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Contesting the Core: Peripheral Social Resistance to Extractive Canal Projects

Salahuddin Solangi
Scholar at Department of Pakistan Studies, Shah Abdul Latif University, Khairpur
salahsolangiccl@gmail.com
Ashique Ali Mako
Scholar at Department of Pakistan Studies, Shah Abdul Latif University, Khairpur
makoashique91@gmail.com
Asad Raza Talpur
Lecturer, Sukkur IBA University
asad.talpur@iba-suk.edu.pk

ABSTRACT

Pakistan's Indus Basin has entered a phase of absolute water scarcity, with per capita availability falling below 860 m³ amid accelerating glacial retreat, erratic monsoons, and a system-wide deficit of approximately 21 percent in 2025. Under these conditions of ecological contraction and demographic pressure, water governance in Pakistan has increasingly taken the form of what Paul Gellert conceptualizes as an extractive regime, wherein the state working through military linked institutions and elite economic actors reorganizes land and water through large scale infrastructure in the name of food security and national resilience. Within this extractive logic, climate change operates as a threat multiplier, a core insight of environmental security theory, intensifying competition over shrinking flows and magnifying the consequences of upstream diversion. The US$3.3 billion Six Canals project, launched under the Green Pakistan Initiative to irrigate 4.8 million acres of arid land primarily in Punjab, exemplifies the expansion of a new hydraulic frontier. Projected upstream diversions of 2–3-million-acre feet threaten to deepen Sindh's chronic shortfalls averaging 19 percent since 2014 and reaching 43 percent in 2022-23, while advancing without meaningful provincial consensus or transparent reassessment of climate altered allocations, underscoring the hydro-political asymmetries embedded in Pakistan's federal water regime. From a human security perspective, the externalization of scarcity downstream translates into heightened livelihood insecurity, salinity intrusion, displacement pressures, and social vulnerability, particularly for agrarian and deltaic communities. The 2025 Babarloi Bypass protest, which paralyzed approximately 45 percent of national freight and inflicted losses exceeding PKR 70 billion, illustrate a characteristic outcome of extractive regimes under scarcity: localized grievances over water access rapidly escalating into national economic disruption and political confrontation. Together, Gellert's extractive regime framework, environmental security theory, hydro-political analysis, and human security perspectives reveal how hydraulic infrastructure in a drying basin ceases to be a technical solution and instead becomes a structural driver of federal strain. Without enforceable real time telemetry, binding downstream consent for major new projects, and climate-adjusted allocation rules, the Six Canals risk converting Pakistan's historic lifeline into a mechanism of cascading instability eroding livelihoods, deepening provincial polarization, and steadily undermining the constitutional foundations of the federation.

Keywords: *Extractive Water Governance, Federal Stability, Climate-Induced Scarcity, Indus Basin Political Economy, Internal Security, Supply-Chain Vulnerability.*

Introduction and Background

Pakistan has crossed the threshold of absolute water scarcity. By December 2025, per capita water availability had fallen to approximately 660 m^3 per year in a population exceeding 255 million, while the Indus River System the hydraulic artery sustaining nearly 80 percent of arable land and contributing roughly 20 percent of national GDP was operating 18-21 percent below historical norms (IRSA, 2025; World Bank, 2024). This contraction is not cyclical but structural. Climate change has emerged as the principal accelerant: Himalayan glaciers supplying an estimated 50-80 percent of dry season flows are losing mass 15-20 percent faster than in previous decades; peak flows are shifting earlier in the hydrological year and extreme low-flow years have become three times more frequent (Khizar et al., 2025; Nepal et al., 2024). In environmental security terms, climate change functions as a threat multiplier, compressing available resources while magnifying the political consequences of allocation decisions. Yet scarcity alone does not explain the intensity of Pakistan's contemporary water conflict. Official data from the Sindh Irrigation Department (2025) reveal a deepening pattern of inter-provincial inequity between 2014 and 2025. Sindh faced an average shortfall of 19 percent against its 1991 Water Apportionment Accord share of 48.76 MAF, peaking at 43 percent in 2022-23 and remaining at 21 percent in 2024-25. Punjab, by contrast, averaged a 13 percent shortfall against its entitlement of 55.94 MAF. In a federal system already marked by asymmetrical power relations, upstream storage expansion, unaccounted abstractions, and chronically weak telemetry have transformed hydrological stress into perceived deliberate deprivation. From a hydro-political perspective, control over headworks, storage, and institutional decision-making has enabled upstream actors to buffer scarcity, while downstream provinces absorb disproportionate ecological and economic risk eroding trust in the federation's most sensitive constitutional compact

