

**Analyzing Trends in Climate Finance Committed to Pakistan;
An Assessment relating to the USD 100 Billion Goal of
Copenhagen Accord**



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CERTIFICATE OF APPROVAL

This is to certify that the research work presented in this thesis, entitled "Analyzing trends in climate finance committed to Pakistan; an assessment relating to the USD 100 Billion goal of Copenhagen Accord" was conducted by Ms Khadija Irfan under the supervision of Dr. Umer Khayyam.

No part of this thesis has been submitted anywhere else for any other degree. This thesis is submitted to the...Department of Development Studies... in partial fulfillment of the requirements for the degree of Master of Science in Field of Development Studies (Climate Change) Department of Development Studies, National University of Sciences and Technology, Islamabad


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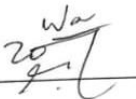
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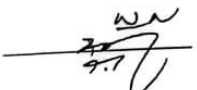
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LIST OF SYMBOLS, ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
AFOLU	Agriculture, Forestry and Other Land Use
AIIB	Asian Infrastructure Investment Bank
AsDB	Asian Development Bank
AsDB	Asian Development Bank
BA	Biennial Assessment
CBDR	Common But Differentiated Responsibilities
CCFAH	Commonwealth Climate Finance Access Hub
CIFF	Children's Investment Fund Foundation
COP	Conference of Parties
CP/x	(relates to the decision made at) Conference of Parties/number of decision

CRS	Common Reporting Standard
CTF	Common Tabular Format
DFIs	Development Finance Institutes
ECA	Export Creditor Agency
ECG	Export Credit Group
EIB	European Investment Bank
EU	European Union
FAO	Food and Agriculture Organization
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Green Environment Facility
GHG	Green House Gas

GMT	Global Mean Temperature
IDFCs	International Development Finance Clubs
IFAD	International Fund for Agricultural Development
INDCs	Intended Nationally Determined Contributions
IsDB	Islamic Development Bank
L&DF	Loss and Damage Fund
LDC	Least Developed Country
LFT	Low Funding Trap
MDBs	Multilateral Development Banks
MT CO ₂	Metric Ton on Carbon DiOxide
NAMAs	Nationally Appropriate Mitigation Actions
NAPs	National Adaptation Plans

NCQG	New Collective and Quantified Goal
NDCs	Nationally Determined Contributions
NGO	Non-Governmental Organization
ODA	Official Development Assistance
OECD	Organization of Economic Co-operation and Development
OECD-DAC	OECD – Development Assistance Committee
SCF	Standing Committee on Finance
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollars

WB	World Bank
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ABSTRACT

The Copenhagen Accord provided a workable target for climate finance flows from the developed world to the developing world. This agreement was further endorsed in the succeeding agreements including the Cancun Agreement and the Paris Agreement. One year past the initial deadline of the meeting the goal of providing USD 100 billion per year in climate finance, the developed world still falls short of achieving the set commitment. Furthermore, the overall architecture of climate finance has been fraught with difficulties.

This study aims to assess the trends in climate finance committed to one of the most climatically vulnerable developing economies, Pakistan. The research tends to explore the degree of balance in mitigation and adaptation financing which was stressed upon in the Paris Agreement. It also assesses the dominant financial instrument that governs these financial activities. Moreover, the alignment between committed finance and recipient's announced country priorities are analyzed. These facets of analysis provide a complete picture of the suitability of climate finance for Pakistan's climate action and resilience buildings.

This study basis the assessment on the commitment level data provided by OECD Climate Finance database. The activities are assessed for their respective contribution to the Rio-Markers i.e. adaptation and mitigation. The financial instrument for each activity is assessed to determine the loan vs grant shares in mobilizing total commitments. For the evaluation of alignment between commitments and country priorities, Pakistan's Nationally Determined Contributions were used as reference of identifying priority sectors. Collective sums of sectoral allocations were calculated to examine if country's priorities are funded by international climate finance or not.

The findings of the study conclude that mitigation finance dominates the overall as well as year by year financial commitments directed towards Pakistan. The mitigation financing outweighs adaptation financing by 2 times. Adaptation remains underfunded in the financial portfolios of all major donors particularly the bilateral providers and the development banks. Finances are majorly distributed via loans with grants forming only a small portion of both adaptation and mitigation financing. Finances are mostly allocated climate component category i.e. to projects in which climate action serves a part and is not the major motivation behind it. Climate component financing is also loan dominant. With respect to country priorities, Pakistan's NDCs highlight energy, transport, and agriculture as key country priorities of climate action. Agriculture and water and sanitation are prioritized for raising adaptive capacity. The financial allocations remain high and increase over the course of 11 years for energy, transport, and water and sanitation. However, the sector of agriculture that holds prominence for both adaptation and mitigation interventions remains underfunded with irregular flows of climate finance directed towards it between the 11 years. The loan

dominance adds to the debt burden of Pakistan while the limited adaptation financing may propagate a low funding trap.

This study explores the trends in climate finance provided to Pakistan under one of the most prominent climate agreement i.e. the Copenhagen Accord. The success of the accord was ingrained in not only the delivery of the USD 100 billion goal but also its suitability with respect to adaptation-mitigation balance, and utilization of non-burdening financial instrument. The research provides an in-depth analysis that is based on activity level commitment data and presents a case of climate finance allocations to one of the most climatically vulnerable developing country. The findings of this study thus provide insight into the responsiveness of providers' commitment to meeting the financial cost of climate action as well as resilience in developing country.

Keywords: Climate Finance, Copenhagen Accord, USD 100 billion, recipients, Adaptation, Mitigation, Debt, Grant.

CHAPTER 1: INTRODUCTION

Climate Finance is an evolving, yet an operational concept. By nature, it is inherently multifaceted and contextually adaptable, reflecting its capacity to evolve within diverse settings and circumstances. Despite its apparent importance in resilient development across the globe, the concept lacks a proper definition. The absence of definition is attributed to the complex realities that are difficult to encapsulate in comprehensive definable terms. Moreover, the concept itself is under evolution subject to changes in global climatic scenarios, economic perspectives, and subsequent prioritization of resilient development. Yet, a steadfast element of climate finance is evident - the flows of financial assistance from developed world (Annex II parties to UNFCCC) to developing world (Non-Annex I parties to UNFCCC) to aid with adaptation and mitigation activities.

While a workable and globally recognized definition to climate finance is not present, there are several operational definitions that use common elements and impart the necessary dynamics to the concept (SCF, 2014). A popular workable definition by UNFCCC describes climate finance as:

“Local, national or transnational financing—drawn from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change”.

In broadly terms, climate finance refers to the finance flows that fund activities that either limit or sequester greenhouse gas emissions (mitigation) and/or enhance resilience against anticipated impacts of climate change (adaptation) (SCF, 2018). Despite the lack of an adopted definition, the context of climate finance holds great importance in developing

resilience against worsening climatic impacts while addressing resource disparities between developed and developing countries.

1.1. Climate Finance as discussed in international negotiations; its origin and attributes

The notion of climate finance has been an elemental part of international discourse on climate change for decades. It is often linked to developed world's greater responsibility to provide assistance for facilitating climate action in lieu of their historic contribution towards inducing climate change. The concept has emerged slowly, first from the need, to acknowledgment under the principle of Common But Differentiated Responsibilities, and then later to establishment of goals and development of operational mechanisms. Today, climate finance is one of the most actively debated agendas in the realm of international climate negotiations with several agreements and accords speaking on it. The USD 100 billion goal was a paramount development under this agenda as it provided the first actionable construct under climate finance where responsibilities for monetary assistance were allocated (Michaelowa & Sacherer, 2022). Even though stringent mechanisms and strictly defined guidelines did not govern this goal, several climate negotiations described certain attributes that should direct the finance flows under this goal. In the absence of an agreed upon definition, these attributes, parameters, or characteristics loosely shape the intended structure of assistive climate finance. Hence, they are fundamental to the landscape of climate finance that aims to transfer assistance from developed to developing world in strengthening climate action and raising resilience. The characteristic parameters as discussed throughout international negotiations require adherence to ensure the delivery of effective and adequate climate finance. This section takes a scoping view of the discussion around climate finance in different climate accords and agreements.

1.1.1. *The Earth Summit (1992)*

The inception of the discussion on climate finance dates back to the Earth Summit of 1992 in Rio de Janeiro. More specifically, United Nations Framework Convention on Climate Change (UNFCCC), one of the three Rio Conventions adopted during the summit addresses the aspect of climate finance. The framework is tasked with fostering international collaborations to prevent dangerous anthropogenic interference with climate systems by stabilizing greenhouse gas concentrations below dangerous levels. To achieve this objective, the framework undertakes broad base activities including negotiating agreements, facilitating climate research, establishing operational institutions, and highlighting responsibilities. The UNFCCC (1992) is guided by its 26 articles.

A pivotal feature of the framework lies in its acknowledgment of the principle of "common but differentiated responsibilities" (CBDR). As articulated in Article 4 of UNFCCC, this principle recognizes the distinct obligations of individual nations in addressing climate change, taking into account their differing capacities and capabilities to undertake actions, defining their responsibilities. As elucidated by Rajamani (2018), the principle is concise yet comprehensive. It lays the basis of equity relating responsibilities of emission reductions and financial assistance to the developed nations whose progress has come at the expense of destabilization of atmospheric GHG emissions. Vanderheiden (2015) states that the CBDR principle unites the countries on their common and unified goal of stabilizing GHG emissions while also highlighting the compromise between capabilities and responsibilities between the Global North and South.

Building on the principle of Common but Differentiated Responsibilities (CBDR), the convention acknowledges the intricate interplay between vulnerability and economic

disparities prevailing in the Global South, wherein each factor exacerbates the other. Simultaneously, it recognizes that the industrial advancement of the Global North has led to an unprecedented accumulation of greenhouse gases (GHGs) in the atmosphere, thus instigating climate change. Ethical arguments penned by Gardiner (2004) and Singer (2010) implicate those nations whose industrialization processes have overwhelmed the Earth's carbon sinks, thereby perpetuating changes in Earth systems leading to climate change. Adverse ramifications and cost of resulting climate change are disproportionately visited upon developing economies, which lack the resources to effectively adapt.

The notion of climate finance is also ingrained in climate justice. It serves as a mechanism of climate justice especially for low emitter countries like Pakistan that despite their negligible emissions continue to face the adverse impacts of climate change. In the context of climate finance, the redistribution of resources via international cooperation is imperative for enhancing adaptation efforts and securing the survival of developing economies (Colenbrander et al., 2017) (Scandurra et al., 2020).

In retrospect, climate finance emerged as a central agenda of Rio Treaty under UNFCCC (1992) while mentioning the responsibilities of developed country parties (listed in Annex II of the UNFCCC) towards developing country parties that are particularly vulnerable to the adverse effect of climate change. A look into the convention reveals the detailed extent to which provision of climate finance is mandated towards developed countries through several articles explicitly or indirectly relating the provision of finance to economies vulnerable to climate change for resilient development. These include Article 4.3, 4.4, 4.5, 4.7 that lay out the commitments for Annex II parties while the article 11 of the conventions lays out the mechanism for financial transfers and Article 12 speaks on the reporting mechanisms for

financial transactions (UNFCCC, 1992) (Brunnée and Streck, 2013). Together the articles call for provisional transfer of financial resources and the technology necessary to meet the incremental cost of implementation of the convention as well as the cost of adaptation to adverse impacts of climate change. The transfer is workable between developing country party and developed country parties or any international entity/entities that have formed an agreement. These articles clearly relate the responsibility of the developed world to assist developing world through monetary and technological measures in enhancing resilience through adaptation and implementing emission reduction targets through low-carbon pathways of development for mitigation.

1.1.2. The Copenhagen Accord (2009)

The UNFCCC marked only the beginning of the discourse climate finance. In successive years, notably during the COP 15 of 2009 and COP 21 of 2015 marked important milestones. At COP 15 in 2009, the concept of climate finance was formalized under the Copenhagen Accord (decision 2 of COP15 written as Decision 2/CP.15). Although not legally binding, as clarified by UNFCCC (2010), the Accord provided actionable provisions that UNFCCC parties could associate with. Currently, 141 countries are listed to be in agreement with the accord or express intention to be listed as in agreement to the accord (UNFCCC, 2010). The accord agreement detailed on pertinent issues specifically related to mid-term emission reduction targets to be set by developed countries and voluntarily pledged by developing countries, mitigation efforts by the developed countries, and very importantly the deliverable goal of climate finance (IISD, 2009). The accord was immediately operational.

The Paragraph 8 of the Copenhagen Accord (2009) speaks on the aspect of climate finance and providing a deliverable target of USD 100 billion a year by 2020. The accord plans

two phases of finance delivery under the USD 100 billion target. The first period i.e. the Fast Start Finance was mapped to last from 2010 to 2012 during which developed country parties or rich nations will jointly provide USD 30 billion to developing country parties or poorer nations. In the second phase, the accord maps a period of 2012 to 2020 during which the developed country parties will strive to achieve the target of jointly providing USD 100 billion every year. The deadline for this target was set at 2020. The rich nations were expected to increase the climate finance provision each year so they reach the ultimate figure of USD 100 billion a year by 2020.

Furthermore the accord, which was enveloped as decision 2 of COP 15 (2/CP15), described the crucial characteristics that were to guide the finance mobilization. The finance mobilized from developed countries must be new, additional, adequate, and achieving a balance between mitigation and adaptation directed funds. The funding was to be prioritized for the most climatically vulnerable developing countries and could originate from various sources including public and private sector and via bilateral or multilateral channels. It was deemed appropriate to channel the majority portion of this fund through the Copenhagen Green Climate Fund, the financial operating entity for the convention (UNFCCC, 2009).

1.1.3. The Cancun Agreement (2010)

At the 16th Conference of Parties in Cancun, a subsidiary body to report on climate finance was formed. The body known as the Standing Committee on Finance (SCF) assists the parties with financial mechanism of the convention deliberating on communication and information exchange between parties, guidance for operating entities, and recommendations for improving coherence and efficiency of the financial mechanism. Moreover, UNFCCC (2017) review of SCF functions states that the committee is also tasked with the development

of biennial assessments (BA) that detail upon the climate finance flows, the geographic distributions of the transactions, thematic balance between funds targeting mitigation and adaptation interventions, and similar crucial aspects of the climate finance. To conduct these assessments, the SCF draws from Biennial Reports submitted by countries in which reporting on climate finance flows disbursed or received is mandatory. Additionally, the committee utilizes information provided by Parties on assessments of their needs, the reports from the operational entities such as the GCF, as well as information provided by other entities that report on climate finance such as the OECD (SCF, 2014).

1.1.4. Paris Agreement (2015)

The discussions and commitments regarding climate finance made way into Paris Agreement during COP 21 of 2015 as well. The article 2.1 (c) of Paris Agreement, while stipulating a global goal of limiting global warming by 2100 to below 1.5 °C, states that the financial flows must align with pathways of low GHG emissions and resilient development (UNFCCC, 2015). The clause not only reiterates that the flows must be consistent with mitigation and adaptation objectives but also must be sufficient to meet the 1.5 °C goal (Egli & Stünzi, 2019).

The article 9 of the agreement speaks more dedicatedly on climate finance. In the beginning of through article 9.1, the responsibility of the developed countries in providing finance to developing countries is highlighted once again to meet adaptation and mitigation needs. Furthermore, article 9.1 also projects that the provisions of the Paris Agreement need to be interpreted in the light of the Convention. A notable shift here, as pointed by Yamineva (2016), is the change of terms from Annex II parties (as was used in UNFCCC text) to *developed countries* in Paris Agreement. In doing so, the agreement acknowledges the shifting

dynamics of the global economies thereby signaling a less precise and more flexible approach. However, since the Paris Agreement must be interpreted in light of the Convention, the developed countries will remain the same as those described under the Annex II of the Convention.

The general theme surrounding the finance context remains almost similar to the predecessor agreements. The article clauses call upon the developed countries to lead in mobilizing finance through multiple sources, instruments, and channels. It also states to utilize variety of actions to provide assistance keeping in view the needs and priorities of developing countries. The financial flows must strike a balance in adaptation and mitigation actions. For transparency, developed countries are told to report financial flows in biennial reports while other parties are encouraged but not necessitated to follow the same (UNFCCC, 2015). All efforts should represent a progression over previous efforts. While the general essence of the articles strengthens the existing provisions of previous negotiations, the article 9.2 imparts some novelty to the agreement's discourse on climate finance.

The article 9.2 *encourages 'other Parties' to provide or continue to provide financial support* for adaptation and mitigation actions *voluntarily*. Yamineva (2016) calls the article 9.2 the main novelty of the Paris Agreement as contrary to previous negotiations this article, reflects the changing realities of global economy. Since the start of discussion around climate finance in 1992, several new economies had emerged. During the two decades between 1992 and 2015, global climate finance architecture had undergone several progressions and had received new and non-traditional donors like China, Republic of Korea, and Chile who had pledged/contributed to GCF. Furthermore, south to south cooperation had also strengthened (Ha & Ogden, 2105). In light of these emerging advancements, the Paris Agreement

recognized the flows mobilized by other parties beyond the Annex II list of the Convention and encouraged them to continue their efforts in providing climate finance.

Furthermore, the Paris Agreement decides to extend the timeline for meeting the annual USD 100 billion goal for climate finance till 2025. The decision also states that the Parties to Paris Agreement *shall set a new collective quantified goal from a floor of USD 100 billion per year* prior to the 2025 COP. This decision signals towards the continuation of finance flows and its increased disbursement beyond 2025 from the developed world to the developing world.

1.2. Reporting on Climate Finance Flows

The mandate for measurement, reporting and verification of climate finance lies with the Standing Committee on Finance as decided under the Cancun Agreement of 2010 (COP 16). The SCF assists the Conference of Parties with the Financial Mechanism of the UNFCCC. It was decided that the SCF will report on overview climate finance, flows in biennial reports drawn from available sources of information. The overview was to include the thematic and geographical distributional balance of the finance flows as well.

In 2014, SCF released its first biennial report (BA) that provided an overview of global climate finance scenario. The report was prepared after reviewing and consulting different data sources including countries' biennial assessments, OECD-DAC statistics, Multilateral Development Banks, International Finance Institute, UN organizations etc. (SCF, 2104). In subsequent years, 5 BAs have been released by SCF presenting a global picture of climate finance flows after drawing information from multiple sources. Munira et al. (2021) as well as SCF (2014), highlight that in the absence of an adopted definition of climate finance, different reporting entities have relied on their own operational definitions to track and report climate

finance flows. The differences among operational definitions can effect overall estimates and limit data comparability. Moreover, the lack of an agreed-upon definition for "new and additional" climate finance allows developed countries to potentially rebrand their existing commitments as such, undermining the purpose of climate finance. This practice can lead to double counting and misrepresentation of financial contributions, eroding trust and hindering progress in addressing climate change effectively (Pauw et al., 2022).

Amidst these problems, the reported climate finance activities and flows often become uncertain, and incomparable with decreased attribution to the cause. However, efforts to align these definitions are underway and most reporting entities provide a detailed narration of the mechanism they apply to record, classify, aggregate, and report climate finance. For example, the core definition adopted by OECD, MDBs, and IDFC is in accordance with definition suggested by SCF in BA 2014 (also discussed in the opening section of this document). Regular improvements are made to these operational definitions to align the classification of funding activities as robustly as possible with the notion of climate finance.

Among notable entities reporting on climate finance, the OECD-DAC statistics hold significant prominence. The Organization of Economic and Cooperation Development has been reporting on environment and climate related official assistance since 1998 with the development of Rio-Markers. Today, the reporting of OECD has extended to deliver activity level financial flows that play an essential part in tracking the progress towards USD 100 billion goal. In its initial BA, the SCF (2014) recognized that a major advantaged incurred with the Development Assistance Committee (DAC) mechanism of OECD is its decades long expertise in reporting on financial flows as official development assistance as well as wide

spread acceptance of its mechanisms¹. Thus, the institutional arrangements and data-handling procedures within the OECD are well established and have also extended to include flows from non-OECD countries.

Despite the limitations argumentative clashes of OECD-DAC climate finance reporting, discussed later, the database is one of the most widely used and cited for assessing and comparing progress on climate finance (Ledger & Klöck, 2023). The primary role of OECD's accounting and reporting framework is to track progress toward the USD 100 billion international climate finance goal (Qi & Qian, 2023). It offers valuable activity-level details reported by nations and has continuously refined its methodologies to improve reporting accuracy regarding the correlation of reported activities with the defining attributes of climate finance.

1.3. OECD Reporting Methodology

1.3.1. Types of Flows Assessed

The OECD methodology takes into account both bilateral and multilateral contributions towards climate finance. It reports on bilateral public finance flows between countries, private finance mobilized by bilateral, official export credits, and multilateral climate finance from multilateral agencies. Flows from multilateral sources includes climate-related commitments by Multilateral Development Banks, Multilateral Climate Funds, and other multilateral organizations. These flows are sourced from their core budgetary resources

¹ Since 1970s, the OECD has tracked the flow of aid from developed to developing world and complemented the information with environmental markers in 1998.

and hence are attributed to developed countries contributing to the core budget of the respective multilateral agency (OECD, 2022). Such flows are represented as “imputed multilateral contributions” in donor profiles and prevent the risk of double counting (Bos & Thwaites,

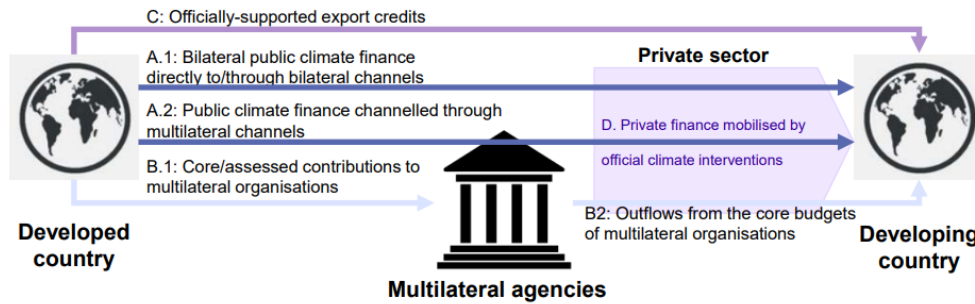


Figure 1.1: The types of finances and their flow pathway (OECD, 2022).

2021). **Error! Reference source not found.** presents a pictorial overview of the flows and their origination.

