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Research Paper

A Textual Analysis of Pakistan's Nationally Determined Contribution (NDC 3.0)

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Abstract

This paper provides a textual analysis of Pakistan's Nationally Determined Contribution (NDC 3.0), identifying the most prominent themes and significant gaps. Pakistan's NDC 3.0 aims to reach its 2035 target by mitigating 50% of GHG emissions by 2035 (17% unconditional, 33% conditional), while also prioritising adaptation measures. The NDC vigorously focuses on the agriculture, water, energy, and transport sectors, along with cross-cutting issues such as gender, health, and SDGS. The findings reveal significant gaps, such as poor institutional coordination, lack of financial, technical, and human resources, low policy integration, weak implementation mechanisms, limited contextual relevance, and nascent data monitoring systems. The study suggests actionable recommendations such as strengthening the new Pakistan Climate Change Authority, enhancing inter-governmental coordination, reinforcing provincial capacity, investing in climate data systems, and integrating climate actions into essential development plans to help Pakistan bridge these gaps for sustainable impact.

Introduction

Pakistan has evolving climate governance framework in response to faces climate challenges by last two decades, although, its shares 1% of global emissions however, suffers disproportionately from climate shocks impacts. Catastrophic events like the 2022 floods, caused the losses of more than 30 billion dollars, 1,700 dead, and 11 million people displaced as a result of this climate asymmetry[1]. Pakistan ranks among the world's top climate vulnerable nations by German watch's climate-risk index, and the indicators confirm that Pakistan is at 150 among 182 countries on state climate readiness and 146 on vulnerability, and the UN places it the "27th least ready country" to deal with climate change. All the key sectors are sensitive to the climate such as agriculture is 18% of GDP and 37% employment share has suffered due to erratic rain patterns, extreme heat waves, and water shortages. Besides this, the drinking water is at risk from glacial melting, droughts, floods, and heat waves amplified the risk of economic security which is based on water, food, and energy securities. These climate shocks severely effect the marginalized communities and vulnerable groups in such as small farmers, rural areas particularly, and urban poor informal settlers generally. In a nutshell, climate change is not a standalone challenge, but an existential risk to the country's economic growth, social welfare, and sustainable development, compels to make adaptation, mitigation, and resilience as key strategies in climate change policy. This framework covers climate governance, policy discourse, institutional reforms to balance economic growth and climate resilience.

NDC 3.0 Narrative

Considering this climate profile, Pakistan has submitted its third National Determined Contributors (NDC 3.0) in September 2025, as the Paris Agreement obligations. NDC 3.0 outline adopts "whole-of-nation" climate action plan (2025-2035), include mitigation strategies, adaptation targets, financial mechanism, technology transfer, capacity-building, implementation framework, and development co-benefits with robust focus on governance, transparency, and social inclusion. It shows a commitment to reduce emissions by 50% by 2035, with key focus on applying low-carbon practices to urge on growth and poverty decline. Moreover, it describes inclusive adaptation actions across other sectoral policies such as water, agriculture, energy, transport, industry, health, and development, along with resilient infrastructure, disaster risk reduction, and ecological restoration, precisely aiming vulnerable communities. The NDC calls to align with national development strategies like Vision 2025, and URAAN Pakistan, and global equity principle of climate justice. However, elaboration of ambitious targets without guarantee actions seems not to work.

Climate change governance structure

Climate governance framework consists of multi-layers institutional arrangements, has legal standing provided by climate change act 2017. Pakistan climate change council, authority, and fund are the high level federal institutional structure with a mandate to guide and design the national climate policy discourse for climate actions. Provincial governments have their own climate policies, adaptation strategies, and resilience plans after the devolution of governance, authority, and financial control in 18th constitutional amendment. The devolution plan for provinces, raises the issue of policy non-coherence among federal and provincial frameworks

[1] Rafferty, John P., and Michele Metych. "Pakistan Floods of 2022." Encyclopædia Britannica. Last updated August 28, 2025. Accessed October 24, 2025. https://www.britannica.com/event/Pakistan-floods-of-2022

leads to ambiguous climate targets, while, in practice, provincial setup like KP and Balochistan lacks in budget, technology, and skills and dependent on federal authority and decisions. NDC 3.0 put key focus on whole-of-nation approach based on whole-of-government concept, to engage all stakeholders across the country in consultation process to improve the institutional coherence, and to build broader consensus, and ownership for joint climate response.

NDC has vital role in guiding climate governance, to align climate policies with broader poverty alleviation measures, social protection programs, and human development strategies. This NDC 3.0 is an attempt to integrate with Vision 2025 strategy, URRAN Pakistan, National climate change policy 2021, and National adaptation plan 2023 for joint and robust climate actions, with mainstreaming the budgetary planning. Climate change has become mainstream in designing other sectoral policies, Alternate and renewable policy, National Electricity Policy, National EV policy.

Challenges

The available research on Pakistan's climate change policy landscape and NDCs covers incessant governance challenges, policy implementation failures, traditional bureaucratic frameworks, and institutional incapacities. Pakistan's technical expertise and capacity to respond climate are low, with less than 1% of the national budget for climate expenditures, approximately 40% of federal climate projects make in time completion, and rest delays due to overlapping of responsibilities and budgetary constraints. The overlapping of ministerial work, weak coordination mechanism among state departments, fragmented institutional framework, lack of integrated planning are the key reasons to delay in effective climate response.

Pakistan depends upon international support in terms of fundings and technical to meet national determined targets, such as to cut 50% of emissions by 2030 and 2035 aimed in NDC 2.0 and NDC 3.0 respectively, however, international financial flows are slow, and Pakistan also fails to catch the 11 billion dollars funds and projects as a compensation money on the floods of 2022, after the promise of international community. Funds deficiency both national and foreign is a key hurdle, Pakistan's Green Climate Fund projects have small fractions of budget to complete needed adaptation. Local facilities such as industrial decarbonization, renewable technology transfer, and disaster readiness are also hampered by low investment incentives for private sector participation.

National Disaster Risk Management Fund found Pakistan's GHG inventory and climate data gaps, low empirical research, and weak monitoring mechanism impede integrated planning. Most of the adaptation planning depends on global risk mapping, while, a small number of sectors have granulated vulnerability assessments beyond floods. Similarly, the Pakistan Meteorological Department's observational network is scarce in rural areas, so flood and heat wave forecasts have high uncertainty. ND-GAIN's ranked Pakistan at 27th shows least ready, data deficient, and low risk awareness.

The reactive approaches, institutional incapacities, financial gaps, and governance leakages lessen the planning and real actions, even though the policy documents are in place, because, policy objectives and goals are often not aligned with on ground priorities. The United Nations' country analysis report depicts that persistent practices of low investments in health, education and social protection programs exacerbates climate vulnerability. NDC 3.0 offers as a catalyst to reform climate governance, strengthen institutional coordination, improve implementation mechanism and attract the international support to meet the climate goals.

Methodology

The analysis employs textual analysis of Pakistan NDC 3.0 document, performed a comprehensive reading of the NDC text, annotating key concepts, commitments, sectoral measures, and any stated challenges or prerequisites. The analysis helps to systematically extracts frequently occurring themes in the NDCs as contextual keywords e.g. institutional capacity, governance arrangements, mitigation strategy, adaptation priorities, cross-cutting issues, to identify gaps and discrepancies, where information had become too opaque, targets appeared to be unrealistic by reference to capacity, or where stated policies opposed, and connects them to Pakistan's broader climate reality.

Study Design

This study offers in-depth analysis by employing textual analysis on NDC document, identifies key themes, actions, and expressions, to analyse what actually strategies and frameworks Pakistan's NDC 3.0 discuss, and focus, also critically evaluates the strengths, and opportunities, identify what are missing links, discrepancies and flexibilities to assist Pakistan's situation. This process informs to what extent the NDC bridges the country's gap between critical requirements and expected climate response.

Analysis

Comparison NDC 3.0 Vs NDC 2.0

Figure 1, a snapshot between NDC's, depicts, Pakistan's climate ambitions, commitments, clarity, and feasibility have progressed over the succeeding years.

