CACCI Country Profile
NEPAL

Country Overview

Nepal is a mountainous, landlocked, and low-middle-income country in the South Asian region. Agriculture is the principal occupation housing 69% of the labor force, followed by tourism. Nepal witnesses frequent soil erosion, landslides, flash floods, and droughts with lasting impacts on most livelihoods. A recent Asian Development Bank study estimates that before 2050, the country will lose 2.2 percent of its yearly GDP to climate change. Energy, agriculture, water resources, forestry, biodiversity, and the health sector are at high risk due to the negative impact of climate change. The National Adaptation Plan (NAP) 2021 – 2050 is the guiding document along with the Second and the Third National Communication to the UNFCCC. The Second Nationally Determined Contribution (NDC) (Jan 2021 – Dec 2030) outlines the sectoral activity-based and policy targets and reduction in emissions in select sectors, all conditional on international support.

Climate Risk

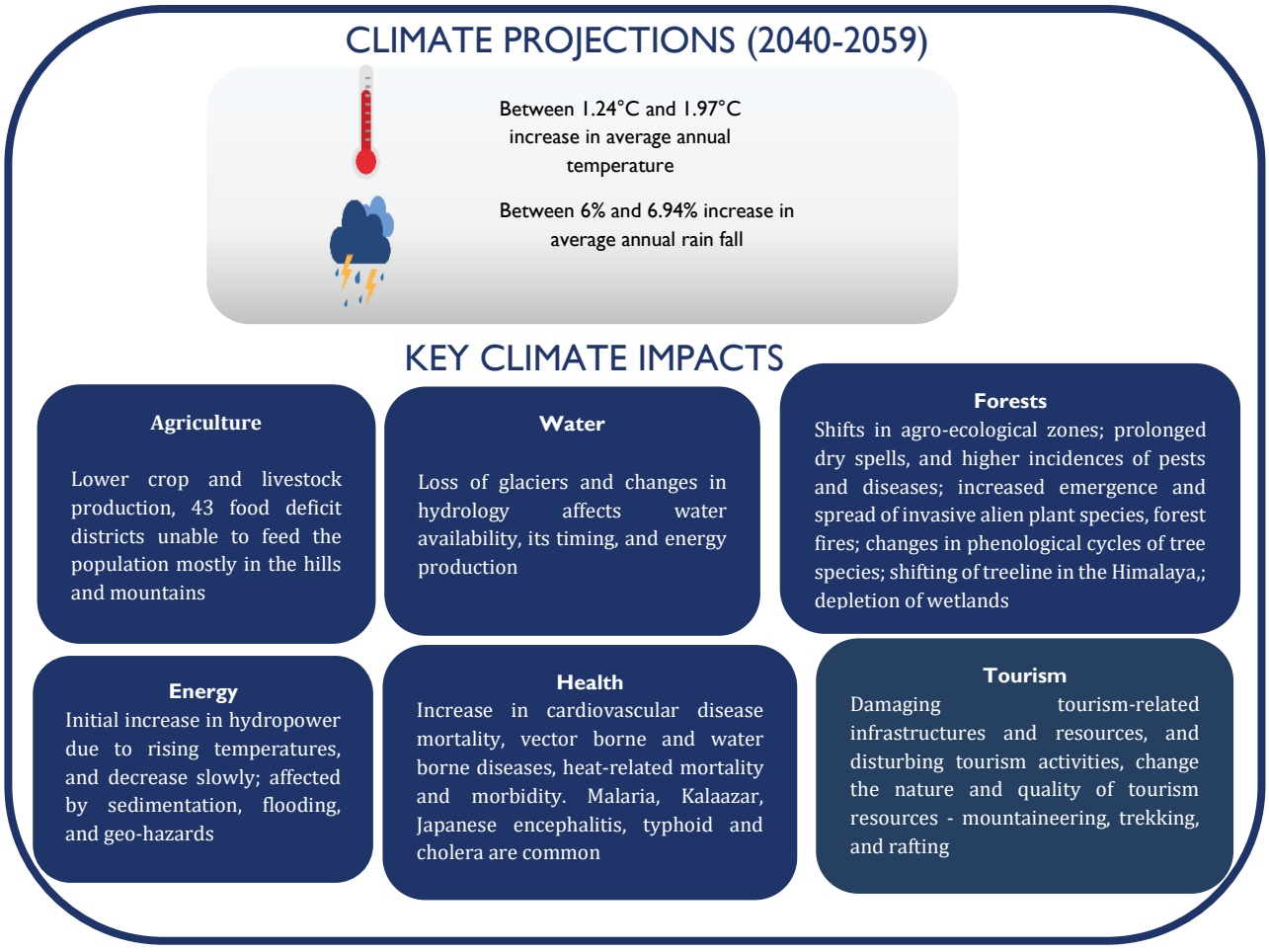
Acute climate hazards, heat waves, floods, landslides, avalanches, and forest fires cause frequent disruption. There is a slow occurrence of droughts, changes in precipitation, snow cover, glacier retreat, and glacial lake outburst flood (GLOF). The agrarian economy relies mainly on rainfall, and there are inadequate irrigation systems. The increased frequency and severity of hazards increase the vulnerability of households. These climate hazards will bring about biophysical and socio-economic impacts - lower food production, destruction of jobs, lower well-being, reduction in biodiversity and natural resources, and disruption of eco-systems; loss of property and infrastructure, and lower services. Implementation of the NDC is by the federal, provincial, and local governments in close

