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Integrating Climate in Fiscal and Economic Planning: An Inclusive Reforms Agenda for a Resilient Pakistan

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CONTENTS

1 INTRODUCTION

Pakistan's development trajectory is constrained by a complex nexus of climate vulnerability, fiscal fragility, and uneven growth. Intensifying climate shocks – such as floods, droughts, and heatwaves – combine with global low-carbon transition pressures to erode productivity, shrink revenues, raise public debt, and widen socioeconomic disparities. Limited fiscal space, dependence on fossil fuels, and fragmented climate governance further amplify these vulnerabilities.

Consequently, this reforms agenda outlines a pathway to embed climate considerations into Pakistan's economic and fiscal frameworks, turning vulnerability into opportunity. As summarized in Figure 1, it identifies several interconnected challenges and translates them into seven strategic reform priorities that envision Pakistan's growth, resilience, and sustainability agendas advancing concomitantly.

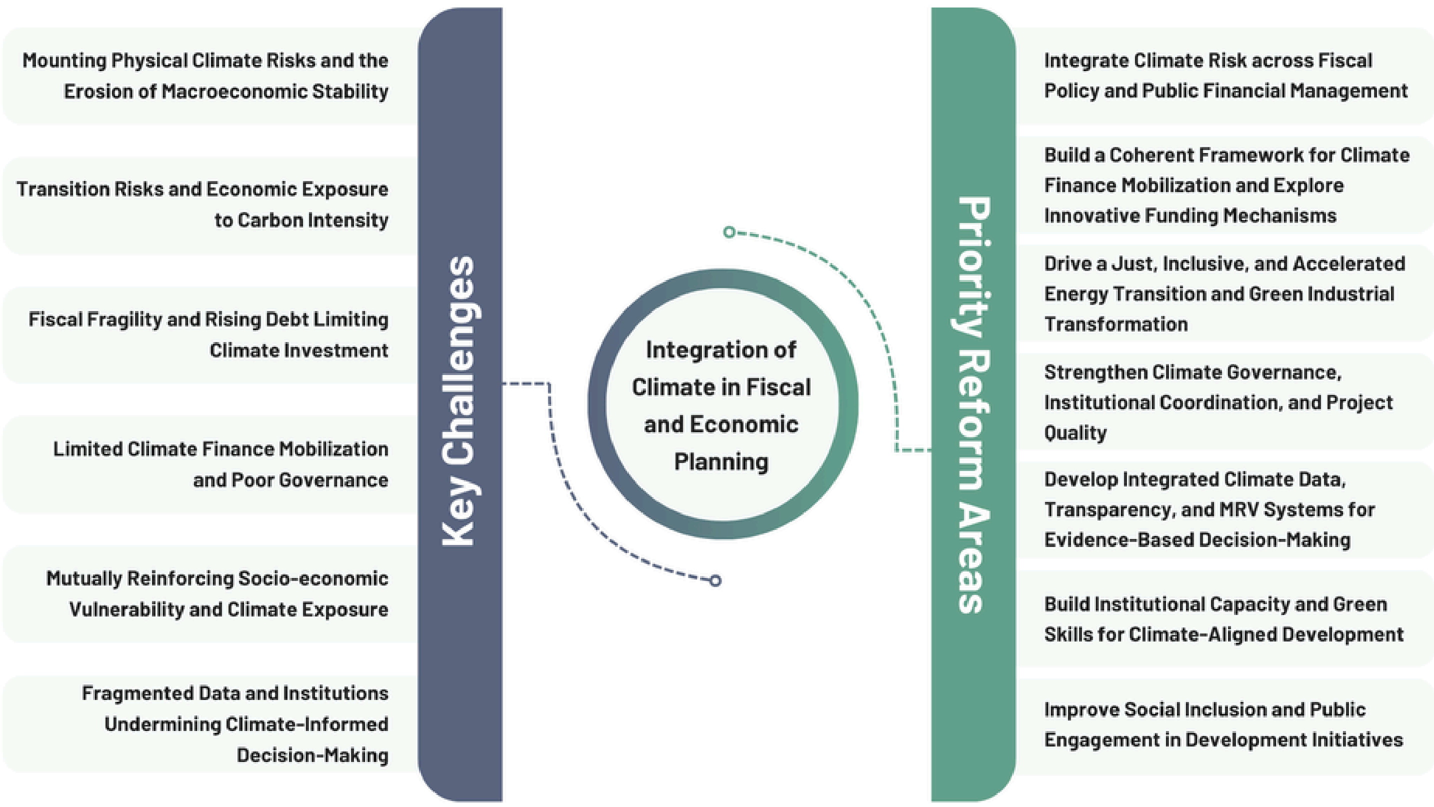

Figure 1: Summary of Pakistan's Key Climate and Development Challenges & Proposed Priority Reform Areas to Integrate Climate in Fiscal and Economic Planning

2 THE CLIMATE-FISCAL-DEVELOPMENT NEXUS: PAKISTAN'S INTERLINKED CHALLENGES

2.1. Mounting Physical Climate Risks and the Erosion of Macroeconomic Stability

Pakistan faces an escalating convergence of acute and chronic climate risks that threaten its growth trajectory, fiscal stability, and human development. Over the past two decades, floods, droughts, glacial melts, and heatwaves have intensified in both frequency and severity, with climate change making extreme early-season heat events up to 30 times more likely[1]. What were once occasional disasters, are now structural features of the country's climate system. Monsoon floods, for example, have become almost an annual occurrence, repeatedly disrupting livelihoods and straining public finances.

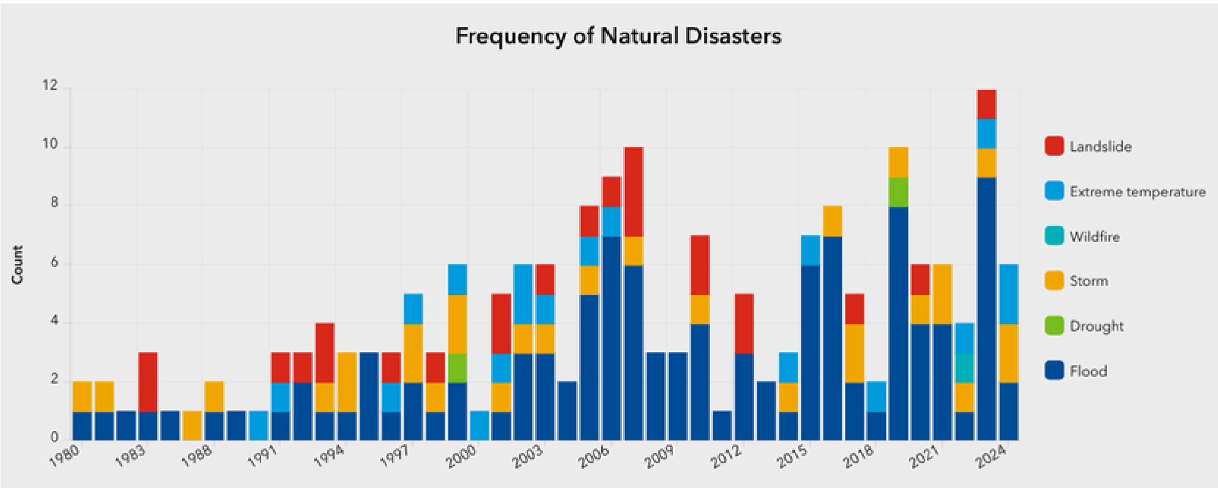

Figure 2: Frequency of Climate-related Disasters in Pakistan (1980-2024). [Source: IMF Macroeconomic Climate Indicators Dashboard][2]

The Global Climate Risk Index (CRI) 2025[1] classifies Pakistan under its "continuous threats" category and ranked it the most climate-affected country in 2022, reflecting the enormous socioeconomic toll of extreme weather events. The 2022 floods alone affected 33 million people, caused USD 15 billion in direct damages – equivalent to 4.8% of GDP – and required an additional USD 16 billion in reconstruction financing[3]. The fiscal burden exceeded the government's entire annual development budget, forcing large-scale reallocations and new external borrowing that widened debt vulnerabilities.

1. Germanwatch. (2025). *Climate Risk Index 2025.* Germanwatch e.V. https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf
2. IMF Macroeconomic Climate Indicators Dashboard. Accessed: 24/10/2025. https://climatedata.imf.org/
3. Government of Pakistan. (2022). *Pakistan Floods 2022: Post Disaster Needs Assessment.* Ministry of Planning, Development & Special Initiatives, Government of Pakistan. https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf

These shocks have cascading macroeconomic consequences. The agriculture sector, which contributes 23.5% to GDP[4] and employs a large share of Pakistan's rural population, is acutely sensitive to temperature and water fluctuations. Recurrent floods and heat stress have led to repeated crop failures, depressing export earnings and raising food import bills. During the 2025 flood season, approximately 4 million tons of food crops were damaged, with inflation nearly doubling between June and September, directly eroding household purchasing power and intensifying food insecurity[5]. The resulting inflationary pressures typically exacerbate poverty, weaken consumption, and deepen fiscal imbalances.