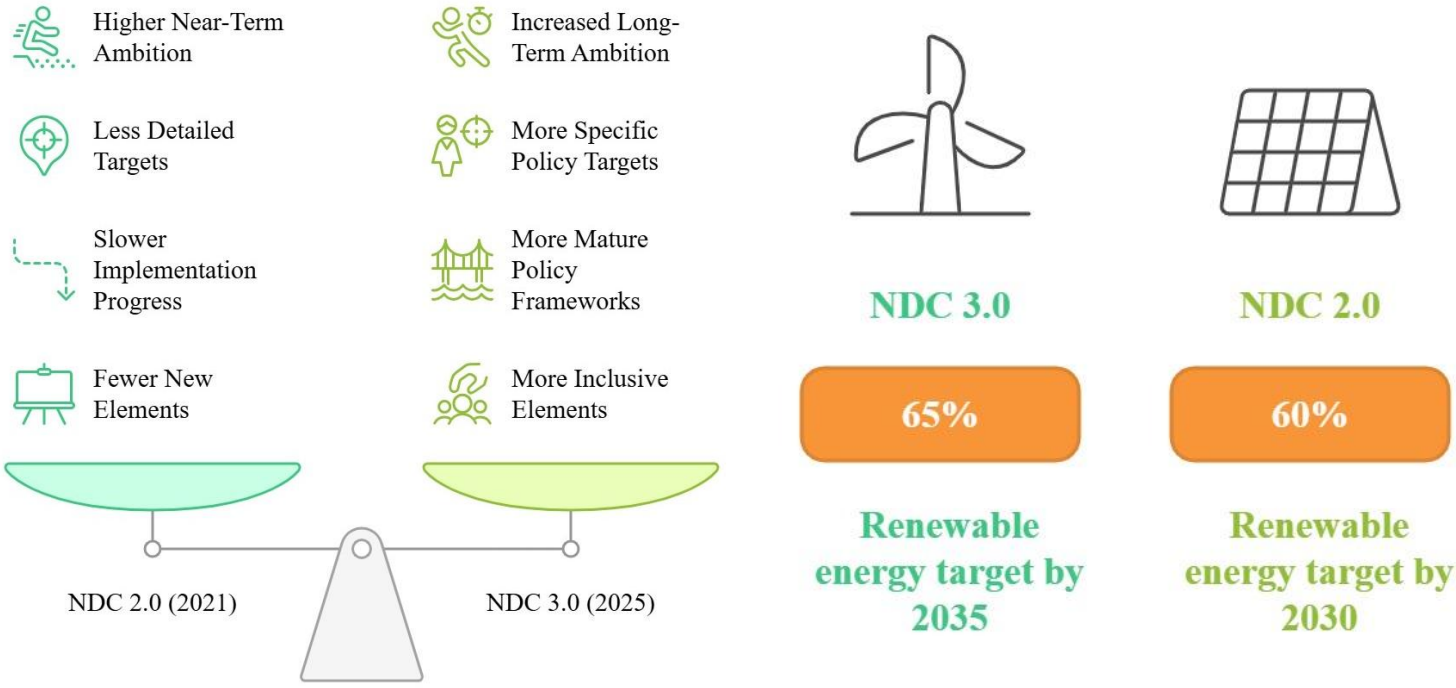
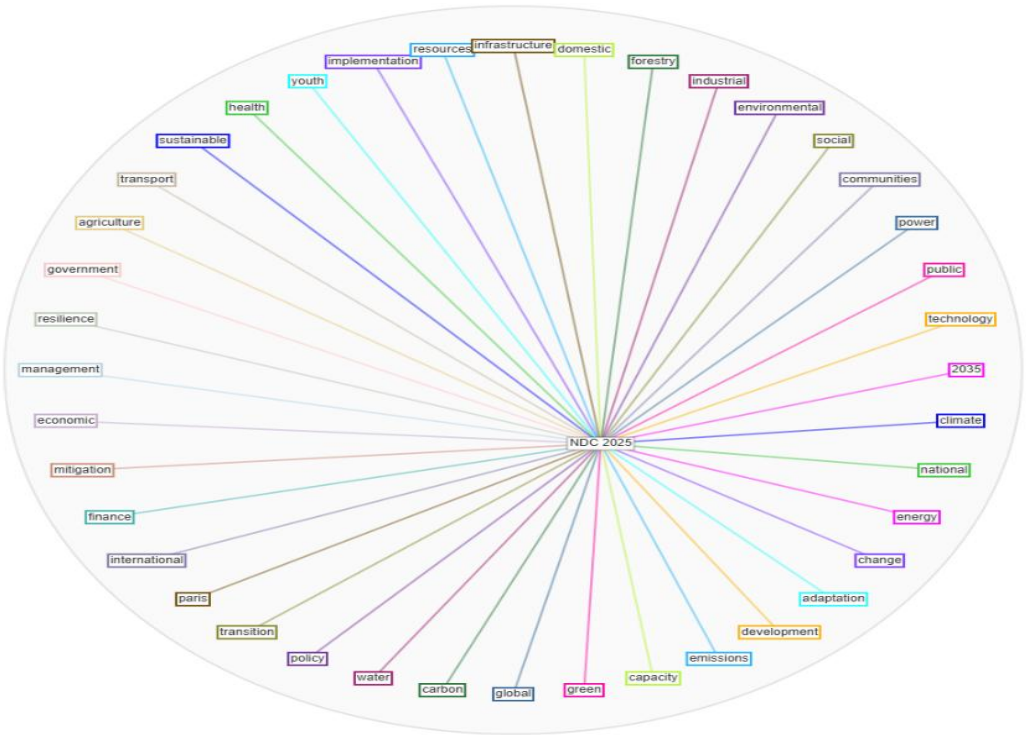


Figure 1 Comparison

Both NDC's set the same 50% mitigation ambition target in total percentage with a slight increase i.e., 17% in unconditional (NDC 3.0) as compared to 15% of NDC 2.0 by 20305 and 2030 respectively, while keeping the conditional 33% share same. The 2035 reflects the aspect of realism due to implementation delays, however, less emissions will be avoided by 2030 as previously promised. For the renewable energy targets, NDC 3.0 shows a significant expansion keeping the same projected momentum at 60% by 2030 and 65% by 2035, shows long term ambition for clean energy. An "upscaled program" suggested as the continuation of Ten billion tree program for afforestation efforts in new NDC. On the side of adaptation, ambition is high and broader, discussed targets and sectoral actions in detail, by including new themes such as youth empowerment, public engagement, and just transition. NDC 3.0 provides clarity in quantitative sub-targets and includes "High Priority Actions", and policy targets, such as, EV charging stations, battery storage deployment, demarcates between conditional and unconditional contributors in more clear terms by mentioning an absolute emission. NDC 3.0 suggests explicit financial strategies and policy measures such as green bonds and climate funds, clearly articulates, the cost of NDC measures i.e., 348, and 565 billion dollars by 2030 and 2035 respectively.

The structure of NDC 3.0 along with an Annexure on Information for clarity, transparency, and understanding (ICTU), offers a detailed information as per UNFCCC direction, shows Pakistan's clarity on communication. NDC 3.0 is explicitly aligns with National Energy Vehicle policy 2025, National energy efficiency and conservation policy 2023, makes easier to connect the NDC targets with the practicing policy instruments, and make coherence with existing polices. The feasibility of NDC 3.0 seems more, as it extends timelines and relies on practicing policies, provides robust footings for action. The inclusive process adopted in NDC 3.0 is more broader and comprehensive consultations are done with provinces to support feasibility of execution plan. NDC 3.0 appears before COP30 in Brazil 2025, shows more



moderate setting for climate actions, and support to meet the conditional targets.

Figure 2, Mandala Magnet, NDC 3.0

The NDC3.0, Mandala graph in fig 2, shows an inclusive design for national climate action plans specifying assurances and obligations by 2035, that are vital to intensely boost ambitions after the 2023 Global Stocktake confirmed that current efforts are insufficient to meet the 1.5^{o}C temperature goal. The radial structure illustrates the need for a holistic, "whole-of-government and society" approach comprising of four unified pillars, i.e., aggressive Mitigation by slashing emissions through deep decarbonization of energy, industrial, and transport sectors, strengthened Adaptation by building national resilience and protecting key systems like water and health from climate impacts, robust Enabling Conditions by securing finance, technology, and capacity for effective implementation, and sound Governance by anchoring the plans in national development priorities, social equity, Just Transition principles, and broad engagement from government and communities.

