Oñati Socio-Legal Series (ISSN: 2079-5971)
Oñati International Institute for the Sociology of Law
Avenida Universidad, 8 Apdo. 28
20560 Oñati, Gipuzkoa, Spain
Tel. (+34) 943 783064 / opo@iisj.net / https://opo.iisj.net

From environmental governance to climate citizenship: Rethinking state authority, climate vulnerability and conflict dynamics in Pakistan

OÑATI SOCIO-LEGAL SERIES VOLUME 16, ISSUE 3 (2026), 1394-1419: FRONTERAS EN DISPUTA: CONTROL MIGRATORIO, EXCEPCIÓN Y RESISTENCIA
DOI LINK: HTTPS://DOI.ORG/10.35295/OSLS.IISL.2556
RECEIVED 18 DECEMBER 2025, ACCEPTED 27 APRIL 2026, FIRST-ONLINE PUBLISHED 15 MAY 2026, VERSION OF RECORD PUBLISHED 1 JUNE 2026

MUHAMMAD IQBAL UDDIN ARIF[1]
MUHAMMAD IRFAN MAHSUD[2]
SUMEERA IMRAN[3]

Abstract

This article reconceptualizes climate change in Pakistan not merely as an environmental issue but as a profound challenge to state authority, citizenship, and political belonging. It addresses the gap between Pakistan's extensive climate policy framework and the state's limited capacity to protect vulnerable populations due to fragmented governance, weak enforcement, and the absence of a rights-based approach. Using doctrinal legal analysis, policy review, institutional mapping, and interviews with key informants, the study examines the interaction between constitutional provisions, environmental laws, disaster management regimes, and social protection systems. The findings show that climate-induced displacement, resource insecurity, and livelihood disruption are generating new forms of precarious citizenship largely unrecognized within Pakistan's legal and administrative structure. The article argues that effective climate resilience requires institutional reform and constitutional recognition of climate-vulnerable populations as full political subjects, contributing to global debates on climate change, rights, and state-society relations in the Global South more broadly.

Key words

Environmental governance; climate citizenship; environmental policy; institutional fragmentation; Pakistan

[1] Dr Muhammad Iqbal Uddin Arif. Associate Lecturer, University of Massachusetts, Boston 100 Morrissey Boulevard Boston, MA 02125, US. Email: arifutman@gmail.com
[2] Dr. Muhammad Irfan Mahsud (PhD). Assistant Professor (corresponding author), Department of Peace and Conflict Studies National Defence University, Sector E-9 Islamabad, 44000 Pakistan. Email: irfanmahsud@ndu.edu.pk
[3] Dr. Sumeera Imran. Assistant Professor, Department of International Relations National Defence University, Sector E-9 Islamabad, 44000 Pakistan. Email: drsameeraimran@ndu.edu.pk

Resumen

Este artículo replantea el cambio climático en Pakistán no solo como una cuestión medioambiental, sino como un profundo desafío para la autoridad estatal, la ciudadanía y la pertenencia política. Aborda la brecha existente entre el amplio marco de políticas climáticas de Pakistán y la limitada capacidad del Estado para proteger a las poblaciones vulnerables, debido a una gobernanza fragmentada, una aplicación deficiente de la ley y la ausencia de un enfoque basado en los derechos. Mediante el análisis jurídico doctrinal, la revisión de políticas, el mapeo institucional y entrevistas con informantes clave, el estudio examina la interacción entre las disposiciones constitucionales, las leyes medioambientales, los regímenes de gestión de desastres y los sistemas de protección social. Los resultados muestran que los desplazamientos provocados por el clima, la inseguridad en el acceso a los recursos y la alteración de los medios de subsistencia están generando nuevas formas de ciudadanía precaria que, en gran medida, no se reconocen dentro de la estructura jurídica y administrativa de Pakistán. El artículo sostiene que una resiliencia climática efectiva requiere una reforma institucional y el reconocimiento constitucional de las poblaciones vulnerables al clima como sujetos políticos de pleno derecho, lo que contribuye a los debates globales sobre el cambio climático, los derechos y las relaciones entre el Estado y la sociedad en el Sur Global en un sentido más amplio.

Palabras clave

Gobernanza medioambiental; ciudadanía climática; política medioambiental; fragmentación institucional; Pakistán

Table of contents

1. Introduction

Climate change has emerged as one of the most pressing global governance challenges of the twenty-first century, affecting ecological systems, economic stability, and social security across national boundaries. Unlike localized environmental issues, climate change is a transboundary phenomenon that requires coordinated action across multiple governance levels, international, national, and local. Global frameworks such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement (2015) emphasize collective responsibility and policy coordination among states to mitigate greenhouse gas emissions and strengthen adaptive capacity (Ostrom 2010, Keohane and Victor 2016). However, scholars increasingly note that the effectiveness of global climate commitments ultimately depends on domestic governance structures, institutional capacity, and the ability of national legal systems to translate international obligations into actionable policy (Biermann *et al.* 2010, Bulkeley and Betsill 2013). In many developing countries, governance fragmentation, limited administrative capacity, and competing development priorities complicate the implementation of climate policies, creating significant gaps between international commitments and local realities (Najam *et al.* 2004, Busby 2022). Understanding how national and subnational institutions respond to these challenges is therefore essential for assessing the effectiveness of climate governance and identifying pathways for more inclusive and adaptive environmental policy.

This study offers a thematic analysis of Pakistan's environmental laws and governance practices, focusing on the federal and provincial (Khyber Pakhtunkhwa) levels. As the country faces intensifying climatic risks, from floods and droughts to glacial melt, a critical evaluation of its legislative and institutional frameworks becomes imperative. The research assesses how effectively existing laws and policies address climate impacts and how governance mechanisms function across administrative tiers. The study contributes to both academic and policy discourse by analysing the intersections of law, governance, and climate adaptation within Pakistan's institutional context. It maps the legal landscape and examines operational gaps between policy formulation and implementation. By contrasting federal and provincial approaches, particularly Khyber Pakhtunkhwa's proactive yet uneven policy initiatives, the study identifies opportunities for reform and improved coordination.

Grounded in analytical eclecticism (Sil and Katzenstein 2010), this study builds on the state of the art in climate governance research, which emphasizes multi-level governance, polycentric decision-making, and the involvement of diverse institutional actors in environmental management (Biermann *et al.* 2010, Bulkeley and Betsill 2013). However, existing scholarship pays limited attention to how these dynamics operate within fragile governance contexts such as Pakistan, particularly regarding the interaction between legal frameworks, institutional capacity, and climate vulnerability. The novelty of this research lies in its integrated analytical framework that combines environmental governance, political ecology, legal pluralism, and risk society theory to examine Pakistan's climate governance across federal and provincial levels, thereby linking legal-institutional analysis with the socio-political dimensions of climate vulnerability. Climate Citizenship is ground in the constitution of Pakistan in the context of right to life, as explained in the *Leghari v. Federation of Pakistan* (Ladores 2017). It

emphasises that the citizens have the right and can hold state accountable for climate inaction, while at the same time sharing responsibility as in rights and duties with common but differentiated responsibilities to address the issue of climate challenges and governance gaps.

Pakistan provides both an urgent and instructive case for understanding governance under climatic stress. Despite being among the most climate-vulnerable countries globally, its environmental policy landscape remains fragmented, under-resourced, and weakly enforced. Constitutional reforms such as the 18th Amendment, which devolved environmental authority to provinces, have not resolved coordination challenges between federal and subnational institutions. Khyber Pakhtunkhwa (KP), marked by ecological diversity and socio-political volatility, offers a critical subnational perspective for examining these tensions. The study addresses two guiding questions:

1. To what extent do Pakistan's federal and provincial environmental statutes incorporate effective mechanisms for climate change mitigation and adaptation?
2. What systemic and institutional constraints impede the implementation of these laws and policies?

