

Climate Change Finance in Nepal: A Review from Policy Framework and Practice

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Abstract: This study deals with climate change finance and its policy frameworks in Nepal. Primarily, this study aims to examine how the government of Nepal has been spending public funds on climate-related projects and activities, and what types of policy initiatives have been taken to respond to the climate change impact as a party of UNFCCC. Secondly, this paper aims to recommend necessary reform in existing policy and practice by reviewing the policy framework and other legal arrangements for climate change in Nepal. This study has been conducted based on the desk review methodology (desk survey method) which is mainly based on the data and information available from the public finance management system of Nepal. The finding of this study reveals that the government of Nepal allocates about 32.5% of the total national budget annually to highly and moderately relevant climate change activities. In terms of public spending on climate change, the total climate change expenditure has been increasing over the last three years, and out of total climate-related expenditure, there is a higher share of local government which is 47%. In contrast, the share of the federal government is 36% and the provincial government is 17% respectively. This study shows that the major portion of climate change finance has been invested from the source of the Nepal government which is 89% of total climate finance whereas foreign aid contributes 9% and kinds and direct payment contribute 2% of the total climate expenditure respectively. As per the Development Cooperation Report 2022, among all the 361 projects under implementation through official development assistance (ODA), out of which, 35 projects are highly relevant to climate change, for which USD 53 million has been disbursed, 76 projects are moderately relevant to climate change for which USD 379 million has been disbursed and 250 projects are neutral for which USD 988 million has been disbursed in 2022.

Keywords: *Adaptation, Climate change, Climate finance, Nepal, Resilience*

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1. Introduction

Climate Change is an emerging issue in the present world. Environmental pollution, degradation, and emission of greenhouse gases on the Earth are the major causes of climate change. Consequently, climate change impacts temperature patterns, precipitation, wind patterns, and other aspects of the Earth's climate system (Rummukainen, 2013). It has a long-term effect on the world's ecosystem due to human activities on the earth, particularly the burning of fossil fuels and deforestation (Nda et al., 2018). Climate change has become a serious problem in the present world. It has adversely affected human lives and the socio-economic condition of the world too. The global communities have agreed to combat the common challenges and threats induced by climate

change through various international protocols and conventions. The UNFCCC, Kyoto Protocol, Paris Agreement, Sendai Framework, and SDGs are the main initiatives that have been undertaken by the global community to fight commonly against the climate change impacts.

Climate change may be caused by both natural and anthropogenic forcing, but unsustainable anthropogenic activities and enormous greenhouse gas (GHG) emissions are causing erratic climate change (Nashier & Lakra, 2020). The climate change risk report of Maple Croft (2010) reported that the average global temperature rose 1.5°F over the last century and is expected to increase an additional 0.5 to 8.6°F within a hundred years (Sapkota & Rijal, 2016). Nepal is the least developed country in the world and is ranked as one of the most vulnerable countries in terms of climate change impact (Mahat, 2019)

however, it is one of the least contributors to the emissions of Greenhouse gases. it emits only 0.027 % of the global share (Sapkota & Rijal, 2021).

Himalayan ranges, glaciers, and ecosystems depending on them in Nepal have been impacted by the rapid rise in air temperature over the past few decades and climate-induced disasters including decreased precipitation, heavy precipitation, and drought that were prompted by it. Increased melting of snow has swollen the glacial lakes and put them at risk of outbursts (GoN, 2019). The average temperature in Kathmandu Valley, Nepal is increasing by 0.06 degrees Celsius per year (Thapa et al.,2021), and this rate is even higher in the Himalayan region. Although Nepal is responsible for only 0.027 percent of the world's total greenhouse gas emissions, the country has been experiencing some major impacts of climate change due to its geologically and geographically sensitive topography (Karki 2010). Special attention has to be paid to the conservation of the Himalayas, which have been serving as a global heat sink (NPC, 2020).