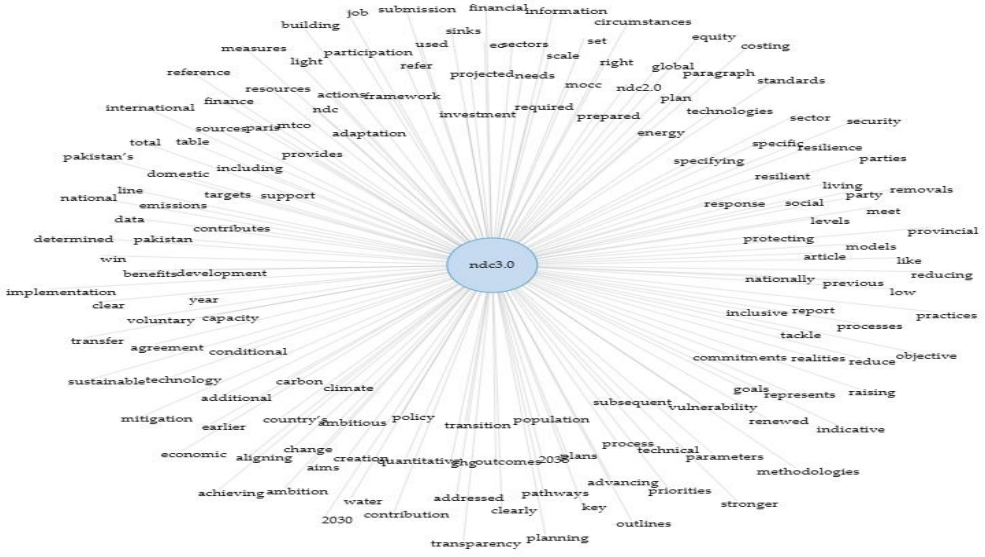


Figure 3, Collocates Graph, NDC 3.0

The collocates graph of NDC 3.0 in fig 3, demonstrates the set targets by 2035, with a determined and integrated national strategy, to attain a momentous development across both mitigation by reducing emissions and adaptation by building resilience. Success pivots to secure finance and investment, necessary for capacity building and technology transfer, and embedding the implementation strategy within a robust national policy framework. Fig shows, NDC 3.0 as a holistic national development plan that requires high-level government ownership, transparency, and a national commitment to social equity.

Quantitative Commitments

NDC 3.0 explicit, as in fig 4, set of commitments includes, mitigation targets, adaptation plan, and implementation mechanism to align national development goals with international obligations.

Figure 4, Key commitments, NDC 3.0

Theme-1 Mitigation commitments; A caption target is "voluntarily reduction of projected GHG emissions by 50% by 2035, extends next five year, as an extension of previous NDC 2.0 target. The fig 5, clarifies the adequate new domestic and international reduction percentage, requires support, and grants to meet the said conditions and according to principles of climate justice.

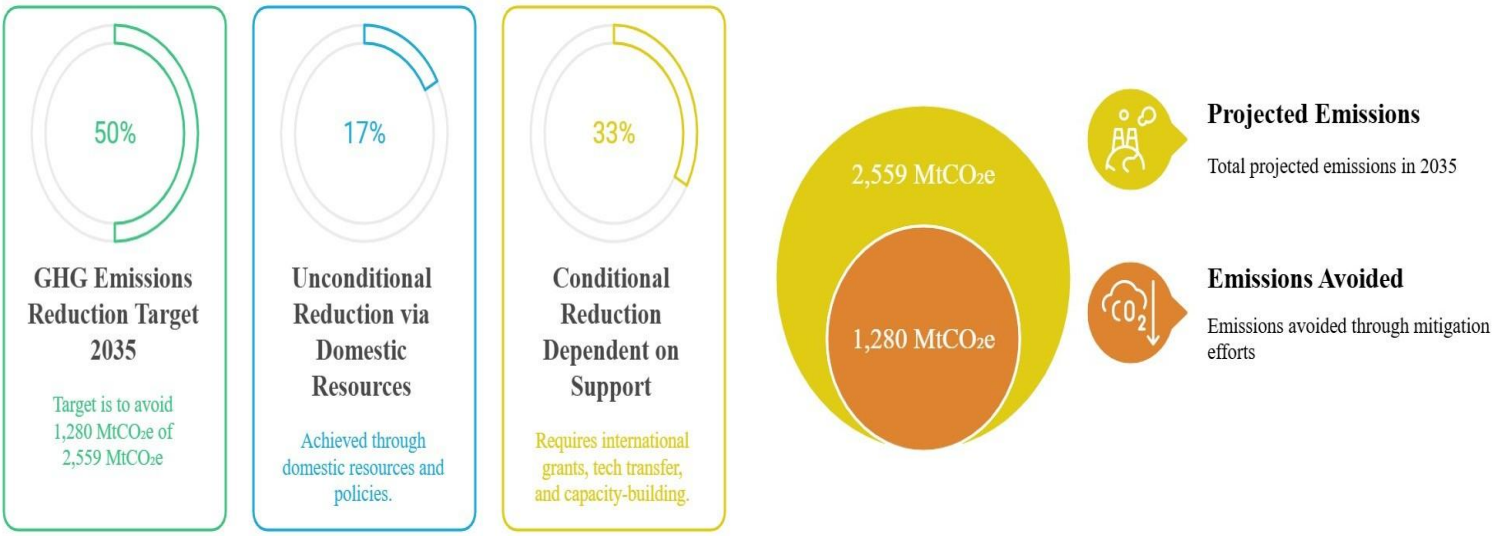


Figure 5, Mitigation Commitments

Sector Specific Mitigation Targets and Actions; In order to attain the mitigation targets, NDC 3.0 delineates sectoral strategies, based on build in policy frameworks.

Energy and Transport; Fig 6, shows energy sector undergoes "decisive transition toward clean sources", targets 60% by 2030 and 65 % by 2035 and increase power generation capacity from renewables (35500 MW) and alternative clean energy sources (43200 MW) under

Inductive Generation Capacity Expansion Plan (IGCEP 2025-2035), makes 62-70 of generation capacity mix, and gradual lower down the share of imported coal and oil in power sector, that is already decline 41% between 2021-2025. Transport electrification aims new EV's by 2030 with deployment of charging infrastructure on motor and highways in initial phase, according to New EV policy 2030, to attain low carbon mobility. NDC highlights the EV assembly incentives, and strict fuel standards under National Clean Air policy 2023, to accelerate electrification.

Figure 6, Energy Transition & Transport

Forestry, Land, and Industry; NDC 3.0 cites "Upscaled Green Pakistan Program" in fig 7. as flagship initiative in afforestation drives of the extended Ten Billion Tree Tsunami Programme for the restoration of ecosystem and boost carbon sinks. Fig 7, highlights, forest restoration efforts, by protecting and regenerating Mangroves, increasing urban forestry, and promotion of climate-smart-agriculture as land use strategies. However, NDC not explicitly describes the quantitative forest targets. NDC also discuss the measures such as energy audits, efficiency retrofits, and relocation and climate proof industrial units, promotion of cleaner production technologies and waste heat recovery according to industrial policy, to cut industrial, and waste emissions. Alternate wetting, drying irrigation, and improved livestock management actions to mitigate agricultural emissions. The better waste management strategies are set to reduce 17% solid waste emissions by 2035.