1.3.2. *Climate (Rio) Marker Methodology for Bilateral Transactions*

The OECD makes use of a purpose based scoring approach that it termed as the Rio-Marker methodology since 1998. The methodology requires bi-lateral donors to individually assess all their assistive projects, individually, determining if the projects address either climate mitigation, adaptation or neither. Weikemans et al. (2017) finds that developing countries majorly utilize the data gathered through the application of Rio-Marker to their aid activities in reporting climate finance commitments to the UNFCCC secretariat. The same is observed and reported by the UNFCCC secretariat.

Under this approach, funders categorize each transaction based on whether adaptation and/or mitigation were the "principal" (score 2) or "significant" (score 1) objectives, or if they

were "not targeted" (score 0) in the funded project or program. Transactions are classified as "principal" if the funded activity primarily focuses on climate mitigation and/or adaptation as its core objective and main purpose. If climate mitigation and/or adaptation serve as secondary purposes or additional benefits achieved from a funded program without being the primary motivation for the project, the financial transaction is categorized as "significant." Lastly, a financial activity is categorized as "not targeted" if the project it funds does not directly address climate change mitigation or adaptation (OECD, 2023). Because these two climate change markers are not mutually exclusive, the funder may donate both adaptation and mitigation as targeted by the same financial transaction (Savvidou et al., 2021). A detailed description of the markers' methodology is elaborated by OECD (2016) in its handbook.

1.3.3. Climate Component Methodology for Multilateral Transactions (MDBs)

For multilateral contributions, the financial activities are reported by the institutes as targeting mitigation or adaptation activities. Multilateral Development Banks have agreed on a Joint Methodology which is reviewed from time to time for improvements². Usually, the whole of project finance is usually not considered rather the components/elements or subcomponents of the project directly targeting climate objectives are tagged and reported as climate finance (MDBs, 2023). The current MDB joint methodology for adaptation finance reporting assesses the adaptation projects based on their direct contribution in strengthening or enabling adaptation. The share of committed finance is then attributed to climate finance as

² The MDBs jointly release a report detailing financing transactions. The pool includes African Development Bank (AfDB), the Asian Development Bank (ADB), the Asian Infrastructure Investment Bank (AIIB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank Group (IDBG), the Islamic Development Bank (IsDB), the New Development Bank (NDB) and the World Bank Group (WBG).

per the degree of relevance from 0-100% of the finance. Climate Mitigation financing involves funding projects that reduce, limit or sequester GHG emissions. However, according to the Joint Methodology by MDBs (2016), a consensus has been developed that not all activities aimed at reducing GHGs are eligible to be considered for mitigation finance. Hence, a specific list of activities that align with low-emission pathways and prevent future lock in carbon intensive infrastructure are considered as climate finance (MDBs, 2021)

1.3.4. Components Assessed

OECD provides a detailed overview of financial activities directed at developing countries through bilateral as well as multilateral channels. In doing so, it assesses the type of the source i.e. bilateral transaction, multilateral flow, export credit, or private finance. Source of funding as well as the delivery channel mobilized to provide the funding to the recipients are also reported. Additionally, the instrument utilized for the transaction i.e. loan, grant, equity investment, guarantees and insurances, or hybrid finances are specified. The reporting informs about the sector financed and project funded through each transaction as well. To align finance with climate objectives, the OECD reports whether the finance principally, significantly, or does not target adaptation or mitigation objectives. This reporting helps assess the appropriateness and effectiveness of mobilized finance in achieving the recipient's climate goals (OECD, 2022).

The climate finance is reported via different sources, dependent upon the donor (OECD, 2022):

- The **bilateral** flows are reported by donor countries in the Common Tabular Format (CTF) tables in the Biennial Reports submitted to UNFCCC by the respective country.

- **Multilateral** reporting encompasses information regarding financial flows from MDBs and Multilateral Climate Funds. The inflows to the core budget of multilaterals are attributed back to the donor countries in financial reporting. Outflows to recipients from the multilaterals core budgets is obtained from standardized data collected by the OECD DAC, based on standardized and specified data fields.
 - MDBs report country-level financing through their project databases and financial reports to the OECD DAC. These reports detail the specific projects and programs funded by the MDBs in each country, including the amount of financing provided, the objectives of the projects, and the outcomes achieved.
 - Multilateral climate funds, such as GCF, report on the financial activities themselves detailing project level information to OECD DAC.
- Data on **Officially Supported Export Credits** is sourced from OECD’s Export Credit Group (ECG) database. The data includes activity level information that is provided to the OECD by the Official Export Creditor Agency (ECA) of the respective country. Some countries that do not report the transactions to ECG database, provide the required information directly to OECD while other report it in their Biennial reports to the UNFCCC from where OECD compiles them. The export credit data undergoes thorough review, cross-referencing, and consolidation to prevent duplication across various sources, hence upholding robust reporting standards.
- Funds provided by **private sector** entities, such as banks, investors, or corporations, to support climate-related projects are reported to the OECD CRS by all OECD DAC members and multilateral institutions that work with the private sector.

The data sources that inform the OECD’s climate finance reporting thus directly emerge from and relate to the donors. A summary of different finance types, their sources, and flows (coverage) is provided in Table 1.1. In most cases, the donors submit the data themselves after assessing project relevance through standardized methodologies like the Rio Marker methodology or MDB joint methodology. Double counting is avoided, multilateral finance is attributed to donors, and relevance to climate objectives is maintained. Hence, the reporting is based on robust data that OECD meticulously gathers from various sources and reports to provide perspective regarding the progress towards the USD 100 billion goal.

Table 1.1: Overview of finance types, sources, and flows covered.

Category	Coverage	Instruments	Data source
Bilateral public	Climate finance outflows from donor countries’ bilateral development finance agencies and institutions	Grants, loans, equity investments	Biennial reports to the UNFCCC and complementary data submissions
Multilateral public (attributed to developed countries)	Climate finance outflows from multilateral development banks and climate funds attributable to developed countries.	Grants, loans, equity investments	OECD Development Assistance Committee statistics (total multilateral outflows); institutions’ annual reports (for calculating attribution shares)

Export credits	Climate-related export credits provided by developed countries' official export credit agencies, mostly for renewable energy	Export credit loans, guarantees, and insurance	OECD Export Credit Group statistics and complementary data submissions
Mobilised private (attributed to developed countries)	developed countries) Private finance mobilised by bilateral and multilateral public climate finance	Private finance mobilised by grants, loans, mezzanine/hybrid finance, equity and developmental guarantees	OECD Development Assistance Committee statistics and complementary data submissions

Source: (OECD, 2022)

1.4. Problem Statement

1.4.1. *The 2020 scenario of reported Climate Finance*

The year 2020 marked the initial deadline for the Copenhagen Accord. Reporting on the financial milestones, the OECD (2022) stated that during 2020, USD 83.3 billion were provided or mobilized by the developed countries to the developing countries as climate finance. While the figure expanded by 4% compared to 2019, the goal was still not met as the portfolio fell short of USD 16.7 billion.

Even though the ultimate goal of achieving an annual climate finance mobilization of USD 100 billion was still unmet, the progress towards it was still hailed as a huge success by developed countries parties. On the other hand, developing country parties as well as international confederations like OXFAM regularly criticize the developed country parties for insufficient efforts towards reaching the climate finance goal. Previously, contestations have been made to the figures depicting mobilized climate finance as well as the characteristic relevance to climate objective of financial activities. The criticism mainly dwells on the absence of internationally agreed-upon modalities for accounting for climate finance has resulted in a variety of accounting and reporting practices. This has led to significantly different approaches on climate finance (Ciplet et al., 2012) (Bondar et al., 2015). The general discourse in this regard criticizes the efforts of the developed world in their role to assist the developing world to scale up resilience and shift to low emission economies. The criticism builds on the loan dominant and contextually irresponsible nature of the mobilized/promised climate finance that does not align with recipient's climate objectives and priorities. While these contestations are based on collective data analysis, country specific assessments are needed to further highlight the discrepancies in promised and mobilized climate finance that limits its effective utilization. The sections below build on these contestations and argues a need for country specific assessment of trends in climate finance promised to Pakistan.

1.4.2. *Adaptation-Mitigation Imbalance*

The need for delivering a 'balance' between adaptation and mitigation finances was mentioned in the Copenhagen Accord and was later reiterated by the Paris Agreement. The Paris Agreement further states to *assist the vulnerable* developing country parties in *meeting the cost of adaptation*. Furthermore, the operational entity for climate finance, GCF, in one of

its earliest decisions decided to aim for a 50:50 balance between adaptation and mitigation financing overtime (GCF, 2014). The emphasis on maintaining the balance underscores the importance of adaptation especially for the survival of vulnerable developing economies. It also highlights the reality that climatically vulnerable and developing countries cannot meet their adaptation costs from domestic budgets alone, hence international assistance is necessary. Research estimates that approximately 12% of regional GDP in South Asia might be lost due to climate change by 2050 without adaptation, 3 times higher than the global average. In contrast, investing 0.6-1% of the GDP from developed world annually could limit the losses and produce high returns (Amiot & Munday, 2024).

International climate finance flows however have not been balanced in this regard and show heightened inclination towards mitigation financing (Weikmans et al., 2017) (Timperley, 2021). Cipler et al. (2013) argues that despite the emphasis of UNFCCC on the responsibility of developed world to maintain a balance in finances such that the adaptation needs are also met and capacities are built, there remains an ever-widening chasm between the needs and financial flows. The gap has widened to the extent that the latest Adaptation Gap Report by UNEP (2023) found the adaptation finance needs of developing countries to be 10-18 times higher than the available financial flows. In monetary terms, the adaptation costs amount to USD 215 billion to USD 387 billion per year, equivalent to 0.6-1% of the combined GDP of all developing countries. This colossal sum not only elucidates the urgency for developing world to actively mainstream adaptation in their development, but also brings to spotlight the incompetency of the developed world in meeting one of the prime objectives of the climate finances i.e. balanced allocation and meeting the cost of adaptation.

While any progress towards meeting the climate finance goal or scaling up assistance is commendable, developing countries must assess if the flows truly meet their needs. For Pakistan, adaptation holds central priority in development. Despite its low contribution to the global GHG emissions, the country routinely faces extreme climatic events and consistently ranks among the 10 most climate vulnerable countries. For Pakistan, climate resilience is rooted in adaptation so that capacities can be built against adverse effects. To achieve this, international assistance in providing adaptation finance is crucial as the country lacks resources to meet the overbearing cost domestically. This realization informs the second variable of this study that aims to assess the adaptation vs mitigation share in the climate finance committed to Pakistan. It assesses whether the imbalanced nature of climate finance that goes against the nature of accords and agreements holds true for Pakistan. The assessment drawn from this study variable will also help contextualize the extent of effectiveness that has been committed to Pakistan. The assessments would illuminate important features that could be built on when negotiating more suitable practices and methodologies for the upcoming funding agendas like the New and Quantified Goal or the establishment of Loss and Damage Funds.

1.4.3. Loan dominance in climate finance

Recently, there has been significant criticism directed at the developed world for its failure to meet the USD 100 billion goal by 2020 accompanied by concerns about the misalignment of mobilized or promised finance with the defining characteristics of climate finance as originally intended. While contesting the claim of developed countries of providing USD 83.3 billion, OXFAM (2022) also highlighted that most of the finance promised or mobilized during the timeline of the goal were loans i.e. 71% of public climate finance in 2020 (USD 48.6 billion). Furthermore, it was stated that the real value of climate finance in 2020

reduces down to USD 21-24.5 billion, if loans are reported in equivalence to their grant equivalent values. The grant equivalent is an estimate of the amount being given away in a loan or other instrument once repayments, grace periods and other concessionality factors are taken into account. This highlighted that the use of the face value of loans while reporting climate finance inflated the real value of finance providing an illusion far beyond its actual utility. Bhattacharya et al., (2020) further elucidates that the Copenhagen accord did not define methodologies for finance calculation neither did it specify the allowable proportion for each financial instrument i.e. grants and loans. This lack of specificity provided grounds for concentrating mobilized climate finance in loans (Carty et al., 2020).

The loan domination has certain disadvantages. Firstly, it burdens the recipient country with repayments with additional interest rates that places the countries in a debt spiral. As there is no specified obligation for the donors to increase the grant share of the climate finance they commit, most donors gravitate towards loan schemes. Developing countries in acquisition of much needed resources to scale up their resilience are not left with much choice but to venture into financing agreements that burden them with repayments far beyond the principle amount(Pauw et al., 2022) (Suroso et al., 2022). Secondly, the utilization of loan instrument is indeed crucial in meeting the USD 100 billion goal. However, its excessive use contributing to circular debt goes against the nature of the Copenhagen Accord rooted in transfer resources from wealthy developed nations to climatically vulnerable developing nations. Thirdly, Timperley (2021) argues that loan schemes largely fund mitigation interventions as return on investment from mitigation projects is more promising than from adaptation projects. Contrarily, developing nations prioritize adaptation to raise resilience against climatic risks hence showing greater need for adaptation finance. Lastly, the prevalence of loans in a donor's

financial profile, when assessed at face value, exaggerates their contribution compared to donors that primarily offer grants (Weikmans & Roberts, 2016). For example, a USD 50 million loan will be counted as equal to USD 50 million grant even though the loan is to be repaid and the grant is provided without conditions. The loan, necessitating repayments, is reflective of less ambitious donor efforts but will still be treated equivalent resulting in overestimation of the donor's contribution.

The arguments highlight the loan dominant nature of international climate finance. It is clear that excessive use of loan instrument in mobilizing climate finance poses challenges for developing economies, particularly those grappling with circular debt, as is also the case with Pakistan. Therefore, there is a need to examine the flow of climate finance at the country level to understand which instruments are dominant and whether they align with the country's economic situation. Hence, for the purpose of this study, the assessment of the loan vs grant share in the climate finance committed to Pakistan since the operationalization of Copenhagen Accord forms a crucial study variable. The insight gained through this assessment will aid in determining the effectiveness and suitability of financing flows directed towards Pakistan.

1.4.4. Extent of Alignment with Country Priorities

Countries lay out their defined interventions and target sectors for climate action in plans such as the Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs). The plans highlight the country's key priorities for mitigation and adaptation action. These priorities guide international climate finance donors on possible areas of investment. Globally, there is a growing consensus to align climate finance strategies with the broader developmental vision of the recipient country. In doing so, synergies between adaptation/mitigation and country development must be explored so that the financial

resources, that are already limited, can be utilized to target development aligned with climate resilience (Murphy, 2023). The need for mainstreaming adaptation in country's sectoral development has also been recognized by the SCF (2022) in its recent Fifth Biennial Report. In the report, the SCF recommended that climate finance providers take into account country driven approaches, country priorities, as well as needs and capacities when planning and mobilizing finance. The direct correlation between committed finance and beneficiaries' need based priorities will also enhance ownership among recipient countries. The recommendation reiterates the calling of Article 9 of the Paris Agreement for considering recipient countries' priorities when mobilizing climate finance.

Hadley et al. (2022) argues that recipient governments need to clearly communicate the areas where it aims to prioritize investment and development. A clear indication would not only improve visibility for investors but also boost investor's confidence in funding a government backed sector. For climate resilience, governments portray priorities via NDCs, NAPs, and/or Long Term Strategies (LTSs) (Asensio et al., 2022). These documents highlight the priority sectors where climate resilience or action is to be enhanced. These priority sectors align with the overall development vision of the country. Hence, NDCs, NAPs, and/or LTSs provide robust directive indications for aligning recipient needs and priorities with donor's committed finances.

It is apparent, that planning for effective climate finance that targets recipient needs and invokes a sense of ownership can only be achieved through close linkage between country priorities and internationally mobilized climate finance. It is one of the key aspects to boost trust between donors and recipients (Bouyé et al., 2018). This obvious connection informs the third study variable of this study that aims to assess the effectiveness of climate finance

committed to Pakistan in context of relevance to sectoral priorities as mapped out in the country's documents i.e NDCs and NAPs. Pakistan submitted its first NDCs in 2016 and an updated revised NDCs in 2021. These documents highlight the key areas of action through which the country aims to not only reduce GHG emissions as well as enhance adaptation. The NAP of Pakistan is a fairly recent document, published in 2023. The NAP focuses intricately on adaptation requirements of the country and also points out priority sectors for immediate action. Even though both documents hold high relevance to climate finance, the NDCs were released fairly timely and have informed the county priorities for longer time than the recently published NAP. Hence, the analysis dives deep into assessment of sectoral allocation of climate finance committed to Pakistan and its alignment with the country's climate resilience strategy, particularly the NDCs.

1.5. Conceptual Significance of this Study

The study holds notable **conceptual significance** as it examines the governing trends in climate finance that is committed to Pakistan since the operationalization of the Copenhagen Accord. Pakistan is a country extremely vulnerable to climate change. The severity, intensity, and frequency of the many climatic events faced by the country (such as floods, heatwaves, droughts etc) are projected to increase with further rise in global temperature. Owing to the high susceptibility to adverse impacts, climate resilience must be mainstreamed in the development priorities. However, the resiliency needs, most clearly portrayed in the country's NDCs and NAPs, cannot be met through domestic budgets alone. Hence, international climate finance holds central importance for the country in achieving its resiliency goals through adaptation and mitigation interventions.

The landscape of climate finance should not be exploitative, rather supportive. However, contestation on the nature of committed finances and the allocation of funds has been a gaining prominence. To ensure effectiveness of finance flows, developed countries must undertake assessments into the regime of climate finance that they receive. In an attempt towards that effort, the study aims to analyze the case of climate finance committed to Pakistan through a detailed review of dominant instruments used, balance between adaptation and mitigation financing, and sectors funded. The analysis would be particularly significant as it will assess the sector level allocation of funding against the priorities laid out in Pakistan's NDCs. This is because, the NDCs formally recognize the need of international assistance for Pakistan in meeting the priorities identified. It states that the implementation on nationally determined contributions is **conditional** to climate finance without which Pakistan may not meet its committed reduction targets or be able to mainstream adaptation in development.

This study holds prominent **geographical significance** as it is focused on one of the most climatically vulnerable developing economy of the Asian region. Country level assessment that is based on activity level data of each committed finance imparts unique robustness to the study and provides a comprehensive analysis into the three defining aspects of climate finance suitability; adaptation vs mitigation balance, use of financial instruments, and alignment with country priorities. It takes into account all financial activities that have committed climate finance to Pakistan since the beginning of Copenhagen Accord till the availability of most recent data. This way it not only assesses the trends of provider's priorities but also a recipient perspective regarding the sectoral needs in climate finance.

The **methodological significance** is highlighted in the utilization of the most recent data obtained from the most comprehensive database on climate finance for the conduction of

this study. The OECD database was developed on the request of providers and hence does not provide any grounds for bias in presentation of activity level figures. Furthermore, the methodology applied is derived on several recent studies that also aim to gain insight into the governing practices in the delivery of climate finance.

Alternative Hypothesis, Research Aim, Research Objectives and Research Questions.

The trends in climate finance committed to Pakistan are loan dominant, imbalanced in terms of mitigation and adaptation shares, and do not meet the country's sectoral priorities for climate action.

Research Aims and Objectives

1. To assess the balance between mitigation and adaptation directed funds in climate finance committed to Pakistan
2. To identify the dominant financial instrument used in climate finance commitments to Pakistan.
3. To analyze the responsiveness of international climate finance in meeting the needs and sectoral priorities set out in Pakistan's climate resilience strategies/plans.

Research Questions:

1. Which is the dominant financial instrument used in climate finance committed to Pakistan?
2. What is the balance between mitigation and adaptation financing in the climate finance committed to Pakistan?

3. How strongly are the climate finance flows committed to Pakistan aligned with the needs and priorities as laid out in its climate action strategies/plans?

1.6. Strengths and Limitations

The research analysis takes into account the latest available data for climate finance that dates to 2021. At the time of this study, climate finance data for year 2022 and onwards has not yet been consolidated. Hence, 2009 marks the starting point of analysis while 2021, being the latest with respect to data availability, the end of it. This timeframe includes the entire operational length of the initial delivery period for meeting the USD 100 billion target that was defined during the Copenhagen Accord and in which the deadline was set at 2020. Later, during Paris Agreement the deadline was extended till 2025. The analysis also includes the entire dataset on climate finance available for the context of Pakistan. Therefore, by examining data for over a decade, that makes a robustly sufficient timeline, strong insights regarding financial allocations trends that govern climate finance flows from multiple donors to Pakistan are identified. The analysis will provide relevant commentary on the effectiveness of committed climate finance which would also be reflective of donor's efforts and commitment towards the principle of Common but Differentiated Responsibilities under UNFCCC. Moreover, it holds direct relevance to an economically developing and climatically vulnerable country of Pakistan that is striving to mainstream resilience in its development agenda, for which targeted and appropriate international assistance is necessary. Lastly, the insights provided by the analysis could be used to inform synergies and improve layouts for upcoming international climate finance agendas such as the New and Quantified Goal (NCQG) as well as the Loss and Damage Funding (L&DF) Mechanisms.

The analysis, however, will be based only on commitment level data as disbursement level reports are not available for all donor sources. It cannot be said with certainty that what share of committed finances has been disbursed or allocated to the recipient, especially for long term loans that are to be provided in installation. Hence, the analysis will not directly speak on the disbursement status. However, because it is the committed finance later translates into the disbursed finance, the findings of the analysis will hold true to the general scenario of climate finance directed towards Pakistan.

1.7. Link with SDGs

At present, the climate action in Pakistan is still in its nascent phase. However, in the last decade, the country has achieved several critical points that showcase political will and ensure initiation of climate action at national level. Post 2015, Pakistan became a signatory to the Paris Agreement, which holds central position in showing national commitment towards climate action. In the following years Pakistan furthered in progress by developing national priorities for emission reduction and conveyed them through NDCs first in 2016 and then later in 2021. Moreover, several projects at provincial level as well as national level were initiated. Notably, these include the Ten Billion Tea Tsunami, The Protected Area initiative, The Living Indus Project, Recharge Pakistan, and GLOF I & II (Nilson et al., 2022). In addition, the country also recently released its first ever National Adaptation Plan that highlights the key areas where adaptation needs to be critically strengthened. These four key areas include Agriculture, Natural Capital, Human Capital, and Urban Resilience. These sectors form the pillars on which the economy of Pakistan stands, showcasing Pakistan's resolve in mainstreaming resilience in development agendas.