Agriculture, food, water resources, forests, biodiversity, human health, tourism, energy production, irrigation, and infrastructure have all suffered from the effects of climate change in Nepal. There was a massive loss of property and livelihoods, which led to the relocation of people due to increased floods and landslides (Sapkota & Rijal, 2016). As per the political, geographical, and socio-economic conditions, Nepal is recognized as a vulnerable country to climate change impacts. There are so many climate-related disasters and incidents occurring yearly (DRR,2022). Many people are losing their lives, many people are injured, many are displaced and many houses are destroyed due to climate-induced disasters such as landslides, floods, heavy rainfall, windstorms, etc. The Climate Risk Index has ranked Nepal 11th most vulnerable country out of 187 countries and 47th by the ND-GAIN Index in 2019 (MOFE, 2020). The ND-GAIN Index ranks 181 countries using a score that calculates a country's vulnerability to climate change and other global challenges as well as their readiness to improve resilience.

In this context, climate change finance plays a crucial role in adaptation and resilience-building measures in LDCs like Nepal (Mahat, 2019). In Nepal, this could involve projects and initiatives focused on developing climate-resilient infrastructure, sustainable agriculture practices, and strategies to protect vulnerable communities from the impacts of climate change.

As a party to the United Nations Framework Convention on Climate Change (UNFCCC), Nepal has been taking advantage of the opportunities in the international arena in line with national needs and fulfilling its obligations (Regmi & Bhandari, 2012). As a least-developed country, Nepal has more challenges in mobilizing financial resources on climate change issues. However, the government of Nepal has been taking an active initiative to mainstream climate change finance into its planning and budgeting system since the climate change policy was formulated in 2011. To fight against climate change-induced challenges and threats, an

underdeveloped country like Nepal needs substantial internal resources and external financial support as well.

2. Relevant Literatures

2.1. Policy framework for climate finance in Nepal

The Government of Nepal has formulated various types of plans, policies, guidelines, and directives to respond to climate change effects and mainstream them into the Planning and Budgeting process. Some of the major policies, guidelines, and other relevant literature have been reviewed for this paper.

National Climate Change Policy (NCCP) 2019

The National Climate Change Policy (NCCP) in 2019 is currently under implementation which is an updated version of Climate Change Policy 2011. It requires sectoral agencies to integrate climate concerns into their policies, strategies, and plans. The government has yet to consider far-reaching ways in terms of improving institutional mechanisms, climate resilience planning, promoting green growth and development, accessing international climate finance, and capacity building (MoFE, 2019). To harmonize those policies with NCCP, Climate Change Financing and Planning in Nepal, and promote climate finance as a part of development planning, prevailing sectoral policies are required to be reformed. The Local Government Operating Act 2017 also has to be updated to integrate climate adaptation at the local level (Upadhyay et.al, 2021). Sectoral strategies and plans at the provincial level must integrate climate change adaptation and financing, and consider climate change resilience (MoFE, 2020). In addition, a common hurdle is that most policies across three levels of government lack a defined standard for climate actions. The lack of definition of norms and an established standard of services means that climate risk-informed planning remains challenging. In this context, National Climate Change Policy, 2019 has been introduced to provide policy guidelines to various levels of government and thematic areas toward developing a resilient society by reducing the risk of climate change impacts.

Climate Change Financing Framework (CCFF) 2017

The Ministry of Finance (MoF), Nepal formulated the Climate Change Financing Framework (CCFF) in 2017, with technical support from UNDP Nepal. It provides key measures to be adopted by the Government of Nepal (GoN) in integrating climate change and climate finance into national planning and budgeting processes (MoF,2017). CCFF blends a top-down and bottom-up approach to the planning process by identifying the priority of climate action-related activities and resource allocation processes. CCFF is also expected to serve as a set of national guidelines that can be replicated at the

provincial level, by linking policy decisions to budget allocations and expenditure tracking in a more structured manner (MoF, 2017). The framework guides the Government of Nepal, helping it to structure climate finance in terms of integrating the Mid-Term Expenditure Framework (MTEF) and Public Finance Management (PFM) reform areas; integrating climate change (CC) into planning and budgeting; mobilizing resources to manage and target finance in support of realizing the country's strategic and climate goals, and tracking and reporting expenditures. It provides pathways for national entities so they can integrate climate change adaptation measures into national and sub-national plans; also, so they can budget to make development resilient to climate risks, which is a prerequisite to achieving Sustainable Development Goals (Upadhyaya et al., 2021).