It further explores how policy incoherence, bureaucratic inertia, and weak accountability mechanisms constrain governance, and how networks of state institutions, civil society, and local communities, mediate climate action. Finally, the study seeks to bridge the gap between theory and practice in climate change governance by integrating legal, institutional, and socio-political analysis. It offers a framework for assessing how governance systems evolve under conditions of environmental uncertainty and institutional fragility, contributing to broader debates on adaptive and inclusive climate governance in developing states.

2. Methodology

This study employs qualitative, multi-method design grounded in analytical eclecticism (Elman and Elman 2001), integrating insights from law, political science, sociology, and environmental governance. Analytical eclecticism enables the synthesis of mid-range theories to explain complex empirical realities (Sil and Katzenstein 2010). Using a case study approach, it focuses on climate change governance in Pakistan, with emphasis on the federal and Khyber Pakhtunkhwa (KP) levels, to examine how environmental laws and governance structures function in practice. The design combines doctrinal legal analysis, policy review, and qualitative inquiry through document analysis and interviews. Guided by an interpretivist orientation, the study explores how institutional, political, and socio-legal actors perceive and enact governance, reflecting the concerns of political ecology and legal pluralism.

Data were collected from three primary sources: Federal and provincial environmental statutes, regulations, and judicial decisions were systematically reviewed, including the *Pakistan Environmental Protection Act (1997)*, *National Climate Change Policy (2012)*, *Framework for Implementation of Climate Change Policy (2014–2030)*, and *Khyber Pakhtunkhwa Climate Change Policy (2016)*. This legal corpus provided the foundation for analysing the design, scope, and evolution of climate governance mechanisms. Secondary sources included official publications by the Ministry of Climate Change,

Pakistan Environmental Protection Agency (Pak-EPA), Khyber Pakhtunkhwa EPA, World Bank, UNDP, and UNEP. These documents offered contextual evidence on implementation challenges, institutional coordination, and capacity constraints. Semi-structured interviews were conducted with policymakers, legal practitioners, environmental NGOs, and federal and provincial (KP) officials. The interviews aimed to capture perceptions regarding the operational gaps, institutional challenges, and political dynamics influencing environmental law enforcement. Data collection followed a purposive sampling strategy to ensure representation from diverse institutional levels and stakeholder perspectives. Documentary sources were triangulated with interview data to enhance validity and depth of interpretation.

The Federal Government and Khyber Pakhtunkhwa (KP) were jointly selected as the case study sites to capture the multi-level dynamics of environmental governance in Pakistan. This dual case design enables a comparative exploration of how national policy frameworks interface with provincial implementation mechanisms under the devolved governance structure established by the 18th Constitutional Amendment (2010). At the federal level, the study examines the Ministry of Climate Change and the Pakistan Environmental Protection Agency (Pak-EPA) as key institutional actors responsible for policy formulation, regulatory oversight, and international environmental commitments, including the *Paris Agreement* and the *Nationally Determined Contributions (NDCs)*. The federal government provides the overarching legal and strategic framework for environmental management, yet often faces challenges of coordination, resource allocation, and inter-agency fragmentation that impede effective enforcement across provinces.

At the provincial level, Khyber Pakhtunkhwa (KP) represents an ecologically diverse and politically significant region that embodies the intersection of climate vulnerability and governance transition. Geographically, KP is among Pakistan's most climate-affected provinces, exposed to glacial melt, flash floods, deforestation, and soil erosion. Politically, it is a post-conflict region navigating complex security, administrative, and developmental challenges while adapting to its newly devolved environmental responsibilities. This federal–provincial pairing allows for a nuanced analysis of how national policy directives are interpreted, adapted, and operationalized at the subnational level, revealing tensions between centralization and decentralization in climate governance. KP's experience provides critical insights into the practical implications of devolution for environmental regulation, institutional coordination, and intergovernmental relations. In essence, this dual-case approach captures the vertical interplay between federal and provincial governance systems, highlighting how structural asymmetries, institutional capacity, and political context shape the overall effectiveness of climate change governance in Pakistan.

The study's analytical strategy integrates doctrinal legal analysis, policy analysis, and thematic qualitative interpretation, consistent with the principles of analytical eclecticism.

To clarify the overall methodological design, Figure 1 presents the study's three-phase analytical strategy, illustrating how doctrinal legal analysis, policy and institutional analysis, and qualitative thematic analysis are integrated within a unified analytical framework.

FIGURE 1

Figure 1. Three-phase research analytical strategy.

Figure 2 below, details the second phase of the methodology, showing how policy documents and institutional arrangements were examined to assess policy coherence, inter-agency coordination, administrative capacity, and governance gaps across federal and provincial levels.

FIGURE 2

Figure 2. Framework for policy and institutional analysis.

Figure 3 illustrates the third analytical phase, outlining the coding and thematic procedures used to analyse interviews and documentary sources and to identify recurrent patterns related to institutional fragmentation, enforcement challenges, stakeholder participation, and policy coherence.

FIGURE 3

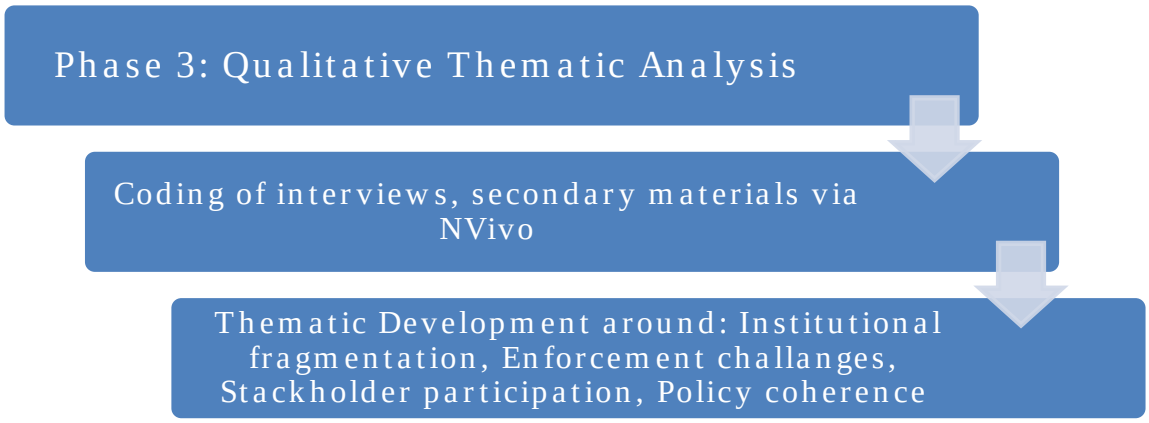

Figure 3. Process of qualitative thematic analysis.

The multi-layered analytical approach, combining legal, policy, and sociopolitical dimensions enabled a holistic understanding of how governance systems operate and why they often fail to achieve intended environmental outcomes.

The research adhered to established ethical standards for social science inquiry. Ethical approval was obtained from the relevant institutional review board prior to fieldwork. Informed consent was sought from all interview participants, ensuring voluntary participation and the right to withdraw at any stage. Participants were assured of anonymity and confidentiality, and identifying details were omitted or coded to protect respondent identities. Given the sensitivity of discussing governance inefficiencies and bureaucratic practices, special care was taken to maintain neutrality and avoid leading questions. All data were stored securely, following GDPR-aligned data protection standards. Artificial intelligence (AI) tools were used solely to enhance the clarity, coherence, and organization of written materials related to this research. The author himself conducted all substantive research design, data analysis, and conceptual development. The use of AI complied fully with academic integrity and ethical research standards, ensuring that intellectual contributions and interpretations remain entirely original.

