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**An Overview of the Pakistan Climate Change Act 2017 and the Role of Judiciary in Advancing Climate Justice**

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**Abstract**

*Climate change has emerged as one of the most pressing global challenges, with developing countries like Pakistan being among the most vulnerable to its devastating impacts (Germanwatch, 2022). Pakistan's response to this crisis was institutionalized through the enactment of the Pakistan Climate Change Act, 2017, which seeks to provide a legislative and administrative framework for climate adaptation and mitigation (Government of Pakistan, 2017). This paper examines the origin, scope, and objectives of the Act while also analyzing the pivotal role of Pakistan's judiciary in advancing the cause of climate justice. Through qualitative analysis of legal frameworks, policy documents, and judicial decisions, this research highlights how the judiciary has evolved into a proactive institution safeguarding environmental and intergenerational rights (Leghari v. Federation of Pakistan, 2015; Khan, 2020). It concludes that while the legislative framework is comprehensive, its implementation remains weak, and the judiciary continues to serve as a catalyst for accountability and environmental governance in Pakistan (Nasir & Ahmad, 2021).*

**Keywords:** Climate Change, Pakistan Climate Change Act 2017, Climate Justice, Environmental Governance, Judicial Activism, Sustainable Development

## 1. Introduction

Pakistan faces acute environmental challenges including glacial melt, irregular monsoons, flash floods, heatwaves, and desertification. These challenges are not only environmental but also socio-economic, as they exacerbate food insecurity, water scarcity, displacement, and rural poverty (Ali & Rizvi, 2021). According to the Global Climate Risk Index 2022, Pakistan ranks among the top ten most climate-vulnerable countries in the world (Germanwatch, 2022). The country has suffered severe climate-induced disasters in recent years such as the 2010 super floods that affected over 20 million people and the 2022 floods that submerged one-third of the nation's landmass—resulting in loss of lives, livelihoods, and infrastructure (UNDP, 2023). These recurring crises highlight the urgent need for a coherent and legally enforceable framework to address climate change at both the national and provincial levels.

To meet this pressing need, the Government of Pakistan introduced the Pakistan Climate Change Act, 2017, which provides an institutional and legal structure for tackling climate change through both adaptation and mitigation measures (Government of Pakistan, 2017). The Act operationalizes Pakistan's commitments under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, emphasizing national coordination, climate finance, and policy integration (UNFCCC, 1992; Paris Agreement, 2015). It establishes two main institutions: the Pakistan Climate Change Council (PCCC) and the Pakistan Climate Change Authority (PCCA). The Council, chaired by the Prime Minister, is responsible for high-level policy direction, while the Authority acts as the implementing body tasked with developing climate action plans, regulating emissions, and managing the Climate Change Fund (Ministry of Climate Change, 2018). These institutions aim to mainstream climate considerations into national development strategies and strengthen Pakistan's institutional capacity to respond to climate risks (Nasir & Ahmad, 2021).

However, despite this legislative progress, implementation has remained inconsistent. The decentralization of environmental management after the 18th Constitutional Amendment (2010) transferred significant powers to provinces, creating coordination challenges between federal and provincial governments (Rana, 2019). Moreover, inadequate financial resources, weak institutional capacity, and lack of public awareness have hindered effective policy execution (Saeed & Shakoor, 2020). Consequently, Pakistan's legal framework, though robust on paper, often struggles to deliver tangible outcomes in practice.

In this governance vacuum, Pakistan's judiciary has played a transformative role in promoting environmental protection and climate justice. The judiciary has expanded the scope of fundamental rights to include environmental protection as part of the right to life under Article 9 of the Constitution of Pakistan, 1973. A landmark case in this regard is *Asghar Leghari v. Federation of Pakistan* (2015), where the Lahore High Court held that the government's failure to implement the National Climate Change Policy (2012) violated citizens' constitutional rights to life and dignity. The Court declared climate change an existential threat and directed the creation of a Climate Change Commission to monitor governmental compliance with policy goals (*Leghari v. Federation of Pakistan*, 2015). This case is internationally recognized as a milestone in climate jurisprudence, comparable to cases such as *Urgenda Foundation v. The State of the Netherlands* (2015) and *Juliana v. United States* (2016), which also established governmental accountability for climate inaction (Peel & Osofsky, 2018).