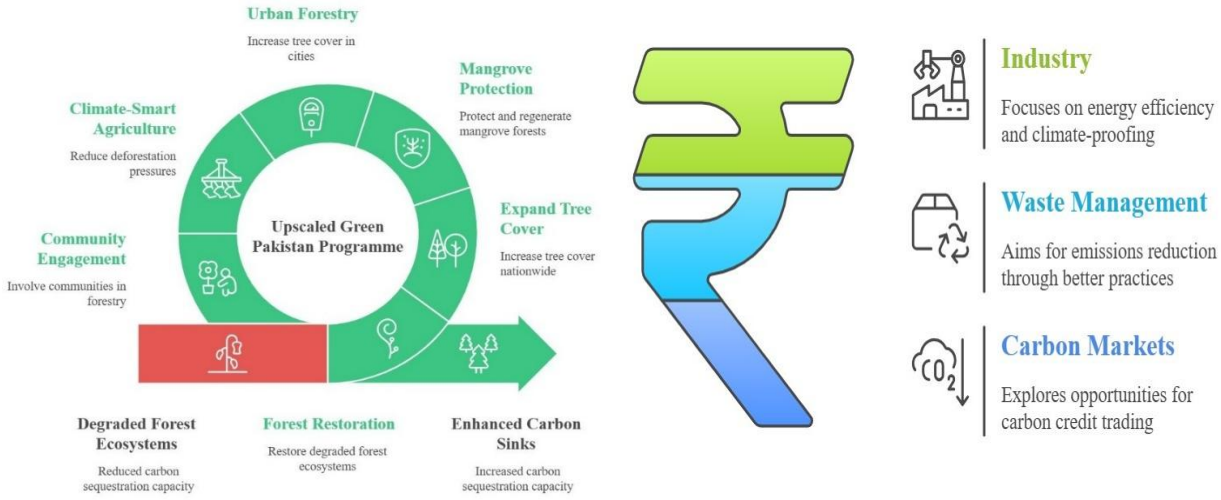


Figure 7 Afforestation Drives, Industry and Waste

Findings

Although NDC covers mitigation ambitious content comprehensively, however, financial and implementation capacity are overlooked. To attain the targets of clean-energy transition, it requires an estimated USD 565.7 billion investment by 2035. NDC candidly acknowledges that the 33% portion of the target is "explicitly contingent" on receiving such funding, along with technology and capacity support, but till to date, Pakistan is struggling hard to secure predictable climate funds. Local renewable (solar) market share rises but still relies on fossil fuel sources, grid-planned solar and wind projects suffer institutional and regulatory impediments. Hence, while the NDC's mitigation targets hold out the promise of high ambition, it's unlikely they will materialize in the context of no transformative enabling. In nutshell, a gap seems between robust ambition and actionable financial and execution capacity. The NDC text notes the "crucial role of global cooperation", underscores that domestic efforts alone, even strong policy framework is insufficient given Pakistan's limited resources and technology base.

Theme-2 Adaptation and Resilience commitments; NDC 3.0 recognise Pakistan's vulnerabilities, placed and treat adaptation equally, and articulates broad adaptation proactive measures for water and food security, disaster management, public health, urban resilience, and ecosystem.

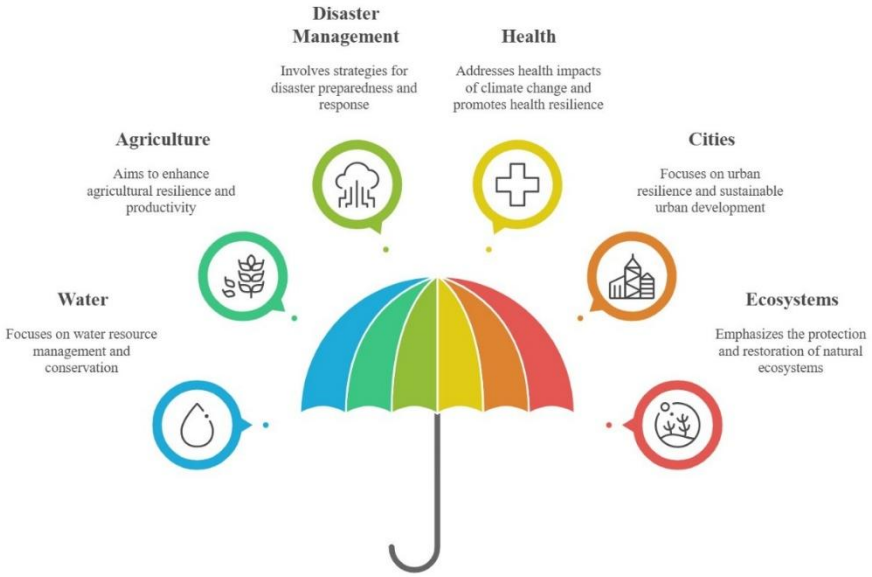


Figure 8 Adaptation Commitments

Water and Food Security; The NDC priorities shown in fig 9, water resource management targets, and nature-based solutions such as rainwater harvesting, groundwater recharge, water conservation and Recharge Pakistan as flagship project by Green Climate Fund, to improve water resilience, mitigate floods, and tackle climate threats. Similarly, for climate-smart agriculture sector, the measures such as improved irrigation, agroforestry, land management, stress-tolerant crops, crop insurance, and supporting small farmers according to food preservation and agriculture policy to strengthen the food security and agricultural resilience.

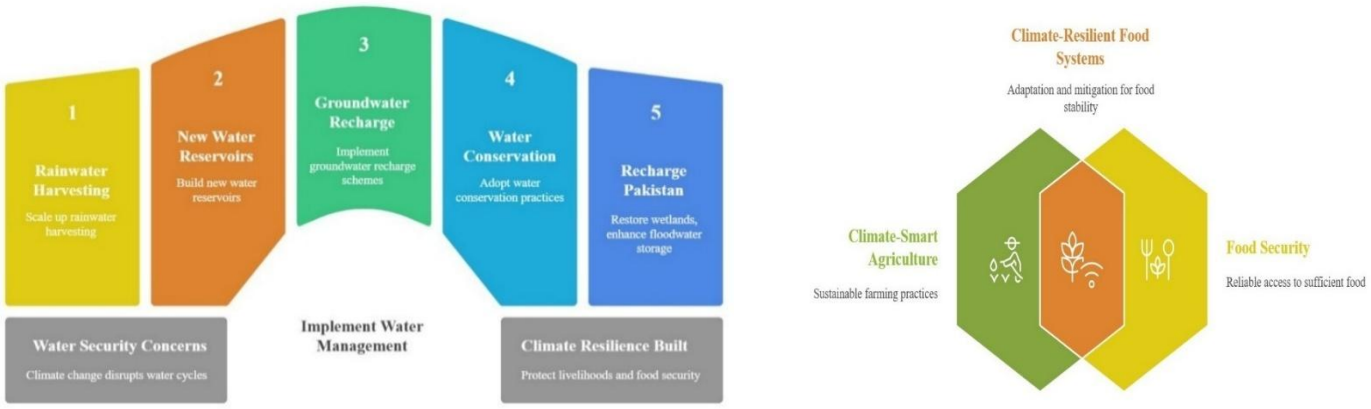


Figure 9 Water Resource Management and Smart Agriculture

Disaster Risk Reduction (DRR) and Climate Resilient Infrastructure; NDC 3.0 discuss Disaster Risk Reduction strategies as shown in fig 10, by introducing improved early warning, upgrade disaster response capacities, strengthen preparedness, and resilient infrastructure to target country-wide multi-hazard risk assessments by 2030. It also seeks to implement community-based disaster management in 100 vulnerable districts by drawing lessons from events like the 2022 super-floods and to minimize future loss and damage. To improve urban resilience, NDC 3.0 emphases on climate-resilient building codes, improved land-use planning,

and upgraded urban drainage systems to manage urban flooding. It also highlights building resilience program for 10 million people in Indus-Basin. It recommends the actions such as, green spaces like Miyawaki forests to combat heat islands, heatwave early warnings, and cooling centers, by introducing model climate-resilient villages to establish integrated adaptation in housing, water, and livelihoods across urban and peri-urban areas.