While the study offers a comprehensive analysis of climate governance in Pakistan, several limitations must be acknowledged. First, the case study design, while rich in contextual depth, limits the generalizability of findings beyond Pakistan's institutional context. However, the insights generated are analytically transferable to other developing countries with similar governance and ecological challenges. Second, data constraints posed challenges such as official statistics and environmental performance indicators are often fragmented or inconsistently updated. To mitigate this, the research employed triangulation across multiple sources to ensure reliability. Third, while interviews provided valuable insider perspectives, they are inherently subjective and may reflect institutional biases or personal experiences. Thematic triangulation with legal and policy analysis helped minimize interpretive bias.

Finally, the study focuses primarily on formal governance mechanisms; informal and community-based environmental governance practices, though relevant, were not extensively explored due to scope limitations. Future research could expand on these dimensions through ethnographic or participatory methodologies. By integrating

doctrinal, policy, and sociological methods within an analytically eclectic framework, this research moves beyond disciplinary silos to capture the complex interplay between law, institutions, and power in shaping Pakistan's climate governance. The methodological design not only strengthens the empirical grounding of the study but also exemplifies an adaptable model for examining environmental governance in similarly complex, multi-level contexts.

3. Climate change and governance

Climate change is not merely an environmental problem but a profound governance challenge. Its multidimensional nature, spanning ecological, social, and political domains demands a rethinking of how authority, responsibility, and accountability are distributed across institutions and actors. This section clarifies the conceptual foundations of governance and its relevance to environmental management, particularly in fragile and multi-level contexts such as Pakistan. Governance refers broadly to the processes and structures through which societies coordinate collective action, make decisions, and manage resources. Unlike "government," which denotes formal state authority, governance encompasses a broader constellation of actors and institutions i.e., public, private, and civil, operating through both formal and informal mechanisms (Evans 2012, Yoshida 2012). It embodies the persistent attempt to steer and regulate societal outcomes through cooperation, negotiation, and shared norms rather than hierarchical command (Burchell *et al.* 1991, Jordan *et al.* 2018). This conceptual expansion aligns with Foucault's notion of *governmentality* (1991), emphasizing the internalization of governance norms and the diffusion of authority across society. Modern governance therefore extends beyond coercive control to encompass participation, partnership, and policy learning among diverse stakeholders such as states, NGOs, markets, and communities.

Over time, scholars have identified several key forms of governance, each emphasizing different modes of coordination and control: Good or Corporate Governance focuses on transparency, accountability, and the rule of law in public administration (Klijn 2008). New Public Management (NPM) or Market Governance advocates for efficiency through delegation, decentralization, and performance-based management (Osborne and Gaebler 1992). Multilevel or Polycentric Governance highlights collaboration across governmental tiers and networks, acknowledging that many contemporary challenges, especially environmental transcend jurisdictional boundaries (Marks and Hooghe 2004, Ostrom 2010). Network Governance views policy-making as a negotiation among interconnected actors i.e., public, private, and non-profit linked through shared interests and mutual dependencies (Rhodes 1997, Sørensen and Torfing 2007). Among these, polycentric and network governance provide the most relevant frameworks for addressing climate change. They recognize that environmental challenges require adaptive, flexible coordination among actors operating at multiple levels, from local communities to international organizations.

The evolution of global governance, defined as the web of institutions, norms, and processes through which collective responses to transnational problems are organized (Rosenau and Czempiel 1992), has intensified since the post–Cold War era. Rising interdependence, environmental degradation, and globalization have created a dense architecture of climate governance, involving both state and non-state actors. These

include international agreements like the UNFCCC and its subsequent frameworks, which emphasize shared responsibility and collaborative action. However, the transnational character of climate change also reveals the limits of traditional governance. Centralized, hierarchical models often struggle to address complex, cross-boundary problems that demand participation, flexibility, and inclusivity. This recognition has driven the turn toward *adaptive* and *polycentric* models of governance, where authority is distributed, learning is continuous, and local knowledge plays a central role (Ostrom 2010).

In the context of Pakistan, this shift is particularly relevant. The country's environmental governance landscape reflects a hybrid of centralized policymaking and fragmented local implementation. While national frameworks set broad priorities, provincial and district administrations, especially in Khyber Pakhtunkhwa, play crucial roles in translating policies into action. Weak coordination among these levels often results in policy incoherence, duplication, and limited accountability. A multi-level governance perspective thus provides the analytical leverage to understand how global climate commitments interact with local administrative realities.

The contemporary climate crisis reveals governance as a form of *social coordination under uncertainty*. It requires mechanisms that integrate diverse actors and knowledge systems, align short-term responses with long-term resilience, and balance efficiency with equity (Arif and Mahsud 2024). Governance, in this sense, is not merely about rulemaking but about creating enabling environments for adaptive capacity, innovation, and cooperation. Effective climate governance must also incorporate non-state and community actors i.e., NGOs, research institutions, local councils, and traditional institutions, that shape decision-making from below. In frontier regions such as Khyber Pakhtunkhwa, indigenous governance structures (e.g., *jirgahs* and *weish*) have historically managed local environmental and social affairs. Recognizing and integrating such systems into formal climate governance frameworks enhances legitimacy and contextual effectiveness.

Governance theory provides the conceptual scaffolding for analysing Pakistan's environmental and climate policies. It highlights that climate change is as much a crisis of institutional coordination and legitimacy as it is of environmental degradation. The challenge lies not only in designing robust policies but in enabling the interplay of state, market, and community actors across scales. Understanding this dynamic, how global frameworks, national institutions, and local practices interact, forms the theoretical foundation for this study's analysis of climate governance in Pakistan.

4. Theoretical underpinnings

This section provides the theoretical framework guiding the study's analysis of climate change governance in Pakistan, particularly at federal and provincial levels. Drawing on insights from governance, political ecology, law, and sociology, it employs a multi-theoretical and analytical eclectic approach (Sil and Katzenstein 2010) to explain how environmental laws and governance practices interact within a complex, multi-level institutional landscape. The framework combines key theoretical traditions i.e., environmental governance, political ecology, legal pluralism, risk society, actor-network theory, transnational regime complex theory, orchestration theory, and critical discourse

analysis, to build a comprehensive yet contextually grounded explanation of climate governance in Pakistan. Each theory contributes distinct but complementary insights into the structural, institutional, and discursive dimensions of governance.

Environmental governance refers to the institutional arrangements, rules, and processes through which societies manage their interaction with the environment (Cashore and Vertinsky 2000). It involves both state and non-state mechanisms for policy formulation, implementation, and enforcement (Steinberg and VanDeveer 2012). In Pakistan, environmental governance functions within a hybrid system where federal and provincial institutions coexist with informal community-based practices and a pervasive role of the military establishment in political and administrative decision-making (Bashir and Ahmed 2019, Siddiqui and Iqbal 2021, Arif 2025). Following the 18th Constitutional Amendment, environmental responsibilities were devolved to provincial governments; however, overlapping jurisdictions and weak coordination have often resulted in fragmented policy outcomes. For instance, conflicting mandates between the Ministry of Climate Change (MoCC) and provincial Environmental Protection Agencies (EPAs) have hampered enforcement of pollution controls and project assessments under initiatives like the China–Pakistan Economic Corridor (CPEC). At the local level, traditional institutions such as *jirgahs* and community forest committees play crucial roles in managing natural resources, particularly in Khyber Pakhtunkhwa and Gilgit-Baltistan. This study evaluates Pakistan's environmental governance across three key dimensions i.e., policy coherence, stakeholder participation, and inter-level coordination, to identify the limitations of climate policy integration and explore pathways for institutional and procedural reform.

Political ecology offers a critical framework for understanding how political and economic structures determine the distribution of environmental benefits and burdens, and how marginalized groups disproportionately bear the costs of ecological degradation (Peet *et al.* 2011, Sultana 2021). It highlights that environmental issues are inherently political, rooted in struggles over access, control, and representation rather than merely technical or ecological concerns. In Pakistan, political ecology illuminates how asymmetric power relations shape climate adaptation and natural resource governance. Following the 18th Constitutional Amendment (2010), environmental authority was devolved to provincial governments, yet institutional fragmentation and intergovernmental competition continue to hinder policy coherence. Federal ministries dominate international negotiations and donor engagement, while provincial departments operate with limited capacity and fiscal autonomy. These tensions generate overlapping mandates and bureaucratic inertia, exemplified by recurrent jurisdictional disputes between the Ministry of Climate Change (MoCC) and provincial environmental protection agencies.