Following the Leghari decision, Pakistani courts continued to strengthen environmental jurisprudence. In *Shehla Zia v. WAPDA* (1994), the Supreme Court of Pakistan earlier recognized the right to a clean and healthy environment as an integral part of the right to life (PLD 1994 SC 693). Building upon this precedent, subsequent cases have invoked principles such as the public trust doctrine, sustainable development, and intergenerational equity to ensure environmental protection (Khan, 2020). These legal doctrines affirm that natural resources belong to the people and must be preserved for future generations. The judiciary's interpretation of environmental rights thus serves as a safeguard against administrative negligence and ensures that governmental authorities remain accountable for ecological degradation and climate inaction.

This research article therefore examines both the legislative framework of the Pakistan Climate Change Act, 2017, and the judiciary's evolving role in advancing climate justice. It highlights how Pakistan's legal system is progressively aligning with international environmental norms and human rights standards to build a climate-resilient and justice-oriented governance model. The analysis underscores that while the law provides an essential foundation for action, its success depends on the synergy between effective implementation, institutional coordination, and judicial oversight.

## **2. History and Background**

The roots of Pakistan's climate change policy can be traced to the National Climate Change Policy (NCCP) 2012, which was the first comprehensive national framework addressing both adaptation and mitigation strategies to combat the effects of climate change (Government of Pakistan, 2012). The NCCP 2012 identified critical sectors such as water, agriculture, forestry, energy, and health as key areas requiring policy intervention. It emphasized the need to build resilience through disaster risk management, renewable energy promotion, and sustainable natural resource utilization. However, the policy was largely advisory in nature and lacked a legally binding enforcement mechanism. Consequently, despite its strong vision, its implementation remained weak and fragmented, primarily due to insufficient institutional coordination and limited provincial capacity following the 18th Constitutional Amendment (2010), which devolved environmental management responsibilities to provincial governments (Rana, 2019).

Recognizing this policy gap, the Pakistan Climate Change Act, 2017 was enacted to institutionalize and legally enforce climate governance through a structured administrative and legislative framework (Government of Pakistan, 2017). The Act represented a major step toward embedding climate policy into the country's broader environmental and development agenda. It established two principal bodies: the Pakistan Climate Change Council (PCCC) and the Pakistan Climate Change Authority (PCCA). The PCCC, chaired by the Prime Minister, is responsible for high-level policy guidance, approval of national climate strategies, and ensuring inter-provincial coordination on climate issues. It includes representation from federal and provincial governments, civil society organizations, and climate experts. The PCCA, on the other hand, serves as the implementing and regulatory body tasked with formulating adaptation and mitigation plans, managing climate finance—including the Climate Change Fund—and coordinating research and awareness programs across sectors (Ministry of Climate Change, 2018).

This institutional arrangement reflects Pakistan's legislative commitment to aligning domestic climate action with its international obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement (2015). By providing a legal framework for climate governance, the Act attempts to bridge the gap between policy design and implementation, ensuring

that environmental concerns are integrated into the country's socioeconomic development plans (UNFCCC, 1992; Paris Agreement, 2015). Moreover, the Act establishes accountability mechanisms to monitor progress on national climate goals and facilitate collaboration between public institutions, the private sector, and academia (Nasir & Ahmad, 2021).

Despite these achievements, practical implementation of the Act has faced persistent challenges. Research indicates that inadequate funding, overlapping institutional roles, bureaucratic inefficiency, and weak data management have limited the operational capacity of the PCCA (Saeed & Shakoor, 2020). The Asian Development Bank (2020) reported that Pakistan's climate institutions lack sufficient technical expertise and financial autonomy, which undermines the execution of climate adaptation projects. Moreover, provincial climate units remain underdeveloped, resulting in poor vertical coordination between national and subnational entities.