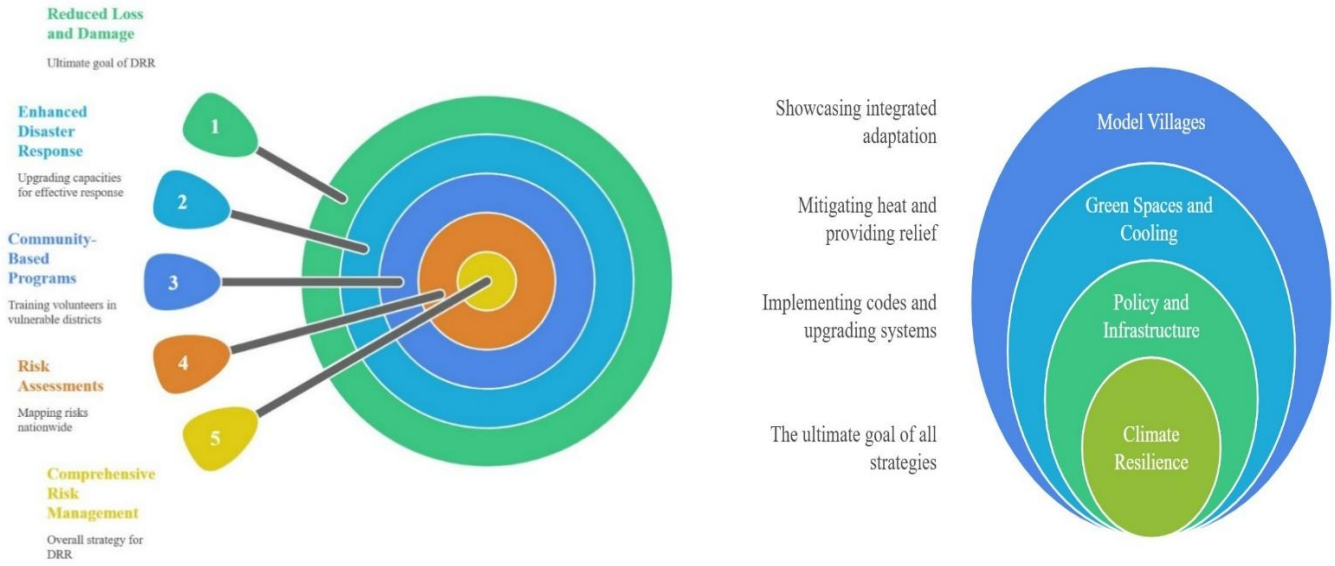


Figure 10 Climate induced disaster & Urban Resilience

Public Health and Climate; NDC notes that, Pakistan has not yet integrated climate into health systems, it establishes a One Health Secretariat as a first step. Fig 11 shows, NDC 3.0 pledges to climate-proof all healthcare facilities by 2035, ensuring hospitals and clinics can withstand heatwaves and floods through resilient infrastructure, to enhances disease surveillance for climate-sensitive diseases like malaria and dengue, and prioritize women, children, and the elderly under the Climate Change Gender Action Plan, embedding equity in health adaptation strategies.

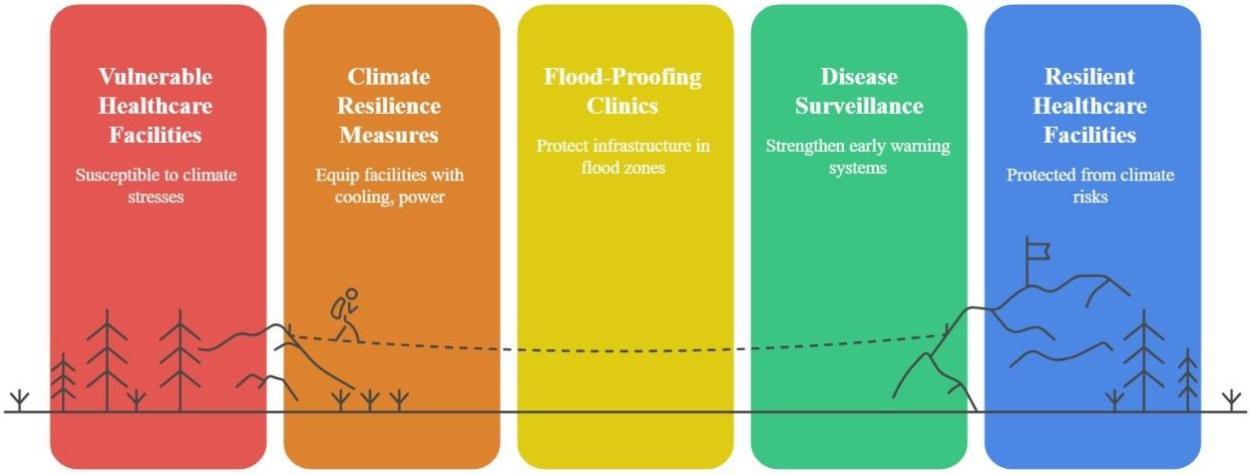


Figure 11 Public health and Climate

Findings: The broader adaptation and resilient commitments are contextually appropriate, and target most vulnerable sectors like agriculture, water, and cities, explicitly recognizes many challenges, from "accelerated glacial melt" to "erratic monsoons" and notes that floods and

droughts cascade into economy-wide impacts. Gaps emerge in institutionalizing adaptation and ensuring implementation. While national and provincial climate policies exist, the NDC admits that "Pakistan has not adopted a 'Health in All Policies' framework" or climate-health surveillance and implying cross-sector coordination is weak. Likewise, local governments frequently do not have the specialization to implement adaptation projects. Finance is another issue, the NDC specifies many projects like rainwater ponds, planting mangroves, however, to scale-up the said projects, requires large magnitude of finance than available budgets. Information and planning are another loophole, as adaptive responses need detailed risk analysis such as flood-zone maps, and tidal tables, but the full-scale research studies for risk analysis are not common, and NDC itself notes the creation of an adaptation monitoring system, suggests data gaps. In short, Pakistan's adaptation agenda is holistic, however, faces common developing-country challenges, diffuse institutional responsibilities, budget constraints, and nascent information systems. The NDC recognizes these barriers in places like advocating climate risk screening guidelines but lacking in detailed roadmaps to counter these.

Theme-3 Implementation Mechanism; NDC 3.0 shows full devotion and attention on implementation means in terms of finance, technology and capacity, spotting the key resources need to attain the ambitious climate goals and outlines delivery support mechanisms.

Figure 12 Implementation mechanism

Climate finance strategy and Capacity Building; The conditional 33% reduction based on international climate finance and invokes "common but differentiated responsibilities, and respective capabilities (CBDR-RC) a foundation principle of UNFCCC and Paris agreement to justify the conditional nature and equitable burden share. NDC 3.0 estimates, the investment need of 566 billion dollars by 2035 in the form of grants, technology transfer, and capacity building, to bridge the climate finance gap for mitigation and adaptation, as Pakistan is unable to deliver high ambition targets without international support. Pakistan is developing climate finance infrastructure, need allocations 139 billion dollars for disaster risk preparedness, 89.5 billion dollars for water and sewerage schemes, and 164 billion dollars for low-carbon power,

seeks enhanced access to climate finance from global funds like the GCF, GEF, and Adaptation Fund. Domestically, Pakistan has initiated climate finance measures such as, green budget tagging, green bonds and Sukuk, National Climate Finance Strategy, Pakistan Green Taxonomy-2025, and climate budget screening, and new levies for EV's and climate support in national budget 2025, to integrate and track climate spending with greater transparency. Pakistan has secured 500 million dollars for renewable energy, transport, and waste management projects. Innovative tools like debt-for-climate swaps and Nature Performance Bonds with public-private partnerships and green investment are in pipeline. Overall, the NDC lays out an inclusive, but globally dependent climate finance strategy to execute Pakistan's ambitious climate plans.

NDC 3.0 pledges the initiatives like green skill development, and national green youth innovation fund to create green markets for jobs and entrepreneurships by engaging community specially youth in climate governance, projects, and advocacy through youth-led climate training, campaigns like Clean Green Pakistan to enhance community level capacity building. On cross-cutting framework of Gender, Equality, Disparity, and social inclusion, it aligns with national policies, SDGs, and poverty reduction strategies, commits to gender equality and social inclusion with a national Climate Gender Action Plan, promotes women empowerment, recognise women as change agents, and include youth and public engagement under Just Transition structures to ensure climate actions.