At the local level, communities in Khyber Pakhtunkhwa, Gilgit-Baltistan, and Baluchistan remain marginalized from decision-making despite being most exposed to climate risks such as glacial melt, floods, and water scarcity. Top-down interventions like the Billion Tree Tsunami Project (BTTP) often reproduce inequality, as local forest-dependent households were restricted from traditional land use and excluded from benefit-sharing mechanisms. Political ecology also exposes how class, gender, and ethnicity intersect to deepen vulnerability. In rural Pakistan, women and small-scale

farmers face unequal access to land, credit, and technology, while policies emphasizing agribusiness or large-scale infrastructure projects tend to privilege elites. These dynamics mirror global political ecology insights that environmental adaptation is shaped by who defines priorities and who controls resources.

Beyond domestic politics, Pakistan's climate governance is embedded within a global political economy of aid and dependency. Reliance on international climate finance via institutions such as the Green Climate Fund (GCF) and UNDP creates external hierarchies, where donor-driven, short-term projects often overshadow structural reform. Transboundary ecological issues, notably the Indus River Basin, further reveal how regional power asymmetries, especially with India, constrain Pakistan's environmental sovereignty. Political ecology helps decode the power relations underpinning Pakistan's environmental governance. It underscores that effective climate adaptation requires not only technical and institutional reform but also the redistribution of power, inclusion of marginalized voices, and commitment to environmental justice as a foundation for sustainable development.

Legal pluralism recognizes that law is not monolithic but constituted by overlapping layers of formal and informal norms, institutions, and practices (Griffiths 1986). In Pakistan, these include international environmental treaties such as the UNFCCC, Paris Agreement (2015), and Convention on Biological Diversity (CBD); national laws like the Pakistan Environmental Protection Act (1997); provincial regulations established after the 18th Constitutional Amendment; and customary or religious systems rooted in local traditions (Ali 2016, Bashir and Ahmed 2020). This plurality creates a complex legal mosaic in which multiple authorities from global organizations to village councils claim legitimacy over environmental regulation. Devolution of powers to provinces aimed to enhance local responsiveness but has often produced jurisdictional ambiguity and overlapping mandates. The Ministry of Climate Change (MoCC), for instance, coordinates international obligations while provinces handle domestic enforcement, leading to duplication and policy incoherence, as seen in disputes over Environmental Impact Assessments (EIA) for projects such as the China–Pakistan Economic Corridor (CPEC).

At the community level, pluralism is even more evident. In Khyber Pakhtunkhwa, Baluchistan, and Gilgit-Baltistan, customary institutions such as *jirgahs* and systems like *weish* continue to mediate environmental conflicts over land, water, and forests through norms of reciprocity and fairness. These indigenous mechanisms illustrate how local legal traditions can foster adaptive, culturally embedded governance. However, they may also clash with state regulations, prioritizing social cohesion over ecological standards and exposing gaps between law in theory and practice, particularly in peripheral regions where state presence is weak. Religious and moral principles further enrich this plural landscape. Islamic notions of *amānah* (trusteeship) and *khalīfah* (stewardship) guide community resource management, promoting conservation and equity even in the absence of codified law. Such moral frameworks reveal that effective environmental governance in Pakistan depends not only on formal enforcement but also on aligning statutory systems with locally legitimate norms and values.

Finally, Pakistan's environmental governance operates through a hybrid of international, national, provincial, customary, and faith-based orders, each offering both

opportunities for localized adaptation and risks of fragmentation. Bridging these divides through integrative legal frameworks, coordination between formal and informal institutions, and recognition of indigenous knowledge systems is essential to strengthening environmental compliance and advancing inclusive, sustainable climate governance.

Drawing on Beck (1992), the concept of the risk society provides a critical framework for understanding how modern societies, in their pursuit of progress, generate new forms of environmental and technological risk that transcend social and spatial boundaries. Beck argues that these "manufactured risks," products of industrialization and modernization, are socially produced rather than naturally occurring. In Pakistan, this framework reveals how social and institutional structures shape the perception and management of climate-induced hazards such as floods, droughts, heatwaves, and air pollution (Haq and Hussain 2021, Busby 2022a). The catastrophic 2022 floods illustrate this dynamic: though triggered by heavy monsoon rains, their devastation stemmed from human factors, unregulated urbanization, deforestation, and weak enforcement of environmental safeguards. Climate risks thus emerge not solely from nature but from governance failures and development choices that prioritize short-term growth over long-term resilience.

Risk society theory also highlights Pakistan's reactive approach to climate governance. Post-disaster rehabilitation, as seen after the 2010 and 2022 floods, dominates policy discourse, while preventive measures such as early warning systems, sustainable land use, and resilient infrastructure receive limited attention. This reflects Beck's observation that modern institutions often struggle to manage the unintended consequences of progress. Moreover, risks are distributed unequally across society. Marginalized groups, especially women, smallholder farmers, and residents of ecologically fragile regions such as Tharparkar, Gilgit-Baltistan, and southern Punjab, bear the brunt of environmental stress. Gendered and class-based inequalities compound vulnerability: women travel long distances for water in drought-affected areas, while small farmers suffer income loss from erratic rainfall and lack access to credit or insurance. These dynamics confirm that climate risks are both ecological and political, reinforcing pre-existing social hierarchies.

Understanding climate change as a manufactured risk underscores the need for governance frameworks that embed social justice and long-term resilience into policy. Although Pakistan's National Climate Change Policy (2021) and provincial frameworks acknowledge these vulnerabilities, weak coordination and inadequate resources hinder implementation. Finally, the risk society framework reveals Pakistan's dual challenge: modernization has improved living standards for some while deepening systemic ecological and human insecurities. Addressing these requires a transition from reactive crisis management to anticipatory, participatory, and equity-based climate governance that treats climate change as a collective social risk.

Actor–Network Theory (ANT), articulated by Latour (2005), Callon (1986), and Law (1992), expands the analytical framework for governance by dissolving the divide between human and non-human actors. Governance is viewed not as a linear, human-centric process but as a network of heterogeneous actants people (e.g., policymakers, scientists, farmers, NGOs) and non-humans (e.g., laws, technologies, infrastructures,

and ecological processes), which co-produce outcomes through interaction. Agency is thus distributed across the network rather than centralized in any single institution. In Pakistan's climate governance, ANT helps trace how policy and implementation emerge through entangled social, technological, and ecological relations. The effectiveness of systems such as flood early-warning mechanisms, for instance, depends not only on state directives but also on the coordinated functioning of meteorological sensors, satellite data, communication networks, and local institutions. A breakdown in any node, whether a data glitch, delayed alert, or weak local coordination undermines overall resilience.

Similarly, initiatives like reforestation under the Billion Tree Tsunami Project or renewable-energy transitions reveal how donor financing, bureaucratic capacity, private contractors, monitoring technologies, and natural variables interact within dynamic socio-technical assemblages. Climate governance, therefore, is less about top-down control than about maintaining network stability, alignment, and accountability among diverse actors. ANT also exposes the politics of knowledge and technology in environmental decision-making. Non-human elements such as data algorithms, GIS systems, and reporting platforms shape how climate risks are categorized and how adaptation funds are distributed, embedding technical biases within governance processes. Power thus operates simultaneously through institutional hierarchies and technological infrastructures.