The Climate Change Financing Framework is considered a national guideline for climate change financing in Nepal (MoF, 2017). It is equally applicable for formulating local plans and policies regarding climate change as national plans and policies. At the local level, most of the climate-related activities have been implemented based on CCFF. However, the Local Governance Operational Act 2074 also gives some guidelines for implementing environmental conservation, reducing environmental pollution and risk, and environment-friendly development programs at the local level. In every local level of government, there is a section/department of Forest, Environment, and Disaster Management for adapting and mitigating climate change effects in the local areas, and certain financial resources have been allocated in every fiscal year's budget.

A review of CCFF 2017 demonstrates that there are many challenges exist to mainstreaming climate change issues in climate-resilient public finance planning systems and public investment processes in the country. Similarly, there is a disconnect, not only in national and sectoral climate change targets but also in climate-related local, provincial, and national priorities. There is a lack of practical tools with which to assess climate loss and damage. There is also a lack of benchmarking for a climate budget ceiling at three tiers of government; this makes it difficult to track the channeling of over 80 percent of the total climate budget at the local level (MoF, 2017). Climate change has not been fully incorporated into the national and sub-national public finance management (PFM) system. Likewise, there is an absence of climate expenditure tracking at the sub-national level, and social returns on climate investments are not assessed, among others (Upadhyaya et al., 2021).

Climate Change Budget Code-Criteria and Methods

The climate change budget code- Criteria and Methods was developed in 2012 by the Government of Nepal with the support of the United Nations Development Program and United Nations Environmental Program. It was an effort to track climate public expenditure and thereby facilitate prioritization of allocating development investment to the most vulnerable areas and key sectors.

The budget code and criteria and methods briefly explain the development process of coding development programs relevant to climate change. It is believed that the information generated by way of using the climate change budget code will help create effective climate financing policies in the future. The Climate Change Budget Code has now been implemented in the National Budgetary system since the fiscal year 2012/2013 to facilitate the tracking of climate expenditures (NPC, 2012).

Climate Change Budget Codes have been categorized based on the relevancy of climate-related activities. The categories of code are 'highly relevant', 'relevant', and 'neutral' which have been provided the codes 1, 2, or 3 corresponding to 'highly relevant', 'relevant', and 'neutral' climate activities respectively (NPC, 2012). According to the agreed criteria, if more than 60 percent of the allocated budget of the program is going to be spent on climate change-related activities the program will be considered 'highly relevant' to climate change, and coded as '1'. Similarly, if 20 to 60 percent of the allocated budget of the program is going to be spent on climate change-related activities, the program will be considered 'relevant' to climate change and coded as '2'. If less than 20 percent of the total allocated budget is going to be spent on climate change-related activities or if the program is not related to climate change, the program would fall under the category of 'neutral' to climate change. It will be coded as '3' (NPC, 2012).

The codes have been aligned with the Government budgetary and planning process through the Line Ministry Budget Information System (LMBIS) since FY 2013/14. The IT-based Public Finance Management (PFM) system has also been strengthened at the provincial and local levels. This IT-based planning, budgeting, and reporting on climate change is also expected to produce evidence-based, result-oriented climate budget and expenditure reporting; establish transparent climate budget and expenditure tracking; and promote good governance practices, thereby attracting more external funding from donors and development agencies. However, it is challenging to track actual information on climate activities because climate coding happens at the program budget head level, not at an activity level.

Despite the challenges in climate coding, this system has the potential to be rolled out at the sub-national level, towards tracking the public response to climate change actions in the country. To improve systems on climate public expenditure tracking, developing a predefined set of criteria for sectoral planning, upgrading the Chart of Account (CoA) of sub-national government to match the CoA of national level, developing a separate chart of "climate-related activities" developing a better understanding of the relevance of budget code during the budgetary planning process could be considered, meeting the specific needs to institutionalize the climate resilience across fiscal planning, budgeting and public investment areas in the country (Upadhyaya et al., 2021).