Judicial developments have further underscored these administrative shortcomings. In *Asghar Leghari v. Federation of Pakistan* (2015), the Lahore High Court explicitly recognized the failure of state institutions to implement the NCCP 2012 and related frameworks, declaring it a violation of citizens' constitutional rights to life and dignity under Articles 9 and 14 of the Constitution (*Leghari v. Federation of Pakistan*, 2015). The Court's decision emphasized that the mere existence of policies and legislative instruments like the Climate Change Act is insufficient unless accompanied by effective enforcement and institutional performance. Following this judgment, the Climate Change Commission was established under judicial directive to monitor progress on adaptation measures and ensure inter-agency coordination (Khan, 2020).

The judiciary has continued to play a supervisory role in ensuring compliance with environmental laws and policies. Earlier, in *Shehla Zia v. WAPDA* (PLD 1994 SC 693), the Supreme Court of Pakistan expanded the interpretation of the right to life to include the right to a clean and healthy environment. This precedent has since served as the constitutional foundation for judicial activism in environmental and climate matters. Subsequent cases such as Human Rights Case No. 4668 of 2018 (Sindh), concerning industrial pollution and deforestation, have reaffirmed the courts' commitment to environmental protection through the application of principles like intergenerational equity, sustainable development, and the public trust doctrine (Khalid, 2021).

In essence, while the Pakistan Climate Change Act, 2017 provides a solid legislative foundation for climate governance, its success depends on the synergy between legislative intent, administrative efficiency, and judicial oversight. The combination of these three forces—law, policy, and judicial enforcement constitutes the backbone of Pakistan's evolving climate governance framework. However, to realize the full potential of the Act, Pakistan must address the systemic barriers of resource scarcity, institutional fragmentation, and political inertia that continue to hinder its effective implementation (Ali & Rizvi, 2021).

### **3. Scope of the Study**

The scope of this research encompasses both the legislative framework of the Pakistan Climate Change Act, 2017, and the judicial activism that complements it. The study examines how the Act aligns with international environmental obligations, and how the judiciary, through landmark cases, has expanded the constitutional interpretation of environmental rights. It also explores the institutional mechanisms established by the Act and evaluates their practical effectiveness in promoting sustainable climate

governance. Furthermore, the paper assesses how judicial interventions have bridged implementation gaps by enforcing environmental accountability and advancing the principles of climate justice.

#### 4. Literature Review

The body of literature on Pakistan's climate governance and judicial environmentalism has expanded considerably over the past decade, reflecting growing academic, legal, and policy interest in the nexus between environmental protection, human rights, and sustainable development. The literature converges on several key themes: the evolution of Pakistan's climate policy architecture, the institutional and implementation gaps in its climate governance, and the judiciary's emerging role as a guardian of environmental and intergenerational justice.

Early scholarship such as Qureshi (2013) and Ali & Rehman (2015) highlighted that Pakistan's environmental framework before 2012 was largely fragmented, focusing on pollution control rather than systemic climate adaptation or mitigation. The *National Climate Change Policy (NCCP) 2012* was therefore recognized as the first coherent policy document outlining a national adaptation and mitigation strategy (Government of Pakistan, 2012). However, scholars like Rauf et al. (2018) and Nasir & Ahmad (2021) observed that despite this progressive framework, implementation remained weak due to the absence of a statutory enforcement mechanism, poor inter-agency coordination, and insufficient financial allocation for climate initiatives. This critique led to a consensus that the *Pakistan Climate Change Act, 2017* was a legislative necessity to translate policy intent into institutional action (Government of Pakistan, 2017).

Research by Asghar and Nawaz (2020) and the Asian Development Bank (2020) provides a detailed institutional analysis of the Act, emphasizing its dual structure: the establishment of the *Pakistan Climate Change Council (PCCC)*, chaired by the Prime Minister, for national coordination and strategic guidance, and the *Pakistan Climate Change Authority (PCCA)*, responsible for technical implementation and monitoring. These studies commend the Act's effort to align domestic climate governance with global commitments under the *UNFCCC* and the *Paris Agreement*, yet they also identify persistent bureaucratic inertia, overlapping jurisdiction, and inadequate capacity at provincial levels as major barriers. The *World Bank (2022) Pakistan Climate and Development Report* reinforces this view, arguing that the Act's institutional design remains underutilized due to limited fiscal devolution, weak data systems, and the absence of a strong accountability mechanism.