The framework further underscores cross-scalar linkages in Pakistan's governance architecture: global financing mechanisms like the Green Climate Fund (GCF) connect international donors, the Ministry of Climate Change, scientific consultants, and digital reporting systems. These assemblages illustrate how policy processes are continuously shaped by transnational technological, financial, and informational flows. In sum, ANT offers a holistic understanding of Pakistan's climate governance by revealing the distributed agency and interdependence of human and non-human actors. Effective environmental governance depends not on hierarchical authority but on the stability, coherence, and adaptability of these relational networks. Laws, technologies, ecological processes, and communities collectively perform governance; their alignment ultimately determines the resilience and success of climate initiatives.

Keohane's and Victor D. G. (2011) regime complex framework offers a powerful lens for understanding the fragmented and overlapping institutional arrangements that define global climate governance. Rather than a single, integrated regime, the climate domain comprises multiple, partially overlapping, and sometimes competing institutions such as the UNFCCC, Kyoto Protocol, and Paris Agreement, alongside numerous bilateral, regional, and non-state initiatives (Keohane and Victor 2011). These institutions form a decentralized, polycentric architecture in which coordination arises not through hierarchy but through negotiation, adaptation, and learning among diverse actors.

Applied to Pakistan, this framework highlights a multi-layered governance landscape where international commitments intersect with domestic implementation challenges. Pakistan's participation in global agreements such as the Paris Agreement, the UN Convention to Combat Desertification (UNCCD), and the Convention on Biological Diversity (CBD) situates it within a dense web of transnational obligations and funding flows. Regional engagement through SAARC and partnerships with donors such as GIZ,

USAID, and UNDP further link Pakistan's environmental policymaking to global governance structures and conditionalities.

Domestically, this regime complexity interacts with post-18th Amendment institutional fragmentation. The devolution of environmental authority to provinces enhanced localized control but also produced uneven regulatory frameworks and overlapping mandates. Provinces like Punjab, Sindh, and Khyber Pakhtunkhwa have developed distinct climate policies, with varying emphases on industrial emissions, coastal resilience, or forest conservation making national coordination and international reporting inconsistent (Najam *et al.* 2007, Siddiqui and Raza 2019). Pakistan's dependence on international climate finance through the Green Climate Fund (GCF) and Global Environment Facility (GEF) further embeds it within this regime complex. Each funding mechanism operates with distinct objectives and accountability systems, compelling the Ministry of Climate Change (MoCC) and provincial departments to navigate multiple, sometimes contradictory, requirements. For example, GCF projects emphasize mitigation and quantifiable outcomes, whereas UNDP-led initiatives prioritize adaptation and social inclusion, illustrating the challenge of aligning diverse institutional logics.

However, regime complexity is not purely a liability. As Keohane suggests, the coexistence of multiple regimes can foster innovation and cross-level learning. Pakistan's National Adaptation Plan (NAP) exemplifies this potential, integrating guidelines from both the UNFCCC and the Sendai Framework for Disaster Risk Reduction (2015–2030). Similarly, provincial pilot projects on climate-smart agriculture, supported by international NGOs, have informed national strategies on food security and resilience. Yet, coordination deficits persist. Overlapping responsibilities between the MoCC, the Planning Commission, and provincial authorities result in duplication and policy incoherence, mirroring the very dynamics of the global regime complex. Thus, while Pakistan's climate governance exhibits both vulnerability and adaptability, effective engagement within this complex system requires strengthening intergovernmental coordination, harmonizing domestic policies with international commitments, and leveraging transnational partnerships to promote coherence, innovation, and resilience in the face of escalating climate risks.

Orchestration Theory, developed by Abbott and Snidal (2009), provides a framework for understanding coordination in fragmented governance systems. It emphasizes the role of orchestrators, typically international organizations, national governments, or leading agencies, which align the efforts of diverse intermediaries such as NGOs, subnational bodies, and networks to achieve shared objectives. Unlike hierarchical, command-and-control models, orchestration functions through persuasion, information exchange, capacity building, and incentives. It represents a form of "soft governance," where coherence emerges through voluntary collaboration rather than coercion. In the realm of climate governance, orchestration explains how multi-level networks of actors, ranging from the UNFCCC and regional programs to domestic ministries and local communities, coordinate to address collective challenges. By facilitating cooperation among disparate institutions, orchestration enhances policy alignment, resource mobilization, and implementation efficiency across scales.

Applied to Pakistan, the theory elucidates how international organizations such as the UNDP, UNEP, and World Bank collaborate with national and provincial institutions to implement climate policies. Following the 18th Constitutional Amendment, the devolution of environmental authority to provinces created coordination gaps between federal and subnational levels. Within this context, orchestration serves as a vital mechanism for coherence and collective action. International donors and agencies often act as orchestrators providing technical support, financial incentives, and policy guidance, while provincial departments, NGOs, and community organizations function as intermediaries that operationalize adaptation and mitigation projects. This dynamic is evident in initiatives linked to Pakistan's Nationally Determined Contributions (NDCs) and National Adaptation Plan (NAP) under the Paris Agreement. These programs rely on orchestrated partnerships that integrate government agencies, academia, and civil society. Through such networks, orchestration mitigates institutional fragmentation, aligns multiple actors around shared goals, and fosters the diffusion of best practices and local innovations.

Conceptualizing governance as facilitative alignment rather than top-down control highlights the significance of relational trust, iterative learning, and adaptive coordination. In Pakistan's evolving climate governance architecture, effective orchestration can harmonize federal–provincial interactions, strengthen institutional capacity, and enhance resilience. Ultimately, it demonstrates how "soft" governance mechanisms can generate coherence and collaboration in fragmented policy environments.

Critical Discourse Analysis (CDA), as articulated by Fairclough (2010) and further advanced by van Dijk (2008) and Wodak and Meyer (2009), provides a framework for examining the interrelations between language, power, and social practices. It views discourse not as a neutral medium but as a constitutive force that shapes governance, policymaking, and collective understanding. Through CDA, language becomes a site where ideologies are constructed, contested, and maintained. In the context of climate change governance, CDA enables the analysis of how different actors i.e., state institutions, international organizations, NGOs, and local communities frame climate issues. These framings influence whether climate change is perceived as a development concern, a security risk, or an ethical obligation, and in doing so, they reveal underlying hierarchies of power and interest.

Applied to Pakistan, CDA exposes how national and provincial narratives align with or diverge from international discourses. Government and donor frameworks often emphasize resilience and adaptation, reflecting technocratic and development-oriented priorities (Hulme 2023), while local and indigenous voices articulate climate concerns through the lenses of livelihood security, moral stewardship, and environmental justice (Hecht 2023). These discursive contrasts demonstrate how global climate agendas are localized and reinterpreted within specific socio-political contexts. Moreover, CDA highlights how certain framings marginalize alternative perspectives. The securitization of climate change, for instance, can justify centralized control and exclude participatory governance, while "green growth" narratives may privilege economic modernization over ecological equity. By analysing language in policy documents, media narratives,

and stakeholder interviews, this study identifies the assumptions, metaphors, and rhetorical strategies that shape Pakistan's climate governance discourse.

Finally, CDA situates environmental governance within the politics of meaning-making. It underscores that effective and just climate action requires not only institutional coordination but also critical reflection on the narratives that define what constitutes "climate policy," whose knowledge is legitimized, and whose interests prevail.

By combining these theoretical perspectives, the research advances a composite analytical model that captures the multidimensional nature of climate governance in Pakistan. Analytical eclecticism provides the methodological flexibility to integrate structural, institutional, and discursive analyses rather than adhering to a single paradigm (Sil and Katzenstein 2010).

- Environmental governance explains institutional mechanisms and policy coherence.
- Political ecology situates these mechanisms within socio-political hierarchies and historical inequalities.
- Legal pluralism exposes overlapping formal and informal norms.
- Risk society highlights perceptions and management of environmental risks.
- Actor–network and orchestration theories map the dynamic relations among actors and institutions.
- Critical discourse analysis reveals how narratives shape authority and legitimacy.