NDC Snapshot	Not available	Draft	Finalized
Frameworks			
Results Framework	☐	☐	☑
M&E framework	☐	☐	☑
MRV System	☐	☑	☐
Implementation and Coordination			
Implementation Strategy	☐	☐	☑
Climate Change Action Plan	☐	☑	☐
Multi-Stakeholder CC working group (MSWG)	☐	☑	☐

MSWG Lead	Rt. Hon. Prime Minister
NAP	Finalized
NDC	Updated NDC submitted in 2021

coordination with the different stakeholders, youth, women, and indigenous people. The coordinating bodies are the Environment Protection and Climate Change Management National Council, Inter-ministerial Climate Change Coordination Committee (IMCCCC), Thematic and Cross-Cutting Working Groups, and Provincial Climate Change Coordination Committees. Nepal needs USD 47.4 billion for implementing priority sector programs up to 2050, with a yearly expense of USD 2.1 billion up to 2030.

Figure 1. Climate Projections and Vulnerabilities by Key Sectors

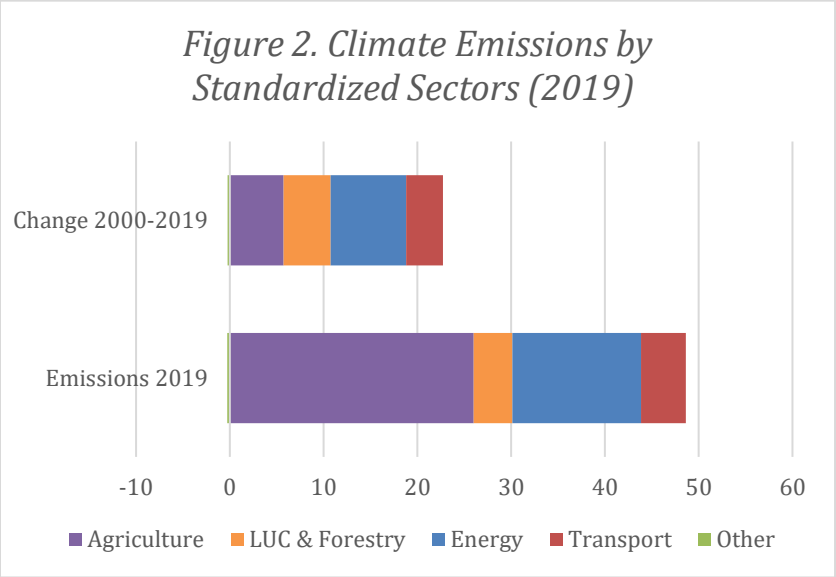


Source: Source: World Bank climate knowledge portal country pages: https://climateknowledgeportal.worldbank.org/. Note: Projections for temperature and precipitation based on SSP1-2.6 and SSP5-8.5 model estimates.

Emissions By Sector

Figure 2 shows that amongst the sectors, the agriculture sector had the highest emissions in 2019, followed by the energy sector. Emissions for agriculture, LUC & forestry, energy, and transport sectors rose between 2000 and 2019.

Figure 2. Climate Emissions by Standardized Sectors (2019)



Source: Historical data emissions file downloaded from https://www.climatewatchdata.org/ghg-emissions?end_year=2019&start_year=1990.

INSTITUTIONAL FRAMEWORK FOR IMPLEMENTATION

The government has developed institutional arrangements to address climate change at all levels. The Environmental Protection and Climate Change Management Council under the leadership of the Prime Minister is the apex institution to oversee the gamut of climate change efforts. The Ministry of Forests and Environment (MoFE) and the Ministry of Industry, Tourism, Forests, and Environment (MoITFE) lead efforts at the federal and provincial levels respectively. For the facilitation of cross-sectoral coordination, the Inter-ministerial Climate Change Coordination Committee (IMCCCC) and the Provincial Climate Change Coordination Committee (PC4) are responsible at the federal and provincial levels, respectively.