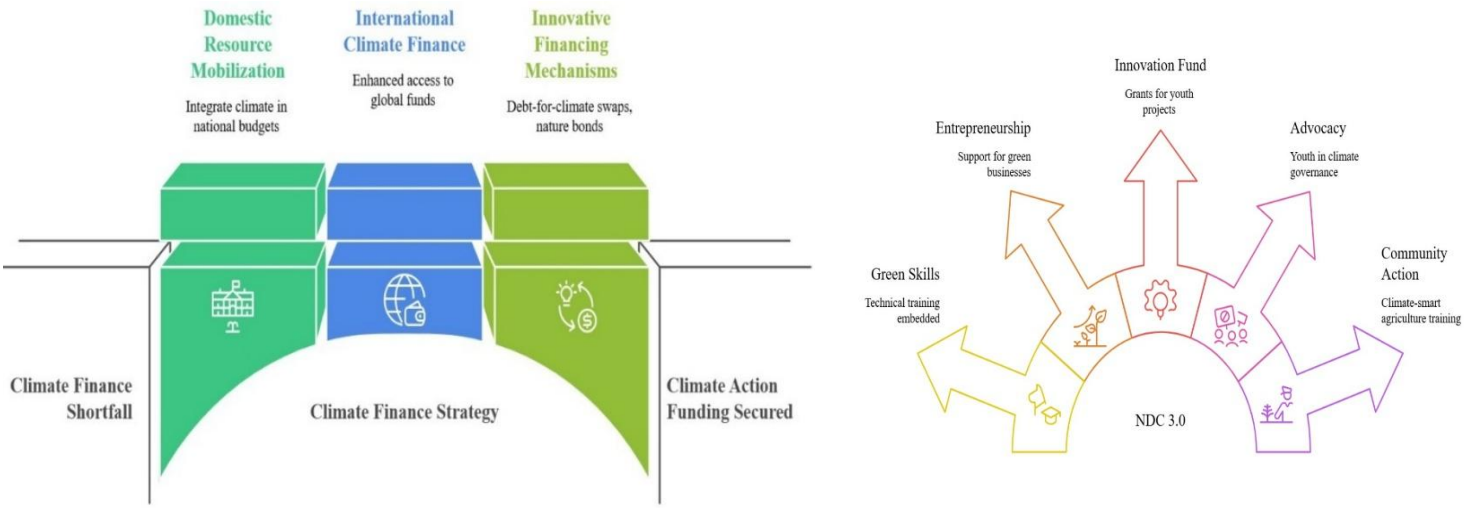


Figure 13 National Climate Finance Strategy and Capacity development

Technology Transfer, Governance and Institutional Framework; NDC 3.0 focus on technology transfer as it is vital to achieve climate goals, access to advanced technologies in renewable energy, water management, agriculture, transport and early warning systems, trough international cooperation under Articles 10 and 11 of the Paris Agreement, while enhancing domestic expertise through GCISC, climate data systems, and green skill program. The planned National Green Innovation Fund for Youth aims to foster homegrown innovation and strengthen adaptive capacity. NDC 3.0 underscores the need of strong institutional set up through a whole-of-government concept to integrate climate actions, plans and budgets for climate governance framework. It discusses the coordinating role of Pakistan climate change authority across institutions, introduces climate units in ministries, enhances coordination and capacity-building. The NDC also highlights the robust regular MRV system via a new Climate Transparency Platform, aligned with the Paris Agreement.

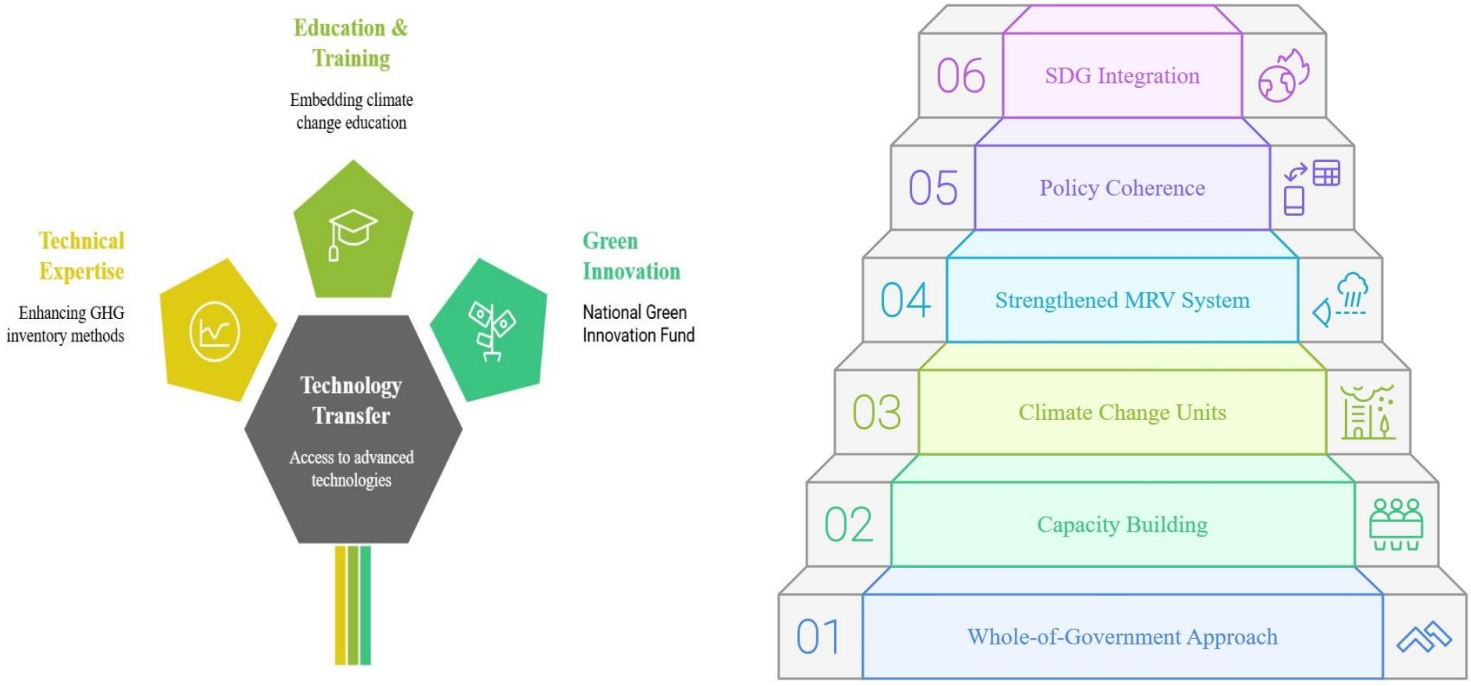


Figure 14 Advanced technologies & Governance and Institutional Steps

Findings: NDC explicitly and commendably focus on financial requirements and development of institutional mechanism. However, some gaps are stark, like NDC's conditional targets depend on new and heavy grants of 566 billion dollars, however, Pakistan's track record shows persistent shortfalls. For example, the UN indicates only about 348 billion dollars has been mobilized up to 2023, leaves an unsatisfied gap. Local climate financial schemes like green bonds are off too small magnitude. To meet the NDC's ambitious vision, it would thus require a significant transformation of both public and private investment flows, which has not yet happened. Financial coordination is another key hurdle, while a climate finance strategy is being prepared and a fund exists, fragmentation persists, multiple international donors use their own channels. The NDC's ambition to use Article 6 market mechanisms is notable, but Pakistan has only recently begun registering under such systems. NDC calls for "affordable, appropriate, and climate-friendly technologies" highlights Pakistan's technology and capacity gaps and limited R&D and import capability. The National Engineering Council, for instance, has little capacity in advanced solar and wind engineering. The NDC does mention supporting technology in industrial processes, but actual programs like. technology incubation centers are only nascent. In sum, the NDC recognizes financial and technological needs and initiates groundwork like screening guidelines, tagging, and strategy drafting, but the gaps in available finance and domestic technological base remains a major obstacle. Effectively, the NDC's mitigation targets will be under-resourced unless these gaps are dramatically closed.

Strengths and Shortcomings

NDC 3.0 looks comprehensive in integration of content, and themes, aligns mitigation, adaptation, and resilience with national polices, visions, goals, and strategies, and shows determined and ambitious by setting high targets, actionable measures, and quantifiable goals, employs inclusive framework and participatory approach, focus on climate justice, gender equality, just transition, women empowerment, community, and youth engagement, promote innovations by blended green bonds, and nature based solutions, and strengthens transparency via green finance tracking and MRV. In general, it reflects a credible, and forward-looking for climate governance.

Although NDC 3.0 shows robust framework for climate governance, however, implementation gaps challenge its effectiveness. The extended timeline i.e., 2035 weakness the short-term targets, with unclear baselines and weak data system, make vague validity. Furthermore, much reliance on external fundings, fragile institutional mechanism, and low accountability standards undermine its credible actions. Governance leakages, political instability, and capacity gaps slow to attain the renewable power generation and EV sales targets.

