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Knowledge Brief

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From Climate Vulnerability to Climate Readiness A Strategic Roadmap for Pakistan

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Executive Summary

Despite being among the top ten countries on the Global Climate Risk Index for high vulnerability, Pakistan receives less per capita climate finance than many countries like Kenya, Bangladesh, and the Philippines etc. Pakistan lost US$30 billion alone in the 2022 floods; international financial inflows are still dominated by loans, worsening Pakistan's debt profile. It is imperative for Pakistan to realize that climate vulnerability does not automatically unlock climate finance. The world listens not only to victim narratives, but to strategy, readiness, and vision. Another reason attributing to Pakistan's low readiness to tackle climate-induced vulnerabilities is the adaptation financing gap, which is 16 times its needs. Pakistan needs US$348 billion by 2030, but receives a tiny fraction of that. Pakistan needs to develop its readiness-based strategy. This readiness demands that Pakistan should have technical and institutional capacity to absorb and deploy funds effectively and efficiently. To possess the absorption capacity is the core eligibility criterion for international climate funds. To demonstrate readiness, Pakistan should have i) high-quality bankable projects in the pipeline, ii) nationally accredited institutions with track records of financial transparency, iii) an operational MRV (Monitoring, Reporting, and Verification) mechanism in line with the Biennial Transparency Report (BTR), and iv) technically expert negotiators to pursue Loss and Damage climate finance. To achieve its NDC 3.0 targets by 2030, Pakistan needs US$ 348, however, there exists an eight times financing gap for its current inflows. To bridge this gap, Pakistan should reposition itself as a proactive climate agent to win climate finance advocacy.

Introduction

Recurrent floods, scorching heatwaves, glacial melt, droughts, and biodiversity loss have made Pakistan one of the most climate-vulnerable countries in the world, consistently ranking within the top ten on the Global Climate Risk Index. The 2022 flood has caused damages amounting to USD 14.9 billion and has affected 33 million people across the country (see Table 1). These disasters exacerbate Pakistan's economy. The events (Table 1) show recurring quantified liabilities on the national budget. The frequency of events is increasing invariably. The losses of public and private assets during these events translate directly into national losses. Some non-asset losses, such as productivity decline under heat stress, health expenditure, etc are not captured in the conventional assessments; therefore, they are not quantified in claims for international climate finance.

Table 1: Impact of Recent Natural Disasters (Pakistan)

Natural Events	Physical Impact	Economic & Fiscal Impacts
Flood 2025[1]	1,037 fatalities; 1,067 injuries; 229,763 homes damaged; 2,811 km of roads and 790 bridges damaged; 22,841 livestock lost; 3,029,091 persons rescued	Ongoing assessment of damages caused that show up contingent liability on the federal budget.
2024 Heatwave[2]	568+ fatalities; 7,900+ hospitalisations; 158 livestock deaths	Losses accrue through productivity, health expenditure and crop heat stress.
2022 Flood [3][4]	33 million people affected across 84 districts; 1,739 fatalities; 12,867 injuries; 2,284,459 houses damaged; 8 million people displaced	Physical damages US$14.9 bn; economic losses US$15.2 bn (combined >US$30 bn, 8% of GDP); reconstruction & rehabilitation needs US$16.3 bn; direct GDP loss of 2.2% in FY2022. Sectoral damage concentrated in housing (US$5.6 bn), agriculture & livestock (US$3.7 bn) & transport (US$3.3 bn)

The result is a funding framework that exacerbates these vulnerabilities. International funding comes in form of loans not grants, so each shock is addressed with a financial instrument that increases national debt, thus squeezing the financial space for the next shock. To break this cycle, Pakistan needs to change the terms of the composition of the climate financial resources and to polish its capacity to deploy these resources.

Pakistan's low adaptation readiness ranking 150th globally[5] (ND-GAIN, 2025) and high vulnerability urge a great need for climate investment and action. Pakistan's climate challenges are the product of global warming and the institutional barriers that are holding Pakistan back to receive the due climate finance share. Pakistan's lack of strategy limits its capacity to absorb and utilize the climate finance effectively. This limitation calls for strategic advocacy at platforms like COPs. This knowledge brief posits that Pakistan should shift towards a readiness-based approach by proposing five strategic priorities to strengthen its technical and institutional capacities to access, deploy and absorb climate finance optimally.

