite the comprehensive approach of Nepal's LDC transition plan, its silence on governance reform poses significant risks to climate change initiatives. This oversight could undermine the effectiveness of climate action, jeopardizing resource allocation, implementation, and international support. Without addressing these fundamental governance issues, Nepal may struggle to meet climate commitments and build resilience, potentially compromising the long-term sustainability of development efforts. As Nepal navigates the post-LDC future, strengthening governance and transparency mechanisms will be crucial to ensure that climate initiatives - and indeed all development programs - deliver their intended benefits to the nation and its people.

To strengthen the strategy and enhance prospects for successful post-graduation development, a robust anti-corruption and good governance component must be developed and integrated across all strategic pillars.

9. Strengthening Climate Resilience and Governance in Nepal

Nepal faces significant challenges in addressing climate change impacts while struggling with economic vulnerabilities and governance issues. To strengthen climate resilience and improve governance, several key areas require immediate attention. Transparent climate finance management is crucial, given the recent revelation of 59% over-reporting of adaptation finance. Implementing stringent reporting mechanisms and enforcing the commitment to allocate 80% of climate funds to local levels are essential steps. Equally important is tackling corruption, particularly at local levels, where 51.42% of complaints in 2079/80 were directed. Strengthening

anti-corruption bodies, implementing whistleblower protection, and integrating robust anti-corruption components into the LDC transition strategy are vital measures.

Natural resource management presents another critical challenge. Despite 45.31% forest cover, Nepal paradoxically imports wood products, indicating mismanagement. Implementing sustainable forest management practices and addressing the lack of forests in 106 local levels are imperative. Developing a transparent and equitable system for natural resource royalty distribution that incorporates climate vulnerability and disaster risk factors is also essential.

Climate-resilient economic development must focus on reducing dependency on imported fossil fuels in the transportation sector and balancing rapid hydropower development with stringent environmental impact assessments. Addressing the mounting public debt, currently at 42.65% of GDP, is crucial to ensure fiscal space for climate initiatives. Governance reform should enhance domestic capacity for climate project implementation, improve coordination between government levels, and strengthen environmental impact assessment processes.

Policy alignment and implementation require ensuring coherence between climate policies, economic development strategies, and governance frameworks. Developing clear implementation guidelines for the National Climate Change Policy and NDC Implementation Plan, while integrating climate considerations into all sectoral policies, is crucial. Establishing a robust monitoring and evaluation system for climate projects and finance, enhancing transparency in reporting, and strengthening the role of civil society and media in oversight are key to ensuring accountability.

Implementing these measures will require concerted efforts from all levels of government, civil society, the private sector, and international partners. By addressing these interconnected challenges, Nepal can enhance its climate resilience, improve governance, and progress towards sustainable development. This approach will not only help Nepal meet its climate commitments but also ensure a more equitable and resilient future for its citizens in the face of growing climate threats. The success of these efforts will depend on sustained commitment, transparent processes, and active participation from all stakeholders in the journey of a climate-resilient and well-governed future.

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