Periodic Development Plan

The Millennium Development Goal (2001), 10th periodic development plan (2002-2006), Sustainable Development Agenda (2003), and poverty reduction strategy paper ((2003) are the entry-level protocol for addressing climate change issues in Nepal (Karki & Bhatta et. al, 2021). However, the government of Nepal recognized it as an emerging issue in the 10th Development Periodic Plan (Karki et al., 2021).

The 15th development plan which is the current development plan of Nepal has also given special priority to climate change action. The ‘Building a climate-resilient society’ has been set out as a Vision of this periodic plan (NPC, 2020). The main objectives of this plan are to increase the adaptive capacity by minimizing the adverse effects of climate change by the Paris Agreement, to implement the concept of environment-friendly, clean energy-driven, and green development for climate change mitigation, and to access international finance and technologies available for climate change mitigation and adaptation within the framework of the Paris Agreement, and distribute the benefits equitably.

Performance Evaluation Directives 2078’ for Sub-national Government

The Resource and Fiscal Commission (NNRFC) has set out some performance evaluation indicators in performance evaluation directives 2078. According to the ‘Province and Local Level Performance Evaluation Directives 2078’, there are 11 performance evaluation indicators for the provincial government and 17 for local level government (NNRFC,2021). Out of them, there are some indicators for the Provincial government performance evaluation set out which are related to climate change i.e. the Air quality index (index no 9) and an increase in areas covered by the forest (index no 10) in the province. However, all these existing indicators can be relevant to climate change. NNRFC should add some indicators into NNRFC directives for climate change activities so that local government and provincial governments can contribute to mainstreaming and integrating or adapting climate change vulnerabilities into the whole development process of Nepal.

3. Materials and methods

This study was conducted using a desk review methodology, primarily focusing on government financing for climate change and the associated policy framework in Nepal. During the study, climate change-related programs, technical reports, and various published and unpublished

documents were reviewed. Discussions and interactions on climate change financing were also held with officials from the Ministry of Finance and the Ministry of Forest and Environment. Most of the literature on climate change was accessed through the official website of the Nepal government and other international web-based portals. Additionally, the latest journal articles related to climate change financing were explored using Google Scholar, with keywords such as "Climate Change Financing" and "Climate Change Adaptation and Mitigation."

Data and information regarding government financing for climate change impacts were collected from various sources within the Nepal government and are presented in the results and discussion section. Furthermore, policy documents such as the Constitution of 2015, the National Climate Change Policy 2019, the 15th Plan, the Climate Change Financial Framework 2017, and several related acts and regulations were reviewed. In particular, the consolidated annual financial report from the Financial Comptroller General's Office (FCGO) of the Nepal government was examined to extract information about the climate change-responsive budget and expenditures. Following the data collection, a descriptive analysis was conducted, which includes relevant tables and figures.

4. Results and discussion

4.1. Government finance on climate change in Nepal

To study and investigate the public financial landscape for climate change in Nepal, the following sections of public finance management have been selected.

Budget Allocation Trends in Climate Change in Nepal

Nepal is a highly vulnerable country in terms of climate change impacts. It has recognized the importance of addressing climate change and has made efforts to allocate funds for climate-related activities. The government of Nepal has been working on integrating climate change considerations into its policies, plans, and budget. After the climate change code has been formulated and incorporated into the national budgetary system, the budget allocation and actual expenditure tracking can be done. As per the climate change budget Code, climate-related budget allocation trends of the Government of Nepal have been presented (in Table 1) below.

Table 1: Climate Change Relevant Budget Allocation Trends (In 00000)

Budget Details	Fiscal Year			
	2019/20	2020/21	2021/22	2022/23
Total National Budget	15,329,671	14,746,454	16,475,767	17,938,373
Highly Relevant to Climate Budget	798421	790932	940233	1058474

Change	% of the national budget	5.21	5.36	5.71	5.90
	Budget	3840375	3997426	4556753	5036398
Moderately Relevant to Climate Change	% of the national budget	25.05	27.11	27.66	28.08
Total climate-related budget		4,638,796	4,788,358	5,496,986	6,094,872
% of Climate-related budget to National budget		30.26	32.47	33.36	33.98