Climate Finance

The recent Conferences of the Parties (COPs) have made significant advances to financially support the emerging economies to combat climate impacts. For instance, the Loss and Damage Fund was established at COP 27. This led to an agreement for a funding mechanism for L&D at COP 28, and the L&D funding mechanism was finalized at COP29. For climate adaptation, mitigation, and resilient development in developing countries like Pakistan, the NCQG (New Collective Quantified Goal) sets an annual finance target of US $300 billion by 2035, accompanied by annual additional funds of up to US $1.3 trillion by 2035 at COP29. Since the disbursement modalities and mechanisms are not finalized at COP30, the NCQG has not disbursed any funds. To successfully negotiate its climate finance share, Pakistan should enhance its institutional readiness to get engaged as a credible claimant, not as a victim.

1.As on June 11, 2026 retrieved from https://www.ndma.gov.pk/sitrepm

2."PDMA Sindh: Situation Report for heatwave 2024 (as of 25 June 2024) - Pakistan". ReliefWeb. 26 June 2024. 2025. Retrieved June 11, 2026

3.https://pc.gov.pk/web/press/get_press/1264#:~:text=The%20Post%2DDisaster%20Needs%20Assessment,7%20million%20to%2014.6%20million.

4.https://www.ndma.gov.pk/storage/publications/September2025/KHBZIFM1dMY41qv8z6wl.pdf

5.https://gain-new.crc.nd.edu/country/pakistan

Pakistan's Climate Resilience and Climate Finance Gaps

The ability of Pakistan to attain resilience against the effects of climate change is restricted due to the reason that the adaptation financing gap in Pakistan is estimated to be $7-14 billion annually, according to the World Bank (2022). At the national level, 15.3% of the Public Sector Development Programme (PSDP) and 7.7% of the Running of Civil Government (ROCG) budget have been allocated to climate change projects in FY2024-25 (Dawn, 2024), even though the financial requirement of Pakistan in this respect amounts to $348 billion ($196 billion for decarbonization and $152 billion for adaptation) till 2030. According to the report prepared by Akhtar and Khawaja (2024), Pakistan encounters an eight times gap in its annual total climate finance needs (Table 2). However, the five times mitigation finance gap together with a sixteen times adaptation finance gap positions Pakistan at a disadvantaged point as compared to other countries (Akhtar & Khawaja, 2024). As reflected in the report, despite having the second highest deserving position in adaptation finance due to its GDP per capita, Pakistan receives much less international public adaptation finance flows than many countries, including Bangladesh and the Philippines that have strong GDP per capita positions (Akhtar & Khawaja, 2024).

Table 2: Cross Country Climate Finance Flows & Gap Comparison

	Kenya	India	Pakistan	Indonesia	South Africa	Nigeria
Absolute financing flows (US$ billion)	2	44	4	5	3	2
Flows per capita (US$)	46	32	17	17	56	9
Absolute financing flows gap (US$ billion)	7	170	34	27	17	20
Gap (expressed as multiple of flows)	3x	4x	8x	6x	5x	10x
Gap (expressed as % of GDP)	7%	6%	8%	3%	5%	5%

Source: Akhtar & Khawaja (2024) Note: Based on climate financing gap as per National NDCs and CPI country reports (2018–2021

In Pakistan, the Green Climate Fund (GCF) is providing eight direct country projects ($300 million). In the case of the largest project i.e., Karachi Green BRT ($583 million project value), GCF is providing 10% finance. In addition to this, the Global Environment Fund (GEF) is providing funding for twelve projects in Pakistan, having a grant value of $37 million and a co-financing value of $200 million for promoting the climate-resilient development trajectory (Table 3) (Akhtar & Khawaja, 2024). Though Pakistan owns a considerable share in both GCF and GEF, still its per capita financing ($0.16) is quite low compared to many other countries such as Bangladesh, Kenya etc. (Table 3).