Despite the progress made, climate action in Pakistan has not yet met the urgency required to address the current challenges. Among the constraints in harnessing need appropriate climate action, the unavailability of effective climate finance remains a persistent issue. The country lacks sufficient resources at domestic levels to meet the cost of its mitigation and adaptation needs. Thus dependence on external resources to undertake the necessary climate action is present (Lindberg et al., 2023). Not only is Pakistan in need of international assistance to meet its emission reduction targets (USD 101 Billion as per 2021 NDCs) as well as strengthening adaptive capacity (USD 7-14 Billion annually), rather for the development to be climate sensitive, considerable budgetary allocation are required (Umar et al., 2023). To respond to these needs, it is important that the climate finance extended to Pakistan is effective in terms of responsiveness to country priorities but also appropriate in relation to the country's debt ridden economic status. This study aims to assess the nature of climate finance that has been committed to Pakistan over more than a decade, with the aim to analyses dominant trends in financial allocations that determine it appropriateness and effectiveness.

The study correlated directly to the SDG 13 i.e. Climate Action. More specifically it links to the indicator 13a of the SDG 13 which states:

*Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to **address the needs of developing countries** in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible.*

The analysis conducted through this research will inform the effectiveness of the committed climate finance to one of the developing country i.e. Pakistan from a pool of both

bilateral and multilateral donors. The evaluation will build on the appropriateness of the committed finance in terms of dominant financing tool utilized with respect to the economic landscape of the developing country. Moreover, the study will make an in-depth analysis regarding the alignment of the committed finance to the sectoral priorities as laid out in the country's NDCs. This assessment will inform if the committed finance is responsive to country needs. In conclusion, the analysis evaluates the effectiveness of international climate finance committed to one of the most adversely effected yet low emissive developing country, against the characteristics that should guide the nature of the climate finance.

1.8. Conceptual Framework

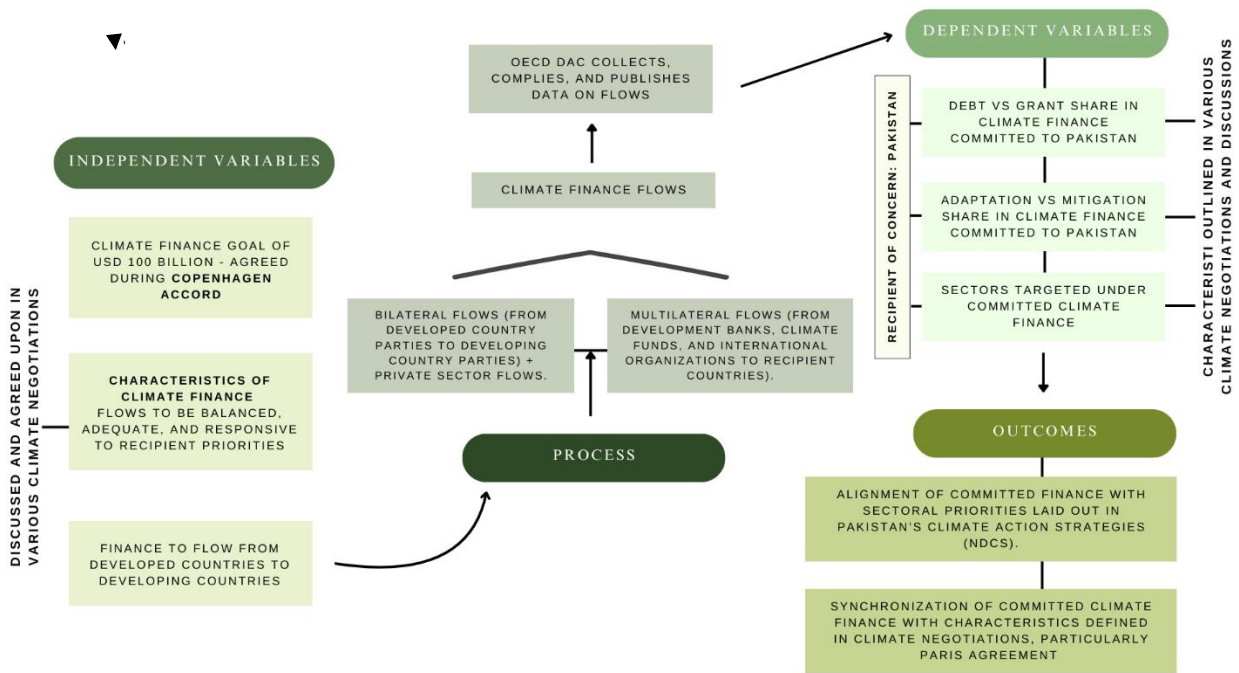


Figure 1.2: Conceptual Framework of the study (Author's own derived from literature review).

This study takes into account the independent variable of climate finance commitments. This variable is reflective of the operational target of achieving climate finance delivery of USD 100 billion per year from developed to developing countries. Although an agreed upon definition does not exist for climate finance, certain characteristics laid out in succeeding climate negotiations such as the Cancun Agreement and Paris Agreement impart critical attributes to improve the suitability and usability of climate finance for the recipients. Of these characteristics, the most prominent include adaptation vs mitigation balance that should be maintained in allocating climate finance to address country priorities. Furthermore, as highlighted in several recent researches the choice of financial instruments for allocating climate finance has significant impact on the usability of climate finance by the recipient. This study thus explores the trends in climate finance committed by bilateral providers, multilateral

providers, and private sector. These trends are assessed for their adaptation and mitigation balance as well as use of debt vs grant in extending the commitment. Furthermore, sectoral allocation of each financial activity are analyzed to examine if country priorities as set out in the NDCs are being met. The variables of the study are thus not only informed by climate negotiations but are also referenced from several research studies (Table 1.2).

Table 1.2: Study variables of the research and their assessment indicators

Variables	Indicators	References
Extent of adaptation – mitigation balance in financial commitments	%age share of adaptation and mitigation financing- each year and then combined	(Savvidou et al. 2021)
Dominant financial instrument	Debt and grant share for each year and then combined	(Atteridge & Cannales, 2017) (OXFAM, 2022).
Alignment with country priorities	Identifying country priorities communicated through national documents	Identification of priorities laid out in NDCs.

	Assessing sectoral allocation of committed finances for each year	Identify sectors financed for each year. Calculate yearly sectoral allocations for comparison between priority and response (Iacobuță et al., 2022) (Mohan, 2023) (Atteridge et al., 2017).
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CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1. Delivering on the USD 100 billion goal of climate finance; the claim vs the criticism

Climate finance has been in debates since the Earth Summit. The realization that the developed world, owing to its unregulated fossil fuel backed development, is largely responsible for climate change has been a part of climate related discussions for decades. This phenomenon has not only been acknowledged over time but has also been used to form the basis of many climate related negotiation aspect such as emission reductions, green transition, fossil fuel phase-out, as well as climate finance. The developing and at risk countries have historically and consistently argued the responsibility of developed countries in financing green transition as well as adaptive capacity enhancement in the developing nations. This discourse was finally acknowledged during the Copenhagen Accord, when a financial goal of USD 100 billion a year was set as the initiation of climate finance that was to flow from the developed country parties to developing country parties.

Over the years, the developed countries have made consistent efforts to initiate as well as scale up the climate finance they commit/disburse to developing countries. During the course of this time, several succeeding climate negotiations have elaborated on the characteristics that should govern these climate finance flows. The most prominent among these are laid by the Paris Agreement that states that Climate Finance should be adequate, balanced, and responsive to recipient needs. The debate at present, revolves more deliberately on the alignment of the existent climate finance flows in meeting these characteristics. In 2021, OECD released a consolidated assessment of climate finance flows for the year 2020. The

assessment stated that the developed countries have been successful in delivering slightly over USD 83 Billion in climate finance during the year 2020. The claim of the assessment held central importance as 2020 was also the initial deadline set for meeting the USD 100 billion target, before it was extended to 2025 during the Paris Agreement. However, the claim of the developed countries was met with significant criticism from developing countries as well as independent research organizations such as OXFAM. The censure was based on the argument that the figure of USD 83.3 billion was highly inflated and did not reflect the true scope of the committed/disbursed climate finance which was much lower in usability (OXFAM 2023). The true value of 2020 climate finance figures were hence denounced to be much lower than the reported figure. Moreover, it was argued that even if the entirety of USD 83.3 Billion was indeed delivered as climate finance in accordance with the characteristics defined by climate negotiations, the goal was still unmet falling short of more than USD 16 Billion. In the era of fast paced development and rapidly emerging adaptation needs, falling short of the agreed upon figure raises questions regarding the developed world's commitment towards assisting climate adaptation and mitigation in developing countries.

Therefore, despite the year by year progress made in delivering climate finance and making new commitments, the exercise concerning promises and disbursement has been criticized thoroughly. It is argued that the existing climate finance practices are not only insufficient but also fail to meet even the loosely set criteria that are supposed to shape the nature of climate finance flows. Over the years, these points of contestation have gained traction through research backed debates on the flawed aspects of climate finance paradigm, emerging from numerous developing country parties. Of these the imbalance in adaptation and mitigation financing as well as use of exploitative financial instruments i.e. more debt

instruments than grants are the most nuanced aspects. The assessments that support these arguments are conducted for global, regional, as well as national levels.

2.2. Use of financial instruments; loan or grant in extending climate finance.

The trend of committing/disbursing climate finance majorly through loans has been reported in providers' perspective of climate finance delivery. In 2020, the loans formed 71% of the total **global** climate financial share while in 2021, this increased to 75% (OECD, 2022) (OECD, 2023). These assessments are based on the data self-reported by the donor countries and compiled by OECD, hence it provides the truest form of assessment based solely on providers' perspective and cannot be claimed to hold any bias that may arise from donors' reporting or. Diving deeper into this analysis, policy research institutes like OXFAM publish that a staggering 67% of multilateral climate finance was provided in the form of loans (Carty & Kowalzig, 2022). Similar trend of loan dominance in financing development focused projects through bilateral channels was also reported by Causevic et al. (2023) in an assessment of climate finance between the years 2016 and 2020.

In 2020-21, market rate debts were one of the major instruments that channeled climate finance towards emerging markets and developing economies. Furthermore, countries with debt distress received 17% of climate finance in the form of loans, which further raised their debt burden (Buchner et al., 2023). The situation has gotten to a point where many developing and vulnerable nations are repaying more in overall debt service than they are receiving under climate finance, or even overall development assistance in case of few (IIED, 2023). Downscaling further to a **regional** perspective, Martinus & Jiahui (2022) report that financial flows in Southeast Asia, that houses some of the most climate vulnerable countries receives

debt dominant climate finance. The proportion of debt in climate finance has increased significantly over 2 decades and reached 85.5% in 2019, compared to 53.2% in 2000. On the other hand, studies based on selection of African countries reveal interesting trends. One of the pronounced trend of overall loan domination in climate finance is highlighted by Meattle et al. (2022) who find that loans dominate grants by a ratio of 2:1 in the climate finance flows directed towards the region. Although this assessment includes also the domestic flows of climate finance, the international climate finance is much greater in magnitude and share. Hence, the international climate finance directed towards Africa is concentrated in debt instrument, although the share of debt vs grant disparity differs for **donors'** contributions, recipient nations, and financed objective. Overall between 2019 and 2021, 71% of the Multilateral Banks contribution towards African climate finance was through loans, slightly lower than Bilateral DFIs share of 77% debt related climate finance. On the contrary bilateral governments and Multilateral Climate Funds relied mostly on grant financing corresponding to 92% and 81% of their total Agriculture, Forestry and Other Land Use (AFOLU) investment portfolio. The difference in the share of loan in provider's investment portfolios indicates the differences that emerge in intricate details of climate finance delivery.

Savvidou et al. (2018) report that debt instrument was used to finance 57% of adaptation related activities in Africa between 2014 and 2018. The mitigation financing exceeded adaptation financing during this period, and the share of debt remained high in mitigation as well. However, the **country** context differs from regional averages with some African nations more loans than grants, while other received only grants (Schwerhoff & Sy, 2017). In the context of Ghana for example, grants have a higher share in adaptation and mitigation financing at 53% and 38% respectively (Meattle & Gupta, 2023).

The preference of one financing instrument over the other is also common in trends of **sectoral allocations** of climate finance. This can be apparently observed from the example case of low income and least developed countries. Between 2016 and 2021, debts dominated all adaptation related sectoral allocations for these income groups, except for the sector of general environment protection. In key developmental sectors such as agriculture, transport, and disaster preparedness received the highest shares of debt i.e. close to or greater than 60% of the total sectoral allocation (OECD, 2023b).

2.3. Share of Adaptation vs Mitigation in Climate Financing

At global level, the OECD despite being an assembly of developed nations who also form the large portion of climate finance providers, highlights these discrepancies. In its periodic reports, one of the consistent trends in **global** climate finance delivery and commitments through international finance, has been prioritization of mitigation financing over adaptation financing. In 2021, an overwhelming majority of the total international climate finance flows i.e. 60% were directed towards mitigation relevant activities. While adaptation activities received 27% of the international climate finance, less than half the share directed towards mitigation finance (OECD, 2023).

Mitigation financing has been the preferred objective in **donors'** portfolio as well. The joint report on climate finance flows by Multilateral Development Banks states that out of the USD 50.66 Billion in climate finance channeled through DBs, USD 33 Billion targeted mitigation activities and only USD 17.6 Billion were directed towards adaptation activities. The portfolio included climate finance provided by MDBs core budget as well as that which was channeled through MDBs from bilateral donors. The mitigation finance in totality formed

65% of the total investment portfolio. Assessing the trends in bilateral **providers'** climate financing through machine learning, Toetzke et al. (2022) finds that between 2000 and 2019, USD 80 billion were disbursed through bilateral channels. Even though, the number of activities analyzed was higher for adaptation (52%) than mitigation (48%), the financial allocations were skewed with 65% of the sum financing mitigation and only 35% financing adaptation. Throughout the period, mitigation finance dominated the climate finance portfolio however the gap between the finances for two objectives decreased by a factor of 1.9 in 2019 (AfDB et al., 2022).

The mitigation and adaptation finance imbalance is also prevalent in **regional** allocations of climate finance. For example, between 2003 and 2018, 62% of all international climate finance that flowed towards Asia was earmarked for mitigation. This is despite the fact that the region contains some of the most economies highly vulnerable to climate change with low adaptive capacities. The difference between the numbers of projects targeting mitigation and adaptation interventions was not very high. 143 adaptation relevant projects and 236 mitigation related projects were approved during this tie. However, the difference in financing allocated in total to fund projects of respective category was enormous. The 143 adaptation projects received USD 0.939 Billion while the 236 mitigation related projects attracted much more i.e. USD 2.9 Billion (Watson & Schalatek, 2019).

Watkiss et al. (2017) discusses that mitigation and adaptation need to be viewed as complementary rather than substitutionary. Mitigation interventions are necessary to limit further warming of the planet while adaptation interventions are required to raise resilience as earth systems react to rising temperatures and climatic impacts unfold with varying local manifestations. When viewed with a complementarity lens, both dimensions of climate action

appear necessary and aiding in effect. This relation whereby mitigation is crucial to prevent further warming and making irreversible changes to earth systems (tipping points), adaptation is crucial in ensuring that the communities and existing developmental gains are not threatened by climatic impacts. This assisting complementarity needs to be enabled by a balanced climate finance for both adaptation and mitigation.

Not only is the adaptation and mitigation financing balance essential to maintain but developing countries particularly LDCs convey a greater need for adaptation financing. This is apparent in the national communications submitted by African developing countries (Zhang & Pan, 2016). Despite the greater need for adaptation, the providers fail to meet the balance let alone provide greater adaptation financing. Savvidou et al. (2021) finds that the international climate finance fails to meet the stronger demand for adaptation expressed by African economies and regional allocations remains majorly directed towards mitigation objectives. Between 2014 and 2018, for example 60% of international climate finance that flowed into the region targeted mitigation and only 33% adaptation. The remaining small percentage supported interventions with combined adaptation and mitigation objectives. While mitigation finance dominates across all regions, the imbalance is most extreme in Northern Africa, with 83% for mitigation. At the country level, the distribution varies widely (Figure 3). Ten African countries, such as Angola and Sudan, received over 75% of their climate finance for adaptation, but these nations received less than 5% of total climate finance. Conversely, six countries, including Egypt, Morocco, and South Africa, received over 75% for mitigation, with these three accounting for about 30% of the total. This assessment highlighted two important things. One, that country level trends are different from regional averages and hence must be assessed with dedicated efforts to gain better understanding of local trends.

Secondly, the countries that receive higher share of adaptation financing may not attracting a considerable share altogether and might be underfunded for climate action.

The imbalance in adaptation and mitigation finance along with debt concentration in both conflicts with the assistive nature that international climate finance was meant to adopt. Literature suggest a general trend of mitigation prioritization and debt concentration in global climate finance architecture, while at the same time highlighting the need for country level assessments. This is especially important because as per Watkiss et al. (2017), adaptation needs manifest vastly differently in local context and hence assessments must analyze if international climate finance is meeting country needs. Moreover, increased disbursement of climate finance through loans weighs heavily on recipient's countries debt distress (Buchner et al., 2023). These two aspects of international climate finance further translate into mismatch between sectoral priorities and climate finance allocations at country level.

2.4. Climate finance to address country priorities

The importance of international climate finance to be country driven has been highlighted in climate negotiations and by the governing body for climate finance i.e. SCF. Article 9 of the Paris Agreement clearly postulates that recipient country priorities must be accounted for when mobilizing climate finance. SCF (2022) when drawing recommendations, based on current practices in climate finance delivery to strengthen the regime of international climate finance, reiterated that climate finance providers take into account country driven approaches, country priorities, as well as needs and capacities when planning and mobilizing finance. The prime reason behind this insistence is to increase recipient ownership towards climate action and improve coordination between developed and developing world. Scholars

also concur on improving alignment between country priorities and committed/delivered finance to enhance climate action and to fund need based measures. Dubash and Wrinkler (2016) argue that that the need and perspective of national stakeholders must guide the delivery and sectoral targets of climate finance in a country. For sustained climate action, especially relating to emission reduction targets, country priorities must be given due consideration for effective results. The concept of financing transformational change that is being sought under the pursuit of low carbon development needs to be interpreted through a wider lens. This wider interpretation must take into account recipient country's developmental outlook and climate action priorities. In doing so, the international climate finance that funds this transformational change should direct resources to meet country needs and highlighted priorities. If the finance remains largely ignorant of country priorities, it invites the risk of turning the very transformational change it funds a pressure imposed on developing countries. The situation would lead to sidelining of country's climate action agenda and priorities while suggesting an amplified acceptance of and support for donor's priorities. This may lessen country ownership towards financed actions as well as widen the disconnect and mistrust between the developing and developed country actors of climate finance.

Furthermore, regarding climate finance as a restitution payment by those responsible for the major share of GHG emissions that have triggered global warming, and following the concept of polluter's pay principle, climate finance needs to take an approach whereby the recipients of climate finance (also the climatically vulnerable and less developed) should have a greater say in where climate finance is spent (Hagemann et al., 2023). To communicate their financing needs, recipient countries of climate finance articulate the sectors they aim to prioritize for mitigation and adaptation action in their NAPs, NAMAs, climate financing

strategies, long term strategies etc., but most consistently in country NDCs. Roester et al. (2019) highlights the bottom up approach adopted for NDCs development that utilizes national processes, incorporating input from various stakeholders, particularly line ministries in reflecting what a country considers achievable in the near to mid-term. In addition to highlighting sectors, the NDCs also at times present a cost estimate of meeting the emission reduction commitments or financing adaptation interventions. The methodology used for cost estimation varies from country to country with regards to precision, sectoral breakdown, and conditional vs non-conditional nature (Pauw et al., 2019). Nevertheless, the identification of priority sectors and expression of financial requirements to meet the NDCs, showcases commitment to climate action, provides a reference towards recipient country's climate finance needs, potentially attracting increased support and aiding in the prioritization of investments (Hagemann et al., 2023).

Aligning climate finance to country priorities is not only critical to ensure appropriateness of financial flows in terms of scale, type, and target but also is pivotal to meeting the 1.5°C GMT target of the Paris Agreement as well. Here, country NDCs relate more closely to mitigation or emission reduction. Facing the urgency of limiting GHG emissions, the developing world also showcases commitment by providing emission reduction targets in NDCs. However, owing to their weak economies, meeting the cost of mitigation may fall beyond their domestic means. In lieu of this several developing countries, including Pakistan, add the term of conditionality whereby they declare that the commitments under NDCs can only be met if international assistance in the form of climate finance, technology transfer and/or capacity building, is made available to the country. In summary, the success of Paris Agreement is severely dependent upon each parties' implementation of its NDCs which

for many countries is achievable only in the presence of international climate finance (Pauw et al., 2019).

In an alternate approach to aligning finance with the priorities of the recipient country, donors may be inclined to prioritize their own perspectives on finance flows. Scholars have argued that there are various motivations behind providers' interest in directing climate finance. Bagchi et al. (2017) have found that climate-related aid has been used by industrialized countries as a bargaining tool to secure developing countries' support in climate negotiations. On the other hand, climate finance may also be used by providers as tool to pursue their political and commercial interests such as export markets. Weiler et al. (2018) find that a recipient country's colonial history and current trade patterns can influence the climate finance it receives. Their research indicates that countries are more likely to receive adaptation assistance from developed nations with whom they have had a colonial relationship or with whom they engage in trade. These findings suggest that providers may use climate finance as a means to facilitate their interest. In doing so, the needs of the most climatically vulnerable may be overlooked.

Climate finance has been a key tool in enhancing equity and ambition including in the context of NDCs (Lehr et al., 2019). Hence, meeting the needs highlighted by developing countries in their NDCs is crucial to channelize a collective effort towards climate action. The NDCs highlight the potential that each country holds in curbing emissions. The prioritized sectors of investment are aligned with each country's developmental strategies. The centrality of climate finance in enabling climate action is further highlighted by the sheer number of countries that have made climate action conditional to finance provision. Pauw et al., (2020) examined the totality of 168 NDCs that were submitted by parties to UNFCCC in 2019. Out

of the 168 countries, 110 make mitigation interventions conditional while 79 make adaptation interventions conditional to the availability of climate finance. Successful implementation of these commitments would require donor countries to meet the finance for prioritized sectors. In aligning the finance with country priorities, the donors aid in increasing financial effectiveness as well as enhancing recipient country's ownership towards climate action (Bouy & Harmeling, 2018).