Together, these frameworks construct a multi-scalar analytical lens that connects local realities to global systems, enabling a nuanced understanding of how Pakistan navigates the governance of climate change across institutional, legal, and social dimensions.

This theoretical synthesis underscores that climate governance is neither purely institutional nor purely environmental, it is relational, negotiated, and deeply political. Understanding its complexity requires acknowledging the interplay between state authority, societal agency, and global structures, a perspective that informs both the empirical analysis and the policy recommendations of this study.

This research centres on two primary questions:

1. How do Pakistan's federal and provincial environmental laws address the issue of climate change?
2. What structural hindrances affect the effectiveness of these laws within Pakistan's governance framework?

To address the first question, a legal and policy analysis approach is employed, drawing on legal pluralism to understand how overlapping regimes, international treaties, national laws, and customary practices, shape environmental regulation. This involves a comparative assessment of federal and provincial (particularly Khyber Pakhtunkhwa) environmental laws, evaluating their provisions for mitigation, adaptation, and institutional coordination. Policy analysis complements this legal approach by examining the policymaking process design, implementation, and enforcement to identify gaps between legislative intent and administrative execution. The second

question adopts a sociopolitical and institutional lens to examine structural constraints that impede implementation. These include institutional fragmentation, inadequate interagency coordination, political interference, weak enforcement, and limited fiscal or technical capacity. An institutional analysis perspective is used to understand how formal and informal norms, bureaucratic processes, and stakeholder power relations collectively shape governance outcomes. Together, these questions guide a multidimensional inquiry that integrates legal, policy, and governance analyses within a unified framework.

5. Environmental governance and the climate change conundrum

The emergence of environmental governance marks a shift from state-centred regulation to more participatory, multi-level systems for managing ecological challenges (Yoshida 2012, Evans 2012). It encompasses the collective mechanisms through which states, markets, and civil society actors formulate, implement, and enforce environmental rules. Yoshida (2012) identifies five key dimensions of environmental regimes, actors, strategies, structural frameworks, situational contexts, and the nature of environmental problems capturing the dynamic interaction between institutions and their socio-ecological settings. Political theory extends this understanding by emphasizing power, legitimacy, and participation in shaping environmental priorities (Lane and Rosenblum 2017). In Pakistan, these dynamics are evident in the negotiation of policy space among ministries, environmental agencies, NGOs, and local communities, often under conditions of resource scarcity and overlapping mandates.

Environmental challenges that were once localized now transcend borders, demanding multi-level governance linking local initiatives to global frameworks such as the UNFCCC and the Sustainable Development Goals (SDGs) (Benson and Jordan 2017). This transition has led to what Evans (2012) describes as a post-Westphalian model of governance, where authority is dispersed across national, regional, and transnational levels. While such diffusion enables innovation and inclusivity, it also generates complexity and accountability gaps. Climate governance epitomizes these tensions. It operates within a dense web of actors, from international organizations and donor agencies to provincial departments and local NGOs. Networks such as REDD+, the IPCC, and UNEP facilitate global coordination, while domestic institutions oversee implementation. This evolution reflects Ostrom's (2010) notion of polycentric governance, in which multiple centres of authority interact to address shared environmental risks, offering both resilience and institutional fragmentation.

Historically, environmental management relied on a command-and-control (CAC) model in which the state imposed uniform standards and penalties to regulate pollution and resource use (Gunningham and Sinclair 1999). While this approach ensures clear accountability, it often proves rigid and ill-suited to the complex, evolving challenges of climate change (Munir 2004). In Pakistan, the CAC paradigm underpins the Pakistan Environmental Protection Act (1997) and related provincial legislation—frameworks emphasizing compliance and punishment but offering limited adaptive flexibility. By contrast, New Environmental Governance (NEG), emerging in the 1990s, promotes collaboration, decentralization, and incentive-based mechanisms. It aligns with contemporary governance paradigms emphasizing stakeholder participation, voluntary agreements, and market instruments. Mechanisms such as carbon trading,

environmental taxation, and Corporate Social Responsibility (CSR) initiatives represent efforts to align economic incentives with ecological outcomes (Carroll and Shabana 2010).

NEG also underscores participatory rights codified in global frameworks such as the Aarhus Convention (1998) and Agenda 21, which call for citizens' involvement in decision-making and environmental monitoring. In Pakistan, tools like Environmental Impact Assessments (EIA) represent preliminary steps toward participatory governance; however, their effectiveness remains constrained by bureaucratic inertia and political interference. Contemporary environmental governance, according to Benson and Jordan (2017), is defined by horizontal and vertical networks connecting states, markets, and communities. This networked governance is evident in regional initiatives like the EU Water Framework Directive and the diffusion of Integrated Water Resource Management (IWRM), which promote adaptive and cooperative approaches. For Pakistan, embracing such principles could strengthen coherence between federal and provincial entities, foster knowledge-sharing, and embed local adaptation strategies within broader climate frameworks.

In essence, the transition from CAC to NEG signifies not merely a change in administrative tools but a paradigmatic shift from control and enforcement to facilitation and collaboration. For Pakistan, where institutional fragmentation and limited enforcement capacity persist, adopting the ethos of NEG could bridge the gap between formal legislation and on-the-ground implementation.

Pakistan's environmental governance operates within a complex intersection of legal pluralism, institutional fragmentation, and developmental constraints. Post-devolution, overlapping mandates among federal ministries, provincial environment departments, and district administrations have produced a patchwork of authorities with limited coordination. This fragmentation weakens enforcement, blurs accountability, and hampers the translation of policy into action. Moreover, Pakistan's governance approach remains largely reactive, mobilized by crisis rather than foresight. Environmental institutions tend to respond to disasters rather than engage in anticipatory planning. Limited fiscal space, weak data infrastructure, and the dominance of short-term security and economic agendas further restrict the capacity for long-term climate adaptation. The 2022 floods exposed this structural vulnerability: despite ample legal frameworks, the absence of institutional synergy and proactive coordination led to disproportionate losses, particularly among marginalized populations.

International climate finance presents both opportunity and challenge. While Pakistan has secured funding through mechanisms such as the Green Climate Fund (GCF) and Global Environment Facility (GEF), bureaucratic inefficiencies, donor conditionalities, and capacity gaps have limited absorption and project execution. The result is a paradox of "institutional abundance and functional scarcity", numerous agencies and policies with little coordinated impact. The central challenge, therefore, is not the absence of laws or institutions, but the absence of synergy among them. Effective climate governance in Pakistan requires a shift from fragmented, state-centric administration to an integrated, multi-level framework that emphasizes provincial autonomy, local participation, and transboundary cooperation. This transformation depends on three interlinked commitments:

- **Political will**: to prioritize climate adaptation as a governance imperative rather than a peripheral development issue.
- **Administrative capacity**: to enable evidence-based planning, data-driven policy evaluation, and inter-agency coordination; and
- **Normative commitment**: to embed principles of environmental justice, equity, and inclusivity at every level of policy design and implementation.

Only through such a transformation can Pakistan move beyond reactive environmental management and build a resilient governance architecture capable of addressing the complex realities of climate change.

The South Asian region, and Pakistan in particular, faces a profound environmental conundrum, shaped by its geography, fragile ecosystems, rapid population growth, and resource depletion. Pakistan ranks 7th among the most climate-affected countries globally, having faced 141 major climate-related disasters, including droughts, heatwaves, floods, and glacial outbursts, causing losses exceeding US$3.8 billion (Eckstein *et al.* 2020). Climate-related damages consume nearly 5% of GDP (Ministry of Climate change Government of Pakistan n.d.).