Beyond episodic disasters, chronic physical risks – rising temperatures, desertification, and glacial retreat – are steadily eroding long-term productivity. Pakistan's average temperature has already risen by more than 1°C since 1980[2], and projections indicate a further increase of 1.3-1.5°C by 2050. Water availability per capita is expected to drop below 800 cubic meters beyond 2025[6], pushing the country into "absolute water scarcity". Meanwhile, accelerated glacial melting in the Himalaya-Karakoram region frequently threatens hydropower generation and downstream irrigation, heightening fiscal exposure to imported energy and food price shocks.

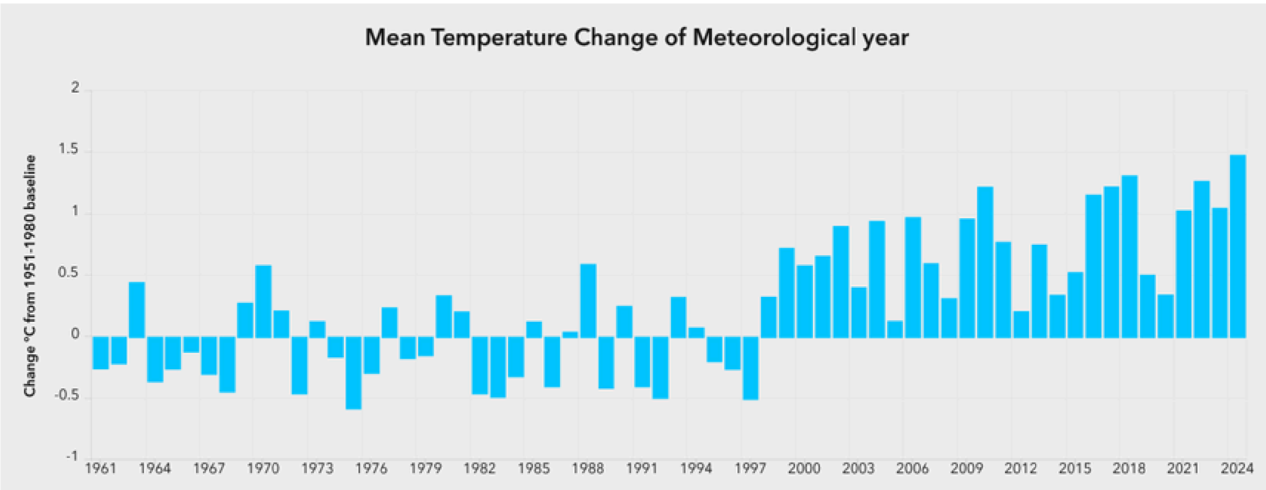

Figure 3: Variation in Average Annual Surface Temperature in Pakistan (1961-2024).
[Source: IMF Macroeconomic Climate Indicators Dashboard][2]

At the same time, the fiscal dimension of these risks is profound. Pakistan loses an estimated USD 2 billion annually to climate-induced disasters. Yet, the majority of disaster response spending remains uninsured and unbudgeted, financed through ad hoc reallocations from development programs. This creates a persistent cycle of deferred infrastructure projects, stalled growth, and mounting debt. The absence of climate-contingent fiscal buffers, sovereign

4. Government of Pakistan. (2025). *Pakistan Economic Survey 2024-25.* Economic Adviser's Wing, Finance Division, Government of Pakistan. https://www.finance.gov.pk/survey/chapter_25/Highlights.pdf
5. Government of Pakistan. (2025). *A Preliminary Assessment of Flood Damages in the Economy of Pakistan.* Plan Coordination Centre, Ministry of Planning, Development & Special Initiatives, Government of Pakistan. https://pc.gov.pk/uploads/pub/a-preliminary-assessment-flood-damages-economy-of-pakistan.pdf
6. Ishaque, W., Mukhtar, M., & Tanvir, R. (2023). *Pakistan's Water Resource Management: Ensuring Water Security for Sustainable Development.* Front. Environ. Sci. 11:1096747. doi: 10.3389/fenvs.2023.1096747

catastrophe insurance, or risk-transfer instruments – such as catastrophe bonds – leaves the country fiscally exposed and reactive rather than prepared.

Unless climate risks are systematically embedded into fiscal and macroeconomic planning, Pakistan will continue to experience the same damaging loop: each major disaster triggers emergency borrowing, raising debt service costs and compressing fiscal space for adaptation. Physical climate risks have therefore evolved beyond environmental hazards – they now represent systemic fiscal and macroeconomic threats, undermining investor confidence and the sustainability of Pakistan's development trajectory.

2.2. Transition Risks and Economic Exposure to Carbon Intensity

Pakistan stands at the intersection of a global energy transition and a domestic fiscal crisis. As the world accelerates towards decarbonization, economies dependent on fossil fuels and carbon-intensive industries face growing transition risks: the economic, financial, and policy costs of adapting to a low-carbon future[7]. For Pakistan, these risks are magnified by its heavy dependence on fossil fuels, persistent energy inefficiencies, and limited fiscal space to finance a sustainable transition. The challenge is not merely environmental; it lies at the heart of the country's macroeconomic stability, trade competitiveness, and fiscal sustainability.

Globally, major economies are embedding climate considerations into trade and finance, transforming competitiveness standards. For example, the European Union's Carbon Border Adjustment Mechanism (CBAM), set to take full effect in 2026, will levy charges of up to €230 per ton of CO_2 equivalent on imports from sectors such as cement, fertilizers, and steel[8]. These sectors are critical drivers of Pakistan's export base; without verifiable low-carbon manufacturing standards and traceable emissions data, Pakistani exporters risk losing market access to Europe and other carbon-regulated markets. Similar green trade measures are emerging in the UK, Canada, and East Asia, threatening to erode Pakistan's export competitiveness and foreign exchange earnings.

The country's energy sector – the backbone of its economy – is both a source of and a potential solution to these risks. Around 80% of Pakistan's commercial energy supply still comes from fossil fuels, nearly half of which is imported[9]. In FY2023–24, Pakistan spent approximately USD 15.5 billion on energy imports, consuming almost 50% of total export earnings[9]. This deep dependence exposes the economy to external shocks, such as global oil price volatility, exchange rate depreciation, and supply disruptions.

7. D'Orazio, P. (2024). *Addressing climate risks through fiscal policy in emerging and developing economies: What do we know and what lies ahead?* Energy Research & Social Science, Volume 119 (2025) 103852, ISSN 2214-6296, https://doi.org/10.1016/j.erss.2024.103852.
8. European Commission. (2025, August). *Carbon Border Adjustment Mechanism.* Taxation and Customs Union, European Commission. https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en
9. Government of Pakistan. (2025). *Energy Yearbook 2023-24.* Hydrocarbon Development Institute of Pakistan, Ministry of Energy (Petroleum Division), Government of Pakistan.

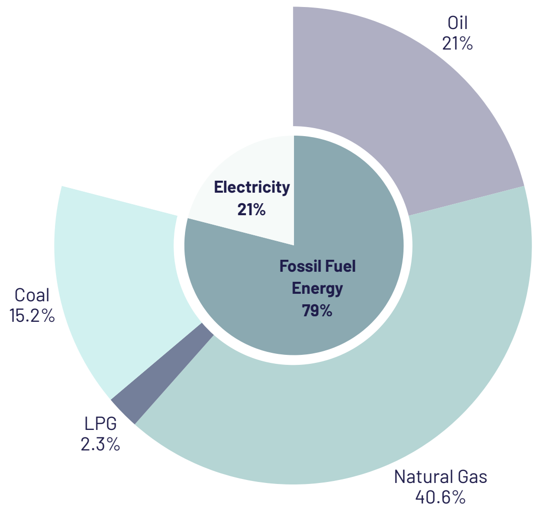

Figure 4: Fuel-wise Division of Pakistan's Commercial Energy Supply (FY2023-24). [Source: Energy Yearbook 2023-24][9]

This fossil fuel dependency has also created a structurally high-cost and high-carbon energy system. Reliance on thermal generation has resulted in electricity tariffs averaging PKR 30-35 per kWh and a ballooning circular debt exceeding PKR 2.4 trillion[10]. Power subsidies – often untargeted and regressive – absorb nearly 1% of GDP annually, diverting scarce fiscal resources away from health, education, and climate adaptation. Transmission and distribution losses of around 15% (FY2024-25) further exacerbate the financial stress on public utilities and the federal budget[11].