A study by Atteridge et al., (2017) explains the necessity of examining sectoral distribution of climate finance. The study argues that some sectors hold prominence in building long-term resilience. These sectors, usually also form the core component of countries' development agendas and NDCs, are likely to be underfunded by climate finance. Basing the findings on the case of Caribbean Island SIDS, the study undertook a preliminary examination of the climate investment priorities that have been articulated by Caribbean SIDS in national climate plans and international communications. The analysis revealed that the received as well as committed climate finance does not greatly align with domestic priorities. The misalignment in recipient priorities and donor decision was particularly apparent in the case of Haiti, the only LDC in the region while also being highly vulnerable to climate change. The findings of the study show that Haiti gives prime importance to integrated water resource management, coastal management, infrastructure and agriculture in its INDCs. On the contrary, the international climate finance flows mostly to renewable energy and transport infrastructure. Even for emission reduction, Haiti focuses more pertinently on agriculture, forestry and land use change rather than heavily financed renewable and transport sectors. Of the priority sector water sector received only 1% of the committed finance, forestry 0.6% and

agriculture, despite being a priority sector for both adaptation and mitigation, only 4% between the study period 2010-2015.

It is widely acknowledged that transitioning to low carbon development and enhancing adaptive capacity requires reform changes across various economic sectors. Climate change itself is a threat to development and hence climate resilience and climate action is strongly related to sustainable development. A study conducted a correlation analysis to assess the alignment of donors' financial commitment (made between 2010 and 2018) and recipients' priorities in financing SDG related climate interventions mapped in recipient's NDCs (Iacobuță et al., 2022). The analysis was conducted for countries that are a party to UNFCCC. Contrary to Atteridge et al. (2017), this study finds considerable alignment between allocation of donor's finance and recipients priority sectors of investment. However, the alignment has remained stagnant without much improvement since the Paris Agreement. It is worthwhile to notice here that the study by Iacobuta et al. (2022) assessed global transactions and NDCs of all parties with the exception of few. On the other hand Atteridge et al. (2017) conducted a regional/national level assessment for the Caribbean SIDS. The differing results of the two studies suggest that global patterns of finance allocation may differ from downscaled assessments at regional and sub-regional levels. The differences necessitate the need for downscaled assessments particularly for climatically vulnerable countries to examine if their needs are being met.

2.5. Theoretical Background; Climate Finance through the lens of Theory of Climate Justice

The research settles in close proximity to the doctrine of the Climate Justice Theory. The roots of this theory can be traced back to the environment justice and human rights movements that emerged and strengthened in the last two decades of 1900s. The timeline coincided with the development of UNFCCC that holds the principle of Common But Differentiated Responsibilities as one of its central doctrine. This theory deeply relates to the indifferences in the historic responsibility towards inducing climate change as well as existing capabilities to mitigate it and adapt to it. In this paradigm, the unequal impact of climate change that is more severe for developing economies that have vulnerable assets and higher hazard exposure despite their miniscule or considerably lower contribution towards inducing climate change. On the contrary, the developed world that is largely responsible for inducing climate change due to rapid industrialization holds better capabilities to adapt, owing to their economic status driven by the vast industrial sector. The true intent of this theory visualizes climate change beyond the environmental and physical nature and frames it as a political and ethical issue as well (Chu et al., 2019). It relates the climate change with the concepts of environmental and social justice and builds on the issues of historic responsibilities, collective rights to a livable environment, and direction of action. In specific terms it is widely acknowledged and built upon that the capacity to undertake adaptation and mitigation varies greatly across nations and communities. Additionally, the need for adaptation is greater for some than the action towards mitigation. From an international relations point of view, the Climate Justice implies that the industrialized developed nations must now amplify their mitigation action to curb the main source of GHG emissions while also supporting just transition in climatically vulnerable,

low emissive, developing nations through technical, technological, and financial assistance, among other measures. The motif of the theory is derived from the implications human rights principles of accountability, international cooperation, participation, and a maximum availability of resources. In short, the Climate Justice theory thus stipulates that benefits and burdens to be shared **equitably**. Over the years, the debate and movement on climate justice has gained traction including from prominent contributors such as the Indian scholar and activist Vandana Shiva and the organization of Former President of Ireland and UN High Commissioner for Human Rights, the Mary Robinson Foundation.

2.5.1. Implications for climate finance

Scholars argue that the extent of climate justice extends to include need appropriate and sufficient climate finance as well. Grasso (2010) states that both procedural and distributive justice in climate finance can be ensured through fair processes that involve mechanisms built with representations from both developed and developing countries. The mechanisms should ensure finance delivery to the most vulnerable first. Khan et al. (2020) contend that even after the 2015 Paris Agreement, significant ambiguities remain in climate finance governance within the UNFCCC framework, particularly concerning distributive, procedural, recognition, and compensatory justice. As a result, the notion of climate justice in channels of climate finance has not seen the level of improvement needed at present. Studies that reveal the insufficient provision of climate finance as per the low emissive and climatically vulnerable recipients need further contest that the growing gap in provisions and needs is furthering climate injustices (Islam, 2022). Moreover, for highly indebted countries, grant based finance is contextually more appropriate (Savvidou et al., 2021). However, the loan dominance in international climate finance architecture also goes against the narrative of

climate justice through climate finance. Zylinski (2024) reports that the global north comprising of developed countries responsible for providing climate finance is facilitating the evolution of neo-colonial form of dependence through finance and debt relationships. In its existent architecture, climate finance holds the threat of propagating new forms of dependence and subordination for the global south's developing and climatically vulnerable economies. The widespread exercise of providing market rate loans as climate finance raises the debt distress of many developing countries as cost of their repayment surges. He argues, in such situations, the recipients of climate finance face risks of defaulting on their loans and subsequently become entrapped in cycles of restructuring, or they spent the crucial monetary resource in re-servicing the debt rather than allocating it to the critical resilience needs. As a result, new forms of colonialism emerge carried by the age old wheels of subordination and dependence.

2.5.2. Identifying modes of injustice for informing transformational change

At present the literature on climate (in)justice is emerging from two faucets, (i) academic and philosophical contributions and (ii) narratives and prose from activist movements. The scholarly articles however tend to exist in siloes drawing arguments on the many guises of climate injustices existent in today's society. Newell et al. (2021) argue that such an approach limits the exploration of emerging mechanisms that deepen the structural hierarchies and exacerbate inequalities. To fulfill this gap, a research agenda is proposed that puts the power of scholarly analysis highlighting the many guises of climate injustices at the epicenter of the enquiry while broadening the horizon to identify the existing mechanisms, methods, and institutions of induce climate change and shape responses to it. This approach calls for wider institutional analysis that study avenues exacerbating inequalities and injustices

within the mechanisms and structures that are supposed to respond to emerging needs of mitigation and adaptation.

Relating to this need, the present study aims to extend the assessment to one of the central mechanisms mandated to assist response towards climate change i.e. the climate finance. Within the wider paradigm of climate finance, this research focuses on the USD 100 billion goal specifically owing to its intended inherently assistive nature. The study seeks to identify the dominant instrument used in transfer of finances from the developed world to one of the most climatically vulnerable and developing countries, Pakistan. Climate justice would demand that the finance extended to Pakistan as assistance for adaptation and mitigation be aligned with the country's struggling economic status and not burden it further with debt servicing. Additionally, owing to the country's low emission profile but simultaneously very high climatic vulnerability, the need for adaptation finance emerges more strongly than mitigation finance. Therefore, in the interest of climate justice, the finance extended to Pakistan should be well aligned with the country's needs hence providing an equal, if not higher, share of adaptation financing. Lastly, the country's sectoral priorities for adaptation and mitigation must also be considered to ensure that national interests are well adhered to in the delivery of climate finance. If these criteria are well met, then the mechanisms and institutes involved in delivery of climate finance to Pakistan would be in accordance to the notion of climate justice. However, if not, the very finance that is supposed to assist the climatically vulnerable economy of Pakistan would prove to be a burden that not only fails to meet national needs but also subjugates Pakistan to new forms of dependence and debt traps.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Study Area and Geographical Significance

This study is temporal in nature and based on country level assessments of climate finance flows. It has analyzed the climate finance that has been committed to Pakistan is for prevalent trends and characteristics for national rather than subnational allocations. This is because, climate finance is a matter dealt at national level and is recorded as such.

This analysis is the first of its kind conducted for Pakistan. Previous studies, such as those by OXFAM (2022), OECD (2023), and Weikmans & Roberts (2019), have primarily focused on global climate finance trends. Additionally, regional studies like Watson & Schalatek (2019) and Martinus & Jiahui (2022) have examined climate finance flows to Asia and South Asia, respectively. However, these studies often focus holistically on one specific aspects, such as the balance between adaptation and mitigation finance or the distribution of debt and grants, without addressing country-level assessments.

Given the diverse nature of climate impacts, adaptive capacities, emission reduction targets, and finance needs among countries, detailed country-level assessments are essential. Pakistan, consistently ranked among the most climate-vulnerable countries, requires substantial climate finance to support its green transition, emission reduction, and adaptation efforts, as outlined in its national documents (NDCs and NAPs). Therefore, a comprehensive national-scale analysis based on detailed activity-level data is necessary.

This assessment addresses this need by exploring the trends in climate finance directed towards Pakistan. Unlike previous studies that focus on individual aspects of climate finance,

this research examines three critical factors: the balance between adaptation and mitigation, the distribution between debt and grants, and sectoral allocation. By doing so, it provides a complete picture of climate finance delivery to Pakistan, highlighting the trends that shape and influence the efficiency of the assistance provided.

3.2 Timeframe of data on climate finance flows under analysis

The quantitative analysis extends from the year 2010 to 2021 in assessing yearly climate finance committed to Pakistan. The Copenhagen Accord was agreed upon on 18th December 2009. Hence, the year 2010, starting immediately after the accord forms a relevant starting point for the analysis. The most recent data for climate finance consolidated by the OECD database dates to the year 2021. 2021 also comes a year after the initial deadline to meeting the USD 100 billion goal which was later extended to 2025 in the Paris Agreement. Therefore, it also acts as a suitable reference point that would go beyond the initial deadline and is based on the most recently available data.

3.3 Data Acquisition

For this quantitative assessment activity level financial data has been acquired from the **OECD Development Finance for Climate and Environment** database <LINK>. Because this data is acquired from an existent consolidated source, it is constituted as secondary data. Moreover, owing to the global nature of climate finance flows, it is not possible to obtain primary data on finance flows from each donor independently for the researcher. Thus an already existent database that provides consolidated data, reported by donors themselves acts as the most comprehensive and useful available source. The database contains activity level external development finance data on committed climate-relevant ODA. The data is self-

reported every year by donors that includes; OECD member countries, multilateral development banks, multilateral climate funds, NGOs, and private sector mobilizers. The data is exhibited in two perspectives; the donor perspective and the recipient perspective. For the purpose of this assessment, recipient perspective data has been analyzed. The selection of recipient perspective is ingrained in the fact that it provides data for all the financing activities from a plethora of providers or donors, both bilateral and multilateral, to a particular recipient for every year, thus, forming a suitable source for the analysis.

The OECD database is regarded as the ‘best available data source’ on climate related ODA finance — the climate finance flows aiming to reach the target of USD 100 billion (Iacobuță et al., 2022). In its first Biennial Report, aimed at assessing climate financing reporting mechanisms among other objectives, the SCF (2014) also recognized the decades long expertise of OECD DAC in reporting on financial ODA flows as well as the wide spread acceptance of its mechanisms that impart robustness to the resultant database on climate related financial flows. The data base has also been used by several assessments and researches based around climate finance including; Atteridge (2017), Weikmans and Roberts (2019), Bos and Thwaites (2021), Mitchell et al., (2021), Achampong (2022), and OXFAM (2022).

The OECD releases yearly information on activity level financing activities in longitudinal datasets. These datasets presented as Excel (.xlsx) files combine comprehensive information regarding each activities in a series of column. The data is available on open source on the OECD website. The online dataset provides information on climate and environment relevant financial activities dating back to the year 2000.

The OECD dataset for climate finance has been derived from the Creditor Reporting Standards (CRS) system maintained by OECD. This system keeps track of aid activities flowing from countries designated as developed to the countries listed as developing world in UNFCCC (See Annex 1). The financing activities are detailed in terms of theme (adaptation or mitigation). The project name financed by each activity, among other project related identifier information is given as well. The dataset, also provides information on the development sectors targeted by each financial activity. Because climate change is a cross cutting issue, the climate finance extends to several different sectors including energy generation, infrastructure development, transport, social development etc. to name a few. This feature of the dataset has allowed for useful assessment around the priority of international donors in financing the sectoral type of climate related projects in Pakistan. Furthermore, the donor for each activity i.e. multilateral entity or bilateral Annex II (From Paris Agreement) providers is specified. As discussed earlier, bilateral donors use the Rio-Marker methodology whereby each activity is marked as per its purpose to be either principally or significantly targeting climate objectives. Some other multilaterals (FAO, GEF, Adaptation Fund) and Private donors (such as Laudes Foundation) also use the Rio-Marker methodology. In case of MDBs, the climate component methodology is used to identify the particular project or transaction elements that actively support or advance either mitigation, adaptation, or both concurrently. GCF also adopts the climate component methodology.

Source: Adapted from Parties to the United Nations Framework Convention on Climate Change

3.4 Data Sorting and Analysis

Several scholars use the OECD database for assessing the debt vs grant share and mitigation vs adaptation imbalance in international climate finance flows. This study follows their approach. For example, Atteridge & Cannales (2017) use the OECD database to account for climate finance flows in 15 Small Island Development States (SIDS). The research uses the data to analyze the dominant financial instrument, funding source, delivery channel, as well as sectors targeted. Similarly, Savvidou et al. (2021) also uses the OECD data to assess climate financial flows in Africa. Both studies focus on different regions yet use the same data source because the OECD classifies financial activities by recipient region as well as countries within that region. Furthermore, Savvidou et al. (2021) makes use of the Rio-Markers by which OECD categorizes if an activity targets adaptation, mitigation, or both. This study follows a similar approach and uses Rio-Markers of adaptation and mitigation to separate adaptation and mitigation targeting finance activities. Furthermore, this study following the approach of Mohan (2023) also separates the financial activities by three categories, significant, principal, and climate component to drive analysis on direct relevance of finance flows with climate objectives.

For this study, the data has been sorted in Microsoft Excel software. The data was available as compiled sheet of all global climate related financial transactions. Hence, the data acquired was extensive and voluminous, presenting with a significant sorting challenge due to its sheer size and complexity. Data was sorted and analyzed using data manipulation functions such as FILTERS, SUMIF formulas, and UNIQUE formulas. Such formulas are most useful in providing insights through aggregation and filtering. To separate the data relevant to Pakistan from the datasheets that informed on flows from around the globe, data filters have been applied to the 'recipient' column of each datasheet for each year. Pakistan has been

selected as the criteria to filter out information relating to it. This filter has sorted the data so that financing activities directed towards Pakistan only, out of the entire list of recipients, is made available. Once, the data for financial flows directed towards Pakistan from different donors for each year had been separated, the quantitative analysis commenced with summation formulas to calculate total amounts of climate finance directed to Pakistan each year, then by theme i.e. adaptation and mitigation activities, as well as by the debt and grant shares. To cross analyze the financial instruments and their share in committing finance to each of the climate objective (principal, significant, climate component), an amalgam of SUMIF formulas have been used. The SUMIF function allow for efficient scrutiny of the extensive dataset and summarization of specific criteria of interest. The use of SUMIF function across various datasheets for every year proved to be an arduous but manageable task. Caution needed to be practices at every step of this processed to ensure that formulas are not linked to the incorrect datasheet. Additionally, when transferring data between sheets, meticulous care has been necessary to ensure that values are copied correctly and that formulas are not unintentionally linked where they are not needed.

As previously discussed, an essential consideration in climate finance is that it should align with and address the recipient country's priorities. Each country highlights its priority areas for investment to raise climate resilience as well as curb emissions. The NDCs and NAPs are key reflective documents of such priorities. In order to assess the alignment of climate finance committed to Pakistan with the country's highlighted priorities, the first NDCs were taken as the primary reference. For the purpose of analyzing this objective, the study reviews Pakistan's 2016 NDCs. In doing so, adaptation and mitigation goals, sectors prioritized for action, and cost estimates for mitigation and adaptation were recorded. Additionally, the degree

to which greenhouse gas emission reduction goals were dependent on international assistance i.e. being conditional to the provision of international climate finance has been assessed. Secondly, the sectoral disbursement of climate finance committed towards Pakistan between 2016 and 2021 has been evaluated against the goals and priority action sectors outlined in 2016 NDCs. The distribution trend of climate finance towards different sectors thus assesses degree of alignment with country priorities. A similar approach was adopted for a study analyzing the financing needs to achieve Nationally Determined Contributions in the Caribbean Islands. Mohan (2023) conducted a review of the NDCs of 16 Caribbean Small Island Developing States. The content informed on the adaptation and mitigation objectives as well as priority sectors where finance should be directed to meet those objectives. To analyze the alignment of climate related ODA from donors with the NDC priorities of recipients, the methodology utilized by Iacobuță et al. (2022) was employed. This methodology numerically calculates the total finance recorded from the ‘recipient perspective’ dataset for each sector. The dataset marks each financial activity for its contribution to a specific sector. The sector wise finance was then compared to determine highest funded sectors. The sectors were correlated with NDCs priority sectors to investigate if funding magnitude aligns with prioritized sectors i.e. higher finance share for priority sectors and lesser finance share for non-priority sectors. This study however, coded NDCs as per their relevance to SDGs e.g. NDC interventions for mitigation in energy were coded under SDG 7(renewable energy), commitments focusing on agriculture were grouped under SDG 2 (Zero Hunger) etc. For the present study, this step has not been utilized and the correlation is developed directly between Pakistan’s NDCs and the share of climate finance towards each sector.

Similar to the methodology of Mohan (2023) and Iacobuță et al. (2022), the present study also used the OECD dataset on climate finance. Furthermore, while Mohan (2023) focused on allocation trends to 16 Caribbean SIDS and Iacobuță et al. (2022) focused on 146 countries, the present study directs its focus to Pakistan only. For conduction of sectoral analysis by the methodology described above, the UNIQUE formula in excel has been applied to identify and categorize the sectors and sub sectors targeted under climate finance for each year between 2015 and 2021. SUMIF formulas have been then used to calculate sector wise funding.

The initial release of Pakistan's NDCs in 2016 establishes an adequate timeline for evaluating the alignment of donor funding with the priorities outlined therein. The revision to NDCs was submitted in 2021. Conversely, while the NAP is relevant, its recent release in 2023 precedes the initial timeline set for the accord i.e. 2020. In addition, at the time of conducting this research, the data availability is limited to the year 2021 at latest. Hence, the recent release and data constraint restricts the utility of NAP and revised NDCs in evaluating past financial activities in terms of alignments to priorities outlined in it.

3.5 Data Visualization

For data visualization, excel and online tools have been used to develop graphs and charts. For each objective, relevant visualization element (graphs, charts, figures) has been developed to depict the findings in a comprehensive manner. The timeframe of the analysis covers 11 years and several themes. Thus, the presentation of trends in a consolidated visual, proved to be trial. Therefore, the visualization of extensive findings, particularly those related to sectoral alignments, has been divided into two periods: pre-Paris Agreement (2010-2015)

and post-Paris Agreement (2016-2021). This approach has facilitated a clearer distribution of data, themes, and trends in relation to the Paris Agreement, improving its presentation.

3.6 Epistemological standpoint of the study

The research adopts a positivist approach, emphasizing empirical evidence and observable trends in adaptation mitigation balance, debt vs grant share, and sectoral allocation of climate finance. It undertakes a quantitative assessment that employs rigorous data manipulation methods to uncover dominant patterns in finance allocation to Pakistan. The results obtained remain impartial to the perception or opinion of the general public. Moreover, this approach aims to produce findings that are both verifiable and reproducible, contributing to a more precise and scientifically grounded understanding of the subject matter.

The methodology used for the conduction of this analysis is designed based on multiple studies related to climate finance. It utilizes the most recent data obtained from the most comprehensive database on climate finance. The OECD database was developed on the request of finance providers and hence does not provide any grounds for bias in reporting or presentation of activity level figures. The database has also been regarded by the SCF (2014) as robust. SCF recognizes that the decades long expertise of OECD DAC in reporting on financial ODA flows imparts efficiency to their operation and provides widespread acceptance to its data collection and reporting mechanisms. Furthermore, the comprehensiveness of the database used is evident from the availability of activity level details regarding climate finance flow from both recipient and providers perspective.

Therefore, this methodology is based on the most optimal, credible, and reliable data source available.

Additionally, the methodology applied is designed based on amalgam of studies related to climate finance. Unlike most studies that either focus on global/regional trends or a single characteristic aspect of climate finance flows, this study is based on country level assessments exploring three major characteristic aspects of climate finance flows. The methodology for analyzing the trends prevailing these characteristic aspects is a combinational mix of methodologies used in existing researches. The assessment methodology for assessing adaptation and mitigation share of climate finance is derived from studies authored by Timperley (2021), Weikmans et al. (2017), and Cipler (2013). Their studies aggregate the distribution of climate finance provided to the two portfolios for all the years analysed, while this study not only provides an aggregate figure for overall flows but also applies the methodology to obtain results on year by year figural changes. Similarly, the methodology used for assessing debt and grant allocation is based on the work of OXFAM (2022). The study by OXFAM focuses only the global finance flows from the year 2020, however the present study uses this methodology to present a year wise figures as well as aggregate trends. The third aspect of this study is informed using the methodologies of Atteridge et al. (2017) and Iacobuta et al. (2022). These studies have used country NDCs as reference point for identifying recipient priorities for climate mitigation and adaptation and compared it with the sectoral allocation of climate finance. The comparison has then been used to discuss alignments between recipient country priorities and donors' allocations. The studies cover a wider geography i.e. Iacobuta et al. (2022) covers global transactions while Atteridge et al. (2017) focuses on Caribbean SIDS. The results of these studies show some variation in global and regional trends, highlighting the need for downscaled assessments to get the most informed

analysis that may get overlooked when covering regional or global scale assessments. The present studies takes this approach and applies it over country level assessments. In doing so, it provides more nuanced and downscaled insights into the alignment between needs and allocations of one of the most climate vulnerable country i.e. Pakistan.

This combinational methodology applied to country level climate finance data that has been derived from the most optimal data source available, augments the innovative significance while reinforcing the relevance of the study.