Parallel to legislative developments, a rich body of legal scholarship has explored the judiciary's expanding role in environmental governance. The landmark judgment *Shehla Zia v. WAPDA (1994)* is often cited as the foundation of environmental jurisprudence in Pakistan, as the Supreme Court interpreted Article 9 (right to life) of the Constitution to include the right to a clean and healthy environment (PLD 1994 SC 693). Later works by Khan (2020), Khalid (2021), and Gul & Aziz (2022) describe how this jurisprudence evolved into a climate justice framework through cases like *Asghar Leghari v. Federation of Pakistan (2015)*, where the Lahore High Court declared governmental inaction on climate policy as a violation of citizens' fundamental rights. In this case, Justice Syed Mansoor Ali Shah held the state accountable for failing to implement the *National Climate Change Policy 2012* and established a *Climate Change Commission* to monitor compliance a landmark intervention that scholars regard as a turning point in South Asian climate litigation (Leghari v. Federation of Pakistan, 2015; Nasir & Ahmad, 2021).

Comparative legal analyses by Peel & Osofsky (2018) and Setzer & Byrnes (2020) contextualize Pakistan's experience within the broader global trend of climate litigation, drawing parallels between *Leghari* and international cases such as *Urgenda Foundation v. State of the Netherlands* (2015) and *Juliana v. United States* (2015). These works argue that Pakistani courts have localized global principles of climate justice such as intergenerational equity, public trust, and the precautionary principle within constitutional and administrative frameworks, thereby expanding the scope of environmental rights in developing-country contexts. More recent literature (UNDP, 2023; Germanwatch, 2022) situates this judicial activism against the backdrop of Pakistan's heightened vulnerability to climate disasters, notably the 2022 floods, which displaced millions and caused damages exceeding \$30 billion. Scholars argue that these events further validate the judiciary's proactive stance and underscore the need for stronger legislative and institutional responses.

Recent policy-oriented studies, including the *Pakistan Environmental Protection Agency Report (2022)* and the *Ministry of Climate Change Annual Review (2023)*, provide empirical insights into how climate policies are operationalized at different administrative levels. They indicate that although Pakistan has developed a strong legislative and policy foundation, implementation remains constrained by political instability, limited financial resources, and weak inter-provincial coordination. This observation is echoed in the academic analyses of Abbasi & Rahman (2022) and Hussain et al. (2023), who argue that judicial intervention, while essential, cannot substitute for long-term institutional capacity-building and fiscal reform.

In summary, the literature demonstrates a clear evolution from policy formulation to legislative institutionalization, and finally, to judicial enforcement. Scholars consistently recognize the *Pakistan Climate Change Act, 2017* as a significant legislative milestone but caution that without effective institutional performance, monitoring, and resource allocation, the Act's potential remains largely unrealized. The judiciary, through progressive interpretation of constitutional rights, has emerged as a central actor in ensuring climate accountability and justice. Collectively, the reviewed literature underscores a dual trajectory: a formal legislative framework aspiring to meet international standards, and an assertive judiciary bridging governance gaps to protect environmental and intergenerational rights.

## 5. Research Methodology

This study employs a qualitative, doctrinal, and interpretive research methodology designed to examine the legal architecture of Pakistan's climate governance and the judiciary's role in advancing climate justice. The primary data sources comprised statutory texts and policy documents chiefly the *Pakistan Climate Change Act, 2017* and the *National Climate Change Policy, 2012* which were analysed using legal-doctrinal techniques to identify statutory mandates, institutional roles, and enforcement mechanisms (Government of Pakistan, 2012; Government of Pakistan, 2017). Judicial materials formed a core part of the inquiry: landmark judgments such as *Asghar Leghari v. Federation of Pakistan* (2015) and foundational environmental rulings like *Shehla Zia v. WAPDA* (1994) were read closely to extract principles (for example, the constitutionalization of environmental rights, the public trust doctrine, precautionary principle, and intergenerational equity) and to trace how courts have translated policy gaps into enforceable obligations (*Leghari v. Federation of Pakistan*, 2015; *Shehla Zia v. WAPDA*, 1994). To capture more recent judicial trends and litigation patterns, the study reviewed case summaries and

secondary analyses of post-Leghari climate litigation and environmental suo motu proceedings discussed in the Pakistani legal literature and litigation surveys (Khan, 2020; Khalid, 2021).