Moreover, in the context of a rapidly decarbonizing global economy, these structural weaknesses have significant fiscal and financial implications. As international lenders – including the World Bank, Asian Development Bank (ADB), and major private financiers – phase out coal investments, Pakistan's ongoing and planned coal and gas projects face the risk of becoming stranded assets. Continued investments in these could impose heavy balance sheet losses on both state-owned enterprises and private investors. The fiscal cost of inaction is already visible: every delay in energy diversification locks Pakistan deeper into a high-cost, low-competitiveness equilibrium.

Furthermore, transition risks are not confined to the energy sector – they permeate the fiscal system as well. Revenues from fossil-fuel-related taxes, royalties, and dividends remain an important component of public finances. As global demand for carbon-intensive products declines, these fiscal inflows will contract, even as the costs of adaptation and clean energy investment rise. According to World Bank's Country Climate and Development Report (CCDR), Pakistan will require USD 348 billion between 2023 and 2030 to transition toward renewable en-

10. Ministry of Energy - Power Division. (2025). *Circular Debt Report - March 2025*. https://power.gov.pk/SiteImage/Reports/CD%20Report%20March%202025.pdf
11. National Electric Power Regulatory Authority (NEPRA). (2025). *Quarterly Performance Evaluation Report: July-December 2024 - Distribution Companies*. https://nepra.org.pk/M&E/PER/Distribution/Performance%20Evaluation%20Report%20-%20Distribution%20Companies%20Jul-Dec%202024.pdf

ergy, modernize its grid, and adapt industries to low-carbon standards[12]. Yet, with debt servicing consuming nearly 60% of government revenues, fiscal capacity to fund this transition remains severely constrained.

The renewable energy opportunity, however, is vast. Solar and wind resources alone could generate over 100 GW[13,14] – far exceeding current national demand. The government has set an ambitious target to achieve 30% renewable integration by 2035 through frameworks like the Integrated Generation and Capacity Expansion Plan (IGCEP) 2024-34 and Pakistan's NDC 3.0. Yet, progress has been slow; renewables account for only 12.5% of total power generation[4]. Regulatory uncertainty, inconsistent policies, and limited access to green finance continue to deter investment. For instance, the 10% import tax on solar panels, introduced in the FY2025-26 budget, is aimed at promoting domestic production but could potentially jeopardize solar uptake instead by reducing access and affordability.

The fiscal and economic implications of delaying this transition are profound. Continued reliance on fossil fuels perpetuates volatile import bills, balance-of-payment pressures, and subsidy liabilities. Conversely, accelerating renewable deployment and energy efficiency will require substantial upfront capital investment in grid infrastructure, storage, and regulatory reforms – expenditures that Pakistan must finance despite fiscal austerity. The trade-off here is clear: either absorb the transitional costs now or face far higher economic losses and global marginalization later.

At the same time, institutionally, Pakistan's progress towards low-carbon fiscal integration remains limited. The country's recently launched Green Taxonomy provides a classification framework for green investments, but its adoption across the financial and corporate sectors is still nascent. Similarly, the issuance of Green Bonds (e.g. the USD 500 million bond in 2021) and a Green Sukuk (worth PKR 20 billion issued in 2025) represent important milestones but remain modest compared to actual financing needs. Carbon markets, green credit schemes, and sustainability-linked bonds are yet to be fully operationalized, leaving Pakistan unable to leverage private capital effectively. Moreover, political misalignment and institutional inertia have slowed subsidy reforms – with continued allocation of over PKR 1 trillion annually to energy subsidies[15] – and the scaling of climate finance instruments.

Ultimately, Pakistan's energy dependence and transition risks are fiscal and macroeconomic challenges as much as they are environmental ones. The country's resilience in a low-carbon world will depend on its ability to integrate climate and energy priorities into core fiscal and economic planning – through carbon pricing mechanisms, gradual subsidy reform, public–private

12. World Bank Group. (2022). *Pakistan Country Climate and Development Report.* https://documents1.worldbank.org/curated/en/099950111072234047/pdf/P176718-4998b85b-1913-4b03-ac4f-233dc0b995ba.pdf
13. International Trade Administration. (2024). *Pakistan Country Commercial Guide.* Accessed: 07/10/2025. https://www.trade.gov/country-commercial-guides/pakistan-renewable-energy
14. Abbas, Y., & Aslam, R.A. (2023). *Potential of Untapped Renewable Energy Resources in Pakistan: Current Status and Future Prospects.* Eng. Proc. 2023, 56(1), 108. https://doi.org/10.3390/ASEC2023-15274
15. Government of Pakistan. (2025). *Federal Budget 2025-26.* https://www.finance.gov.pk/budget/budget_2025_26/budget_in_brief_10062025.pdf

investment in renewables, and transparent climate finance governance. Transitioning to low-carbon growth is therefore not an option but a fiscal stabilization imperative – a prerequisite for sustained competitiveness, energy security, and long-term economic resilience.

2.3. Fiscal Fragility and Rising Debt Limiting Climate Investment

Pakistan's fiscal landscape is increasingly characterized by tight liquidity, low revenue mobilization, and rising debt obligations – conditions that severely constrain its capacity to finance climate resilience and green growth. Public debt now exceeds 70% of GDP[16], while debt servicing consumes more than half of federal revenues. At the same time, the tax-to-GDP ratio remains stagnant at 10–11%, among the lowest in South Asia[17]. This combination of high debt and low revenue leaves minimal fiscal room for development spending, let alone for sustained investment in climate adaptation and mitigation.

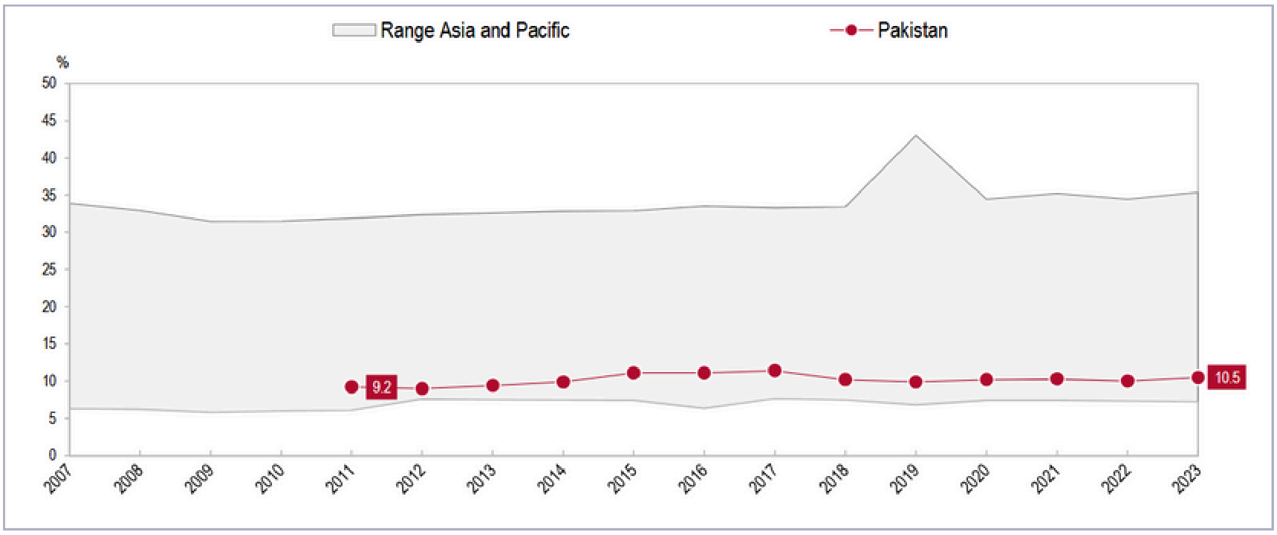

Figure 5: Pakistan's Tax-to-GDP Ratio, in comparison with the Regional Range (2011-2023). [Source: OECD, 2025][17]

Moreover, these structural imbalances have created a fiscal environment that is reactive rather than preventive. Climate-induced disasters exacerbate these pressures by triggering unplanned expenditures, widening deficits, and increasing dependence on external borrowing. The 2022 floods, for instance, expanded the fiscal deficit by nearly 2% of GDP and depleted foreign reserves through emergency imports and reconstruction needs. Similar events – heatwaves, droughts, and glacial outbursts – routinely impose large contingent liabilities that are rarely budgeted for. The Medium-Term Fiscal Framework (MTFF) has yet to systematically incorporate these climate-related fiscal risks, leaving the government to fund recovery largely through supplementary budgets and emergency reallocation of development spending.