CHAPTER 4: RESULTS AND DISCUSSIONS

This chapter details the trends in climate finance that has been committed to Pakistan over the span of 11 years from 2010 to 2021. The discussion is framed on the basis of the research questions and objectives leading this study. The findings illustrate the extent to which the climate finance commitments made to Pakistan adhere to the criteria shaped by various international agreements. The narration of climate action priorities by countries is an established practice. It serves to guide the essential climate finance assistance, without which cross sectoral climate action becomes unattainable. Hence, the analysis also extends to demonstrate the extent to which international climate finance is aligned to Pakistan's country priorities.

The regime of international climate finance has been under a lot of scrutiny recently. Contestations have been raised on the proclaimed delivery of climate finance in assisting global South to achieve meaningful climate action. Developing countries are increasingly disillusioned, accusing developed nations of lacking the necessary political will to address the escalating challenges of climate change and the urgent need for climate action. While the climate finance architecture remains insufficient, several notions highlight the violation of the principle of CBDR. Despite the historical responsibility of climate change as well as the greater capacity to act, as pointed out by Sayegh (2018), the developed countries have failed to meet the target of USD 100 billion. Thereby, failing to uphold their part of the bargain under the CBDR. Amidst the outcry of insufficient assistance, a case of climate injustice emerges (Gifford & Knudson, 2020).

Several contestations challenge the mechanism, delivery, and reporting of the finances committed towards the meeting of the USD 100 billion goal. This study while examining the commitments made to Pakistan, basis the analysis around the characteristics of climate finance codified in different climate agreements and negotiations. The results aim to argue on the appropriateness and effectiveness of climate finance paradigm in the localized context of Pakistan. The results provide valuable perspective on the effectiveness of the current climate financing structures and efforts in addressing the needs of one of the world's most climate-vulnerable and least emissive countries. These trends will underscore crucial aspects that could prompt discussions on enhancing mechanisms and altering reporting narratives for forthcoming finance-related elements in climate negotiations, such as the NCQG and the L&DF, to better align with the requirements of developing nations.

The analysis reveals multiple financing activities have been directed towards Pakistan for adaptation and mitigation since 2010. These finances were aimed at funding pan-sectoral climate action. Both mitigation and adaptation actions in several developmental sectors have been the focus of these transactions. In totality, US dollars Fourteen Billion, eight hundred fifty-eight million, three hundred forty-four thousand, three hundred eighty-one dollars *or* USD 14,858,344,381.4712 in climate finance have been committed to Pakistan over the span of 11 years. This figure rounds off to USD 14.86 Billion and is referred to as such from now on. Every year, both mitigation and adaptation actions have been financed albeit in different proportions. The financial commitments follow an overall rising trend with the highest figures recorded for the year 2021.

The climate finance portfolio of Pakistan receives commitments from a diverse range of providers. In total, 36 different providers have committed monetary assistance to forward

climate action in Pakistan. In an attempt to contribute towards the USD 100 billion goal of the Copenhagen Accord, these providers have over the 11 years financed projects of varying degree of direct relevance to climate adaptation or mitigation. The providers can be grouped into four distinct categories as shown in Table 4.1.

Table 4.1: List of climate finance Providers for Pakistan along with their total commitments to the recipient country’s climate finance portfolio (2010-2021) (Author’s own).

Bilateral Providers			
Total number: 22			
No	Country	Climate Finance Amount in Million USD (actual)	Climate Finance Amount in Million USD (rounded-off)
1.	Australia	91.97518	92.0
2.	Austria	1.329698	1.3
3.	Belgium	0.591515	0.6
4.	Canada	3.819095	3.8
5.	Czechia	0.022911	0.0
6.	Denmark	22.21205	22.2

7.	EU	417.9542	418.0
8.	Finland	0.415437	0.4
9.	France	984.1826	984.2
10.	Germany	499.39	499.4
11.	Ireland	6.956871	7.0
12.	Italy	240.2208	240.2
13.	Japan	558.5809	558.6
14.	Korea	25.36947	25.4
15.	Netherlands	4.00863	4.0
16.	Norway	25.4085	25.4
17.	Poland	0.022689	0.02
18.	Spain	0.871382	0.9

19.	Sweden	6.108089	6.1
20.	Switzerland	53.61302	53.6
21.	United Kingdom	452.5402	452.5
22.	United States	364.1546	364.2
Multilateral Development Banks Total number: 5			
23.	AIIB	961.9031	961.90
24.	AsDB	2287.119	2287.12
25.	EIB	197.3828	197.38
26.	IsDB	335.418	335.42
27.	WB	6892.797	6892.80
Other Multilateral Providers Total number: 5			
28.	Adaptation Fund	13.50929	13.51

29.	FAO	1.605423	1.61
30.	IFAD	2.999741	3.00
31.	GCF	133.9385	133.94
32.	GEF	61.63376	61.63
Private Sector Total number: 4			
33.	Bloomberg Family Foundation	2.091667	2.09
34.	Laudes Foundation	0.26675	0.27
35.	CIFF	0.216377	0.22
36.	IKEA Foundation	7.83606	7.84

For this study, the financing activities of these providers were assessed to explore the trends of prioritized objective, dominating instrument, and sectoral allocations. The analysis presented below drives a holistic view with detailed assessments wherever necessary.

4.1 Adaptation vs Mitigation imbalance

One of the key characteristics for shaping climate finance was the 50:50 split between adaptation and mitigation targeting financing. Both objectives serve highly important purposes. Mitigation finance, more associated with climate action, funds activities or projects that aim to reduce GHG emissions as well as sequester existing emissions in the earth systems. On the other hand, adaptation finance, more associated with climate resilience, builds capacity against existing and anticipated impacts of climate change. In a broader view, mitigation activities require global, concentrated, and united response to bring meaningful benefits while adaptation is driven nationally with its benefits accrued locally (Klein et al., 2007) (Watkiss et al., 2015). It is therefore well established that to enhance local, territorial capacity against adverse impacts of climate change, adaptation action holds prominence. Consequently, neglecting adaptation financing can increase susceptibility to climate change especially for vulnerable developing countries that lack domestic resources for the very purpose.

The need for an equitable and balanced approach in all climate finance pledges has been codified in several climate agreements, as previously discussed. In the lieu of the equitable and balanced approach mandated by various climate agreements, the analysis determines the share of adaptation and mitigation focused activities in the climate finances pledged to Pakistan. Of the USD 14.86 billion pledged to Pakistan, USD 9.95 billion are earmarked for mitigation activities and the remaining USD 4.91 billion are designated for adaptation focused activities (**Figure 4.1**). The glaring imbalance between adaptation and mitigation finances underscores the significant disparity in the pledges made to Pakistan. Over the 11 years studied, mitigation focused funding amounts to almost twice as much as adaptation

focused funding. The figures unmistakably illustrate that the widespread criticism of donors favoring mitigation financing also holds true for Pakistan.

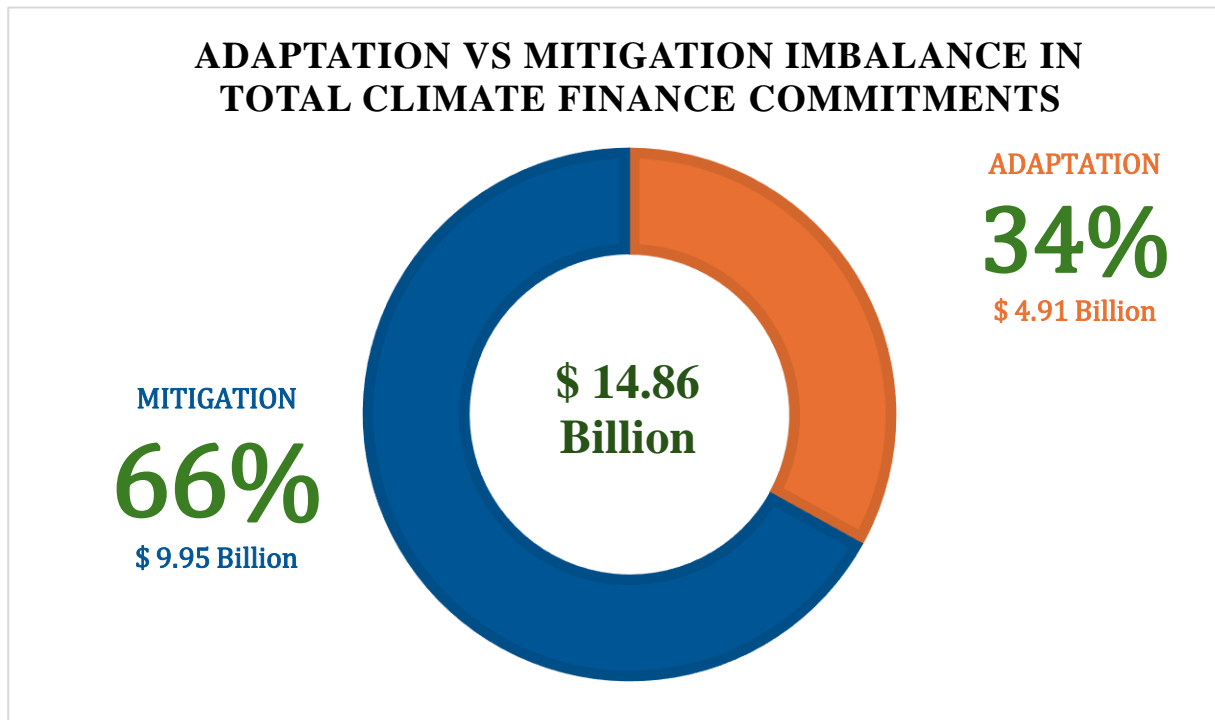


Figure 4.1: The adaptation vs mitigation imbalance in climate finance pledged to Pakistan (2010-2021). Two third of international climate finance has been earmarked for mitigation, leaving adaptation underfunded (Author’s own).

The pronounced disparity between the allocations for the two objectives is glaringly evident when examining the year-by-year trends portrayed in Figure 4.2. While the trends indicate a significant increase in mitigation financing each year, adaptation financing remains relatively stagnant. Throughout the studied years, except for 2011 and 2015, international climate mitigation financing directed to Pakistan has far exceeded climate adaptation financing. This trend more nuancedly persists in the years following the 2015 Paris Agreement, showing a deviation from the principles of the agreement that stressed on the very balance to be maintained. Notably, the widest discrepancy in funding between the two objectives occurred

in 2020, where mitigation received three times the funding allocated to adaptation. Moreover, the peak year for adaptation financing was 2021, with USD 704.77 million allocated to this objective. In contrast, the highest mitigation financing peaked at approximately USD 1758.67 million, recorded in 2020. The difference between the highest allocations illustrates that adaptation is not attracting nearly as much funding as mitigation objectives, with the difference between the maximum funds allocated to both objectives reaching above a USD 1 billion.

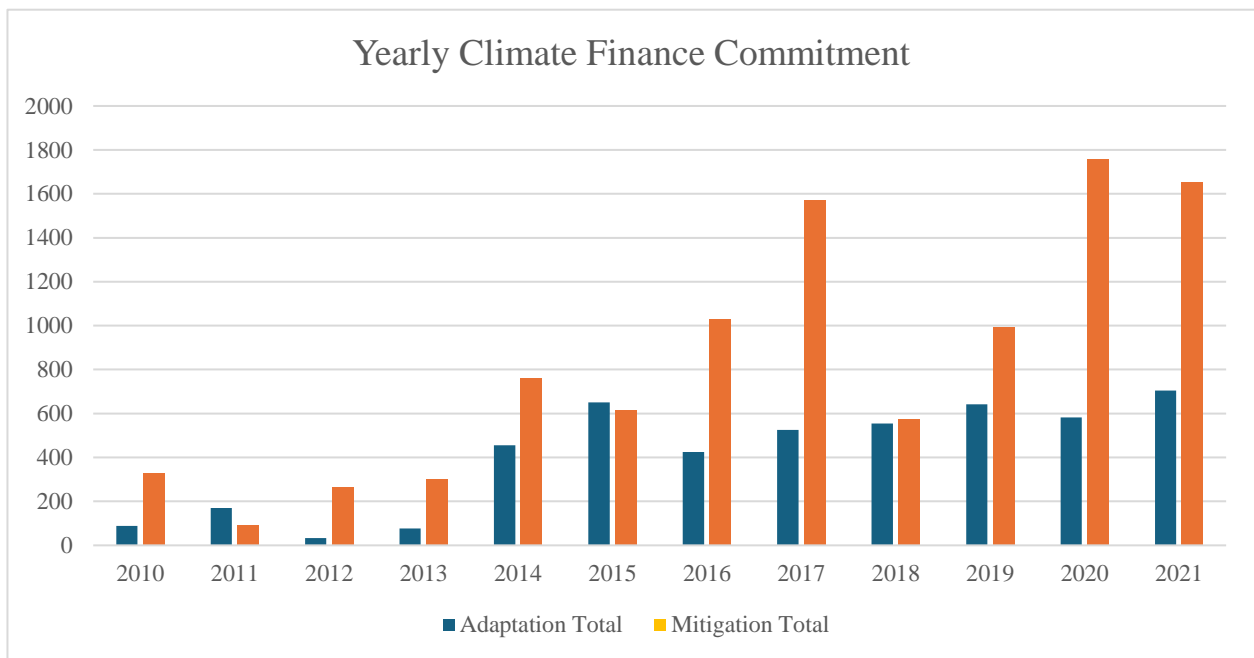


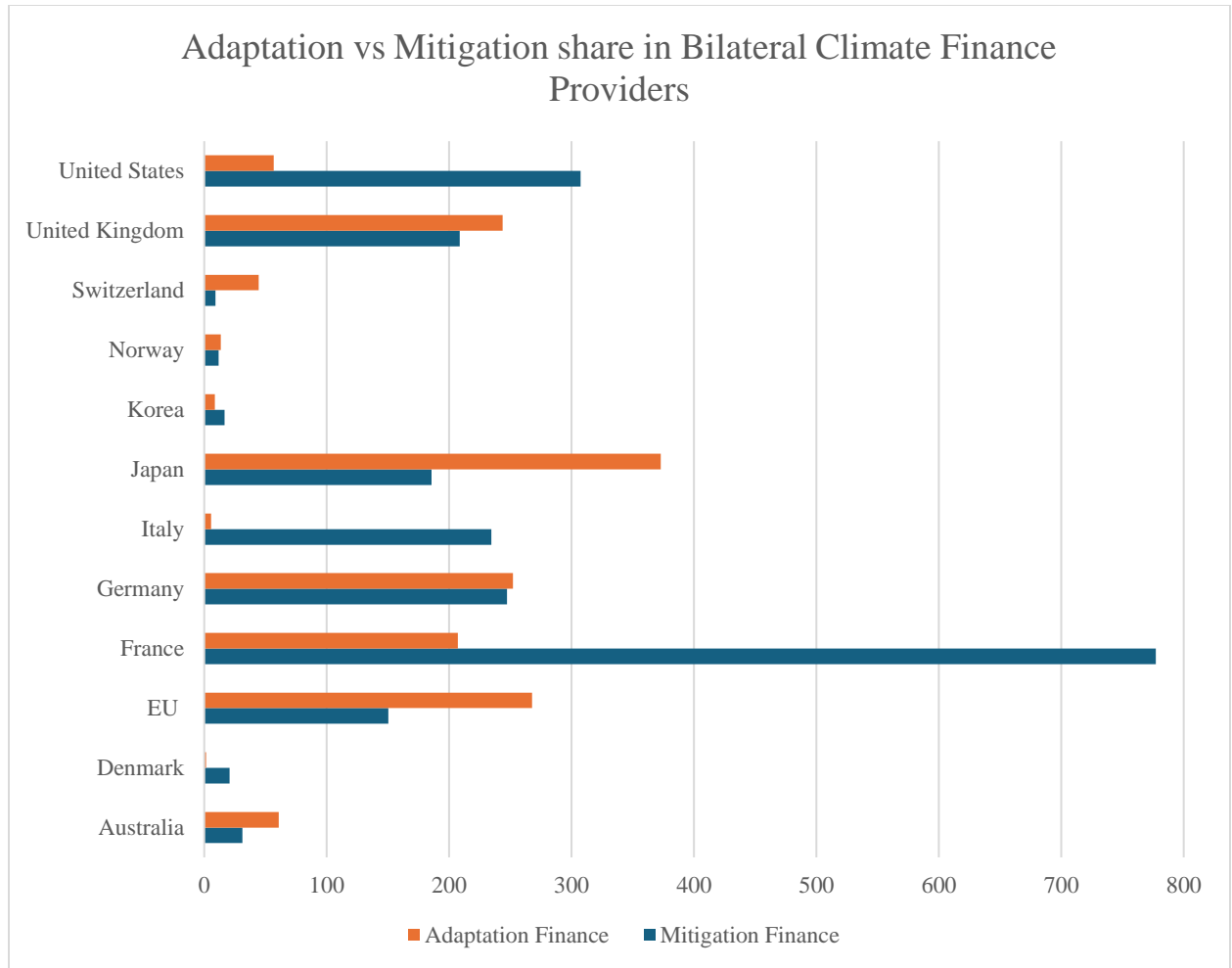
Figure 4.2: Year by year objective wise climate finance directed towards Pakistan. Mitigation financing overshadows adaptation financing every year, except 2011 and 2015 (Author’s own).

4.2 Adaptation and Mitigation Finance shares by Provider type

Pakistan has received commitments for climate finance from a variety of providers. These include, developed countries, Multilateral Development Banks, other Multilateral Organizations including climate relevant funds, as well as the private sector. **Bilateral finance** was committed by 22 countries. Of these, France provided the most climate finance while

Czechia and Poland provided contributed least to the overall commitments between the 11 years. Analysis reveals that along with Czechia and Poland, Finland, Spain, Belgium also provided less than USD 1 million in climate finance to Pakistan. Norway and Sweden contribute to less than USD 10 million during the 11 years. On the other hand, France, United States, United Kingdom, Japan, Germany, and Italy committed to the delivery of large sums monetary assistance for climate action in Pakistan, as highlighted in Figure 4.3. All these provider countries committed to more than USD 200 million over the years. France has the highest cumulative share amongst bilateral providers with commitments reaching to USD 984 million, only USD 16 million short of a billion-dollar investment portfolio.

It is worth noting that three major bilateral providers also concentrate climate finance in mitigation sector. The share of mitigation vs adaptation finance in the commitment portfolio of these 3 providers, France, Italy, and United States, is highly skewed with mitigation financing forming more than three fourths or 75% of the total commitment share. Alternatively, the remaining three major donors prioritize adaptation, with Germany and United Kingdom providing a more equitable or comparatively balanced share of adaptation and mitigation financing. However, Japan focuses heavily on adaptation financing and has committed to over 50% of total share of its climate finance to Pakistan towards adaptation. The comparison of prioritized objective also shows that the total amount of mitigation finance provided by the three major donors that focus on mitigation is greater than the combined total of adaptation finance from the three major donors that focus on adaptation. Hence, revealing that despite the efforts of some providers, the imbalance in the finances directed towards the two objectives remains unresolved in the bigger picture.



Note: EU refers to European Institutes other than EIB

Figure 4.3: Adaptation vs Mitigation share in the total climate finance provided by the various bilateral providers (Author’s own)

Similarly, the study also explores the financing portfolio of **Multilateral Development Banks** (MDBs) that hold a central position among providers of climate finance. MDBs contribute the most to climate finance in Pakistan with commitments exceeding USD 10 billion (Table 4.1). Out of the 5 development banks, the World Bank is most active in directing climate finance towards Pakistan while EIB provides the least amount to the overall share. The MDBs collectively contribute more towards mitigation as shown in Figure 4.4. Two of the five banks i.e. EIB and IsDB do not provide any adaptation finance and provide only mitigation finance. The portfolio of the remaining three banks heavily prioritizes mitigation. Altogether, the share

of mitigation finance in MDBs provider portfolio forms more than USD 7.6 Billion (71.6%) while adaptation finance lags behind at USD 3.38 Billion (28.4%).

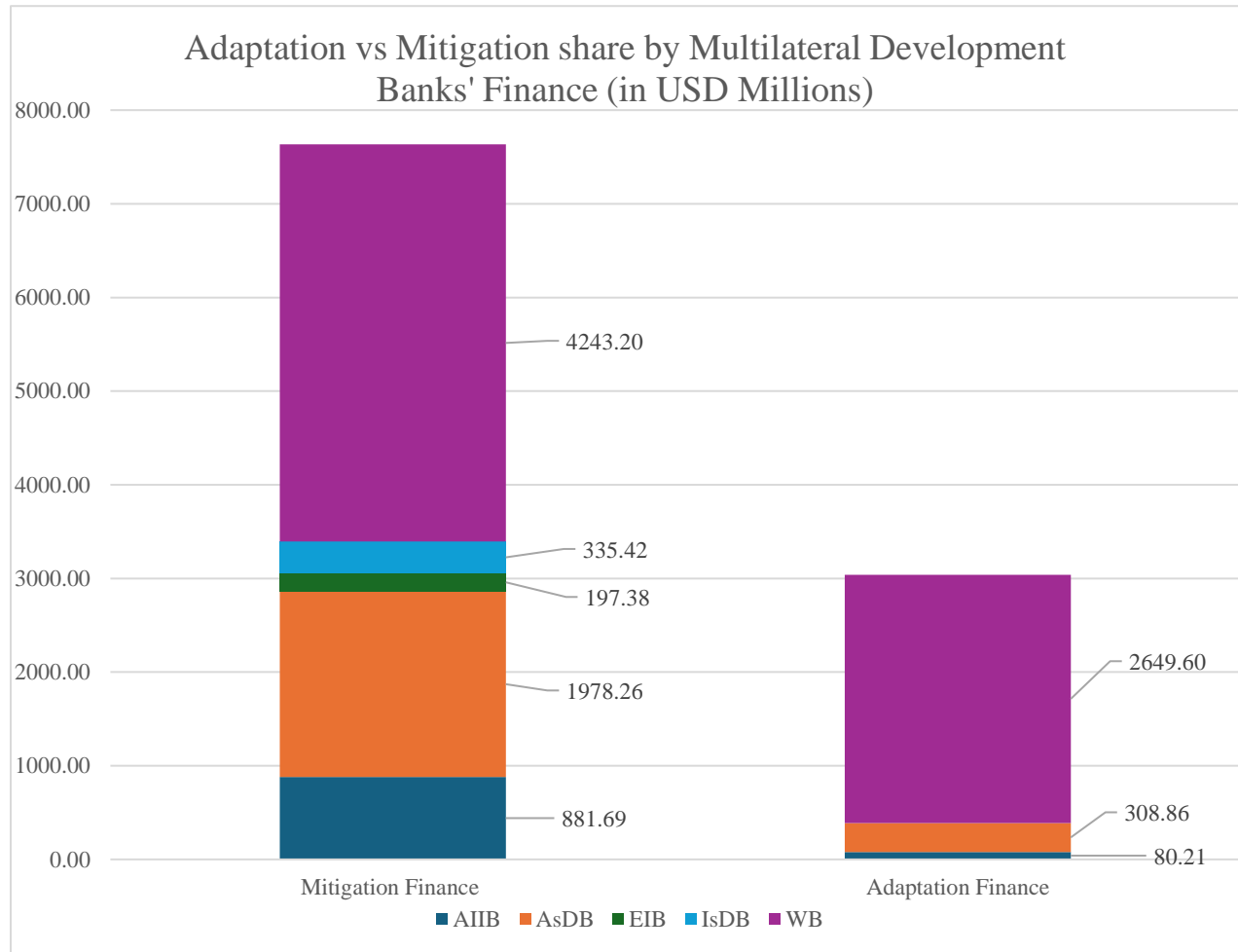


Figure 4.4: Share of adaptation and mitigation finances in the commitment portfolio of MDB providers of climate finance to Pakistan (Author's own).