Source: MoF, Nepal, Budget Speech of Respective Years

In this study, the climate-related budget of four fiscal years has been taken for the examination of the allocation trend from the annual national budgetary System (from F/y 2019/20 to 2022/23). Based on Table 1, it is revealed that the government of Nepal has been allocating 5.41% budget to highly relevant activities, 27% to moderately relevant activities, and 32.51% budget to highly and moderately relevant climate change activities on average. As per the Climate Change Budget Code, all the development projects and activities have been categorized and coded into three groups Highly Relevant, Moderately Relevant, and Neutral based on their relevancy. This budget code has been incorporated into the National Budgetary System and Public Finance Management

System (PFMS) of Nepal. So, the climate change financing and budget have been tracked out through the budget code from the National budgetary system.

Comparative Climate Change Expenditure

Climate change expenditure is also another part of climate finance in Nepal. The data related to climate change expenditure has been taken from the consolidated financial statement report of the financial comptroller general office, Nepal government. The expenditure of three fiscal years incurred by the different levels of government of Nepal has been used to compare the level of government and fiscal years. The following figure shows the level-wise and year-wise climate expenditure.

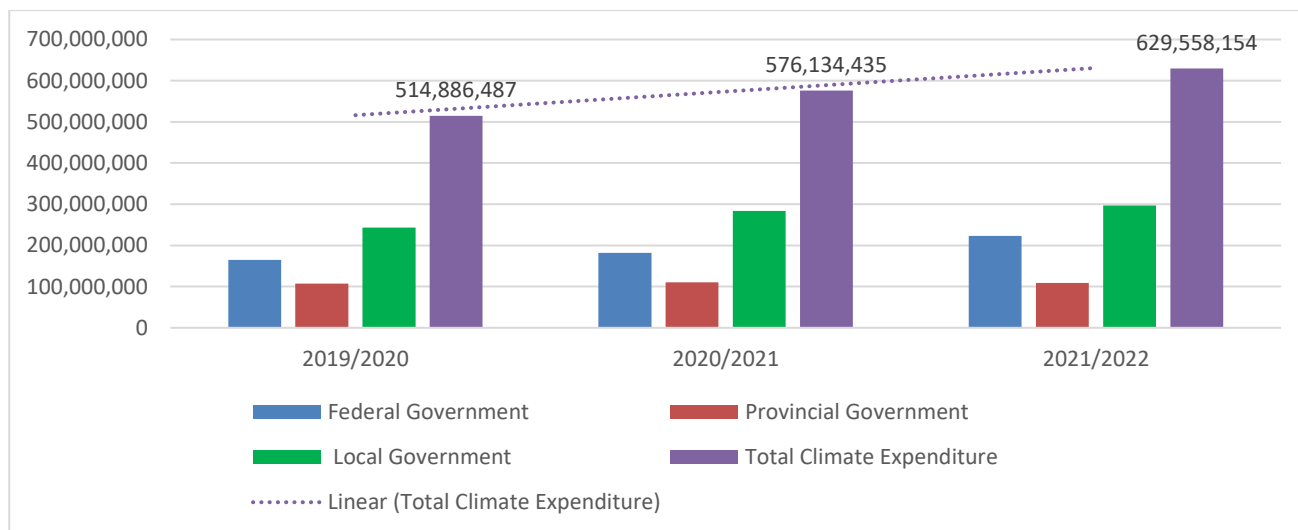


Figure 1: Comparative Climate Change Expenditure (in Rs. 000)

Source: Consolidated Financial Statement, 2021/2022, FCGO, Nepal

The above diagram shows that the total climate expenditure incurred by the federal, provincial, and local level governments has been increasing trend. Among all levels of government in Nepal, the local government has spent a substantial amount on climate change projects and activities during the three fiscal years than others and it is also an increasing trend. The Federal government is in the second position and the provincial government in third

position respectively in terms of government spending on climate change.

Government Level-wise Expenditure to Climate Change

As per the data obtained from the Nepal government, the contribution of the different tier of governments on public spending to climate change finance has been presented in the following Pie chart (Figure 2).