Complementing the doctrinal review, thematic content analysis was applied to academic articles, government reports, and multilateral assessments to identify recurring implementation barriers and governance challenges. Key reports such as the IPCC assessment syntheses and Pakistan-specific damage and needs assessments (for example, the 2022 post-flood PDNA) provided empirical grounding on climate impacts that courts and policymakers reference when justifying remedial measures (IPCC, 2021/2022; UNDP, 2023). Multilateral institutional appraisals—such as assessments by the Asian Development Bank and World Bank on institutional capacity and climate finance were used to triangulate findings about resource and capacity constraints (Asian Development Bank, 2020; World Bank, 2022). Comparative legal analysis drew on influential transnational climate litigation (e.g., *Urgenda v. Netherlands* and *Juliana v. United States*) to situate Pakistan’s judicial remedies within global jurisprudential trends and to evaluate doctrinal parallels and limits (Peel & Osofsky, 2018).

Methodologically, documents were selected through purposive sampling: legal instruments and cases directly addressing climate policy or environmental constitutional rights were prioritized, while scholarly literature was chosen for relevance, methodological rigor, and peer review status. Data extraction followed a structured coding framework that categorized material under themes such as “normative basis” (constitutional provisions and international obligations), “institutional design” (PCCC, PCCA, provincial units), “implementation constraints” (finance, capacity, coordination), and “judicial remedies” (injunctions, commissions, monitoring orders). Triangulation across doctrinal texts, empirical reports, and jurisprudence strengthened the credibility of inferences about systemic gaps and the judiciary’s corrective role.

The study acknowledges limitations inherent in qualitative legal research: reliance on secondary sources reduces the ability to capture real-time administrative dynamics, and selective publication bias in case reporting may under represent lower-court activity. To mitigate these limits, the research cross-checked judicial findings with multiple reports and scholarly critiques and explicitly identified areas where empirical fieldwork or interviews with policymakers would be required for deeper validation. Overall, this mixed doctrinal comparative approach allowed the paper to synthesize legislative intent, judicial reasoning, and policy outcomes, producing an interpretive account of how law and litigation interact with institutional capacities to shape climate governance in Pakistan.

## **6. Key Findings**

The research reveals several critical findings regarding the Pakistan Climate Change Act, 2017, and the role of the judiciary in advancing climate justice. First, the Act provides a comprehensive legislative and institutional framework for climate governance in Pakistan, establishing the Pakistan Climate Change Council (PCCC) and the Pakistan Climate Change Authority (PCCA) to coordinate policy, implement adaptation and mitigation strategies, and manage climate finance (Government of Pakistan, 2017; Asghar & Nawaz, 2020). The PCCC, chaired by the Prime Minister, is responsible for high-level policy guidance, inter-provincial coordination, and alignment with international commitments such as the Paris Agreement (2015), while the PCCA operationalizes these strategies at the technical and administrative level (Ministry of Climate Change, 2018). These institutions mark a significant evolution from the *National Climate Change Policy 2012*, which lacked legally binding mechanisms and suffered from weak enforcement (Government of Pakistan, 2012).

Second, despite the legislative progress, the research finds that implementation gaps remain a persistent challenge. Studies indicate that bureaucratic inefficiency, limited financial resources, and inadequate technical capacity at both federal and provincial levels impede the effective execution of climate policies (Saeed & Shakoor, 2020; Asian Development Bank, 2020). The World Bank (2022) report notes that inter-provincial coordination remains weak, and the absence of a robust monitoring and evaluation framework limits the accountability of climate initiatives. Additionally, political instability and lack of public awareness further constrain the operationalization of the Act, highlighting that legislative enactment alone is insufficient without systemic institutional support (Nasir & Ahmad, 2021).