6. The climate crisis in numbers

Pakistan's climate vulnerability manifests across multiple dimensions: erratic monsoon patterns, accelerated glacial melt in the north, and heat-stressed arid zones in the south. These shifts threaten water security, agricultural productivity, and biodiversity (Saad *et al.* 2024). The 2022 floods submerged one-third of the country, displaced eight million people, and caused over US$15 billion in damages (World Bank 2022, Post-Disaster Needs Assessment—PDNA —2023). These catastrophic events followed unprecedented heatwaves exceeding 45°C, previously considered "once in a millennium" phenomena, leading to crop failures, wildfires, and power shortages. Despite Pakistan's negligible contribution to global greenhouse gas emissions (0.01%), it bears disproportionate consequences due to structural vulnerabilities and governance deficiencies. Pakistan's vulnerability stems less from ecological exposure than from weak governance. Despite extensive policy frameworks (PEPA 1997, NCCP 2012, Framework for Implementation 2014–2030), implementation remains under-resourced and incoherent (World Bank 2022). Environmental governance in Pakistan suffers from three interrelated challenges:

1. **Institutional Fragmentation:** Overlapping mandates between federal and provincial departments lead to bureaucratic inertia and policy incoherence, particularly after the 18th Constitutional Amendment devolved environmental responsibilities to provinces.
2. **Political and Military Dominance:** Governance is shaped by a securitized mindset, where environmental issues are subordinated to political instability and defence priorities.
3. **Weak Enforcement and Public Engagement:** Despite laws and policies, monitoring mechanisms, accountability systems, and public awareness remain inadequate.

Drawing on Busby's (2022b) framework, Pakistan's vulnerability stems from chronic conflict, military predominance, political exclusion, and agrarian fragility.

1. **Chronic Conflict:** Persistent insecurity, particularly in border regions affected by the "War on Terror," undermines local governance capacity and diverts resources from environmental management.
2. **Military Predominance:** The militarys pervasive influence, both direct and indirect shapes national priorities, often sidelining environmental and developmental agendas.
3. **Political Exclusion**: Weak political inclusivity and fragmented party systems hinder consensus on long-term climate policy, resulting in reactive rather than preventive governance.
4. **Agrarian Fragility:** Pakistan's economy remains heavily dependent on climate-sensitive agriculture, which relies on outdated practices and is increasingly vulnerable to droughts, floods, and shifting weather cycles.

These structural factors interact to intensify the impacts of climate change and weaken the state's adaptive capacity. They also reinforce regional disparities, leaving provinces such as Khyber Pakhtunkhwa and Baluchistan doubly exposed due to both ecological fragility and historical marginalization.

According to the United Nations Environment Programme (UNEP 2021), Pakistan's *inclusive wealth*, a measure of national prosperity and sustainability grew at 2.3% annually between 1992 and 2019, primarily driven by human (2.9%) and produced capital (3.2%). However, *natural capital* declined by 0.1% annually, signalling unsustainable resource exploitation. While recent reforestation initiatives and ecological restoration efforts (notably under the "10 Billion Tree Tsunami Program") mark an "environmental turnaround," agricultural lands continue to shrink, underscoring the need for integrated land and water governance.

Recognizing the magnitude of the crisis, Pakistan is developing a National Adaptation Plan (NAP) to align with its Nationally Determined Contributions (NDCs) under the Paris Agreement (2015). The NAP seeks to integrate adaptation strategies into sectoral policies, enhance institutional coordination, and mobilize climate finance. However, significant gaps persist in translating these strategies into actionable outcomes due to capacity constraints, fiscal limitations, and competing priorities. At the international level, Pakistan is an active participant in global environmental agreements, including the UNFCCC, Kyoto Protocol, and Montreal Protocol, and has sought to align national strategies with the Sustainable Development Goals (SDGs). Yet, domestic execution remains uneven. Policy documents often lack clear accountability frameworks, and data limitations hinder effective monitoring of progress. To address these challenges, three interlinked priorities emerge:

1. **Institutional Strengthening and Policy Coherence:** A unified, multi-level governance model is essential one that bridges federal-provincial divides, clarifies institutional mandates, and ensures resource decentralization.
2. **Public Awareness and Participation:** Enhancing environmental literacy and involving civil society, academia, and local communities in climate planning can democratize governance and improve compliance.
3. **Collaborative and Adaptive Mechanisms:** Integrating polycentric governance principles (Ostrom 2010), where multiple centres of authority

coordinate across scales can improve flexibility and innovation in environmental decision-making.

Pakistan's climate governance must evolve from a command-and-control paradigm toward networked, adaptive governance, combining regulatory oversight with market-based incentives, voluntary compliance, and participatory frameworks. This transformation requires strong political will, sustained investment, and cross-sectoral collaboration.

7. Conclusion

The study positions Pakistan as a critical case in understanding how environmental governance and political structures intersect within a climate-vulnerable state. Employing analytical eclecticism as a guiding lens, it integrates insights from environmental governance theory, legal pluralism, and political ecology to illuminate the complex interplay between law, institutions, and power. The findings demonstrate that climate governance in Pakistan is hindered less by a lack of policy and more by fragmented authority, weak institutional linkages, and an absence of long-term political vision. Strengthening governance, therefore, entails not only legislative reform but also reconfiguring relationships between state and society between the logic of security and the imperatives of sustainability. Pakistan's experience illustrates that resilience is not merely ecological or technical but fundamentally institutional and ethical rooted in the capacity of governance systems to adapt, coordinate, and learn. Bridging theory and practice in this manner contributes to broader global debates on how states in the Global South can transform vulnerability into agency within the emerging climate order.

References

Abbott, K. W., and Snidal, D., 2009. *The governance triangle: Regulatory standards institutions and the shadow of the state.* Oxford University Press.

Ali, S., 2016. *Environmental law and governance in Pakistan.* Karachi: Oxford University Press.

Arif, M. I. U., and Mahsud, M. I., 2024. Disentangling Pakistan's climate change governance challenges: Trajectories and underpinnings. *Pakistan Journal of Law, Analysis & Wisdom*, 3, 36.

Arif, M. I. U., 2025. *Climate change and governance: A thematic analysis of environmental laws and practices in Pakistan*. PhD Thesis. University of Peshawar/UMass Boston.

Bashir, H., and Ahmed, Z., 2019. Climate change governance in Pakistan: Institutional complexities and pathways. *Environmental Policy and Law*, *49*(2), 83–94.

Bashir, H., and Ahmed, Z., 2020. *Environmental governance and legal pluralism in South Asia.* Islamabad: National Institute of Public Policy Press.

Beck, U., 1992. *Risk society: Towards a new modernity.* London: Sage.

Benson, D., and Jordan, A., 2017. Environmental governance. *In:* D. Richardson *et al*., eds., *International encyclopedia of geography: People, the Earth, environment and technology* [online]. Hoboken: John Wiley & Sons. Available at: https://doi.org/10.1002/9781118786352.wbieg0631

Biermann, F., *et al*., 2010. Earth system governance: A research framework. *International Environmental Agreements: Politics, Law and Economics* [online], *10*, 277–298. Available at: https://link.springer.com/article/10.1007/s10784-010-9137-3

Bulkeley, H., and Betsill, M., 2013. Revisiting the urban politics of climate change. *Environmental Politics* [online], *22*(1), 136–154. Available at: https://doi.org/10.1080/09644016.2013.755797

Burchell, G., Gordon, C., and Miller, P., 1991. *The Foucault effect: Studies in governmentality.* University of Chicago Press.

Busby, J., 2022a. *States and nature: The effects of climate change on security.* Cambridge University Press.

Busby, J. W., 2022b. *The politics of climate change - States and nature: The effects of climate change on security.* 1st ed. Cambridge University Press.

Callon, M., 1986. Some elements of a sociology of translation: Domestication of the scallops and the fishermen of St. Brieuc Bay. *In:* J. Law, ed., *Power, action and belief: A new sociology of knowledge?* London/Boston: Routledge & Kegan Paul, 196–233.