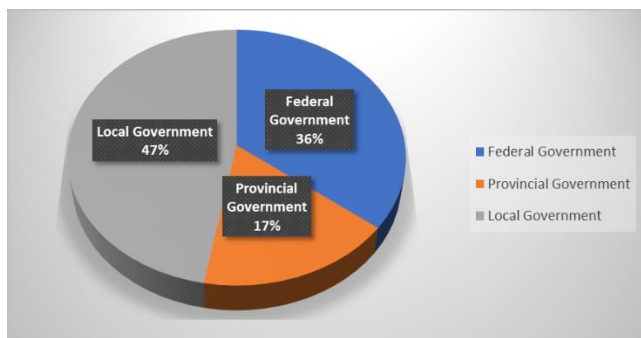


Figure 2: Government Level-wise Climate Change Expenditure

Source: Consolidated Financial Statement, 2021/2022, FCGO

The above figure 2 reveals that there is a higher contribution of the Local government to climate change finance in Nepal than other tiers of government which is 47% of total climate change expenditure whereas the federal government has 36% and the provincial government has 17% contribution on climate change respectively.

Source of Climate Financing in Nepal

Table 2: Source of Climate Change Finance in Nepal (In thousands)

Level of Government	Total Climate Change Expenditure	Source of Climate Change Finance in Nepal (2021/2022)					
		Nepal Government		Foreign Aids		Kind and Direct Payment	
		Amount	%	Amount	%	Amount	%
Federal	223,500,253	178,996,535	80	33,566,669	15	10,937,048	5
Provincial	109,039,948	104,473,980	96	4,241,767	4	324,200	0
Local	297,017,952	279,471,194	94	17,290,964	6	255,793	0
Total	629,558,154	562,941,710	89	55,099,401	9	11,517,042	2

Source: Consolidated Financial Statement, 2021/2022, Financial Comptroller General Office

The above table shows that there are three types of financial sources for climate finance in Nepal which are the Nepal government, foreign Aid and Kinds, and Direct Payment. out of all three types of sources, the Nepal government is a prominent source of financing climate change at all levels of government contributing 89% of total climate finance Foreign Aid contributed 9% and kinds & direct payment contributed 2% of the total climate finance.

Official Development Assistance (ODA) in Climate Change in Nepal

Climate finance has become an increasingly important component of ODA in Nepal. The data related to climate change financial assistance from development partners has been collected from the Aid Management Information System (AMIS) of the Ministry of Finance, Nepal. The distribution of Projects across three categories of climate relevancy: Highly Relevant, Relevant, and Neutral, has been taken from AMIS for understanding and analyzing development partner disbursements relevant to climate finance (MoF, 2022). The following figure shows the status of Official Development Assistance (ODA) in climate change finance.

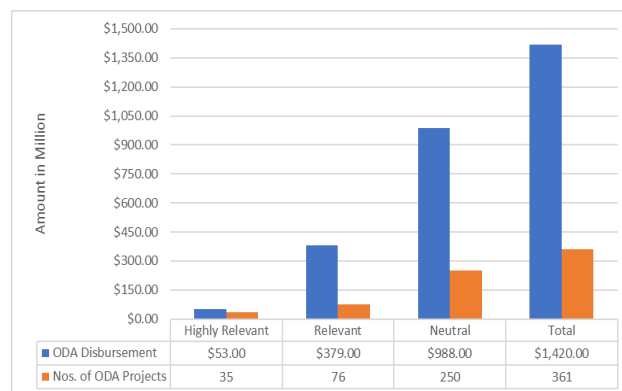


Figure 3: Official Development Assistance (ODA) Disbursements on Climate Change

Source: Development Cooperation Report, 2021/2022. Government of Nepal

As per the AIMS, Ministry of Finance record, there are 361 projects under implementation by Official Development Assistance (ODA) in 2021/2022. Out of them, there are 35 projects are highly relevant to climate change which USD 53 million has been disbursed, 76 projects are moderately relevant to climate change which USD 397 million, and 250 projects are Neutral to climate

change which USD 988 million have been disbursed respectively by different development partners.