16. State Bank of Pakistan. (2025). *Pakistan's Debt and Liabilities - Summary*. https://www.sbp.org.pk/ecodata/Summary.pdf
17. Organization for Economic Cooperation and Development. (2025). *Revenue Statistics in Asia and the Pacific: Pakistan*. https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/revenue-statistics-in-asia-and-the-pacific-2025-country-notes_0a069779/pakistan_f7330e74/e3565533-en.pdf

This absence of climate-contingent fiscal buffers also exposes Pakistan to a recurring cycle of debt and disaster. Estimates suggest that Pakistan's annual climate-induced losses already exceed USD 2 billion, while the cost of climate inaction could rise to USD 250 billion by 2030 and reach USD 1.2 trillion by 2050[18]. These figures starkly illustrate that the fiscal burden of inaction far exceeds the cost of building resilience today.

Pakistan's limited access to affordable international capital further compounds the challenge. High sovereign risk ratings and debt distress limit the country's ability to borrow on concessional terms, even for climate-related projects. While international partners such as IMF's Resilience and Sustainability Facility (RSF), the World Bank, and ADB have begun offering targeted climate finance, their impact is yet to materialize. Moreover, Pakistan's reliance on short-term borrowing and project-based grants prevents it from building predictable fiscal frameworks for climate investment.

In contrast, many emerging economies have already begun integrating climate-responsive fiscal instruments into their budgeting systems, while Pakistan is only beginning to pilot these tools. Countries such as Indonesia, Kenya, and the Philippines have established green budgeting frameworks, resilience bonds, and carbon pricing mechanisms to mobilize domestic resources for adaptation and mitigation. In Pakistan, the absence of a coherent fiscal architecture to integrate such mechanisms prevents the systematic mobilization of climate finance while also deterring private investment.

Furthermore, Pakistan's debt structure also requires a climate lens. The current fiscal framework does not integrate climate risks into debt sustainability analysis, fiscal rules, or borrowing strategies. Additionally, the limited mobilization of domestic revenue for climate action further weakens fiscal resilience. Despite introducing a Climate Support Levy and an Electric Vehicle Adoption Levy in the FY2025-26 budget, Pakistan still lacks a comprehensive carbon pricing framework. Fuel subsidies – estimated at over PKR 1 trillion annually – continue to undercut fiscal discipline and disincentivize renewable energy uptake. Gradual, targeted reform of these subsidies is essential to alleviate the country's overbearing debt burden.

Moreover, climate-related spending is fragmented across ministries and provinces, often without alignment with national fiscal or adaptation priorities, resulting in duplication, inefficiency, and weak monitoring. Public investment management systems have yet to incorporate climate risk screening systematically, despite recent progress under the Public Sector Development Programme (PSDP).

Therefore, Pakistan's fiscal vulnerability is not merely a matter of constrained resources – it reflects a systemic governance gap as well. Without integrating climate risks into fiscal rules, debt management strategies, and budget frameworks, the country will remain trapped in a cycle

18. Akhtar, S., & Khawaja, M. (2025). *UN Common Country Analysis (CCA) 2024 Update: Climate Financing and Policy Recommendations - Policy Brief*. United Nations Pakistan. https://pakistan.un.org/sites/default/files/2025-03/CCA%202024%20update_UN%20Pakistan_climate%20financing_CLEAN_ed_26feb25_.pdf

of reactive expenditure, rising debt, and limited resilience. Transitioning towards risk-informed fiscal governance is essential to break this cycle. This means establishing contingency financing instruments, aligning debt strategies with resilience goals, and ensuring that every rupee spent on development today contributes to reducing vulnerability in the long run as well.

2.4. Limited Climate Finance Mobilization and Poor Governance

Pakistan's climate finance architecture remains critically underdeveloped relative to the scale of its vulnerability. The country requires an estimated USD 40-50 billion annually until 2030 – around 11% of cumulative GDP – to meet its adaptation and mitigation needs[19]. Yet, it attracts only USD 1.5-2 billion per year from international sources, while domestic climate finance mobilization remains nominal. This vast financing gap undermines both economic resilience and fiscal sustainability.

Several interlinked structural constraints drive this shortfall. Foremost, Pakistan lacks a fully operational national climate finance framework with standardized mechanisms for classifying, tracking, and reporting climate-aligned investments. Although a Green Taxonomy has recently been approved, its adoption across ministries, financial institutions, and provincial governments is yet to pick pace. Without clear definitions and reporting standards, both public and private actors struggle to align projects with international eligibility criteria, weakening access to global funds.

Project readiness and institutional capacity pose further challenges. Fewer than a dozen nationally endorsed projects have successfully accessed the Green Climate Fund (GCF), largely due to cumbersome approval processes, limited technical expertise, and insufficient coordination among key institutions. These overlapping mandates – mainly across the Ministry of Climate Change & Environmental Coordination (MoCC&EC), Ministry of Finance (MoF), and Planning Commission (PC) – create fragmentation, slowing decision-making, and diluting accountability.

The fiscal implications are equally serious. Climate finance is not systematically integrated into Pakistan's national or provincial budgets, leaving allocations ad hoc and reactive – largely directed toward post-disaster reconstruction rather than preventive adaptation. Development budgets are yet to employ consistent climate tagging, making it difficult to evaluate efficiency or outcomes. Furthermore, reliance on unpredictable donor inflows undermines fiscal predictability and long-term investment planning. With limited fiscal space, most climate-related spending continues to depend on external assistance – typically limited to short-term humanitarian or infrastructure support. Moreover, this support often comes in the form of loans that add to the country's debt burden; in cases where it takes the form of grants or other non-debt-based instruments, the volume disbursed tends to be small.

19. Khan, A. (2025, February 9). *Cracking the Code of Climate Finance.* Dawn. https://www.dawn.com/news/1890802/cracking-the-code-of-climate-finance

Private-sector participation in climate finance is equally limited. Domestic financial institutions remain risk-averse, constrained by the absence of credit-enhancement mechanisms, green guarantees, and blended-finance platforms. Instruments such as green bonds, sustainability-linked loans, and debt-for-nature swaps – vital for scaling climate investment without worsening debt burdens – are still in pilot stages. The absence of enabling regulations and incentive structures further limits the flow of capital into green sectors.

Institutional weakness continues to compound financial barriers. Capacity deficits across line ministries and provincial governments restrict the development of bankable, climate-aligned projects. For instance, following the 2022 floods, international donors pledged USD 11 billion at the 2023 Geneva Conference for recovery and reconstruction; however, only USD 2.8 billion was eventually disbursed, primarily because the government lacked the institutional and technical capacity to develop investible projects to unlock the remaining funds[20].

Such shortcomings result in a fragmented and inefficient system marked by slow disbursement and accountability gaps. Without a central coordination mechanism – such as a national climate finance authority or a unified country platform – Pakistan risks remaining a passive recipient of donor support rather than an active mobilizer of global climate finance. The country's inability to attract, manage, and deploy climate finance is not merely a technical lapse – it is a fiscal and developmental constraint. Strengthening institutional capacity, harmonizing data systems, and developing innovative financial instruments will be critical to transforming climate finance from a series of isolated projects into a system-wide enabler of fiscal resilience, green investment, and sustainable growth.

2.5. Mutually Reinforcing Socio-economic Vulnerability and Climate Exposure

Climate vulnerability in Pakistan is inseparable from the country's deep-rooted social and economic inequalities. With nearly 40% of the population living in multidimensional poverty and another 13% highly vulnerable to it[21], millions remain trapped in cycles of deprivation that magnify exposure to climate shocks. The poorest communities, particularly those in rural areas, depend heavily on agriculture and livestock – sectors that collectively contribute nearly one-fifth of the GDP. Erratic rainfall, intensifying heatwaves, and mounting water scarcity leave them particularly exposed; this steadily undermines productivity and incomes, while eroding not only the resilience of households but also the fiscal stability of the country.

20. Pakistan Today. (2025, August 28). *Pakistan misses out on $11 billion in 2022 flood aid due to lack of investable projects.* https://profit.pakistantoday.com.pk/2025/08/28/pakistan-misses-out-on-11-billion-in-2022-flood-aid-due-to-lack-of-investable-projects/
21. United Nations Development Program (UNDP). (2025). *Global Multidimensional Poverty Index 2025.* https://hdr.undp.org/system/files/documents/global-report-document/mpireport2025en.pdf

Between 2009 and 2023, Pakistan endured 107 climate-induced disaster events, displacing over 24.3 million people and destroying millions of acres of cropland[22]. Each flood or drought not only erases household assets and income but also erodes hard-won development gains. For smallholder farmers and informal laborers, the loss of a single harvest can mean a permanent descent into poverty. Food insecurity, rural unemployment, and migration are now recurring outcomes of climate volatility – transforming environmental hazards into persistent social crises.