Third, the judiciary has emerged as a key actor in bridging these governance gaps. Landmark cases, most notably *Asghar Leghari v. Federation of Pakistan (2015)*, established that government inaction on climate change constitutes a violation of citizens' fundamental rights under Articles 9 and 14 of the Constitution (Leghari v. Federation of Pakistan, 2015). The Lahore High Court's decision mandated the creation of a Climate Change Commission to oversee policy implementation and ensure accountability, representing an unprecedented judicial intervention in climate governance (Khan, 2020; Khalid, 2021). Further judicial precedents, such as *Shehla Zia v. WAPDA (1994)*, reinforced the constitutional right to a healthy environment as an integral part of the right to life (PLD 1994 SC 693), laying the foundation for subsequent climate litigation. These cases collectively demonstrate that the judiciary functions not only as an interpretive body but also as an active monitor of environmental and climate policy compliance.

Fourth, the research indicates that Pakistan's judicial interventions align with global trends in climate litigation. Comparative studies show that rulings such as *Urgenda v. Netherlands (2015)* and *Juliana v. United States (2016)* similarly hold governments accountable for failing to meet climate obligations (Peel & Osofsky, 2018). The Pakistani judiciary has localized these principles through the application of doctrines such as intergenerational equity, public trust, and the precautionary principle, effectively linking climate governance to human rights and social justice (Gul & Aziz, 2022; Setzer & Byrnes, 2020). This demonstrates that the courts are filling implementation gaps, particularly where administrative institutions lack capacity or political will, thereby reinforcing climate justice within the national context.

Finally, the findings reveal that judicial activism alone cannot ensure sustainable climate governance. While courts have provided oversight and accountability mechanisms, the long-term effectiveness of the Climate Change Act depends on strengthened institutional capacity, adequate financial resources, and greater public participation (Hussain et al., 2023; UNDP, 2023). The research suggests that a synergistic approach combining legislative rigor, administrative efficiency, and judicial oversight is essential for achieving climate resilience and justice in Pakistan.

## **7. Discussion**

The Pakistan Climate Change Act, 2017 represents the foundation of Pakistan's legal and institutional framework for climate governance, aiming to mainstream climate considerations into national development planning (Government of Pakistan, 2017). Through the creation of the Pakistan Climate Change Council (PCCC) and the Pakistan Climate Change Authority (PCCA), the Act provides mechanisms for strategic policy formulation, management of the Climate Change Fund, and coordination among federal, provincial, and local stakeholders (Ministry of Climate Change, 2018; Asghar & Nawaz, 2020). The Act also emphasizes research, public awareness, and technology transfer to enhance the country's

capacity for climate adaptation and mitigation (Nasir & Ahmad, 2021). Despite these provisions, implementation has been hampered by administrative inefficiencies, limited financial resources, and insufficient technical expertise at provincial levels, resulting in delayed execution of climate projects and incomplete integration of climate policies into broader development planning (Saeed & Shakoor, 2020; World Bank, 2022).

The judiciary has emerged as a proactive guardian of environmental and climate rights, compensating in part for institutional weaknesses. The landmark decision in *Leghari v. Federation of Pakistan* (2015) illustrates this role, where the Lahore High Court ruled that government inaction in implementing the National Climate Change Policy 2012 violated citizens' constitutional rights to life and dignity under Articles 9 and 14 (*Leghari v. Federation of Pakistan*, 2015; Khan, 2020). The Court's establishment of a Climate Change Commission to monitor policy compliance represents a novel form of judicial oversight, linking climate accountability to enforceable constitutional mandates. Scholars such as Khalid (2021) note that this ruling marked a watershed moment in Pakistan's environmental jurisprudence, signaling the judiciary's willingness to transform environmental protection into a rights-based obligation.

Following the *Leghari* precedent, Pakistani courts have increasingly applied principles such as the public trust doctrine, the precautionary principle, and intergenerational equity to enforce environmental sustainability (Gul & Aziz, 2022; Khan, 2020). These doctrines collectively affirm that natural resources are held in trust for present and future generations and must be managed responsibly. Courts have directed public authorities to conduct environmental impact assessments, protect wetlands and forests, regulate industrial pollution, and enforce sustainable development practices (*Shehla Zia v. WAPDA*, 1994; Khalid, 2021). Such rulings indicate a growing judicial consciousness that environmental protection is integral to social justice, public welfare, and sustainable development.