4.2. Global fund for climate change in Nepal

In addition to the climate financing by the government of Nepal through the national budgetary system, The World Bank (WB), the Asian Development Bank (ADB), Green Climate Fund (GCF), Climate Investment Funds (CIFs), and Global Environmental Facility (GEF) are the international institutions contributing Climate change finance in Nepal. out of the World Bank and Asian Development Bank are considered to be the two largest donors of Nepal's climate finance (OPM, 2022). All these international funds provide grants and concessional loans to support climate projects and programs in the country.

The Green Climate Fund (GCF) is a global fund created to support the efforts of developing countries to respond to the challenge of climate change. It was set up by 194 countries that were parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 2010 as part of the Convention's financial mechanism. (GCF,2022). Although Nepal has yet to access funds directly from GCF, the GCF Board has approved US\$ 3 million for the development of the National Adaptation Plan for Nepal through UNEP. Similarly, the NDA has nominated two national institutions i.e. Alternative Energy Promotion Center (AEPCC) and National Trust for Nature Conservation (NTNC) for their accreditation as Direct Access Entities to access resources from GCF more directly.

The Green Climate Fund has also played a pivotal role in supporting climate adaptation and mitigation projects in Nepal. The Development Cooperation Report (2022) stated that the GCF has allocated USD 48.52 million to the Nepal Climate Change Support Program in 2021/2022, aimed at enhancing climate resilience, promoting renewable energy, and strengthening disaster risk reduction efforts across the country (GCF, 2021).

The Climate Investment Fund (CIF) is also a large multilateral climate fund focused on transformational climate innovation in 72 middle- and low-income countries. Nepal has also benefited from the Climate Investment Funds, particularly the Pilot Program for Climate Resilience (PPCR) and the Scaling Up Renewable Energy Program in Low-Income Countries (SREP). These funds have supported projects such as climate-resilient agriculture, forest conservation, and the development of renewable energy infrastructure (World Bank, 2021).

5. Conclusion

Nepal is one of the most vulnerable countries in the world regarding climate change impacts; however, it is also one of the least contributors to greenhouse gas emissions, accounting for only 0.027% of the global share. Due to climate-related disasters and incidents, thousands of people have been losing their lives and properties. As a party to the UNFCCC, Nepal has been playing a

significant role in responding to climate change effects by formulating the CCF in 2017 and implementing other policy interventions. The CCF provides key measures for the GoN to integrate climate change and climate finance into national planning and budgeting processes. Additionally, the Climate Change Budget Code has been implemented in the national budgetary system since the fiscal year 2012/2013 to facilitate the tracking of climate expenditures.

Moreover, this study reveals that the Government of Nepal allocates 32.5% of the total national budget annually to highly and moderately relevant climate change activities. In terms of public finance for climate change, the total climate change expenditure has shown an increasing trend over the last three years. Out of the total climate-related expenditure, local governments account for the largest share at 47%, while the federal government contributes 36%, and the provincial government contributes 17%.

The study indicates that the Nepalese government is a major source of climate finance; however, foreign assistance is also considered a significant source. The government contributes 89% of total climate finance, while foreign aid accounts for 9%, and in-kind contributions and direct payments make up 2% of total climate expenditure. Projects and programs implemented by development partners through official direct assistance (ODA) have been categorized based on their relevance to climate change as highly relevant, relevant, and neutral. The Development Cooperation Report (2022) states that there are 35 projects categorized as highly relevant to climate change, of which USD 53 million has been disbursed; 76 projects are considered relevant, with USD 379 million disbursed; and 250 projects are classified as neutral, with USD 988 million disbursed in 2022.

Government financing mechanisms for climate change should be comprehensively introduced at the subnational level to ensure that all tiers of government are responsible for climate change mainstreaming. Evidence-based climate change policies, planning, and financing for climate action should be developed at the local government level, with due consideration for mainstreaming risk assessments. It is essential to improve and roll out the CCF at the subnational level, enhance awareness of the relevance of using climate codes during climate-resilient fiscal planning, budgeting, and public investment, and conduct climate audits of national and sectoral policies and strategies. Additionally, the existing climate change policy and financial framework should be revisited and reviewed to attract global climate funds in Nepal as a least developed country, promoting direct access to the GCF and CIF based on a solid legal framework.

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