KEY SECTORS AND PRIORITY ACTIONS

PRIORITY SECTORS AND ACTIONS	
Sector	**Actions**
Agriculture & food security	Key adaptation measures in **the agriculture & food security sector** include: • National Agriculture and Research Council (NARC) - Breeding drought tolerant varieties of crops like Hardinath-1, Radha-4, Barkhe varieties of rice, Gautam and WK 1204 varieties of wheat and Manakamana, Rampur Composite, and Deuti varieties of maize, submerged variety of rice like IR 64; • developing drought tolerant varieties, submerged varieties, early maturing and pest resistance varieties, and varieties that can withstand high temperatures; • System of Rice Intensification (SRI); green manuring; conservation tillage practices; use of plastic house and water sprinklers; sustainable agriculture soil and water conservation; slope stabilization and landslide control; rainwater harvesting, rangeland and forage improvement; cultivation on river beds and shrub land; livestock shed improvement; bioenergy; and adoption of biogas; • promotion of agricultural crops in dry and waterlogged area; water efficient irrigation system; crop diversification, agro-biodiversity conservation and organic agriculture system, commercialization, kitchen and home garden.
Water resources & energy	Key adaptation measures in **the water resources & energy sector** include: • setting up early warning systems at the meteorological and hydrological stations; retrofitting of existing plants and over-designing new plants; • development of a web-based telemetry system in rivers for providing real-time data on water levels and flood warnings; • upgradation of 11 hydro-meteorological stations in the Koshi River basin for real time assessment of flood forecasting and early warnings; • construction of rain water harvesting pond, development of water storage and multiple use of water technology for access in vulnerable regions, water siphoning in glacial lake to prevent GLOF, maintaining standards for sustainability of ground water usage in urban locations.
Forests & biodiversity	Key adaptation measures in **the forests & biodiversity sector** include: • sustainable and scientific forest management through watershed and landscape level planning and management; • improved governance capacity, low-cost soil and water conservation practices; control of forest fire; • proper monitoring of forest health through management of landscape-level ecosystem and corridor, improved ecological connectivity, restored ecosystem and species, and control of invasive species; emphasis on management of herbs; • ex-situ conservation of threatened species; afforestation/reforestation and reduction of deforestation and forest degradation; • improved protected areas in mountains; reduced anthropogenic stresses; • incentive for private landowner, strengthening the early information system of climate variability and implementing the preparedness measures to reduce the risk of climate induced disasters; • provision of Payment for Ecosystem Services (PES); • promotion of non-conventional energy sources.

Public health & WASH	Key adaptation measures in **the public health & WASH sector** include: • greater awareness and capacity development about climate change and impact on health; • reducing the morbidity and mortality of infectious diseases (vector, water, air and foodborne diseases) and malnutrition attributed to climate change; • protecting human health from climate change through multi-sectoral response ensuing health in all policies.
Tourism, Natural and Cultural Heritage	Key adaptation measures in **the tourism, natural & cultural heritage sector** include: • application of weather and climate information system, sustainable tourism practice, supply chain management, tourism products diversification, policy reforms and exploiting the situation for immediate opportunity; • renewable energy for tourism related organization, eco-cultural trekking trails, installation of early warning systems.
Urban Settlement and Infrastructure	Key adaptation measures in **the urban settlement & infrastructure sector** include: • engagement of multiple stakeholders and adoption of community-based and ecosystem-based adaptation approaches with an integrated approach; • implementation of urban plans and policies, and enforcement of building codes; • risk sensitive land use planning, construction of climate-resilient infrastructure, investment in green and blue infrastructure, increased insurance coverage; • vulnerability assessment of urban areas for solving environmental problems in coordination with stakeholders.

CLIMATE POLICIES, PROGRAMS, AND INVESTMENTS – PROGRESS AND GAPS

The government of Nepal is committed to working on climate change issues. The NAP is a strategic document to help the country with the adaptation strategies over phases until 2050. For building climate resiliency, the 64 adaptation programs are crucial, out of which 35 require implementation by 2030 and another 29 by 2050. In accordance with the NDC, the Fifteenth Plan (Fiscal Year 2019/20 - 2023/24), and the National Climate Change Policy there is preparation and implementation of the Local Adaptation Plan for Action (LAPAs) by the 753 local governments. Some of the NDC commitments include establishment and operationalization of a climate information system, strengthening the climate-sensitive disease surveillance system, and developing a multi-hazard monitoring and early-warning system. The government has received technical and financial support from the UN Environment and NDC Partnership.

The government is in the process of finalizing a monitoring, review, and reporting (MR&R) system to track the adaptation actions for national and international reporting needs and track the participation of different stakeholders with a focus on women and vulnerable groups. Sectoral focus, choice of indicators, and collation of baseline data are crucial steps. Transparency and accountability are important for developing the M&E framework. The Third National Communication to the UNFCC identifies the following constraints and gaps while preparing the report.

- lack of inter-ministerial and cross-sectoral coordination and cooperation;
- uncertainty in GHG Inventory and Data Quality, no detailed country-specific emission factor and activity data is available;
- inadequate and uneven spatial coverage of meteorological and hydrological observational networks;
- inadequate human resource and lack of updated technology and equipment in the Department of Hydrology and Meteorology;
- low priority and inadequate institutional arrangement for research and development in adaptation and mitigation technologies;
- inadequate opportunity to invest resources in Ministries other than MoFE and other sub-national institutions;
- inadequate institutions and incentives for developing and using technologies for adaptation and mitigation.

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