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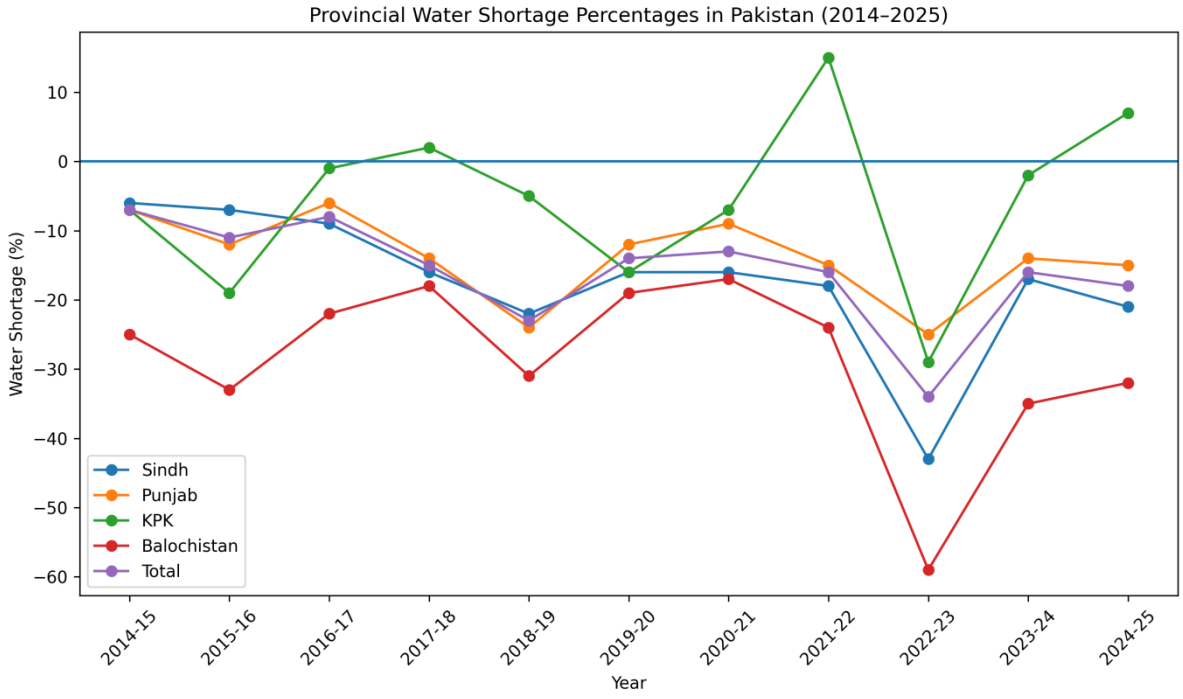
Following is the plotted a line graph of water shortage percentages (%) for Sindh, Punjab, KPK, Balochistan, and Total from 2014–15 to 2024–25**.**