Multilateral Development Banks are not the only transnational entities that deal with and contribute towards climate finance. Some other organizations and typically the climate funds also provide climate finance to Pakistan. These organizations and institutes are clubbed as ‘Other Multilateral Organizations’. The study analysis identifies five multilateral organizations other than MDBs direct funds to finance climate adaptation and mitigation in

Pakistan. Together these five entities have committed to USD 213.686 Million to the recipient Pakistan over 11 years (Figure 4.5 **Error! Reference source not found.**).

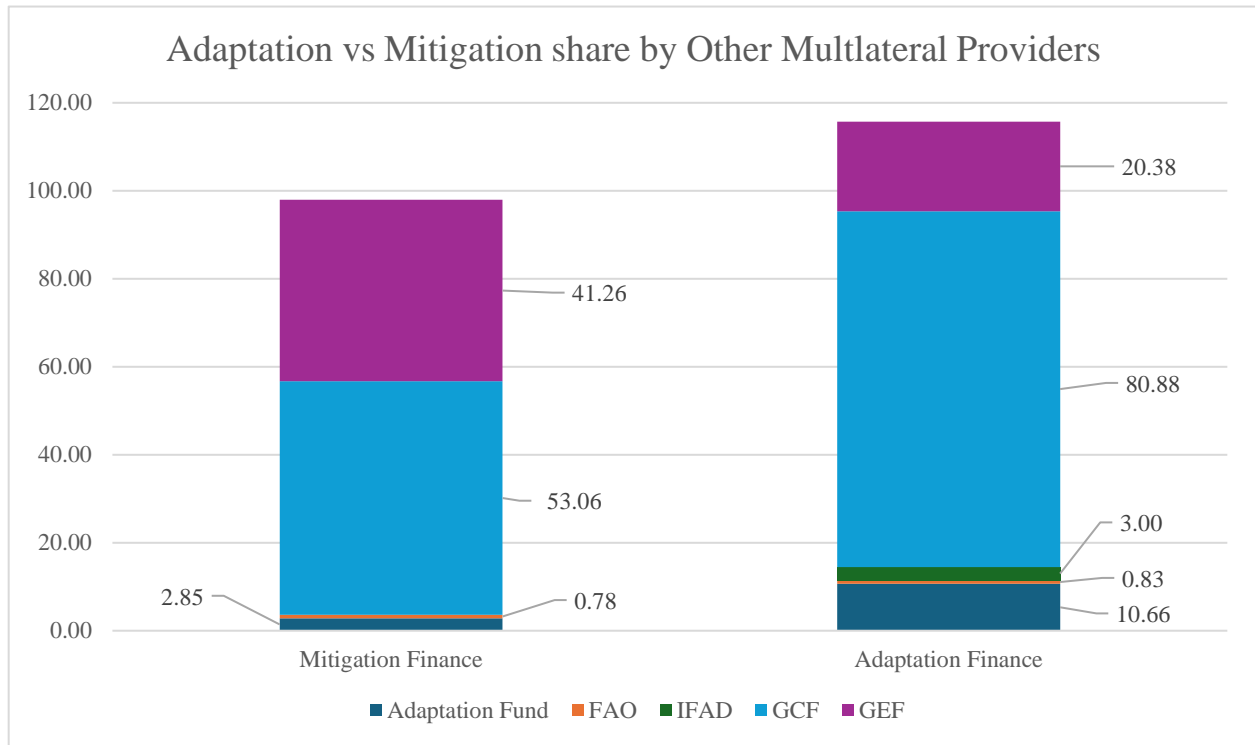


Figure 4.5: Adaptation vs Mitigation share in the commitment portfolio of Other Multilateral Providers (Author’s own).

An interesting deviation from the usual trend of objective prioritization is seen in the lending/commitments of other multilateral providers. Out of the collective share of Adaptation Fund, FAO, IFAD, GCF, and GEF, adaptation receives more financing than mitigation. The same is true for the individual portfolios of these five entities as well. Although a considerable margin between the financing of two objectives is not visible, adaptation receives 54% of the total finance provided by this provider group while mitigation receives the remaining approximate 46%. When individual portfolios are assessed IFAD provides no finance to mitigation objectives while the rest of the organizations/institutes contribute marginally less to

mitigation objectives. Furthermore, Adaptation Fund despite its name still directs 26.7% of its total commitment to Pakistan towards mitigation. GCF, the greatest contributor in this providers group, since its operationalization has a manifesto to achieve 50:50 split in adaptation and mitigation finances overtime. In case of Pakistan, the envisioned 50:50 split has not been achieved. However, the disparity between equitable allocation is comparatively much lower for GCF than other providers (especially when compared to bilateral and MDB providers). Between 2010 and 2021, GCF has directed approximately 60% of its total portfolio in Pakistan to finance adaptation objectives and 40% to finance mitigation objectives.

One more provider group has also been active in Pakistan albeit with smaller financing portfolios. The private sector (Table 4.1) has the smallest share in overall climate finance commitments to Pakistan. However, this group also prioritizes adaptation objectives and directs 61% of its total climate finance share in Pakistan towards adaptation interventions.

In assessing the mitigation vs adaptation finance imbalance, this study finds that out of the four providers groups that finance climate action in Pakistan, two prioritize mitigation, these include bilateral providers and MDBs. On the other hand, the remaining two i.e. other Multilateral Providers and Private Sector prioritize mitigation. Despite an equal split in preference at provider category level, the overall finance for climate mitigation exceeds that for climate adaptation. Altogether this imbalance favors mitigation in a ratio of 3:1 with mitigation attracting USD 9.95 Billion vs adaptation receiving USD 4.51 Billion from total commitments made towards Pakistan.

4.2.1 The lacking Adaptation Finance and Low Funding Trap

The consistent increase in mitigation financing that contrasts with relatively stable adaptation funding over the studied years (Figure 4.2) is reflective of global patterns of favoring mitigation measures over strengthening adaptation. Studies suggest a probable Low Funding Trap (LFT) for the most climate vulnerable countries of the world, especially those in South Asia and Sub-Saharan Africa. Islam (2022) finds that countries with better investment climate were likely to receive more adaptation financing. Paradoxically, the climatically vulnerable countries are also the developing countries with low investment readiness. Hence, the most vulnerable were less likely to receive adaptation financing. Consequently, heightened vulnerability persists in developing countries, compounded by a lack of adaptive capacity and readiness, which perpetuates a weak investment environment and contributes to the LFT. This entire scenario runs counter to the principles of distributive justice. Bringing into perspective here the study by Amiot & Munday (2024) that projects 12% of regional GDP in South Asia due to climate change by 2050 reiterates the widening of the LFT. Without improving allocation patterns to better balance adaptation and mitigation financing, vulnerable countries will continue to face adverse impacts in absence of the very adaptive capacity, the funds for which they are unable to attract.

4.2.2 Influence on perception regarding return on benefit on climate financing imbalance

Another reason attributed to the vast disparity in adaptation vs mitigation financing relates to the interest of market instruments in financing broader benefits. When viewed under conceptual contextualization, adaptation brings local, national, or regional benefits while mitigation harbors global benefits. Adaptation is hence more acutely related to public good. Mitigation has calculable indicators and actively relates to global benefits, hence a favored

experiences a favored bias from public as well as private financing regimes (Khan & Munira, 2021). Correspondingly, it is suggested by Timperley (2021) states that mitigation provides better return on investment than adaptation, hence it is the favored objective for financing instruments. Khan and Munira suggest building a narrative beyond the conventional approach to viewing adaptation. They propose to conceptualize adaptation as a global public good against climatic challenges. Framing adaptation through multi-disciplinary lenses would enhance the understanding of its importance against the global common issue of climate change. Thereby, highlighting the acute and urgent need of this particular climate objective and boosting finance directed towards it.

4.3 Loan dominance in financial commitments

Diving further into the analysis, another popular criticism against climate finance allocations was found imbedded in commitments made to Pakistan as well. The loan dominance in climate finance is visibly observed in the finances directed towards Pakistan. Of the USD 14.86 billion, the lion's share i.e. USD 12.59 billion are loans while only a meager portion i.e. USD 2.27 billion is extended as grants. A staggering 84.7% of the total climate finance committed to Pakistan in over a decade is in the form of loans. Figure 4.6 **Error! Reference source not found.** gives an instrument wise breakdown of climate adaptation and mitigation financing.

Proportion of loan and grant in climate finance (in USD Billion)

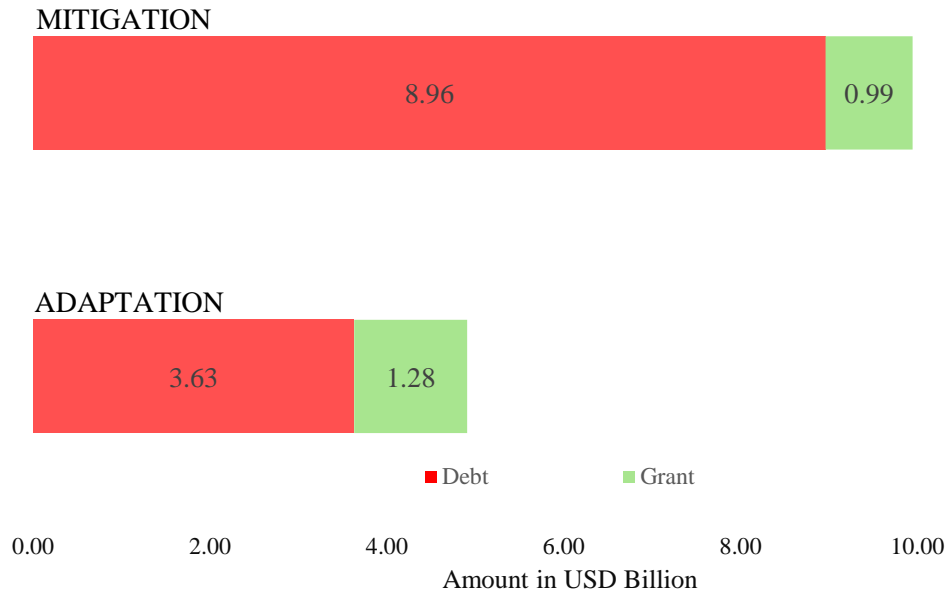


Figure 4.6: Share of each of the two instruments; loans and grants in financing climate adaptation and mitigation in Pakistan (Author’s own).

The breakdown underscores the predominant reliance on debt financing in climate finance commitments to Pakistan. Regardless of the proportion allocated to each objective, debt instruments constitute the primary source of funding, comprising over 70% adaptation and over 90% for mitigation financing. Even though adaptation is an underfunded aspect, it still receives loans as the dominant source of financing. The situation highlights the conundrum whereby developing economies find themselves compelled to abide by burdensome loan schemes to address their critical adaptation needs for survival. In the case of Pakistan, as depicted here, meeting the adaptation needs and curbing the already negligent GHG emissions is adding to the country’s debt burden.

4.3.1 *Dominant instrument by objective sub-category*

The climate finance data informs if each activity principally or significantly targets the related climate objective (i.e. adaptation, mitigation, or both). Additionally, the climate components categorization highlights that only some element of the funded activity can be categorized as achieving climate objective and thus contributing to climate finance. **Error! Reference source not found.** analyses the debt vs grant share of each of the three relevance indicating categories for adaptation, while Figure 4.8 showcases the same for mitigation.

OBJECTIVE WISE ADAPTATION FINANCING



Figure 4.7: Adaptation finance commitments towards the three relevance categories with a breakdown of their debt vs grant shares. The three categories are developed to showcase relevance of financial activities in meeting climate objectives (Author’s own).

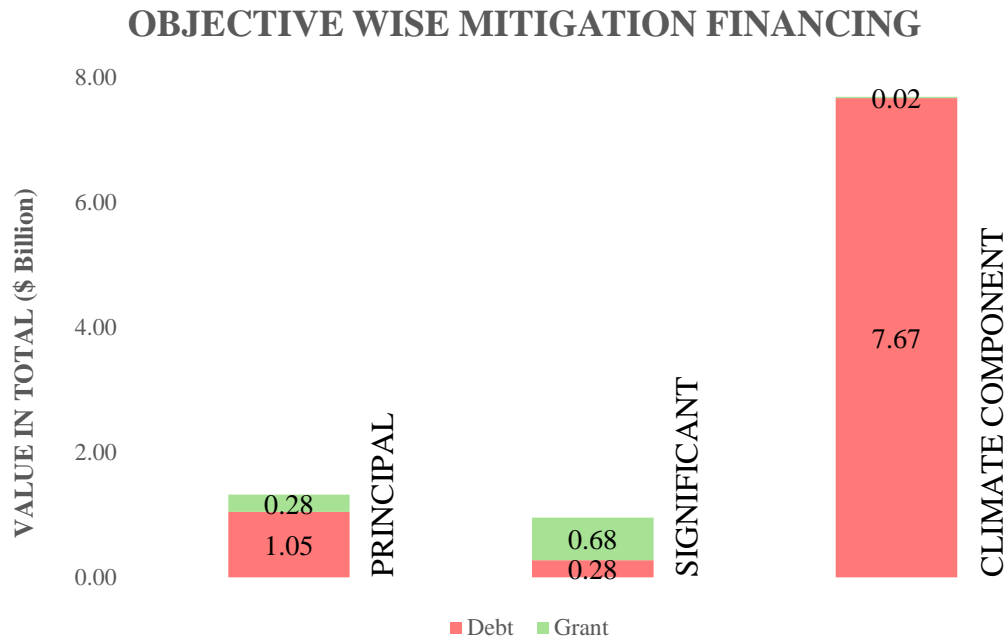


Figure 4.8: Mitigation finance commitments towards the three relevance categories with a breakdown of their debt vs grant shares. The three categories are developed to showcase relevance of financial activities in meeting climate objectives (Author’s own).

The figure reveals an interesting pattern. The highest share of climate finance is directed at activities that in part achieve climate objectives. In contrast, the interventions that majorly contribute to climate objectives are fewer utilizing a considerably lesser portion of the entire climate finance. For both adaptation and mitigation, the share of finance that is directly funding climate action i.e. the principal category, remains much lower than the climate component category. Similarly, finances directed at activities where climate action is planned as an additional benefit or secondary motivation, are also lower compared to the climate component category. This suggests that lesser of the climate finance goes to projects where climate action is either the primary or secondary focus compared to developmental projects where only certain elements of mitigation or adaptation may be integrated as climate components. Moreover, the debt instrument remains dominant and heavily concentrated in the

highest funded of the three categories. Moreover, the overall major providers i.e. World Bank, France, and Japan, also rely heavily on loans to commit climate finance for Pakistan.

4.3.2 *The effect of excessive loans on developing economy*

It is imperative to discuss that despite the benefits of grant, this financial instrument alone cannot satisfy the climate finance demand or meet the USD 100 billion goal. Before casting loans as antagonist, it is necessary that their role in delivering climate finance must be acknowledged (Mustafa, 2022). However, the issue emerges when loans are heavily concentrated and grants remain meager in share. Excessive loan instruments backed by ever expanding financialization in banking systems perpetuate a debt economy. Stephen & Sakol (2023) argue that this has a paralyzing effect in climate finance that exacerbates social inequalities and spatial vulnerabilities. The debt economy uses extractive financing methods ridden by loans to redistribute income in the society (Lazzarato, 2012). Debt servicing moves already scarce resources away from critical investment areas for climate action, particularly adaptation. Consequently, income and wealth, extracted from the at-risk and vulnerable populations finds its way back to the creditor/lender. Such market mechanisms rooted in capitalism compound the injury inflicted on climate justice paradigm.

Aligishiev et al. (2022) find that even with economic reforms and fiscal adjustments, the fiscal adaptation cost for necessary measures may exceed the fiscal space of many developing countries that are vulnerable to ever worsening climatic impacts, including Pakistan. The situation stresses the importance of international climate finance in assisting climate action for vulnerable developing countries. Amidst this, dissemination of climate finance majorly as loans, makes developing countries highly exposed to debt distress.

Conversely, climate conditional grants are most suitable at ensuring the intended purpose i.e. providing investment for particular climate action. They are structured to escape debt servicing. Conditional grants serve best when the sole purpose is to create fiscal space for climate investment (Bolton et al., 2022).

The analysis showcases the inherent disparity in debt and grant vehicles mobilized in committing climate finance to Pakistan. The extremely high reliance on debt instruments burdens the already burdened resources of Pakistan, entrapping the country in debt trap. Viewing from the lens of climate justice, the vulnerable countries that are also not largely responsible for global warming emissions, have to bear the cost of it. The cost is not only borne in terms of economic losses due to climatic events but also through debt repayments of loans funding climate objectives in the country. For climate justice to prevail, it is necessary that leverage is provided to highly climate vulnerable countries through concessional instruments. This also involves disrupting the extractive financial systems that with the aid of exploitative political structures concentrate wealth among those who resist transformative change in attempts to maintain impractical price stability (Stephen & Sakol, 2023) (Boneva et al., 2022).

Table 4.2: Year wise financing activities for different sectors. Number of activities directed towards particular sector are denoted by numbers under each year (Author's own).

Sr. No	Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1.	Action Relating to Debt		1										
2.	Agriculture, Forestry, Fishing	1	1	3	15	8	9	14	31	25	22	20	28
3.	Banking & Financial Services			1			1	4			1		3
4.	Business & Other Services	1		1					1	2	2	1	2
5.	Communications				1				1	1	1		
6.	Disaster Prevention & Preparedness	4	7	4	11	10	8	9	6	6	1	7	2
7.	Development Food Assistance		1				2				1	1	1
8.	Education	1	4	1			4	4	7	8	23	59	32
9.	Emergency Response	6	5		1	2	6	8		2	1	18	4
10.	Energy	10	4	10	10	21	17	25	23	16	26	27	31
11.	General Environment Protection	5	8	9	6	9	2	10	3	11	12	11	10
12.	Government & Civil Society	4	2	4	2	2	5	8	1	9	23	28	28
13.	Health	1		1	1	1		1	1	1	5	42	19
14.	Industry, Mining, Construction				1			1	1	3	2	1	2
15.	Other Multisector	1	5	4	2	9	6	7	13	14	20	19	34
16.	Other Social Infrastructure & Services	1	3				1	4	4	4	3	7	13
17.	Population Policies/Programmes & Reproductive Health		1		1							4	2
18.	Reconstruction Relief & Rehabilitation	2	1	2	2	2	2		1		1	1	1
19.	Trade Policies & Regulations						2	1					

20.	Tourism										1		1
21.	Transport & Storage	1	1		1		3	9	3	7	8	4	3
22.	Water Supply & Sanitation	9	8	7	8	7	15	13		22	34	22	31
23.	Unallocated/Unspecified						1	2		1			1

4.4 Sectoral allocation of climate finance

Climate finance rightfully assumes a cross sectoral approach to raise resilience and curb emissions across different developmental dimensions. These sectors include energy, agriculture, forestry, health, education, and social protection to name a few. The analysis of sectoral allocation of finance reveals various sectors are financed in Pakistan for climate mitigation as well as adaptation every year. **Error! Reference source not found.** presents the list of various sectors that have been financed in Pakistan between the years 2010 and 2021. It also details which sector received finance in which year.

Climate finance has been committed for a total of 22 specified sectors. A few activities have been marked as unallocated and unspecified as well, meaning that the donors did not categorize these activities as per specific sectors. Analysis indicates that 6 sectors have continuously received funding, via different activities financing different projects, every year from 2010 to 2021. These sectors include (i) Agriculture, Forestry, Fishing (ii) Energy (iii) Disaster Prevention & Preparedness, (iv) General Environment Protection, (v) Government & Civil Society and (vi) Other Multisector. Moreover, Transport and Storage, Water Supply & Sanitation, as well as Reconstruction Relief and Rehabilitation are also popularly financed sectors. On the other hand, the sectors that have received fewer financing include Communications, Population Policies/Programmes & Reproductive Health, Trade Policy and Regulation Sectors. The sector categorized as 'Only Action Relating to Debt' has only once received financing in the year 2010. The stark difference is unsurprising. The highly financed sectors hold greater relevance and more direct connections with climate resilience and action, hence receive greater financing. On the other hand, the scarcely financed sectors hold indirect relations to climate change and appear not to attract much funding.

Over the years, financing activities for the most funded sectors have generally increased, especially since 2016. Notably, in 2020, there was a significant spike in the number of financing activities for the education and health sectors. This sudden increase, particularly in the health sector—which had previously attracted only a limited number of funds—is inconsistent with the trends observed in both the preceding and following years. However, the spike coincides with the peak year of COVID 19. The datasets show that most of the financing activities for the two sectors in the year 2020, are directed towards provincial Human Capital Investment Projects that are funded by the World Bank and have an overarching focus on education and health outcomes (especial focus on COVID 19 related healthcare service delivery). In addition, for the health sector, some specialized COVID 19 projects are also financed through these activities.