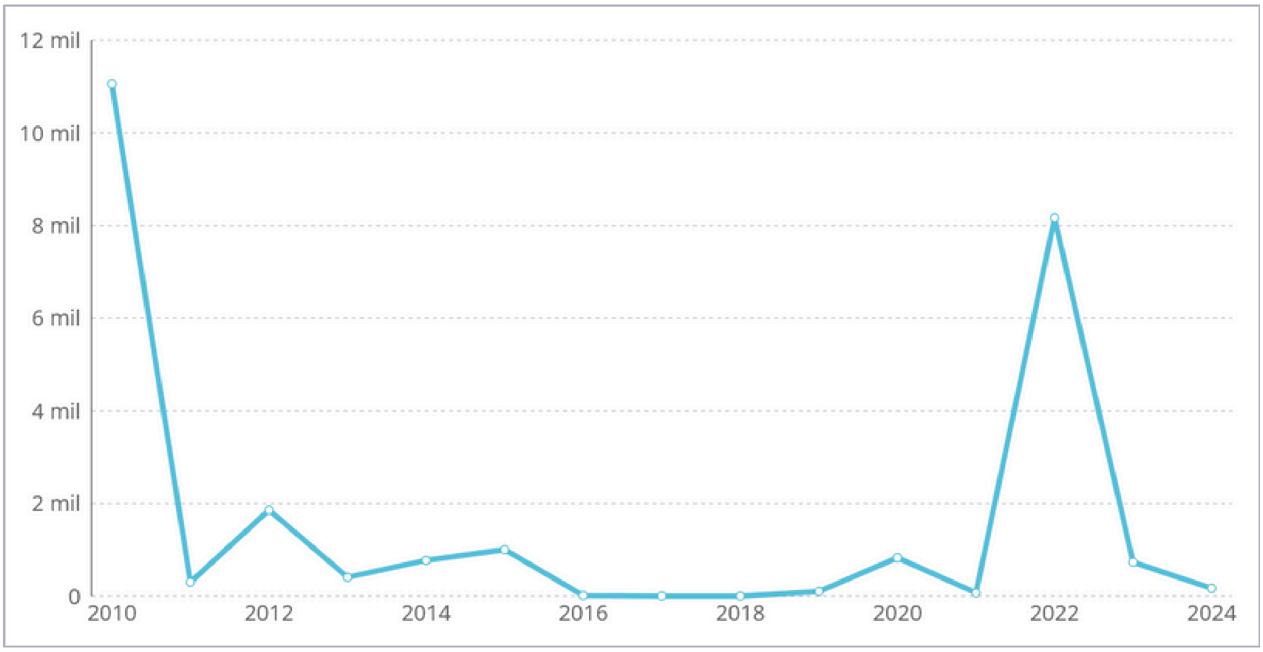

Figure 6: Disaster-induced Displacement in Pakistan (2010-2024).
[Source: Migration Data Portal][23]

Furthermore, the economic ripple effects extend far beyond rural livelihoods. Disasters repeatedly damage transport networks, irrigation systems, and schools – core infrastructure that underpins both productivity and human development. Recovery costs strain already limited fiscal space, forcing the government to divert funds from planned development projects toward emergency relief. While such interventions are vital, they are overwhelmingly reactive, consuming resources that could otherwise finance preventive adaptation and social resilience.

Urban areas face parallel, compounding climate risks; rapid and often unplanned urbanization – projected to push Pakistan's urban population above 50% by 2040[24] – has created new vulnerabilities in flood-prone, heat-stressed, and highly polluted environments. Major cities such as Lahore and Karachi consistently record air quality indices exceeding 200 (denoting "Unhealthy" to "Hazardous" air quality) – among the worst globally – imposing health and productivity costs of several billion dollars annually. Rising urban heat further reduces labor effi-

22. Othering & Belonging Institute at UC Berkeley. (2025). *Climate Crisis, Displacement, and the Right to Stay: Pakistan.* https://belonging.berkeley.edu/climatedisplacement/case-studies/pakistan
23. Migration Data Portal. (2025). *Number of Internal Displacements in 2010-2024 due to Disaster.* https://www.migrationdataportal.org/dashboard/compare-geographic?c=586&i=9694&t=2010_2024
24. Pakistan Bureau of Statistics. (2023). 7th Population and Housing Census - The Digital Census. https://www.pbs.gov.pk/census/

ciency, especially in informal sectors where workers lack access to climate-safe workplaces.

In parallel, climate impacts also exacerbate existing gender and social inequalities. Women, children, and marginalized groups disproportionately bear the brunt of climate disasters, as they are more likely to lose assets, face livelihood insecurity, and experience barriers to recovery. Yet, Pakistan's social protection systems – with public expenditure accounting for only 0.5% of GDP in 2023, channeled primarily through the Benazir Income Support Programme (BISP) and Pakistan Bait-ul-Mal – remain weakly linked to climate resilience[25]. Beneficiary targeting seldom incorporates vulnerability to climate risk or supports adaptive livelihoods and resilience skills.

Ultimately, it is clear that Pakistan's fiscal and social resilience are intertwined. Addressing poverty, inequality, and climate vulnerability simultaneously – through integrated programs that link social protection, green skills, and adaptive infrastructure – is essential for a stable and inclusive low-carbon future.

2.6. Fragmented Data and Institutions Undermining Climate-Informed Decision-Making

Reliable data and strong institutions are the backbone of effective climate-fiscal governance. Yet, Pakistan continues to face critical deficits in both. The country lacks a unified, interoperable system for tracking greenhouse gas (GHG) emissions, climate-related expenditure, and sectoral exposure to physical and transition risks. Data remains scattered across ministries – often outdated, inconsistent, or incompatible with international reporting standards. For instance, Pakistan's last comprehensive GHG inventory covers emissions only up to 2021[26], leaving significant information gaps at a time when near real-time data are essential for climate-responsive decision-making.

These deficiencies have wide-ranging consequences. Incomplete or inaccessible data prevents policymakers from quantifying the fiscal costs of climate inaction, assessing the resilience of public assets, and prioritizing climate investments. For example, the National Disaster Management Authority (NDMA) records disaster impacts but does not systematically integrate this information with fiscal and development databases, obscuring the true public cost of recovery and reconstruction. Similarly, the lack of a consolidated loss and damage database hampers Pakistan's ability to plan adaptation proactively and negotiate climate finance effectively.

The absence of integrated data also weakens early warning systems – one of the most cost-effective tools for saving lives and minimizing economic losses. While Pakistan has made progr-

25. Government of Pakistan. (2025). *FY2023-24 Federal Government Current Expenditure on Health, Education, and Social Protection.* Finance Division, Government of Pakistan. https://www.finance.gov.pk/budget/fed_gov_curr_exp_2023_24.pdf
26. Amjad, M. (2024, July 17). *Pakistan's Greenhouse Gas (GHG) Emission Inventory Process.* Global Climate Change Impact Studies Centre (GCISC), Ministry of Climate Change & Environmental Coordination. https://www.unescap.org/sites/default/d8files/event-documents/Day1_Session4.4_Pakistan.pdf

ess in flood forecasting and glacial monitoring, data fragmentation between the Pakistan Meteorological Department (PMD), NDMA, and Provincial Disaster Management Authorities (PDMAs) prevents timely information sharing. This leads to delayed alerts, inefficient coordination, and higher post-disaster costs. Enhanced data interoperability, supported by geospatial and satellite-based analytics, is crucial to improve risk forecasting, disaster preparedness, and the efficiency of public spending.

Furthermore, institutional fragmentation compounds these challenges. Climate-related responsibilities tend to be divided among multiple entities – MoCC&EC, MoF, PC, NDMA, and provincial departments – with overlapping mandates and weak coordination mechanisms. Provincial governments – pivotal to implementing adaptation and resilience programs – often lack the technical capacity, fiscal autonomy, and digital infrastructure needed to collect and analyze localized climate data.

These institutional and data gaps also limit Pakistan's ability to access international climate finance. Donors and investors increasingly require transparent and verifiable Monitoring, Reporting, and Verification (MRV) systems that demonstrate fiscal accountability and measurable impact. Without credible data and harmonized reporting standards, Pakistan faces difficulties in preparing bankable project proposals, participating in carbon markets, or issuing verified green bonds.