It is within this parched and polarized landscape that the Six Canals project has emerged as a focal point of contestation. Launched in July 2024 and partially inaugurated in February 2025, the US$3.3 billion scheme aims to bring 4.8 million acres under irrigation, primarily through the 176-kms Cholistan Canal in southern Punjab (Pakistan Bureau of Statistics, 2025). Federal and Punjab authorities frame the project as essential for food security in a country importing nearly US$9 billion worth of food annually. However, viewed through Paul Gellert's extractive regime framework, the project represents more than a technical response to scarcity. It constitutes the expansion of a hydraulic resource frontier, in which the state operating through military-linked institutions and corporate agriculture reorganizes land and water to secure accumulation and territorial control under conditions of environmental stress. Sindh perceives the project as an existential threat. Planned perennial offtakes of 2,000-3,000 cusecs threaten to further reduce downstream flows already diminished by climate-induced glacial retreat and upstream storages. IRSA's approval of the project bypassed mandatory provincial consensus and comprehensive climate-risk assessment, reinforcing accusations of Punjab-centric governance and state-military-corporate capture of water policy (The Water Diplomat, 2025; Dawn, 2025). When combined with the 2024-25 system-wide deficit of 21 percent and reservoirs operating at roughly 50 percent capacity, the additional diversion risks pushing Sindh's cumulative shortage since 1999 toward 45-50 percent. The downstream consequences are tangible: accelerated seawater intrusion has already salinized approximately 1.2 million hectares and destroyed mangrove buffers at three times the pre-2020 rate (Al Jazeera, 2025b).

The combustible nature of these dynamics was laid bare in November 2024, when farmers and nationalists of Sindh blockaded the National Highway 5 (N-5) at different places including Babarloi Bypas for 72 hours. The protest paralyzed roughly 40 percent of national freight movement (Mongabay, 2025; Pakistan Bureau of Statistics, 2025). What began as opposition to a 35 percent Kharif shortfall rapidly escalated into ethicized confrontation, with #SindhThirst trending globally and police clashes injuring more than 150 people. Echoing earlier mobilizations against the Greater Thal and Cholistan schemes, the episode demonstrated a characteristic outcome of extractive regimes under scarcity: localized grievances over resource access cascading into nationwide supply-chain disruption, inflationary pressures, and legitimacy crises for the state (Qureshi et al., 2024). This study argues that Pakistan's current water crisis cannot be understood as a purely hydrological or administrative failure. Rather, it reflects the convergence of climate-induced scarcity, hydro-political asymmetry, and extractive development logic. By integrating Paul Gellert's extractive regime framework with environmental security, hydro-political, and human security perspectives, the article demonstrates how large-scale canal infrastructure in a drying basin transforms water from a shared ecological lifeline into a driver of federal strain. Without enforceable real time telemetry, binding downstream consent for major new diversions, and climate-adjusted allocation rules, the Six Canals project risks converting scarcity into cascading instability undermining livelihoods, deepening provincial polarization, and steadily eroding the constitutional foundations of Pakistan's federation. (Calvo-Gallardo et al., 2025).

Problem Statement

Pakistan is experiencing severe climate-driven water scarcity, intensifying inter-provincial grievances and political polarization, particularly between Sindh and Punjab. By late 2025, the Indus Basin's hydrological stress has become deeply entangled with institutional mistrust and contested development priorities. In this tense environment, the Six Canals project, a US$3.3 billion initiative launched under the Green Pakistan Initiative to irrigate millions of acres across arid regions, has emerged as a potential flashpoint capable of escalating political contention

and undermining national cohesion. Despite assertions by federal authorities that the project is essential for agricultural resilience, large-scale protests across Sindh signaled broad opposition to the construction of new canals from the Indus River. Beginning in April 2025, lawyers, political parties, nationalist groups, and civil society organizations staged sustained sit-ins and blockades most prominently at the Babarloi Bypass in Khairpur district effectively disrupting major highways and inter-provincial transport links as part of a coordinated campaign against the canal plan. The highway blockades and shutter-down strikes brought transport between Sindh and other provinces to a standstill, shuttered markets and businesses across multiple cities, and prompted warnings from transport associations of severe economic impacts as freight and passenger movement was suspended for days. Protestors demanded the formal cancellation of the canal project rather than a vague suspension, and in some instances halted train services and threatened further escalation by blocking additional infrastructure and critical rail lines, illustrating the breadth of opposition to perceived encroachments on Sindh's water rights. These mobilizations not only exposed deep public anxiety about unequal water governance but also demonstrated how localized water disputes can cascade into nationwide supply-chain disruption, political confrontation, and legitimacy challenges for the state. Yet, despite the scale and intensity of the backlash, scholarly analysis remains limited on how contentious water infrastructure projects like the Six Canals intersect with climate-induced scarcity to create broader internal security risks. This study addresses this gap by assessing how climate-induced water scarcity, inter-provincial power asymmetries, and the political economy of contentious water projects may threaten Pakistan's internal stability and national cohesion, particularly when localized grievances escalate into systemic disruptions and federal legitimacy crises.