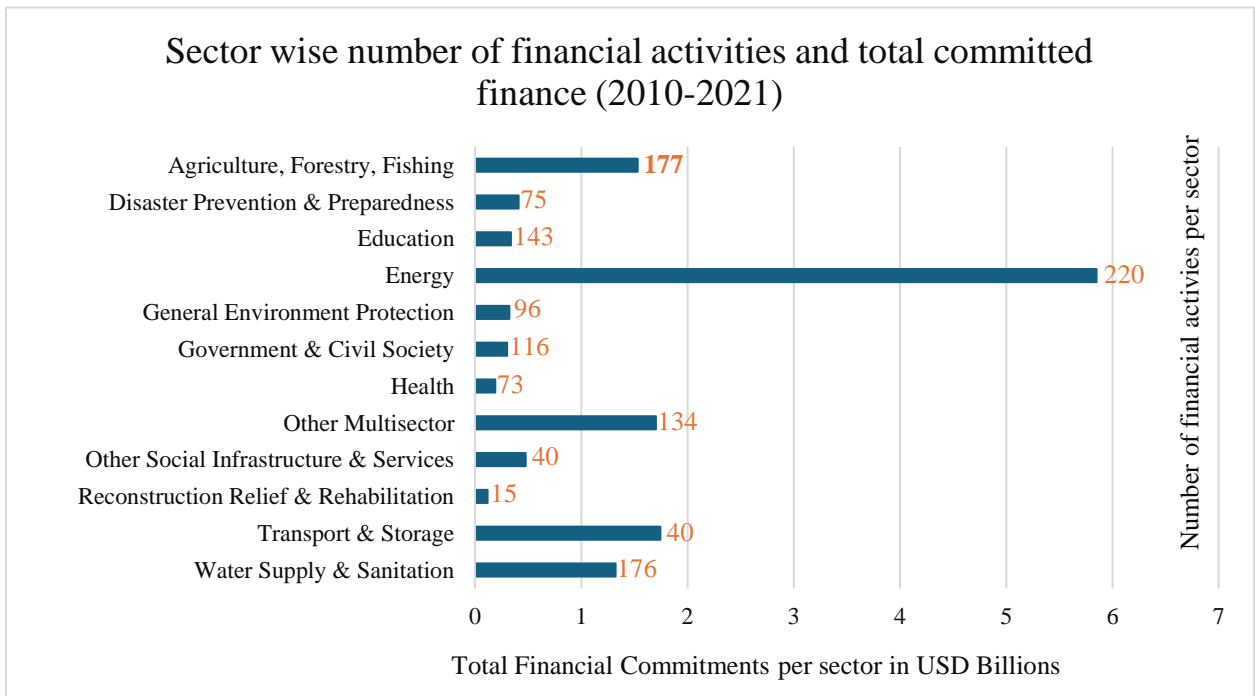


Figure 4.9: Sector wise financial commitments vs the number of activities targeting the sector. This comparison has been developed for select sectors with high financing or high number of activities delivering/committing the finances

A higher number of financial activities targeting a sector does not necessarily translate into greater financial allocations for that sector. As shown in FFigure 4.9**Error! Reference source not found.**, the highest financial allocations, amounting to more than 5.5 billion, are directed towards the energy sector, which also receives the highest number of financial activities at 220. However, the second highest financial commitments are made to the ‘Transport and Storage’ sector, amounting to more than 1.7 billion that have been committed. This sector, however, has been financed with only 40 activities. Furthermore, a higher number of activities are directed at the sector of ‘Agriculture, Forestry, and Fishing’ but it remains lesser financed compared to ‘Other Multisector’. A considerably large number of activities are directed towards the ‘Education’ sector but the sector itself remains one of the least financed. This interesting pattern indicates that financial activities differ largely in the sum of finances that they carry. Not all the finances are hefty. Sectors like Energy receive hefty finances through numerous activities/donations. While the Transport sector receives considerably fewer in number but much heftier investments. On the other hand, sectors like Education, Government and Civil Society, General Environment Protection, and Health although routinely funded receive multiple financing of small magnitude. This is why despite receiving finances almost every year, the amount committed towards these sectors remains much less compared to energy and transport.

A strong measure of appropriateness and usefulness of sectoral allocations of climate finance is to gauge its alignment with recipient country’s sectoral priorities for climate action. The sectors and priority interventions within sectors are communicated via national adaptation plans, climate policies, nationally appropriate mitigation actions, and nationally determined contributions etc. The details of these documents are not only reflective of a country’s

commitments towards climate action but also offer guidance to donors for committing/allocating international climate finance as per recipient's areas of priorities, need, or interest.

In this context, NDCs hold particular significance. The Paris Agreement mandates all UNFCCC party countries to submit updated NDCs every five years, outlining emission reduction targets across various developmental sectors. Additionally, developing countries with limited resources often include conditional terms alongside their emission reduction targets, signaling the necessity for international support to achieve these targets given their own domestic economic constraints (Pauw et al., 2020). Consequently, NDCs serve as a blueprint for climate action and identify areas for investment. Due to these characteristics, NDCs are frequently considered in planning and delivery of international climate finance.

In order to assess, the alignment between climate finance and Pakistan's sectoral priorities, this study reviews Pakistan's NDCs. This analysis informs on mitigation potential, adaptation and mitigation needs/actions highlighted, and cost abatement for mitigation and adaptation. The highlighted and focused mitigation and adaptation priority sectors are then compared against yearly sectoral allocation.

4.4.1 Priority areas in Pakistan's NDCs

Pakistan, a party to UNFCCC submitted its first NDCs, more commonly known as Intended NDCs in 2016, and an updated version in 2021. The review for the purpose of this study is focused mainly on the 2016 submission of first NDCs. The rationale for primarily examining the 2016 NDCs lies in the alignment with available data on international climate finance flows, which extends to 2021. By assessing a five-year period from 2016 to 2021, the

study ascertains whether the allocation of climate finance during this timeframe corresponds with the sectoral priorities outlined in Pakistan's 2016 NDCs. The same cannot be performed for the second NDCs that are submitted in the year 2021 for which comparable data on climate finance for the following years i.e. 2022-23 is not yet available.

The 2 submissions of NDCs differ in content but have a similar aim of highlighting the mitigation potential within the developmental sector of the country's economy. Additionally, some indication towards adaptation needs are also narrated. More importantly, Pakistan clearly states that harnessing the mitigation potential is conditional to availability of external climate finance (Government of Pakistan, 2016) (Government of Pakistan, 2021). This means that without international assistance, the country will not be able to realize its emission reduction targets. This conditionality holds high importance because it suggests that without financial assistance, many of the developing states will not be able to robustly invest in mitigation pledges despite the global urgency to reduce emissions in order to stay aligned with the global average temperature limit of Paris Agreement set at 1.5 °C (Rashid et al., 2023). Article 2 of the Paris Agreement itself calls for consideration of country priorities when providing climate finance. This alignment with country priorities, needs and capacities also boosts ownership among recipients (SCF, 2022).

Pakistan's first NDCs provide a general context of the country's adaptation needs and mitigation potential. The document focuses on a priority timeline that extends till 2030. It also states that the NDC submission is in compliance to the obligations of UNFCCC and showcases that Pakistan resolve to uphold the agenda of COP 21 or Paris Agreement. The development of the NDCs is based on Pakistan's Vision 2025 along with relevant polices such as the Climate Change Policy (2012), National Water Policy, National Disaster Risk Reduction and policy.

The close consultation with relevant policies and development visions reiterates the cross-sectoral nature of climatic threats and the need to adopt resilience in all sectors of the economy. The document also acknowledges that Pakistan’s envisioned economic growth will lead to an increase in GHG emissions however it also presents an opportunity to shift towards cleaner production methods.

4.4.2 Adaptation context

Owing to Pakistan’s extreme vulnerability to climate change, the country has been pushed into a state of forced adaptation, the document highlights. The country holds huge adaptation potential particularly relating to flood infrastructure that is crucial to the agriculture economy but also for settlements residing downstream of the river network. The document states that the current (in 2016) cost of adaptation needs lies in the range of USD 7-14 Billion per annum. Of this, the cost of adaptation to flood disaster ranges between USD 2-3.8 Billion. The estimates are based on the 2016 price of the US dollar currency.

Adaptation priorities for short to long term are presented in the document. The short-term priority foresees the development of a National Adaptation Plan between the year 2020 and 2025. In the medium-term by 2030, the vulnerability of three key sectors water, agriculture, and infrastructure is envisioned to be addressed. Actions to address the vulnerability are also mentioned and are combined in 90Table 4.3.

Table 4.3: Sectoral priorities for adaptation as described in Pakistan's 2016 NDCs.

Sector	Envisioned Action/Measure
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<p style="text-align: center;">Water</p>	<ul style="list-style-type: none"> • Improving irrigation through lining of canals and channels. • Through integrated watershed management • Water conservation • Development and optimization of water resource allocation, strict water management regulation unconventional better water resources such as recycling of used water and rainwater harvesting
<p style="text-align: center;">Agriculture</p>	<ul style="list-style-type: none"> • Strengthening risk management system for the agriculture sector • Implementing a comprehensive Climate Smart Agriculture program
<p style="text-align: center;">Infrastructure</p>	<p>Building climate-resilient infrastructure with focus on</p> <ul style="list-style-type: none"> • improved and safe operation of water-related infrastructure • better management of transport operations • energy transmission • strengthening the development of disaster reduction and relief management systems

(Source: Pakistan’s first NDCs (2016))

In the long-term vision, the NDC document envisions mainstreaming climate resilience socially and economically vulnerable sectors.

It can be assumed that the priority sector for adaptation as per 2016 NDCs are water, agriculture, and infrastructure. For alignment assessment, we assess yearly allocation to these three sectors that finance adaptation objective.

4.4.3 *Mitigation context*

The document provides an estimation of expected GHG emission rise from 405.07 MT CO₂ equivalent in 2015 to 1603 MT CO₂ equivalent by 2030. The emissions assessment is based on 5 main sectors including; Energy, Agriculture, Industrial Process, Land Use Land Change, and Waste. The estimates project the emissions to quadruple in a span of 15 years. The NDCs state that the projected GHG emission rise will result from accelerated economic progress that would require harnessing energy from renewable resources as well as coal and gas. It is stated that the energy crisis of the country requires utilization of all possible resources including nuclear, solar, wind, gas, and coal to meet the energy demand. The crossroads of development also provide an opportunity to mainstream low carbon development technologies.

In the context of mitigation, the 2016 NDCs text conveys the total emission reduction target ... *Pakistan intends to reduce up to 20% of its 2030 projected GHG emissions subject to availability of international grants...* but does not directly relate it to specific sectors. However, the text does provide possible interventions aimed at mitigation in the energy and agriculture sector. Hence, it can be assumed that energy and agriculture sector are the two priority sectors for Pakistan's mitigation related climate action. This assumption also corresponds to the priority sectors highlighted in the updated NDCs released in 2021. In the

second draft of the NDCs, energy falls among the sectors which are highly prioritized for mitigation, along with transport and Nature based Solutions. Agriculture is also mainstreamed in cross sectoral mitigation options.

Cost estimates for 10%, 15%, and 20% GHG emission reduction are provided. For 10% reduction, USD 5.5 billion are required. To achieve 15% reduction, an estimated cost of USD 15.6 billion are required. And for 20% reduction, USD 40 billion in estimates are required. To meet these costs, the 2016 NDCs clearly mention the need of financial assistance. While the NDCs submission is reflective of country’s commitments to the goal of Paris Agreement, the document also clarifies that the emission reduction should not be considered as an international obligation for Pakistan, unless sufficient assistance in meeting projected goal is provided.

Mitigation interventions for two priority sectors as highlighted in the 2016 NDCs document are presented in the Table 4.4.

Table 4.4: Sectoral priorities for mitigation as described in Pakistan's 2016 NDCs.

Sector	Proposed mitigation intervention
Energy (Supply sector)	Increase in grid efficiency
	Increase in coal efficiency
	Large scale and distributed grid connected solar, wind, and hydroelectricity

	Carbon sequestration
Energy (Demand sector)	Efficient irrigation pumping system
	Use of energy efficient Light Emitting Diodes
	Efficient stoves and water heaters, air conditioners, refrigerators.
	Roof insulation
Agriculture sector	Improvement in irrigation and water management
	Water management to control methane release of in in rice fields. Introduction of low water rice varieties
	Implementation of agroforestry practices through plantation of multipurpose and fast growing tree species
	Promotion of green manure
	Use of agricultural and animal wastes to produce biogas and organic fertilizer

	Targeted use of chemical fertilizers to limit release of nitrous oxide
	Production of improved feedstock to reduce methane production from enteric fermentation in livestock
	Promotion of no till farming
	Development and adoption of high yield (milk/meat) and low methane livestock varieties
	Use of cropping methods instead of artificial fertilizer to manage soil nitrogen
	Introduction of carbon responsive Genetically Modified crops

(Source: Pakistan’s first NDCs (2016))

Pakistan’s updated NDCs were submitted to UNFCCC in 2021. As per the updated commitments Pakistan aims to reduce 50% of emissions projected for the year 2030. In doing so, the country pledges to reduce 15% emissions using its own resources and the remaining 35% subject to availability of international climate finance. To achieve the target, four focus areas are identified. These are presented below in

Table 4.5.

Table 4.5: Sectoral priorities for mitigation as described in Pakistan's 2021 NDCs.

<p style="text-align: center;">Renewable energy</p>	<p style="text-align: center;">Production of 60% of all energy in the country through renewable resources by 2030</p>
<p style="text-align: center;">Transportation</p>	<p style="text-align: center;">Shifting to electric vehicles; 30% of all new vehicle sold will be electric by 2030</p>
<p style="text-align: center;">Coal</p>	<p style="text-align: center;">Terminating use of imported coal for energy generation by 2020. Focusing on coal gasification and liquefaction for indigenous coal.</p>
<p style="text-align: center;">Land Use and Forestry</p>	<p style="text-align: center;">Continuation of biggest afforestation drive the Billion Tree Tsunami from 2019-2030.</p>

(Source: Pakistan’s first NDCs (2016))

4.5 Alignment between international financial commitments and Pakistan’s sectoral priorities

In a scoping view, it is evident that the number of financial activities have increased for most sectors after 2015. The timeline aligns with the adoption of Paris Agreement as well as the release of Pakistan’s first NDCs in 2016. The trend is particularly visible for the sectors

of agriculture, energy, other multi-sectors, government and civil sector, and education (Figure 4.11) as compared to before Paris Agreement adoption and NDCs submission (Figure 4.10). However, as previously discussed, the rise in number of financial activities does not necessarily indicate that the sectors are gaining significant funds as well.

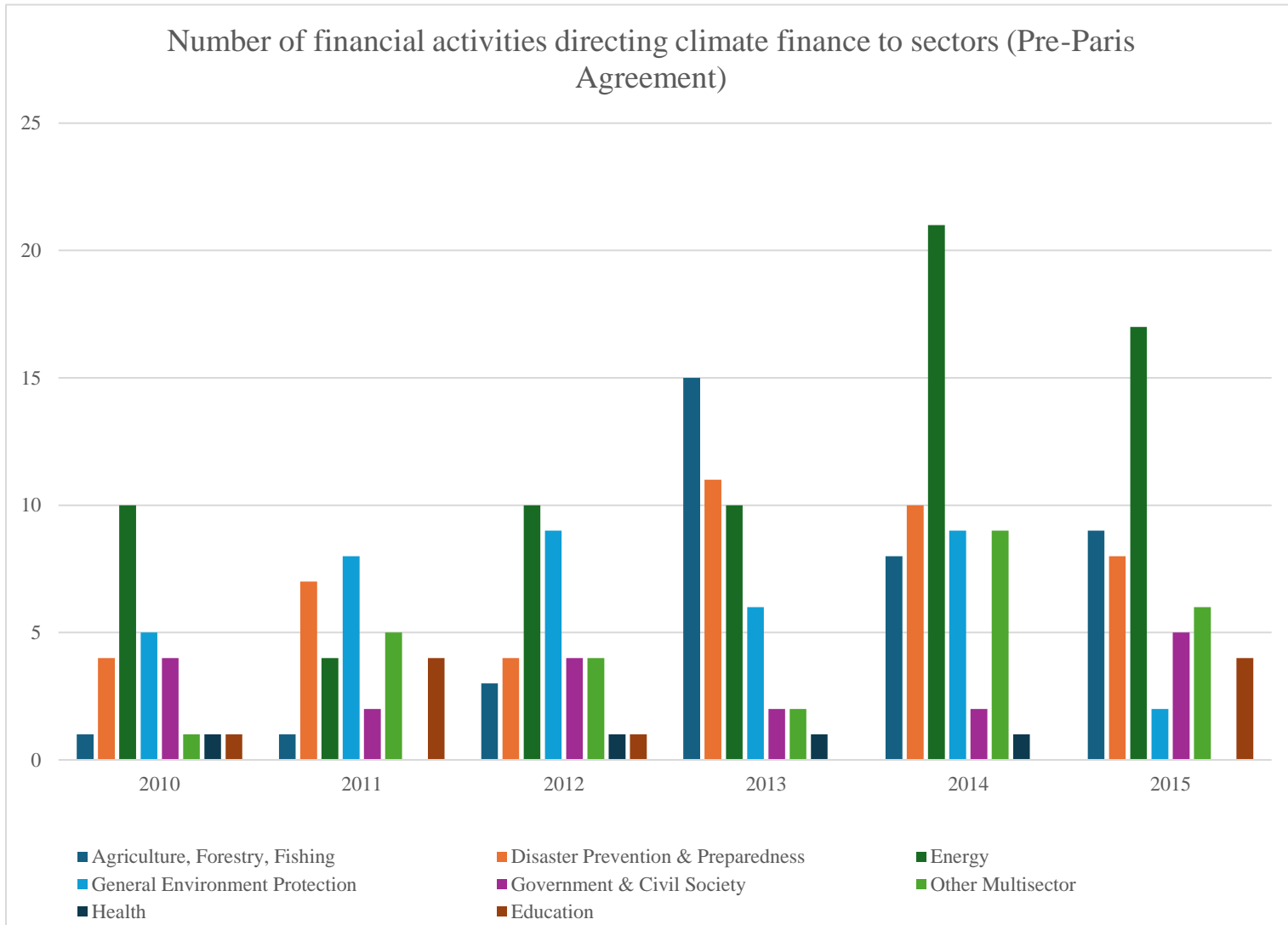


Figure 4.10: Total number of financial activities directing finances to most frequently financed sectors before Paris Agreement (2010-2015) (Author’s own).

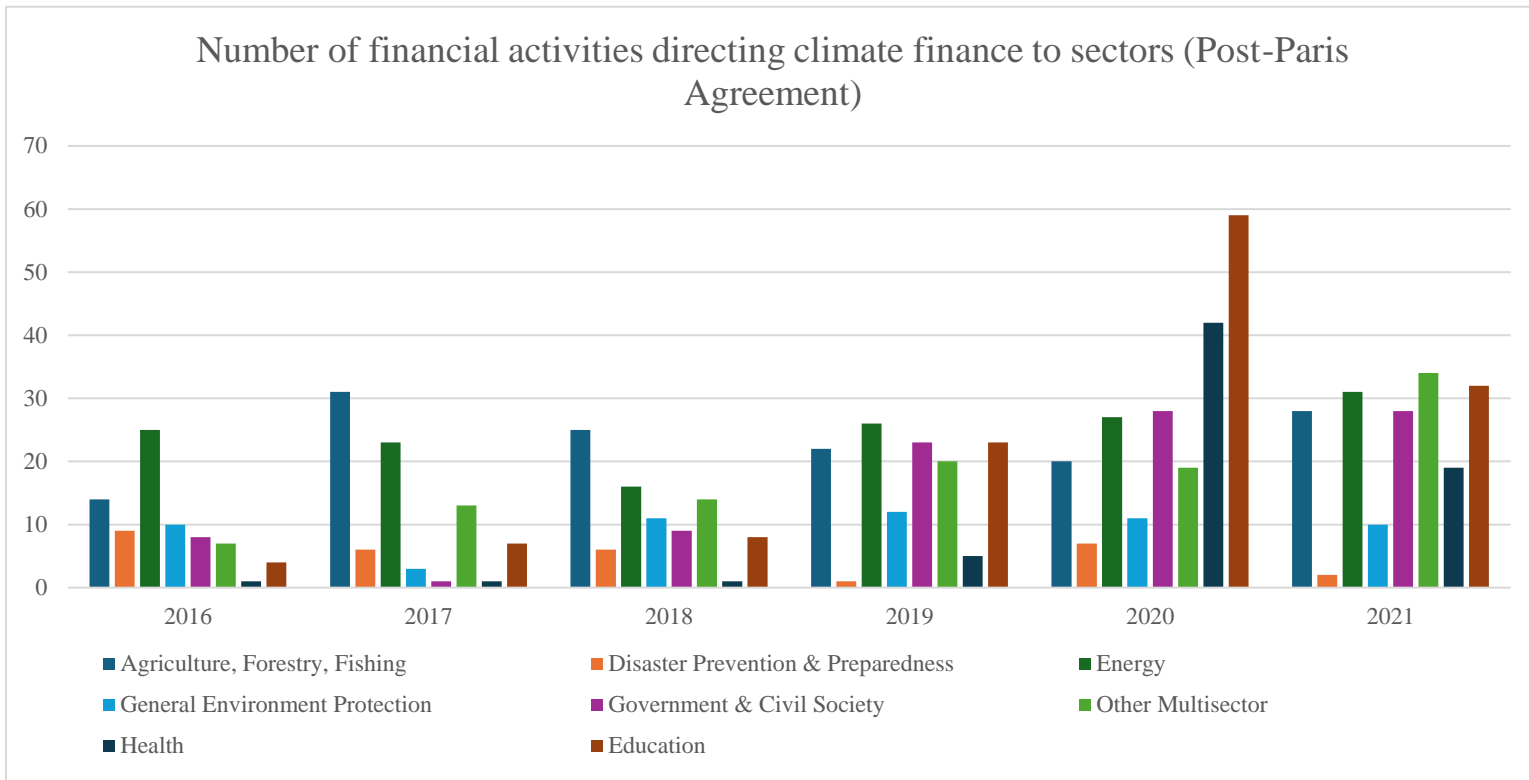


Figure 4.11: Total number of financial activities directing finances to most frequently financed sectors after Paris Agreement (2016-2021) (Author’s own).

For analysis of financial commitments only the NDCs priority areas are assessed, as per the objective of this study. The financial commitments to NDCs priority sectors show a prominent difference after Paris Agreement in 2015 and NDCs submission in 2016. The latter part of the time period i.e. from 2016-2021, saw a marked increase number of financial commitments to three out of the four priority sectors. The rise is most pronounced for the energy sector that received more than 0.5 billion in commitments in the first two years after NDCs submission and has seen a further rise to more than USD 1 billion per year in 2020 and 2021 (Figure 4.12). Even though the commitments to the energy sector declined between 2018 and 2019, they increased subsequently in the next two years. The greatest financing to energy

sector in the years 2020 and 2021 coincides with the highest mitigation funding allocated in these two years.