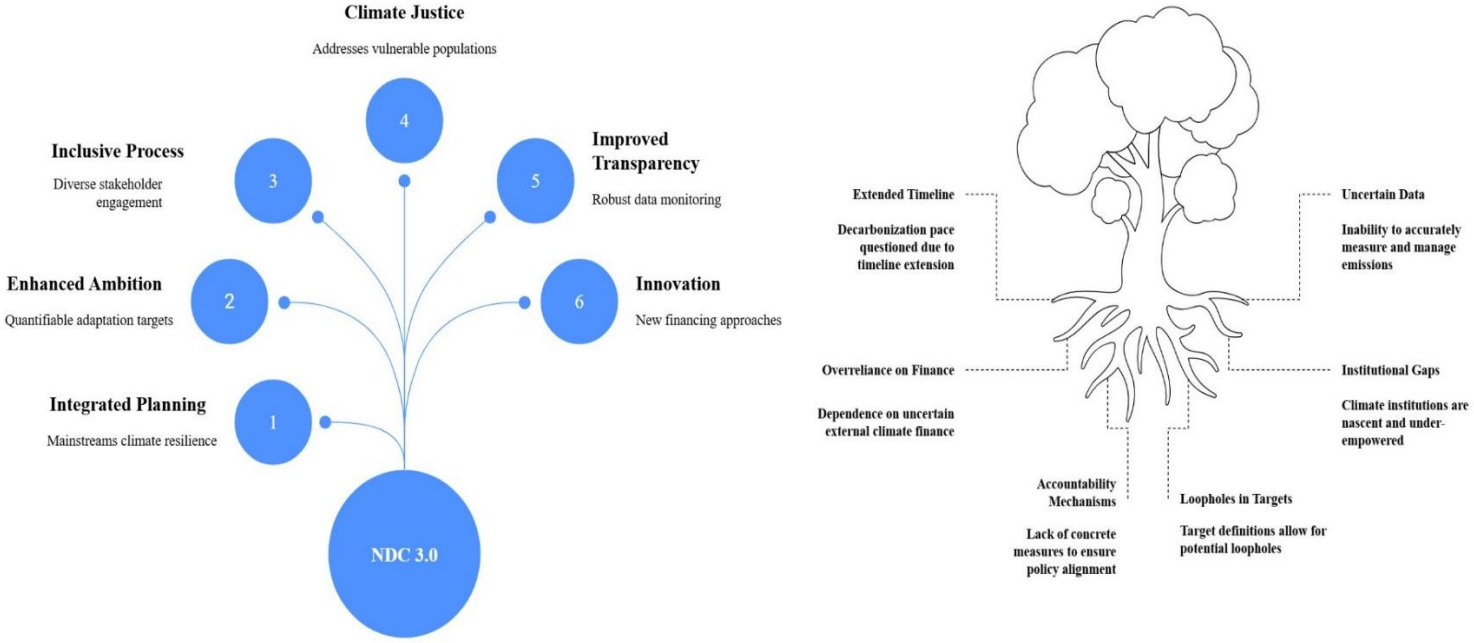


Figure 15 Strengths and Shortcomings

Risks and Uncertainties

A risk gap exists between ambitious plan and on-ground realities like institutional fragility, and early-stage climate finance infrastructure. A capacity gap remains a critical challenge to climate response, includes fragmented institutional framework, low coordination, lack of coherence, understaffing, untrained technical staff to risk screening, low budgets, outdated scientific technologies, absence of data-sharing mechanism, and weak implementation.

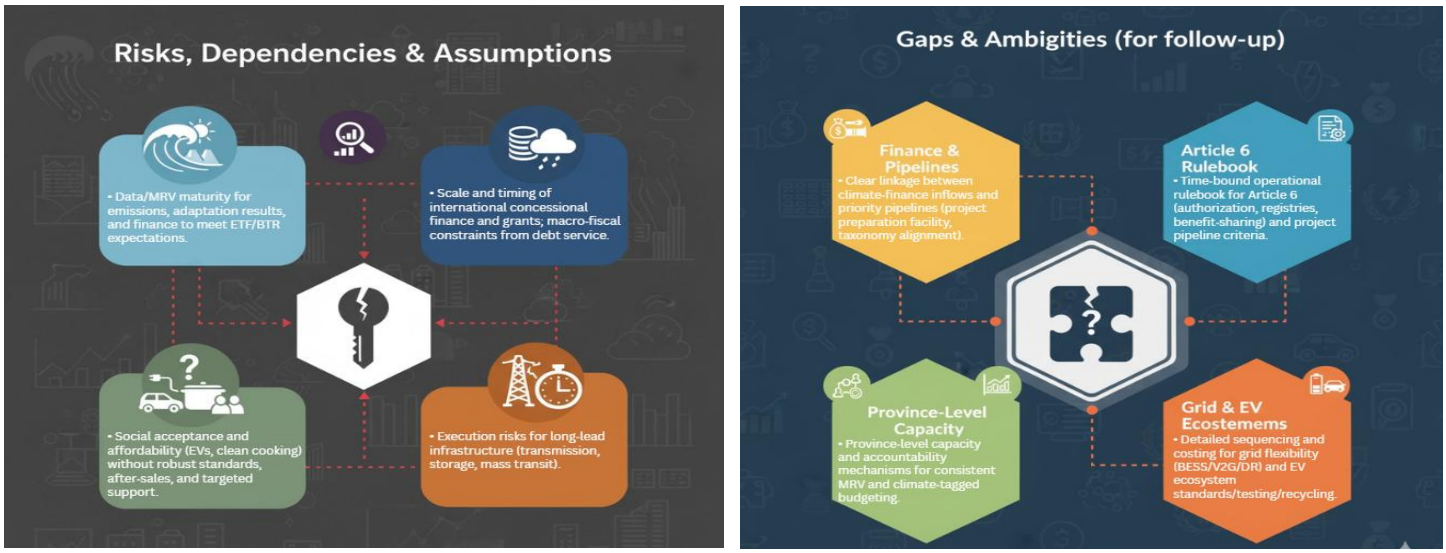


Figure 16 Risks and Uncertainties

Policy instruments & Takeaways

Policy alignment is another gap, in governance terms, as NDC repeatedly claims climate action is "aligned with national policies, plans, and development priorities, yet some national programs still treat climate as an add-on. Sectoral policies often ignore climate screening, so climate projects rarely enter provincial budgets. The NDC's reference to the National Finance Commission and Public Sector guidelines is a positive sign, but implementation inertia remains. NDC acknowledges the importance of institutions, but the gaps in policy, capacity, coordination and political buy-in mean that the structures it describes may not function effectively. This indicates a need for continuous investment in institutional strengthening beyond mere establishment of new bodies.

Figure 17 Policy Tools and Takeaways

Theme	Evidence	Salience

Targets & Ambition	2035 voluntary reduction vs. projected 2,559 $MtCO_2e$; split 17% unconditional + 33% conditional; CBDR-RC framing.	High
Mitigation Pathways	Power transition with RE/hydro dominance by 2035; efficiency; EV uptake; AFOLU sinks; waste methane programs.	High
Adaptation & Resilience	NAP-2023; Recharge Pakistan launched end-2024 to enhance resilience of millions via ecosystem restoration/water recharge.	High
Means of Implementation	Costing ≈ US$565.7b; mobilize grants/concessional, green bonds/Sukuk, blended finance, carbon markets (Article 6).	High
Governance, MRV & Transparency	Climate budget tagging; centralized registry; MRV frameworks with climate KPIs; alignment with ETF/BTR.	Medium-High
Cross-Cutting (Just Transition & GEDSI)	Focus on green skills, social protection, and inclusion; distributional impacts considered.	Medium
Risks & Dependencies	Debt burden, macro-fiscal constraints; climate hazards; reliance on timely external finance/technology.	High

Table 1

This textual analysis briefly highlights, the NDC 3.0 of Pakistan is an extremely refined document compared to NDC 2.0, capturing the climate mitigation and resilience within one integrated umbrella. It carries forward lessons learned from past criticism, it mainstreams climate into development targets, codifies equity, and spells out institutional adjustments. It positions climate action as a "win-win" driver of sustainable development.