Research Objectives

1. To examine the political, institutional, and socio-economic implications of the Six Canals project for inter-provincial relations between Sindh and Punjab.
2. To assess how climate-induced water scarcity and contentious water infrastructure projects generate internal instability and supply-chain disruption, using the Babarloi Bypass protest as a critical empirical case.

Research Questions

1. In what ways does the Six Canals project, proposed under climate-stressed conditions, contribute to perceptions of inequitable water governance and inter-provincial mistrust?
2. How does water scarcity and contested canal development disrupt internal instability, social unrest, and national supply chains, as illustrated by the Babarloi Bypass protest?

Literature Review

Scholarly engagement with Pakistan's water crisis has expanded significantly over the past two decades, reflecting growing concern over declining availability, climate variability, and governance failure in the Indus Basin. Early hydrological studies framed water scarcity primarily as a function of population growth, inefficient irrigation practices, and limited storage capacity (Briscoe & Qamar, 2005; World Bank, 2010). Subsequent research, however, has increasingly emphasized that scarcity in Pakistan is not merely physical but politically produced, shaped by institutional design, power asymmetries, and contested development priorities. This shift mirrors broader trends in political ecology and critical development studies, which challenge technocratic narratives of resource management and foreground questions of authority, inequality, and distribution. Climate-focused scholarship establishes the environmental backdrop against which Pakistan's water politics unfold. Studies of the Hindu Kush–Karakoram–

Himalaya region demonstrate that accelerated glacial retreat, altered snowmelt timing, and increased monsoon volatility are reshaping the temporal and spatial distribution of Indus flows (Bolch et al., 2019; Nepal et al., 2024). Khizar et al. (2025) and Rasul et al. (2023) show that dry-season dependence on glacial melt water has increased precisely as glaciers are losing mass more rapidly, creating a paradox of short-term abundance followed by long-term decline. Environmental security scholars conceptualize such dynamics as "threat multipliers," arguing that climate stress rarely causes conflict directly but amplifies existing political and social vulnerabilities (Homer-Dixon, 1999). In the Pakistani context, this literature underscores how climate change compresses water availability while heightening the stakes of allocation decisions, rendering infrastructure projects politically explosive rather than stabilizing.

A substantial body of work interrogates the hydro-political dimensions of water governance within Pakistan's federal structure. The Water Apportionment Accord (1991) is widely recognized as a foundational but fragile compromise, designed to manage inter-provincial competition in a context of historical mistrust (Mustafa, 2025). Empirical studies by Mustafa (2014; 2023) demonstrate that while the Accord established formal entitlements, its implementation has been undermined by weak telemetry, discretionary reservoir operations, and asymmetrical control over head works and storage infrastructure. Hydro-political analyses emphasize that Punjab's upstream position and demographic dominance translate into institutional leverage, enabling it to buffer shortages more effectively than downstream Sindh. This literature shows how water governance in Pakistan is inseparable from federal power relations, with perceived inequities in allocation reinforcing narratives of marginalization and injustice. While hydro-political studies identify asymmetry, they often stop short of theorizing large-scale infrastructure as a form of extraction. This gap is addressed by political ecology and critical development scholars, particularly through the work of Paul Gellert. Gellert's concept of extractive regimes extends the notion of extraction beyond mining and forestry to encompass infrastructure-led appropriation of land, water, and ecological systems (Gellert, 2010; 2020). He argues that extractive regimes are characterized by state-led territorial expansion, alliances between political authority, military institutions, and capital, and the systematic displacement of ecological risk onto peripheral populations. Importantly, extraction in this framework is not defined solely by physical removal but by the reorganization of socio-ecological relations to facilitate accumulation and control.