In a nutshell, Pakistan's limited domestic financial capacity and its disadvantageous position in terms of international finance comparison hinder its ability to implement large-scale climate initiatives, underscoring the need to enhance institutional readiness to absorb climate finance.

Table 3: GCF & GEF Funding Country Comparison

	Pakistan	Bangladesh	Kenya	Nepal	Thailand
Climate Vulnerability Rank	8	7	50-100	10	9
GCF Funding Comparison					
No. of Projects	8	8	7	5	10
Total Financing ($ in million)	304	441	322	112	58
GEF Funding Comparison					
No. of Projects	12	13	18	8	18
Total Financing ($ in million)	37.40	34.60	60.90	22.70	52.30
Per Capita Financing ($)	**0.16**	0.20	1.11	0.73	0.73

Source: Extracted & Adopted from (Akhtar & Khawaja, 2024)

Pakistan's Case and Low Readiness to Win and Absorb Climate Finance

The key obstacle that weakens Pakistan's case as a deserving nation for an adequate share in climate financing is not lack of available funds, but its institutional inefficiencies to mobilize and deploy the funds for climate action effectively. Institutional readiness is the capacity to access and absorb climate financing in an optimal, transparent, and result-oriented way. Institutional readiness is the product of three dimensions: i) institutional capacity, signifying GCF or GEF accredited national implementing entities, national designated units for appraisal and endorsement of climate-finance proposals; (ii) technical capacity, having bankable projects in pipeline with feasibility valuations and co-financing arrangements; and (iii) negotiation capacity, having expert climate and legal diplomats to advance Loss and Damage claims, by expatiating on NCQG disbursement modalities. The lack of these dimensions ranks Pakistan 150th globally on the ND-GAIN Readiness Index (2025). Bureaucratic complexity is another factor hindering access to funds like the Green Climate Fund.

Admittedly, Pakistan's macroeconomic disruptions, high vulnerability, and infrastructure losses in natural disasters (Table 1) make Pakistan entitled to Loss and Damage claims and concessional finance and grants for recovery and resilient rehabilitation. Based on data-driven evidence, Pakistan can voice its case for climate justice embedded in equity and human rights. However, Pakistan's low readiness in terms of its institutional and technical capacities and fragmented climate governance contribute towards its restrained bargaining position in global negotiations. Therefore, Pakistan can seek international assistance to build institutional capacity in terms of climate finance and its implementation mechanisms. Similarly, Pakistan should harness its legal and technical expertise to build its case around climate justice and loss attribution.

To enhance resilience, tackle poverty, and promote climate-smart development, it is necessary to integrate and mobilize diverse financing streams like public, private, and international sources (Sherin, 2023). Green finance holds a potential to mobilize investments in Pakistan's low-carbon transition (Ullah & Ullah, 2024). Normally, international climate finance is directed through inter-

mediaries that reduces the ownership over climate finance of recipient countries. Adopting proactive strategies, Pakistan can enhance its ownership in climate financing.

Actually, Pakistan cannot afford the cost of climate inaction that is estimated to cost $250 billion by 2030 and $1.2 trillion by 2050 (FCDO, 2024). The climate-induced disasters can cause an annual 18% loss of livestock GDP and an annual 8% loss in agriculture crop GDP by 2030 causing a drop of 47% in crop yield by 2050. According to FCDO (2024) report, around 90 million and 400 million people respectively by 2030 and 2050 will be displaced incurring $80 billion cost of displacement by 2050 (FCDO, 2024). It is inferred that the cost of inaction is more than the cost of prevention.

Strategic Priorities for Pakistan

Based on the Third National Communication to the UNFCCC, Pakistan's NDC 3.0, and the Biennial Transparency Report (BTR), Pakistan should focus on the following strategic areas to optimally leverage climate financing sources.

1- Institutional Readiness and GCF/GEF Accreditation

Pakistan should target securing GCF/GEF accreditation for some additional NIEs by 2027. This will help Pakistan reduce its dependence on multilateral intermediaries, enabling it to submit projects independently. For optimal utilization of climate finance, a dedicated Climate Finance Coordination Unit operated by MRV experts, financial analysts, and legal experts can serve the purpose.