On the fiscal side, Pakistan has made a notable advancement with the introduction of Climate Budget Tagging (CBT) in the FY2025-26 federal budget to track adaptation and mitigation spending. This marks an important step toward aligning fiscal policy with climate objectives; however, the criteria defining what qualifies as "climate-relevant" expenditure remain opaque and inconsistently applied across ministries. Without clear classification standards, the effectiveness of CBT in guiding resource allocation, ensuring transparency, and attracting climate finance will remain limited.

In sum, data fragmentation and institutional silos undermine both climate governance and fiscal integrity. Strengthening data systems, integrating early warning and fiscal platforms, and clarifying expenditure classification under CBT are vital for Pakistan to transition from reactive spending to evidence-based, climate-informed fiscal decision-making.

3 PAKISTAN'S CLIMATE-ALIGNED FISCAL AND ECONOMIC TRANSFORMATION: STRATEGIC PRIORITY REFORM AREAS

3.1. Integrate Climate Risk across Fiscal Policy and Public Financial Management (PFM)

Pakistan's economic and fiscal frameworks must be redesigned; they must evolve from reactive crisis management to forward-looking, climate-informed governance. Integrating climate risk into macro-fiscal modelling, budget formulation, public investment management, and debt-strategies is fundamental to building long-term resilience. Similarly, systematic climate-fiscal integration is essential to ensure that adaptation and mitigation policies directly influence expenditure decisions, fiscal rules, and revenue frameworks. By embedding risk analytics and data-driven cost and opportunity assessments into core public financial management systems, Pakistan can strengthen fiscal transparency, enhance investor confidence, and align with emerging global climate finance and transparency standards.

Key Recommendations:

3.1.1. Establish a dedicated Climate-Fiscal Unit (CFU) within the Ministry of Finance

- A permanent Climate-Fiscal Unit should be created within MoF to lead climate risk integration across macro-fiscal models, the MTFF, debt strategy, and budget cycles. The CFU should house technical experts – economists, risk managers, and PFM experts – empowered to adjust macro-assumptions for climate shocks, and issue mandatory guidance for ministries and provinces on how to reflect climate costs in budget submissions.
- The CFU should also publish an Annual Climate Finance Report – potentially as part of the federal budget – outlining aspects such as total climate-related expenditures and revenues, fiscal exposure to climate risks, and progress on green fiscal reforms. This should also quantify environmental and social returns on major public investments and highlight policy gaps in adaptation and mitigation financing.
- The CFU may also be linked to the IMF's RSF for technical support and conditional financing where appropriate.

3.1.2. Integrate Climate-Adjusted Debt Sustainability and Contingent Liability Analysis

- MoF should amend debt management procedures to include routine climate-adjusted debt sustainability analysis and contingent liability assessment for public investments. This means assessing how climate shocks affect debt servicing, GDP growth, and fiscal balances, while also establishing climate-contingent buffers and embedding explicit climate-risk thresholds in fiscal rules.

3.1.3. Strengthen and fully Operationalize Climate Budget Tagging

- MoF should issue standardized climate budget tagging guidelines – adopting a harmonized classification, ideally linked to Pakistan's Green Taxonomy and systematically integrated into the Budget Call Circular and MTFF – and scale them across federal and provincial ministries, based on international best-practices.
- The current CBT system should be upgraded, setting out clear accuracy and consistency standards, sector-specific tagging guidelines, and periodic public disclosures – laying out the rationale for tags, expected outcomes and lessons learned – to increase transparency and eventually attract climate investors.
- Line ministries should also designate climate focal points to validate tagged projects and avoid double counting.

3.1.4. Create a National Climate Resilience Reserve (CRR) and Risk-Pooling Facility

- To manage fiscal shocks from climate-induced disasters, MoF should design a formal Climate Resilience Reserve (CRR) within the federal budget framework to cover prioritized ex-ante adaptation and early emergency response, financed through a mix of pre-arranged instruments such as contingency funds, green fiscal tools (e.g. revenues from the carbon levy imposed under the IMF's RSF program), natural resource revenues, and climate finance tools (e.g. periodic issuance of green bonds and sukuks).
- The CRR should be complemented with a risk-pooling vehicle (e.g. engagement with the Global Shield against Climate Risks), coordinated by MoCC&EC, MoF, or PC, to streamline disaster spending and reduce ad hoc reallocation of development funds.

3.1.5. Integrate Climate Screening into PSDP Project Appraisals

- The Planning Commission should ensure that all PSDP projects undergo mandatory climate risk screening at the PC-I or PC-II stages and in accordance with the procedures laid out in their Handbook on Climate Risk Screening for Policy Planning; climate-proofing measures and their incremental costs should also be included in project designs and budgets at this stage. Moreover, climate screening results must be documented as part of project approval, with high-risk projects required to include adaptation measures or risk mitigation plans.
- To support enforcement, PC, together with the Pakistan Climate Change Authority (PCCA) once it is operationalized, should develop a digital screening tool and capacity building program for project developers and implementing agencies.
- PC should mandate the inclusion of quantified climate exposure and the fiscal cost of plausible disaster scenarios in the medium-to-long term (10-15 years) in PSDP documents, particularly PC-I and PC-II project forms. Such analyses may further be used to calibrate borrowing strategies, reserve buffers, and the design of contingent financing instruments, e.g. sovereign catastrophe bonds or credit lines, to alleviate post-disaster financing pressures.

3.2. Build a Coherent Framework for Climate Finance Mobilization and Explore Innovative Funding Mechanisms

Addressing Pakistan's widening climate finance gap requires moving beyond fragmented, donor-driven approaches towards a coherent, diversified, and transparent national climate finance framework. Mobilizing adequate resources is contingent upon a diversified portfolio of green financing instruments (e.g. green bonds, sustainability-linked finance, and carbon markets), expanded access to concessional finance, and scaled-up blended-finance models. Operationalizing national tools – including the Pakistan Green Taxonomy and standardized climate finance tracking – will also be vital in generating pipelines of bankable, investment-ready projects that attract private capital as well as international climate funds.

Key Recommendations:

3.2.1. Rapidly Operationalize Pakistan's Green Taxonomy and link it to Financial Regulation

- The recently finalized Pakistan Green Taxonomy should fully come into force as soon as possible, with an implementation roadmap that mandates adoption by the Securities and Exchange Commission of Pakistan (SECP), and public financial institutions for definitions of eligible green assets and disclosure practices.
- Regular public disclosure of green investments should be made obligatory to enhance transparency, support green bond issuance, and help attract international climate finance by aligning with global standards such as the EU taxonomy.
- Future green bond or sukuk issuances and sustainability-linked products should also be required to reference the taxonomy in offering documents and independent verification in order to standardize eligibility, reduce greenwashing, and accelerate private capital flows into high-impact sectors.

3.2.2. Create a National Climate Finance Facility (NCFF) to Blend Concessional Capital with Private Investment

- A National Climate Finance Facility (NCFF) should be established – as a public-private blended finance vehicle – to co-finance bankable adaptation and mitigation projects using concessional donor capital, guarantee instruments, and first-loss facilities. It should pool and manage domestic and international climate funds, serving as a single window for project preparation, blended finance structuring, and fund disbursement, ensuring coherence and avoiding duplication. This could take one of many forms, including a country platform or simple operationalization of the Pakistan Climate Change Fund with an upgraded design.
- The NCFF's role should extend to de-risking projects, catalyzing commercial bank participation, and underwriting credit enhancement for local green bond and sukuk issuances in line with national priorities (e.g. for projects involving decarbonization, distributed renewables, water infrastructure, nature-based solutions, etc.).

3.2.3. Expand and Regulate the Use of Innovative Green Financing Instruments

- Pakistan should diversify its climate-finance toolkit by scaling a wide range of innovative green financing instruments – including green and sustainability-linked bonds, transition bonds, guarantees, risk-sharing facilities, and Shariah-compliant products – that attract capital while preserving fiscal space.
- MoF and SECP should develop standard templates, regulatory guidance, and verification frameworks for various green financing instruments in line with Pakistan's Green Taxonomy and global standards to ensure credibility.
- In parallel, Islamic green finance, such as Green Sukuks and sustainability-linked Shariah-compliant loans, should be integrated as an inclusive financing channel with domestic and international demand, enabling a wider investor base, lower cost of capital, and accelerated funding for adaptation and mitigation projects. Pakistan's recently issued first green sukuk could be used as a template to raise recurring Shariah-compliant green finance.