Research Methodology

This study adopts a narrative literature review approach, drawing on peer-reviewed academic literature, official government data, policy documents, and media reports. This review selects sources from 1995–2025 focusing on Pakistan's Indus Basin water governance, climate-driven scarcity, and hydro-political conflict. Priority was given to peer-reviewed research and official reports. Selected literature emphasizes contemporary environmental stress and provincial disputes. Purely technical studies, opinion pieces, and geographically irrelevant or outdated works were excluded.

Results and Findings

Gellert's work on Indonesia's forestry, plantation, and infrastructure frontiers has been widely applied to contexts where development projects are justified through narratives of modernization, food security, or national resilience while marginalizing local communities (Peluso & Lund, 2011). Scholars have extended this framework to analyze dams, irrigation schemes, and water transfers as mechanisms of "hydraulic extraction," where water is territorially captured and redirected to serve elite interests (Sneddon & Fox, 2012). This literature is particularly relevant to Pakistan, where canal expansion and storage projects have

historically restructured agrarian relations and regional power balances. Yet, despite these parallels, Gellert's extractive regime framework remains underutilized in analyses of South Asian water governance, especially in the context of climate stress.

Human security scholarship provides critical insight into how macro-level extraction translates into lived experience. Moving beyond state-centric notions of security, the human security framework emphasizes access to livelihoods, food, health, and dignity as core components of stability (UNDP, 1994). In Pakistan, researchers have documented how water scarcity disproportionately affects small farmers, landless laborers, fisherfolk, and women, intensifying poverty, migration, and social fragmentation (Cheema et al., 2025). Studies of the Indus Delta highlight how reduced freshwater flows accelerate salinity intrusion, collapse fisheries, and erode mangrove ecosystems, undermining food security and increasing displacement (Cheema et al., 2025). Human security perspectives thus illuminate why water governance failures generate social mobilization rather than passive adaptation.

Recent scholarship increasingly links these human impacts to protest and political instability. Qureshi et al. (2024) and Raza (2023) demonstrate that water-related protests in Pakistan often emerge not during absolute shortages but during periods when scarcity is perceived as unjustly distributed. This aligns with Gellert's argument that extractive regimes generate resistance precisely because they concentrate benefits while externalizing costs. Comparative studies from India, Turkey, and Central Asia further show that large-scale water infrastructure in climate-stressed basins tends to provoke downstream opposition, ethnicized narratives, and legitimacy crises when participatory mechanisms are weak (Allouche et al., 2019).

Despite these advances, the existing literature remains fragmented. Climate studies often treat governance as an external variable; hydro-political analyses focus on institutional design but neglect political economy; and human security research documents impacts without fully theorizing their structural origins. This article addresses these gaps by synthesizing these strands through Gellert's extractive regime framework. By conceptualizing the Six Canals project as an instance of hydraulic extraction under conditions of environmental stress, the study offers an integrated explanation of why water scarcity in Pakistan increasingly manifests as federal conflict and social unrest rather than cooperative adaptation. In doing so, the article contributes to broader debates on resource governance in the Global South. It demonstrates that in climate-stressed federations, large-scale infrastructure does not merely respond to scarcity but actively reshapes it producing new frontiers of accumulation while deepening inequality. The literature reviewed here thus provides the conceptual foundation for analyzing Pakistan's water crisis not as an administrative failure, but as a political-economic transformation with profound implications for stability, equity, and state legitimacy.

Six Canals Project, Extractive Water Governance, and National Security Risks in Pakistan

The Six Canals project, a flagship component of Pakistan's US$3.3 billion Green Pakistan Initiative (GPI), stands at the intersection of developmental ambition and existential political risk. Officially framed as a transformative agricultural intervention designed to irrigate approximately 4.8 million acres of arid land across Punjab, Sindh, and Balochistan, the project seeks to reclaim desert frontiers particularly in Punjab's Cholistan region through six large scale canals drawing primarily from the Indus River system (Pakistan Bureau of Statistics, 2025). Promoted as a solution to food insecurity in a country importing over US$9 billion worth of edible commodities annually amid persistent system wide water shortages, the project has been celebrated by federal and Punjab authorities as a technocratic answer to scarcity. Yet, when examined through the lens of Paul Gellert's extractive regime theory, the Six Canals

project emerges not merely as an irrigation scheme but as a paradigmatic instance of extractive water governance under conditions of ecological contraction.