2- Renewable Energy Transition and Carbon Markets

Pakistan's quick adoption of solar energy can be used to attract investment and technologies to implement the principles of ESG and Zero Emissions. The quick adoption of solar energy in Pakistan, which has 14.3% of solar contribution in its energy mix in 2024, makes Pakistan more advanced than other countries, such as China (8.4%) and India (7.4%). The major shift to off-grid solar systems, especially in residential areas, is due to the increase in the cost of electricity by 155%. The dramatic increase in solar panel imports from 16GW year-to-year and net metering capacity up to 4.9 GW in FY25 shows a major shift to this trend.

Pakistan can participate in Article 6 carbon markets under the Paris Agreement to establish a National Carbon Registry and standardized emission reduction methodologies.

3- Climate-Resilient Agriculture and Food Security

Following the global practice of integrating indigenous solutions national adaptation strategies, Pakistan can achieve climate resilience targets. For example, GCF financing for GLOF-II Project in Pakistan at the cost of $36.96 million sets up an early warning system, ensures the stabilization of slopes so that safe havens can be created in 24 valleys, and revives irrigation systems for 700,000 people (Dawn, 2025). In the same vein, National Adaptation Plan (NAP) (2023-2030) stresses upon climate smart irrigation, agroforestry, rainwater harvesting, and conserving the genetics of plants in areas vulnerable to risks (Dawn, 2023). What is required is to implement climate smart agriculture for food security (FAO, 2021). The locally adapted adaptation measures in the form of national policy can assist in achieving Pakistan's adaptation goals in order to safeguard crop production and livestock as per NDC 3.0 goals.

4- Loss and Damage Finance and Legal Capacity

Pakistan should conduct a research as per IPCC methodologies to provide evidence-based documentation to legal and economic experts to engage in NCQG disbursement negotiations at COP platforms as per the agreed access modalities.

5- Blended Finance and Private Sector Mobilization

Pakistan should target to de-risk private investment in renewable energy, water infrastructure, and climate-resilient housing. A dedicated facility unit should frame green bond mechanisms in line with international taxonomies, facilitating private sector mobilization and blended finance. Approximately, 20% (≈Rs 925 billion) of the total schemes under Public Sector Development Program (PSDP) have been allocated as 'green' for FY 2023-24.

Conclusion

The knowledge brief suggests that Pakistan must shift from the vulnerability-based approach to the readiness-based one, which is based on institutional capacity, technical credibility, and negotiation discipline. For Pakistan, there is a great need to transform climate vulnerability into strategic leverage through the implementation of the five strategic priorities presented above.

The shift from victimhood to vision requires deliberate institutional investment and political will. As for the implementation roadmap, this knowledge brief suggests three key areas of immediate actions including, (a) establishment of the Climate Finance Coordination Unit at the NDA within 12 months of the time and initiation of the accreditation applications for the two new NIEs, (b) submission of a GCF compliant Loss and Damage project proposal along with the commissioned loss attribution study, which is in line with IPCC methods within 18 months and (c) creation of the National Climate Finance Facility and issuance of the first sovereign green bond, which is in accordance with international taxonomies, within 24 months to signal Pakistan's commitment to climate-aligned fiscal management. Besides, Pakistan should establish a results-based MRV framework aligned with the BTR and Third National Communication to the UNFCCC and should adopt transparent project management and financial reporting standards to improve disbursement track records.

There are several strategic priorities such as institutional readiness and GCF/GEF accreditation, renewable energy transition and carbon markets, climate-resilient agriculture and food security, Loss and Damage finance and legal capacity, and blended finance and private sector mobilization. Notably, Pakistan's leadership in solar power generation, surpassing India and China in proportional share, is a compelling success narrative that should anchor its climate diplomacy and attract further technology transfer and carbon market partnerships. Pakistan's trajectory to climate-resilient development depends not on waiting for aid, but on building the institutional foundations that make it a credible and capable partner in the global climate finance architecture. COPs present Pakistan with an opportunity to demonstrate this readiness, not mere to claim vulnerability, but to lead with vision, strategy, and institutional credibility. The transition from vulnerability to readiness is Pakistan's most urgent climate imperative.

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