3.2.4. Institutionalize Debt Restructuring Mechanisms

- The government should negotiate and pilot debt-for-nature swaps and other debt transition instruments with bilateral creditors and multilateral partners to convert portions of external debt into long-term financing for adaptation and mitigation projects. This is crucial for reducing sovereign debt stress while financing nature-positive public goods.
- MoF, in partnership with the State Bank of Pakistan (SBP), should simultaneously create enabling regulations for these instruments, ensuring transparent fiduciary arrangements, measurable conversion outcomes, and co-benefits for vulnerable communities. This should also be supported by capacity building for banks and public institutions to assess, structure, and monitor green investments.

3.2.5. Leverage IMF's RSF and MDB Concessional Windows to Catalyze Private Capital

- The government should strategically leverage the policy reforms agreed under IMF's Resilience and Sustainability Facility as well as the Extended Fund Facility (EFF) to unlock larger flows of concessional and private finance. By translating these commitments into clear, bankable pipelines and risk reduction measures, Pakistan can reduce perceived sovereign risk, secure guarantee instruments, and crowd in private lenders and institutional investors for mitigation, adaptation, and resilience projects.
- MoF should develop a co-financing framework that links RSF reform milestones – such as improved climate data systems, disaster-risk planning, and green PFM reforms – to blended finance opportunities with MDBs and private investors, turning them into a credibility signal that enhances investor confidence and accelerates capital mobilization.

3.3. Drive a Just, Inclusive, and Accelerated Energy Transition and Green Industrial Transformation

Pakistan's economic and fiscal vulnerability, energy insecurity, and declining trade competitiveness are closely tied to its reliance on fossil fuels and carbon-intensive production systems. Therefore, accelerating the shift to a low-carbon energy mix and greener industrial base should not only be an environmental priority but also a strategic economic imperative. However, a predictable regulatory environment, coherent policy signals, and targeted fiscal incentives will be essential to guide public and private sector investment towards clean energy, efficient manufacturing, and green technologies. Embedding principles of just transition are equally critical to ensure that workers, surrounding communities, and vulnerable groups benefit from new economic opportunities while contributing to a more resilient and competitive growth model.

Key Recommendations:

3.3.1. Integrate Transition Risks into Fiscal Planning and Establish Sectoral Competitiveness Strategies

- Pakistan should embed transition-related fiscal risks – e.g. exposure to CBAM, global fuel price volatility, and declining fossil fuel revenues – into macroeconomic forecasting and sectoral strategies. MoF, together with the Ministries of Commerce (MoCom) and Industries & Production (MoI&P), should develop transition competitiveness assessments for key industrial and hard-to-abate sectors, also quantifying the fiscal, export, and employment implications of inaction. These assessments should also guide targeted tax incentives, concessional financing, and technology support for low-carbon upgradation, ensuring climate transition policies directly inform industrial and fiscal planning rather than operate in parallel.

3.3.2. Introduce Targeted Fiscal Incentives for Green Industrialization linked to Verifiable Climate Outcomes

- MoF, MoI&P, and MoCom should jointly design performance-based fiscal incentives – funded through concessional finance, private capital, and domestic fiscal instruments – to support industrial decarbonization. These incentives should only be granted when firms demonstrate measurable improvements in performance, verified through MRV systems, to encourage them to upgrade technologies in ways that strengthen export competitiveness, avoid CBAM penalties, and align industrial growth with national climate commitments.

3.3.3. Use Public Procurement to Accelerate Green Manufacturing and Local Value Chains

- Public procurement rules and regulations should be updated to create predictable demand for low-carbon products and technologies, such as energy efficient equipment, green building materials, and local renewable energy technology manufacturing.

- Climate-aligned criteria should be embedded in procurement rules and public investment frameworks, requiring minimum performance criteria and compliance with the Pakistan Green Taxonomy. MoF and MoI&P should create a "Green Preferred Supplier" designation offering preferential access to public tenders for firms meeting verified low-carbon standards.
- It should also be made mandatory for relevant projects to adopt green building codes, renewable energy mandates, and streamlined permitting for green manufacturing, especially in Special Economic Zones (SEZs) to strengthen domestic value chains and reduce fiscal exposure to imported technologies.

3.3.4. Prioritize Public Investments that Reduce Fiscal Exposure to Imported Fuels

- To ease balance-of-payment pressures and improve long-term fiscal resilience, Pakistan should prioritize PSDP investments that lower dependence on imported fossil fuels. This includes distributed renewables, local energy values chains, grid efficiency upgrades, and energy conservation programs.
- The Planning Commission should adjust PC-I and PC-II templates to include fuel import sensitivity, projected carbon costs, and stranded asset risks. Projects with high exposure should be redesigned or deprioritized unless paired with risk mitigation measures. This ensures that public investment decisions are future-proof, affordable, and aligned with Pakistan's transition to a low-cost, low-carbon economic structure.

3.3.5. Implement a Phased Fossil Fuel Subsidy Reforms Program linked to Social Protection

- The Ministry of Energy (MoE) should adopt a phased reform plan to gradually reduce untargeted fossil fuel subsidies while protecting vulnerable groups through cash transfers and energy vouchers under BISP.
- Fiscal savings from measures such as subsidy phaseout, carbon taxation, and petroleum levies under IMF's RSF should be transparently redirected towards adaptation and mitigation projects, particularly renewable energy expansion and grid upgrades, as well as social protection programs. These should be accompanied by public communication campaigns to counter misinformation and build citizen support for fiscal reallocation towards long-term sustainability.

3.3.6. Pilot Carbon Pricing Instruments with Transitional Safeguards

- Design and pilot carbon pricing instruments, e.g. a sectoral carbon tax or an ETS pilot, starting with easily monitored sectors – such as power generation and large industries – using revenues to finance transition support and social protection for affected groups. Implementation should be phased over time, with clear safeguards to preserve competitiveness and link pilots with monitoring and verification systems to inform wider roll-out.

3.3.7. Establish a Just Transition Support Framework for Exposed Regions and Workers

- The federal government, with support from provinces, should develop a just transition framework that maps vulnerable workers, Small and Medium-sized Enterprises (SMEs), and regions dependent on fossil fuel value chains or high-emitting industries. This framework should guide targeted fiscal measures – such as retraining programs, tax relief for affected SMEs, and local development grants – to smooth out the socio-economic impacts of transition.

3.4. Strengthen Climate Governance, Institutional Coordination, and Project Quality

Fragmented and overlapping mandates, limited technical capacity, and weak coordination across federal and provincial institutions continue to undermine effective climate action. Pakistan needs a streamlined and empowered climate governance architecture that clearly defines institutional roles, strengthens inter-ministerial linkages – particularly among climate, finance, planning, and sectoral ministries – and embeds climate priorities within national and subnational policy processes. Enhancing vertical coordination with provinces and local governments is equally critical to align planning, budgeting, and implementation. A cohesive governance framework will be necessary to reduce duplication, ensure accountability, and enable timely and coordinated climate-related decision-making across the public sector.

Key Recommendations:

3.4.1. Strengthen the Pakistan Climate Change Council (PCCC) to Steer Climate-Fiscal Integration

- The Pakistan Climate Change Council, established under the Pakistan Climate Change Act, should be strengthened and assigned a clearer mandate to oversee climate-fiscal integrations and cross-government alignment. Its function should be expanded to include reviewing climate-related budget reforms, monitoring RSF commitments, ensuring adoption of the Green Taxonomy across sectors, and convening finance, planning, and provincial authorities for structured periodic progress reviews.
- The PCCC should also issue an annual performance report to enhance accountability and ensure coherence between macro-fiscal planning, PSDP processes, and climate finance mobilization efforts.

3.4.2. Redesign the National Finance Commission (NFC) Awards Framework to Incorporate Climate-Adjusted Transfers and Performance Benchmarks

- The NFC review and reform process should be used to formally allocate responsibilities and fiscal transfers linked to climate functions (e.g. adaptation grants, resilience investments, disaster response funds, etc.) to foster vertical accountability while improving subnational capacity.

- MoF should establish a fiscal transfer window for climate-responsive expenditures that requires provinces to meet reporting and climate-proofing standards, rewarding them for adopting green fiscal policies and transparency protocols.

3.4.3. Mandate Integrated Climate Governance across Project Approvals and Reporting Lines

- Pakistan should integrate a clear, step-by-step climate alignment review into all government decision-making processes that influence fiscal, economic, and development outcomes. This would encompass requiring federal ministries and regulators to include climate risk assessments, Green Taxonomy compliance checks, transition risk implications for fiscal stability, and required mitigation measures in all major policy proposals and investment approvals.
- Regulators, such as SBP and SECP, should embed similar requirements in tariff determinations, licensing, and financial disclosures, to ensure climate considerations become a routine part of national economic governance rather than standalone add-ons.