Carroll, A., and Shabana, K., 2010. The business case for corporate social responsibility: A review of concepts, research and practice. *International Journal of Management Reviews* [online], *12*(1), 85–105. Available at: https://doi.org/10.1111/j.1468-2370.2009.00275.x

Cashore, B., and Vertinsky, I., 2000. Policy networks and firm behaviours: Governance systems and firm responses to external demands for sustainable forest management. *Policy Sciences* [online], *33*(1), 1–30. Available at: https://doi.org/10.1023/A:1004728206505

Elman, C., and Elman, M. F., 2001. Reflections on the use of case studies in international relations research. *In:* C. Elman and M. F. Elman, eds., *Progress in international relations theory: A critical assessment*. Cambridge, MA: MIT Press, pp. 3–22.

Evans, M., 2012. *Understanding governance: Policy networks, governance, reflexivity and accountability.* Maidenhead: Open University Press.

Fairclough, N., 2010. *Critical discourse analysis: The critical study of language*. 2nd ed. Harlow: Pearson Education.

Foucault, M., 1991. Governmentality. *In:* G. Burchell, C. Gordon and P. Miller, eds., *The Foucault effect: Studies in governmentality.* University of Chicago Press, 87–104.

Griffiths, J., 1986. What is legal pluralism? *Journal of Legal Pluralism and Unofficial Law* [online], *24*(1), 1–55. Available at: https://doi.org/10.1080/07329113.1986.10756387

Gunningham, N., and Sinclair, D., 1999. Regulatory pluralism: Designing policy mixes for environmental protection. *Law & Policy*, *21*(1), 49–76.

Haq, I., and Hussain, S., 2021. Risk society and environmental policy in Pakistan. *Environmental Sociology*, *7*(3), 198–214.

Hecht, G., 2023. *Residual governance: How South Africa foretells planetary futures.* Durham: Duke University Press.

Hulme, M., 2023. *Climate change isn't everything: Liberating climate politics from alarmism.* Hoboken: John Wiley & Sons.

Jordan, A., *et al*., eds., 2018. *Governing climate change: Polycentric in action?* Cambridge University Press.

Eckstein, D., *et al*., 2020. *Global climate risk index 2020: Who suffers most from extreme weather events?* Bonn: Germanwatch.

Keohane, R. O., and Victor, D. G., 2011. Global governance and regime complexes in climate change. *Perspectives on Politics* [online], *9*(1), 7–23. Available at: https://www.researchgate.net/publication/228212111_The_Regime_Complex_for_Climate_Change

Keohane, R. O., and Victor, D. G., 2016. Cooperation and discord in global climate policy. *Nature Climate Change* [online], *6*, 570–575. Available at: http://dx.doi.org/10.1038/nclimate2937

Klijn, E. H., 2008. Governance and governance networks in Europe. *Public Management Review* [online], *10*(4), 506–525. Available at: https://doi.org/10.1080/14719030802263954

Ladores, I. M., 2017. In the name of climate change: How *Leghari v. Federation of Pakistan* is instrumental to the pursuit of the right to life in the Philippines. *Groningen Journal of International Law* [online], *5*(2). Available at: https://doi.org/10.21827/5a6af9f49574a

Lane, M., and Rosenblum, N. L., 2017. *The political theory of climate change: State of the field (Report No. 3, 2017)*. SSRC.

Latour, B., 2005. *Reassembling the social: An introduction to actor-network theory.* Oxford University Press.

Law, J., 1992. Notes on the theory of the actor-network: Ordering, strategy, and heterogeneity. *Systems Practice*, 5, 379–393.

Marks, G., and Hooghe, L., 2004. Contrasting visions of multi-level governance. *In:* I. Bache and M. Flinders, eds., *Multi-level governance*. Oxford University Press, 15–30.

Ministry of Climate Change, 2016. *Pakistan Climate Change Act*. Islamabad: Government of Pakistan.

Ministry of Climate Change, 2021. *Pakistan National Adaptation Plan framework*. Islamabad: Government of Pakistan.

Munir, M., 2004. *Environmental law: Policy and practice in Pakistan*. Lahore: Vanguard Press.

Najam, A., Christopoulou, I., and Moomaw, W. R., 2004. *The emergent "system" of Global Environmental Governance.* Cambridge, MA: Global Environmental Politics.

Najam, A., Huq, S., and Sokona, Y., 2004. Climate negotiations beyond Kyoto: Developing countries concerns and interests. *Climate Policy* [online], *3*(3), 211–231. Available at: https://doi.org/10.1016/S1469-3062(03)00057-3

Najam, A., Rahman, A., and Rauf, M., 2007. *Environmental institutions in Pakistan: Strengthening governance for sustainable development*. Islamabad: Sustainable Development Policy Institute.

Osborne, D., and Gaebler, T., 1992. *Reinventing government: How the entreprenurial spirit is transforing the public sector*. Reading: Addison-Wesly.

Ostrom, E., 2010. Beyond markets and states: polycentric governance of complex economic systems. *American Economic Review* [online], *100*(3), 641–672. Available at: https://doi.org/10.1257/aer.100.3.641

Peet, R., Robbins, P., and Watts, M., eds., 2011. *Global political ecology* [online]. 1st ed. London: Routledge. Available at: https://www.routledge.com/Global-Political-Ecology/Peet-Robbins-Watts/p/book/9780415548151

Post-Disaster Needs Assessment (PDNA), 2023. *Pakistan floods 2022: Post-disaster needs assessment.* Islamabad: Government of Pakistan/World Bank.

Rhodes, R. A. W., 1997. *Understanding governance: Policy networks, governance, reflexivity and accountability*. Buckingham: Open University Press.

Rosenau, J. N., and Czempiel, E. O., 1992. *Governance without government: Order and change in world politics*. Cambridge University Press.

Saad, S., Mahsud, M. I., and Mian, G., 2024. Climate change impacts: exploring the rising climate-security nexus in Pakistan. *Liberal Arts and Social Sciences International Journal (LASSIJ)* [online], *8*(1), 177-190. Available at: https://doi.org/10.47264/idea.lassij/8.1.10

Siddiqui, N., and Iqbal, Z., 2021. Assessing Pakistan's environmental law and governance framework. *Environmental Law Review*, *23*(2), 142–159.

Siddiqui, N., and Raza, S., 2019. Federal–provincial relations and the environmental policy gap in Pakistan. *Pakistan Journal of Public Policy*, *5*(1), 57–72.

Sil, R., Katzenstein, P.J., 2010. Analytical Eclecticism in the Study of World Politics: Reconfiguring Problems and Mechanisms across Research Traditions. Perspectives on Politics 8, 411–431.

Sørensen, E., and Torfing, J., 2007. *Theories of democratic network governance.* Basingstoke: Palgrave Macmillan.

Steinberg, P., and VanDeveer, S., 2012. *Comparative environmental politics: Theory, practice, and prospects*. Cambridge, MA: MIT Press.

Sultana, F., 2021. Political ecology II: Conjunctures, crises, and critical publics. *Progress in Human Geography* [online], 45, 1721-1730. Available at: https://doi.org/10.1177/03091325211028665

United Nations Committee for Development Policy, 2014. *Global governance and sustainable development*. New York: United Nations.

United Nations Environment Programme (UNEP), 2000. *The Montreal protocol on substances that deplete the ozone layer.* Nairobi: UNEP Ozone Secretariat.

United Nations Environment Programme (UNEP), 2021. *Inclusive wealth report: Measuring progress toward sustainability.* Nairobi: UNEP.

Van Djik, T. A., 2008. *Discourse and context: A sociocognitive approach*. Cambridge University Press.

Wodak, R., and Meyer, M., 2009. *Methods of critical discourse analysis*. 2nd ed. London: Sage.

World Bank, 2022. *Pakistan country climate and development report*. Washington, DC: The World Bank.

Yoshida, F., 2012. *Governance, environmental regimes, and sustainable development.* Tokyo: United Nations University Press.