Challenges and Recommendations

NDC 3.0 provides the opportunity to marginalised communities and encourages youth engagement as key stakeholders in socially inclusive local governance for climate actions and to foster public ownership, however, to ensure meaningful and active participation and effective coordination remains and challenge.

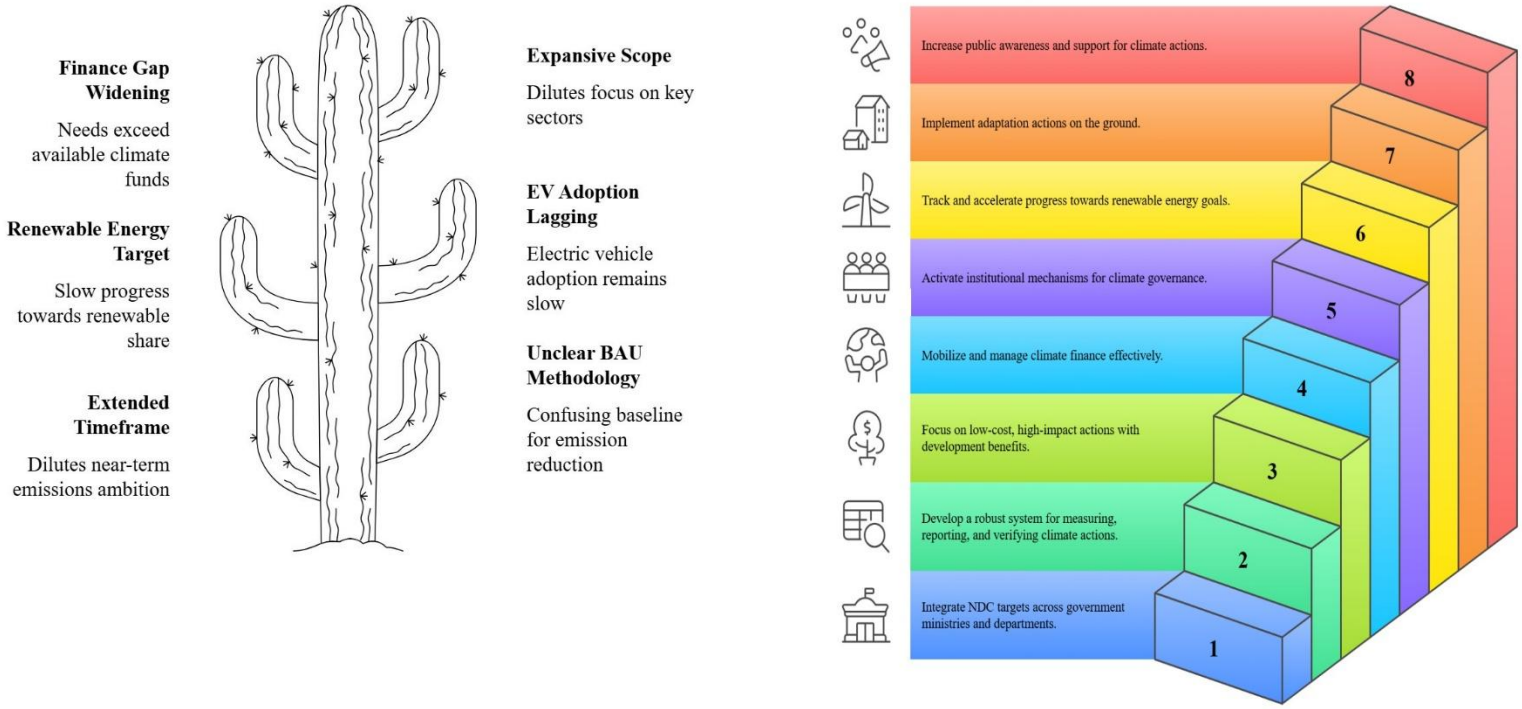


Figure 18 Challenges and Recommendations

Recommendations

Following strategies are being suggested to improve NDC 3.0 implementation, to respond the identified gaps,

1. **Foster Institution Building:** Provide specialized interventions finance, human resource, training to the climate cells of the provinces of Pakistan and the Climate Change Authority, Pakistan. Establish permanent tech units inside the line ministries (i.e., planning, agriculture, and finance) to integrate the climate into regular operations. This includes deploying climate specialists in district governments. Enhanced capacity will improve policy coherence and execution

2. **Strengthen Inter-government Coordination:** Create inter-government working mechanism, with clear mandate and responsibilities, such as inter-ministerial working groups with clear mandates and regular meetings to align the NDC targets by the Centre with the provinces' development plans, to avoid overlapping. Use the updated National Finance Commission formula to incentivize provinces for climate-smart spending. Strengthening these channels will address the “unclear coordination” that currently hinders implementation.

3. **Mobilize Climate Finance:** An ambitious climate finance framework should introduce at the national level, to scale up domestic funding by expanding green bonds, introducing carbon pricing, and mainstreaming climate in PSDP. Simultaneously, strengthen diplomacies for franchise international finance leveraging Pakistan’s weakness profile and equitable burden arguments to secure financial grants rather than loans. For this purpose, transparent tracking by using the Climate Transparency Platform will to build donor confidence.

4. **Invest in Data and MRV Systems**: Revisit GHG inventories and sectoral baselines regularly, possibly with the country's national university or think tanks on a technical assistance arrangement. Develop the national climatic database e.g., additional weather stations, digitization of hydro data to support climate risk assessments. Access to good data will form the basis of planning based on evidence and closing the funding gap (as donors insist on results that can be measured).

5. **Strengthen Domestic Capabilities:** Establish community-based organizations to strengthen the capacity of small farmers on climate-smart agriculture, provincial DRR offices with response functions. Raise awareness on energy efficiency programs like the "Climate Field Schools" or similar can build technical know-how at the grassroots. Focusing on local capacity ensures that efforts through NDCs (e.g. afforestation, water management) scale.

6. **Protection of Vulnerable Populations:** Include vulnerable groups from adaptation financing (women, small farmers, poor urban family households). For example, provide microfinance for climate-resilient agriculture or subsidies to climate-resilient housing. Make gender equality, and social inclusion as an integral part of all climatic projects.

7. **Leverage International Cooperation:** Engage global partners to upgrade the actions on NDC adaptation and mitigation targets. Strategic diplomacy should focus to leverage advanced technologies of grid resilience, and flood modeling from developed countries with a climate focus by joining knowledge-sharing networks, and transfer global best practices as per Pakistan's requirements.

Focusing on these areas would reduce the difference between the NDC's ambition and action on the ground by quite some distance. These are all evidence-informed recommendations (drawn from the NDC document and research on the Pakistani case) and specifically designed to the socio-economic settings of the nations. Effective prioritization, sufficient resourcing, and long-reaching planning would be the catalyst to transform the inclusive NDC 3.0 of Pakistan to concrete resilience and low-carbon development.

Conclusion

Pakistan's 2025 NDC represents a characteristic transformation in its climatic policy, it's inclusive, future-oriented, and openly weaves climate targets with development. The NDC's 50% emission reduction is commendable, however, to achieve this, it heavily reliance on international financial support and technology transfer, whereas domestic finance schemes e.g. green bonds) remain minimal. Adaptation priorities are broad-based (water, agriculture, ecosystem, health) and appropriately matched with the vulnerability of Pakistan. However, local capability and financial weaknesses could limit project implementation at the real level.

New bodies (Climate Council, Authority) and engagement (parliament, judiciary) create a legal framework, yet they must overcome historical coordination failures and staffing shortages. Inclusion of transition justice and gender inclusion are both positives, and they both cover social aspects of impacts of climate policy. Their success will depend on successful on-the-ground programs and multi-stakeholder acceptance. A shift to national MRV platform and adaption of monitoring and evaluation mechanism shows strong commitment to transparency, however, data quality and institutionalized reporting is at nascent stage.

In a nutshell, Pakistan's NDC 3.0 is well draft document to address the country's climate and developmental realities. However, alignment on paper does not ensure outcomes. The

document itself acknowledges these challenges to some extent. In line with the research in the policy brief, unless capability, financial, and governance gaps have been filled, NDC's targets could remain aspirational. Meeting the gaps will ensure long-term political will, resources, and international support.

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