3.4.4. Create a Pooled Project Preparation and Risk Mitigation Facility for Bankable Climate Projects

- Pakistan should establish a national pooled project preparation and risk mitigation facility to accelerate implementation and provide support for early-stage project development, feasibility studies, climate-proofing analyses, and incorporating risk mitigation instruments.
- The facility should prioritize projects aligned with the Green Taxonomy and be jointly governed by MoF, MoCC&EC, and PC. MDBs should be invited to facilitate technical capacity building and co-finance transaction advisory and guarantees to improve project quality, reduce implementation delays, and enhance investor confidence.

3.5. Develop Integrated Climate Data, Transparency, and MRV Systems for Evidence-Based Decision-Making

Robust climate data and transparent monitoring systems are foundational to effective climate-fiscal planning and improved access to global finance. Pakistan must strengthen its data ecosystem by developing integrated, interoperable MRV frameworks that capture emissions, climate risks, and climate-related public expenditures. Enhanced digital platforms and open-data systems can link climate analytics with fiscal planning, disaster response, and performance tracking, enabling timely decision-making and more precise resource allocation. Investments in data quality, standardization, and transparency will also support stronger climate budgeting, improve investor confidence, and facilitate meeting international reporting requirements.

Key Recommendations:

3.5.1. Build a National Climate MRV Platform with Clear Institutional Roles and Interoperability Standards

- Pakistan should develop and operationalize an interoperable MRV platform that integrates holistic datasets pertinent to fiscal, emissions, disaster-loss, and project-level climate data to resolve fragmentation issues, improve transparency, and strengthen Pakistan's ability to access climate finance by demonstrating credible and verifiable climate-related spending. Various sectoral ministries and public departments should come together to achieve this, e.g. through a system where MoCC&EC leads standard-setting and governance, MoF integrates budget-tagged expenditures, PC connects PSDP reporting, NDMA and PDMAs supply hazard and loss data, while SBP and SECP ensure financial sector reporting.
- The platform should also be used to produce an annual Climate Finance Scorecard, tracking progress against various frameworks such as the MTFF and RSF indicators.

3.5.2. Institutionalize Climate and Transition Risk Scenario Analysis across Macroeconomic and Regulatory Institutions

- MoF and PC should jointly develop Pakistan-specific climate scenarios to capture fiscal, financial, and sectoral impacts under high-risk futures. These scenarios should inform macro-fiscal updates, debt sustainability analysis, monetary policy considerations, and PSDP prioritization; they should also be updated routinely in light of emerging threats and changing socio-economic and geopolitical landscapes.
- SBP should incorporate climate scenarios into bank stress-testing, while provinces should use them to guide medium-term planning, to address the challenges associated with incomplete analysis of macroeconomic climate impacts.

3.5.3. Modernize Subnational Climate Data Systems and Adopt a Federal-Provincial Data Sharing Compact

- Provincial governments should invest in rapidly modernizing their respective data systems, prioritizing digital asset registries, geospatial risk layers, and integrated early-warning systems to address concerns related to limited subnational data.
- A federal-provincial data sharing compact should define interoperability standards, reporting timelines, and verification protocols to overcome issues of weak vertical integration. Provinces meeting data-quality benchmarks should become eligible for climate-adjusted transfers under the NFC framework.

3.5.4. Mandate Third-Party Verification and Audit for Climate Claims, Budget Tags, and Green Financing Instruments

- SECP and SBP should require independent verification of climate-related disclosures, ESG reports, green debt instruments, and climate-linked financial products.

- MoF and PC should introduce third-party audits of major climate-budget-tagged lines to reduce misclassification and enhance credibility.
- A national roster of accredited verifiers – comprising local rather than international experts – should be prepared and made available to reduce audit and verification costs and avoid processing delays.

3.5.5. Establish Public-Private Climate Data Partnerships

- Pakistan should establish public-private partnerships with domestic tech firms, universities, and international data providers to build advanced climate analytics and data hubs, e.g. AI-based risk modelling, satellite monitoring, hydrological simulations, and real-time climate dashboards, to reduce national-level capacity constraints, introduce modern analytical methods, and support evidence-based fiscal decisions.
- Scalable, open-source solutions should be prioritized, while also facilitating capacity sharing with provinces. These partnerships should be managed by strict data governance, privacy standards, and public interest clauses to ensure accessibility, continuity, and integrity of climate datasets.

3.6. Build Institutional Capacity and Green Skills for Climate-Aligned Development

Pakistan's transition to a climate-resilient, low-carbon development model also requires major investment in human capital – both within government institutions and across the broader labour market. Strengthening climate-fiscal skills within public institutions and simultaneously expanding green skills and retraining pathways for workers will be essential to ensure that climate integration translates into credible governance, productive jobs, and an inclusive economic transition.

Key Recommendations:

3.6.1. Strengthen Institutional Competence for Climate-Responsive Economic Planning

- Pakistan should create a National Capacity Accelerator, hosted by the Planning Commission, to build public sector skills – in areas like green PFM, climate risk management, project preparation, MRV, and blended finance structuring – and address the chronic institutional capacity gaps that exist in the country.
- The government should partner with bodies - such as the World Bank, IMF, UN agencies, etc. - and leading universities to deliver certifications for federal and provincial finance departments, planning units, and regulators to build their capacity for effective integration of climate in economic and fiscal planning.

3.6.2. Launch a National Green Skills and Employment Initiative

- The Ministry of Planning, Development, and Special Initiatives (MoPD&SI), in close collaboration with federal and provincial Technical and Vocational Education Training (TVET) programs – particularly the National Vocational and Technical Training Commission (NAVTTC) – should establish a national green skills initiative offering certified trainings in sectors that lie critically at the intersection of climate and economic development, e.g. renewable energy installation, EV maintenance, climate resilient agriculture, environmental monitoring, and green manufacturing.
- Green skills training should be paired with strategic job placements in SEZs, green industries, or programs pertinent to the country's long-term development objectives and climate goals. The initiative could also partner with chambers of commerce and industry to support apprenticeships and innovation challenges, particularly targeting the youth.
- Additionally, tailored retraining tracks should be launched for workers displaced by fossil-fuel-dependent industries and other sectors vulnerable to climate-aligned economic restructuring, ensuring they can smoothly transition to emerging green and resilient livelihoods.

3.7. Improve Social Inclusion and Public Engagement in Development Initiatives

Public engagement and social inclusion are essential to the success and durability of climate-fiscal reforms. Strengthening climate literacy, promoting green economic opportunities, and integrating social protection with resilience objectives is paramount in building public trust, enhancing reform legitimacy and ownership, and countering misinformation-driven resistance. Empowering communities, particularly women, youth, and vulnerable groups – e.g. through participatory adaptation initiatives and public consultations – can translate climate policies into tangible economic and social benefits, driving a people-centered transition to a low-carbon, climate-resilient economy.

Key Recommendations:

3.7.1. Embed Climate Vulnerability and Resilience Criteria into Social Protection Programs

- Pakistan should update BISP and other social protection programs to incorporate climate vulnerability criteria, e.g. disaster exposure or recurrence, asset fragility, and livelihood dependence, into beneficiary selection criteria.
- Social protection programs at both the federal and provincial levels should provide resilience top-ups, adaptive cash transfers, and support for community-led restoration work financed by climate levies and climate-adjusted NFC transfers. This should enable automatic expansion of cash assistance during extreme weather events, reducing the fiscal shock of emergency relief.

3.7.2. Institutionalize Structured Community Engagement Protocols for Public Investments

- Community engagement protocols should be developed, requiring early-stage consultations, participatory risk assessments, transparent benefit-sharing obligations, and Free, Prior, and Informed Consent (FPIC) for all public investments, ensuring that climate-related concerns are duly heard and addressed before approval. These should also be integrated into PC-I guidelines and tied to disbursement conditions.
- Transparent and easily accessible grievance redress mechanisms should be established, with provincial governments supporting their availability and implementation in local languages as well, to ensure accountability, justice and inclusion of vulnerable communities in relevant projects and address their socio-economic development concerns.

3.7.3. Launch a Public Communication and Counter-Misinformation Campaign for Fiscal and Climate Reforms

- MoF, MoCC&EC, and MoPD&SI, in partnership with the Ministry of Information and Broadcasting (MOIB), should launch an unbiased national campaign to transparently communicate the rationale behind different climate and fiscal reforms and their long-term micro- and macro-economic implications.
- Media campaigns and social media outreach, district-level engagements, and partnerships with universities and civil society should be used to popularize climate-friendly practices while also countering misinformation and altering public perspective around controversial tools such as carbon levies and subsidy reforms.