Nevertheless, while judicial activism has played a critical role in advancing climate governance, it cannot substitute for the executive's responsibility and institutional capacity. Research indicates that long-term success depends on effective coordination among federal, provincial, and local institutions, adequate financial and human resources, and public engagement (Nasir & Ahmad, 2021; UNDP, 2023). Scholars argue that the judiciary provides moral and constitutional impetus, but the real transformation requires political will, structural reform, and strengthened administrative mechanisms to translate policy and legal mandates into practical climate resilience (Saeed & Shakoor, 2020; Hussain et al., 2023). In essence, a collaborative approach combining legislative action, judicial oversight, and executive efficiency is essential to achieve sustainable climate governance in Pakistan.

## **8. Recommendations**

### **8.1 Institutional Capacity Building**

The administrative and technical capacity of the PCCA and provincial climate units should be strengthened through specialized training, adoption of modern technology, and allocation of skilled human resources to ensure effective implementation of climate policies (Asian Development Bank, 2020).

### **8.2 Financial Mobilization**

Sustainable and predictable funding must be secured for climate adaptation and mitigation initiatives. This includes better management of the Climate Change Fund and leveraging international climate finance through mechanisms such as the Green Climate Fund and other multilateral funding sources (World Bank, 2022).

### **8.3 Intergovernmental Coordination**

Coordination between federal, provincial, and local authorities should be enhanced to eliminate bureaucratic bottlenecks, clarify jurisdictional responsibilities, and ensure harmonized implementation of national climate strategies (Saeed & Shakoor, 2020).

### **8.4 Public Awareness and Community Engagement**

Citizen participation in climate action should be increased through awareness campaigns, educational programs, and community-based adaptation projects. Grassroots involvement is critical for resilience, accountability, and the successful adoption of climate initiatives (Nasir & Ahmad, 2021).

### **8.5 Judicial Oversight and Legal Reform**

Judicial monitoring of climate policy implementation should be maintained and expanded. At the same time, environmental compliance mechanisms should be codified within legislation to ensure enforceable accountability and the long-term promotion of climate justice (Khan, 2020; Khalid, 2021).

## **9. Conclusion**

The Pakistan Climate Change Act, 2017 represents a landmark achievement in the country's environmental and climate governance framework. By establishing the Pakistan Climate Change Council (PCCC) and the Pakistan Climate Change Authority (PCCA), the Act provides institutional mechanisms for strategic planning, national and provincial coordination, and the management of the Climate Change Fund (Government of Pakistan, 2017; Ministry of Climate Change, 2018). It further emphasizes research, technology transfer, public awareness, and integration of climate considerations into national development strategies, thereby aligning domestic policies with international obligations under the UNFCCC (1992) and the Paris Agreement (2015) (Nasir & Ahmad, 2021).

Despite this comprehensive legislative framework, the Act's effectiveness has been constrained by administrative inefficiencies, financial limitations, and insufficient technical capacity, particularly at provincial and local levels (Saeed & Shakoor, 2020; World Bank, 2022). Climate-induced disasters, such as the 2022 floods, have highlighted the urgent need for stronger implementation mechanisms and intergovernmental coordination (UNDP, 2023). In this context, the judiciary has played a critical role in filling governance gaps. Landmark rulings, such as *Leghari v. Federation of Pakistan* (2015), have interpreted climate protection as a constitutional right, enforced accountability, and operationalized oversight through mechanisms like the Climate Change Commission (*Leghari v. Federation of Pakistan*, 2015; Khan, 2020; Gul & Aziz, 2022). These judicial interventions have reinforced doctrines such as intergenerational equity, the precautionary principle, and the public trust doctrine, embedding climate justice into Pakistan's legal system (Khalid, 2021; *Shehla Zia v. WAPDA*, 1994).

While the combination of legislative reform and judicial activism has created a solid foundation for climate governance, the long-term success of Pakistan's climate framework depends on the effective translation of policy into practice through institutional efficiency, resource mobilization, and active public participation.

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