Interestingly, the number of activities directing finances to the energy sector in 2019 and 2020 differ by only one, with 27 activities in 2019 and 26 in 2020. Despite the higher number of financial activities in 2019, the total finance delivery in 2020 surpasses that of 2019 by 10 times. This indicates that the financial commitments to the energy sector in 2020 involved significantly larger monetary amounts albeit directed through lesser activities. This observation is confirmed by a deeper analysis of the financial commitments to the energy sector for the years 2019 and 2020. In 2019, the activity with the highest financial commitment was the ‘Rehabilitation of Chitral and Dargai Hydropower Plants’ by Agence Française de Développement (AFD), amounting to USD 61.58 million. In contrast, the highest commitment in 2020 was USD 401.92 million (or USD 0.4 billion) from the World Bank, aimed at financing Stage 1 of the Dasu Hydropower Project. The substantial difference in the magnitude of these highest financial commitments explains the 10-fold increase in energy sector finance in 2020. In addition to the Dasu project, the Khyber Pakhtunkhwa Hydropower and Renewable Energy Development Project also received significant financing in 2020, totaling more than USD 360 million (or USD 0.36 billion) from the World Bank as debt. Together, these two projects attracted over USD 0.7 billion in commitments. This underscores that a greater number of activities does not always correspond to higher financial commitments.

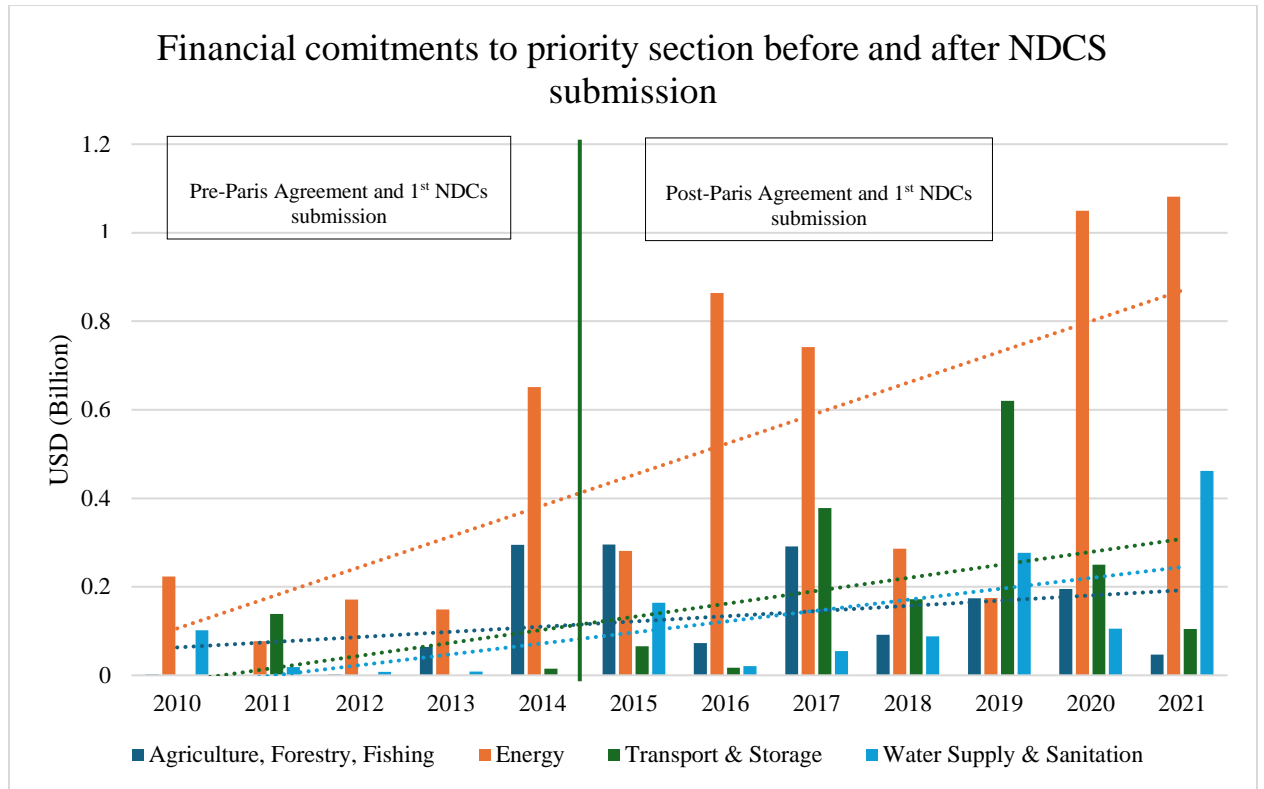


Figure 4.12: Sectoral allocation to priority sectors highlighted in Pakistan's NDCs (Author's own).

Furthermore, the transport sector also receives relatively larger financing. In 2019, the transport sector received its highest share of commitments across all years, totaling USD 0.6 billion. Pakistan gained significant financing this year for mega projects such as the Karachi and Peshawar Bus Rapid Transit systems, along with other mobility projects. These Bus Rapid Transit (BRT) projects play a direct role in mitigating the transport sector's emissions by introducing eco-friendly fleet of bio-methane hybrid and electric plug buses for public transport. However, since the rise in 2019, the financial commitments towards transport sector have again declined, reducing to USD 0.1 Billion in 2021, as most of the mitigation financing have started to concentrate in the energy sector.

The water and sanitation sector has witnessed a relatively steady increase in financing allocations. Up till 2014, negligible finances were directed towards the sector. After a boom in 2015, the commitments to the sector declined again in 2016 but have seen a steady rise since 2017, reaching the highest share of all years in 2021.

Conversely, commitments to the Agriculture, Forestry, and Fishing sector do not exhibit a consistent pattern. The finances directed to the sector fluctuate between adjacent years. In terms of total financial commitments as well, the sector attracts very few resources. The highest commitments to the sector correspond to the year 2015 when USD 0.295 billion were directed towards it. This share is pronouncedly modest compared to the highest shares for other sectors equaling to more than USD 1 Billion for energy, USD 0.9 Billion for transport, and USD 0.46 for water supply and sanitation. This trend is particularly alarming considering Pakistan's agrarian nature and high dependence on crop growth, livestock raising, and fisheries in different parts of the country. Agriculture is also particularly vulnerable to climate change and requires immediate attention as per Pakistan's NDCs. Similarly, the Forestry sector was significantly highlighted in the NDCs for Carbon sequestration. Furthermore, the Agriculture sector is the only sector that has been highlighted as priority for adaptation and mitigation interventions in the NDCs. The mainstreaming of agriculture sector sheds light on Pakistan's resolve to curb emission when south Asian countries are less likely to include emission reduction commitments for the agriculture sector because of concerns of food security (Babu et al., 2019) The erratic trends of committing nominal finances towards Agriculture, Forestry, and Fishing thus might affect Pakistan's motivation towards agricultural emission reductions while also raising concern regarding its ability to raise crucial adaptive capacity in the sector.

4.5.1 *The financial disparity in adaptation and mitigation focused sectors*

The imbalance in adaptation and mitigation focused finance is evident in the context of country NDCs as well. The results indicate that post NDCs submission, energy and transport sectors, which are prioritized for mitigation, have been taking the lion's share of committed finance. Whereas agriculture that includes both adaptation and mitigation focused interventions, along with the water and sanitation sector, which is prioritized majorly for adaptation, attract comparatively lesser financial commitments. The sectoral imbalance is consistent with the global and regional trends as well where energy and transport sectors are favored under climate finance. OECD (2020) reporting on aggregate trends of climate finance commitments states that energy and transport fall under the highest financed sectors globally, receiving 34% and 14% of total mobilized financed. Agriculture, forestry, fishing receives 9% and water and sanitation receive (7%) of the total climate finance. A regional assessment for Asia analyzed the sectoral allocation of climate finance to different economic sectors. It was found that in Asia between 2013 and 2020, transport and storage received nearly one third (32%) of the total climate finance directed to the region while energy sector received 26%. On the contrary, the agriculture, forestry, fishing and water and sanitation sectors received 9% and 8% of the total finance committed to the region (Roy, 2022). The global, regional, and national trends of sectoral commitments in providing climate finance this highlight the prioritization of mitigation related sectors particularly; energy and transport over adaptation focused sectors such as agriculture, forestry, fishing, and water and sanitation.

The imbalanced prioritization especially in the favor of energy sector in the context of Pakistan may have risen from both recipient's and provider's preferences towards this sector. From recipient's perspective, Pakistan faces an acute energy crisis that has grappled the country for multiple decades causing disruptions in industrial operations, comfortable living, and delivery of critical services (such as healthcare). Hence, energy sufficiency has been giving due preference in the country's development plans such as the Vision 2025 as well as the NDCs. Referring specifically to NDCs, the 2016 submission stresses highly on the energy crisis prevalent in the country urging the need for energy generation projects. Similarly, the updated submission of 2021, meeting energy demand while curbing energy sector emissions is a central agenda. Consequently, the highest emission reduction targets are also set for the energy sector. It may be argued that Pakistan as recipient of international assistances also prioritizes developments in energy sector. On the other hand, providers prefer mitigation financing because it is more convenient to measure the success and gains in terms of emission reduction than to assess the success of adaptation due to the ever-evolving nature of adaptive needs (Timperley, 2021). Furthermore, the financing to adaptation is limited due to perception of low profitability, and high actual/perceived risks of investment in the portfolio. As a result, providers exceedingly gravitate towards mitigation financing while tightening the lending criteria for adaptation intervention, particularly agriculture (Choi et al., 2023). Similarly, the sectors that fall under the public good category such as education as health are also not popularly financed as they may not offer enough financial returns. In an attempt to seek more stable returns, providers thus shift preferences towards sectors whose revenue models are comparatively well understood such as energy (Amiot & Munday, 2024).

Hence, this study concludes that some degree of alignment between country priorities and sectoral direction of international climate finance, especially for mitigation interventions, exists in the context of Pakistan. The NDCs priority for Pakistan is being addressed by international climate finance with highest shares of finance being committed for energy which is a priority sector in both 2016 and 2021 NDCs drafts. Recently, finance towards transport and storage has also increased with mega projects targeting the emission reduction priorities of the sector. However, adaptation finance in two key sectors remains low. Commitments toward agriculture have shown inconsistent fluctuations throughout the timeline of operationalization of climate finance and even after the NDCs submission, and the total allocation for agriculture has not significantly increased, despite its priority status for both mitigation and adaptation. The water and sanitation sector has experienced a consistent but relatively smaller rise in financing compared to the energy sector.

CHAPTER 5: CONCLUSIONS AND POLICY IMPLICATIONS

5.1. Conclusion

The findings of this study provide an elaborate understanding of the characteristics of international climate finance that flows to Pakistan. Despite its vulnerability and limited domestic capacity, the international climate finance aimed towards the country is both insufficient and inefficient. The dominant use of debt instrument adds to the burden of the already crippling economy. It necessitates the country to repay inflated amounts of money as per market rate. The very finance that was the goal of USD 100 billion set under Copenhagen Accord was aimed at assisting developing world not burdening it.

Adaptation and mitigation imbalance has persisted in the climate finance committed towards Pakistan throughout the course of Copenhagen Accord. The investment priority towards mitigation leaves adaptation immensely underfunded and the need for Pakistan's adaptive capacity unresolved. Resultantly, despite the flow of climate finance to Pakistan, the crucial need of raising communities' resilience through adaptation remains unaddressed, putting millions at multifaceted impacts. Moreover, the commitments that reach Pakistan themselves are limited in utility and add to the debt burden of the country. Use of loan instrument dominates the entirety of the paradigm that circulates international climate finance to Pakistan. The use of loans is heavily exercised by all categories of climate finance providers. Consequently, Pakistan's climate action and resilience comes at the cost of economic burden inflated by debt repayment. Moreover, the debt dominant and mitigation focused finance addresses country priorities only to some degree. Comparison between commitments and priorities reveals that while energy and transport attract major finances in accordance with

Pakistan's mitigation target, the crucial sector of Agriculture remains severely underfunded. The importance of agriculture sector is central not only to Pakistan's economy but also to its climate action and resilience. Agriculture falls among the highest GHG emissive sectors of the country, and its productivity remains extremely vulnerable to climatic hazards such as rising temperature, drought, flood, erratic rainfalls etc. Keeping this in view, the urgency of financing mitigation as well as adaptation for the agriculture sector is highlighted. Nonetheless, the assessment of sectoral allocations of climate finance reveals that Agriculture sector receives inconsistent financing that have not increased considerably over the 11 years. Of the 4 priority sectors identified in the NDCs, agriculture remains the least funded with irregular financing patterns.

These discovered trends can help enable arguments that raise concerns over lacking efficiency and appropriateness of international climate finance flows. The findings can assist the development of a climate finance policy that reflects the country's context and streamlines the allotment of climate finance with economic settings as well as emerging needs. Pakistan is currently under the process of developing the National Climate Finance Strategy. This strategy will define the backdrop for attracting and accessing climate finance from international providers. The findings of this study can help present the existent scenario and highlight the inconsistencies in it. The policy could assimilate these findings to develop frameworks for attracting more equitable and appropriate financial commitments.

Furthermore, the misalignment between climate finance commitments received and the country's economic context as well as country needs reflects some areas of improvement for the recipient as well. The most prominent among these is the need for the development of bankable project proposals presenting with concrete evidence of Pakistan's eligibility for

climate finance. Rather than acting as passive recipients, the country needs to actively mobilize domestic resources and capacities in preparing project proposals as per the requirements of providers. These proposals must address the bankability aspect as per the focus of provider. For example, for loan providers, this aspect must showcase the profitability and financial returns on investment as well as highlight project's scalability and contribution to long-term transformation at country level. On the other hand, grant providers view bankability differently as they do not expect financial returns. For them fundability needs to be justified in terms of contribution to longer-term resilience in the project area, and prior consideration of possible project risks (Ellis & Pillay, 2021). Through such readiness approaches, policy makers can enhance the programmatic approach to climate finance that is responsive to country needs and aligned with economic status.

Lastly, this study explores international climate finance directed towards a highly climate vulnerable developing economy of Pakistan that fits all the criteria of eligibility to climate finance. The findings of this study hence present a critical case of how effective international efforts have been in fulfilling the responsibility of assisting developing and climatically vulnerable economies in enhancing climate action and resilience.

The USD 100 billion goal set under the Copenhagen Accord was designed to be assistive in nature, aiming to support developing countries that have contributed minimally to the causes of climate change but are disproportionately affected by its impacts. However, the trends revealed by this study indicate that climate finance has often been misaligned with these goals and, at times, exploitative in the case of Pakistan. The trends also showcase a degree of misalignment with Paris Agreement that focuses on addressing recipient country's priorities as well as achieving a balance in adaptation and mitigation financing. These discrepancies can

severely limit usability of climate finance, defer strengthening of critical adaptive capacity, causes delays in climate action and hence the limiting contribution of Pakistan in realizing the 1.5 °C goal of Paris Agreement.

5.2. Policy Implications

This section discusses the policy implications of the findings gained from the study. The country level assessment of climate finance draws critical insights into the trends that govern the nature of climate finance directed towards Pakistan. These findings can inform the basis for several important policy aspects. These are described below.

- **Negotiating for just finance:** The misalignment between the characteristic aspects of climate finance, that were elucidated by various climatic agreements, and the nature of financial flows directed towards Pakistan provides strong evidence for arguing a case for just finance in international climate negotiations. Up till now, the Caribbean SIDS have been actively criticizing the climate finance that is committed to their developing states often calling it grossly inadequate and ineffective in meeting state-level needs (Morland, 2024). The study finds that the same holds true for Pakistan. Augmenting this lack of climate finance with the relatively negligible emission from Pakistan and extremely high risk to different climate risks, urges that the exploitative and misaligned nature of climate finance be highlighted at global level. The climate negotiations at COPs provide with a suitable platform to raise this concern using research informed arguments, thus debating a case for climate justice. The agenda in upcoming COP29 is expected to majorly revolve around climate finance, thus providing ample

opportunity to express concerns regarding the current dynamics of debt concentrated, misaligned, and imbalanced climate finance.

- The observed discrepancies in climate finance allocations primarily arise from the absence of an agreed-upon definition of what constitutes climate finance. This ambiguity has left room for interpretation, resulting in differing reporting practices that complicate the tracking of climate finance disbursement and lead to a lack of uniformity. The use of various methodologies and definitions results in non-responsive and non-harmonized provision practices, with most donors primarily using loans while very few provide a greater share of their contributions as grants or concessional loans. It is well established that the dominance of loans in climate finance stems from this lack of standardized definitions and modalities, which has prevented an agreed-upon proportion of debt and grants for the USD 100 billion goal. Additionally, estimating the monetary portion of development projects that qualify as climate finance lacks standardized metrics, causing many donors to over-report their climate-related contributions. The findings of this study provide crucial evidence supporting the criticism of these discrepancies that can be voiced at international negotiation forums. This research presents a case study of a highly climate vulnerable, low-emission developing country whose climate action heavily depends on international assistance, which predominantly comes in the form of debt, further burdening its economy under the guise of facilitating climate action. These insights provide critical lessons from the USD 100 Billion Goal's implementation. Integrating these lessons into negotiations is essential to establish a more harmonized framework with clear definitions and allocation of responsibilities for the

New Collective Quantified Goal) of climate finance, which will succeed the Copenhagen Accord, and for the establishment of the Loss and Damage Fund.

- On recipients end, the discrepancies suggest a lack of technical capacity in designing proposals for accessing climate finance. Several donors especially the multilateral climate funds exist that can provide need specific climate finance as concessional loans or grants depending upon the country's vulnerability as well as ability to repay interests. But, Pakistan's existent capacity remains underdeveloped to utilize these opportunities. Therefore, proposal readiness exercises and training sessions must be conducted for enhancing the capacity of responsible authorities at national and subnational level. Such sessions have proven to provide encouraging results in other developing economies that have also struggled with debt concentration, adaptation-mitigation imbalance, and sectoral misalignment. Building capacity for proposal readiness has resulted in enhancing the ability of responsible authorities in designing well-constructed and convincing proposals for more suitable climate finance. Evidence from developing countries showcases the positive impact that readiness programmes have on improving access to climate finance. Colombia for example, has been actively undertaking readiness exercises to improve bankability of climate related projects and devise a system where financial needs and potential investors are identified and approached at planning stage. The capacity gained through these exercises has resulted in approval of over USD 500 in climate finance for various projects in Colombia. Moreover, GCF (2023) in its progress report itself states that an improvement in the design, proposed fundability, and justification in adaptation related proposals has been witnessed at the Secretariat which has resulted from undertaking proposal readiness

activities in several developing countries. Between 2020 and 2023 GCF has successfully readied 141 countries to gain access of grants totaling over USD 450 million. Additionally, readiness activities have also strengthened the ability of national and sub-national direct access entities to gain GCF accreditations after which they can directly apply for GCF funding on proposed projects. Similarly, another entity The Commonwealth Climate Finance Access Hub (CCFAH) reports that its readiness support activities in 7 developing countries (From Africa and Indo-Pacific regions) have resulted in access to USD 45.5 million in Climate Finance. This finance has been disbursed to 34 projects with an additional USD 762.2 million in the pipeline covering 57 projects. The activities have mainly contributed to developing capacities in aligning projects to local needs as well as the donor's fund application requirements (Commonwealth Secretariat, 2022). Owing to Pakistan's mounting climate finance needs, it is crucial that the country strives to achieve more finance as grants than burdensome loans. To achieve this, one of the most obvious gaps that is capacity strengthening; in documenting local needs, proposing solutions, and developing an economically viable finance proposal must be raised. The capacities for improving bankability of projects, and meeting the application requirements of various donor sources specifically multilateral funds must be met. Pakistan is in the process of developing its first National Climate Finance Strategy. Acknowledging this need in that strategic document would facilitate the recognition of problem as well as its redressal.

- Additionally, the research suggests that several donors extend climate finance to Pakistan, often to institutes and departments other than the designated national climate change authority. This results in dispersion of climate finance to various development

sectors, which is a good practice, however in the absence of central bodies dealing with climate finance, the monetary assistance received escapes collective traction and acknowledgment by the recipient country. At present, Pakistan lacks technical unit that deal with the complexities of climate finance and negotiate with the donors; the share of debt vs grant, categorization of projects as principle, significant, or climate components, the terms of loans. In addition, the reporting on efficient use of climate finance, where and how, is also severely lacking. Therefore, an impression of lacking capacities at ground is perpetuated to the donors in the international climate finance arena, whereby Pakistan's abilities to deal with climate finance are considered diminished. The situation requires development of designated bodies within provincial climate change governance systems as well as within federal authority. These bodies could be mandated to consult and negotiate with the donors, during project design and finance planning phases, the monetary terms for each project that includes any share of climate finance. Once the project is finalized, and finance is received, in disbursement rather than commitments, the provincial body should formally recognize and acknowledge the acquisition of assistance and report it to the federal body. The federal body could compile data from all provinces as well as federal level climate relevant projects. The compiled data could be reported as climate finance that Pakistan acknowledges as duly received. The data thus generated would provide a home ground perspective from recipients (in contrast to the existent mechanisms of providers' perspective reported y OECD) as well as assist in preparation of Biennial Reports.

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ANNEX 1- LIST OF DEVELOPED AND DEVELOPING COUNTRIES

Developed countries (Annex II parties to UNFCCC) 26 parties	Developing countries (Non-Annex I parties to UNFCCC) 155 parties
<p>Australia, Austria, Belgium, Canada, Denmark, European Economic Community, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom of Great Britain and Northern Ireland, United States of America.</p>	<p>Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Cook Islands, Costa Rica, Côte d'Ivoire, Cuba, Democratic People's Republic of Korea, Democratic Republic of the Congo, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Fiji, Gabon, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Holy See, Honduras, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Lao People's Democratic Republic,</p>

	<p>Lebanon, Lesotho, Liberia, Libya, Madagascar, Malawi, Malaysia, Maldives, Mali, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nauru, Nepal, Nicaragua, Niger, Nigeria, Niue, North Macedonia, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Qatar, Republic of Korea, Republic of Moldova, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Solomon Islands, Somalia, South Africa, South Sudan, Sri Lanka, State of Palestine, Sudan, Suriname, Syrian Arab Republic, Tajikistan, Thailand, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkmenistan, Tuvalu, Uganda, United Arab Emirates, United Republic of Tanzania, Uruguay, Uzbekistan, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia, Zimbabwe.</p>
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