Gellert's framework conceptualizes extractive regimes as political–economic formations in which the state, allied capital, and coercive institutions reorganize natural resources to secure accumulation, territorial control, and regime legitimacy often by externalizing ecological and social costs onto peripheral regions. Applied to Pakistan's Indus Basin, the Six Canals represent the expansion of a hydraulic frontier, whereby upstream control over a shrinking river system is mobilized to convert scarcity into opportunity for elite accumulation. Under this logic, water is no longer governed as a shared ecological common but as an extractable asset whose redistribution is justified through narratives of national resilience, food security, and climate adaptation.

Punjab's official projections underscore this extractive ambition. Provincial planners estimate that corporate farming models enabled by the Cholistan Canal alone could increase wheat and cotton yields by 15-20 percent, reclaiming over 1.2 million acres of desert land and easing recent Rabi season deficits that left nearly a quarter of Punjab's cropland under-irrigated (IRSA, 2025). However, this upstream optimism masks a deeper structural contradiction: the Six Canals planned perennial off-takes estimated between 2,000 and 3,000 cusecs are being introduced into an Indus system already operating at a 21 percent deficit in 2025, with reservoirs hovering at roughly 50 percent capacity amid declining snowfall and accelerating glacial retreat. In such a context, the water diverted to new canals cannot be newly created; it can only be reallocated, primarily at the expense of downstream provinces.

Sindh, the lower riparian province, perceives the project not as development but as dispossession. Chronic shortfalls since 2014 have averaged 19 percent against Sindh's entitlement under the 1991 Water Apportionment Accord, peaking at 43 percent in 2022-23. These deficits have already resulted in the salinization of over 1.3 million hectares, the collapse of nearly one-fifth of mangrove-dependent fisheries, and the displacement of coastal and deltaic communities whose livelihoods depend on minimum environmental flows (Al Jazeera, 2025). Within Gellert's extractive regime framework, these outcomes are not unintended consequences but predictable externalities of a governance model that prioritizes frontier expansion over downstream survival.

Critics' characterization of the GPI as an extension of Pakistan's "Milbus" economy highlighting the involvement of military-linked corporate entities in land acquisition and agribusiness further reinforces perceptions of elite capture and Punjab-centric accumulation. The bypassing of mandatory provincial consensus mechanisms under the 1991 Accord and the opacity surrounding IRSA's January 2025 certification of the project despite significant telemetry gaps have deepened mistrust. In this sense, the Six Canals project is not merely an infrastructural undertaking; it is a stress test for Pakistan's federal compact, one that risks transforming the Indus from a unifying lifeline into a fault line of political fragmentation.

The Long Arc of Hydraulic Extraction and Riparian Inequality

The tensions surrounding the Six Canals project are not anomalous but deeply embedded in Pakistan's historical experience of water governance. Since the 1947 Partition, the Indus Basin has been a site of both national survival and internal contestation. The Indus Waters Treaty (IWT) of 1960, brokered by the World Bank, successfully defused the risk of interstate conflict with India by allocating the eastern rivers to India and the western rivers to Pakistan (Pireh, 2025). Yet, while the IWT stabilized external relations, it simultaneously intensified internal riparian politics by consolidating Pakistan's dependence nearly 80 percent of its agriculture on a single river system whose flows now had to be redistributed among provinces with divergent

ecological positions and political power. Pre-Partition canal colonies in undivided Punjab thrived on integrated flows, but the Radcliffe Line severed headworks and introduced acute vulnerabilities. India's temporary suspension of water supplies to West Punjab in 1948 left significant tracts of land parched for weeks, imprinting an enduring sense of hydraulic insecurity on Pakistan's political consciousness (Qureshi, 2024). In response, the postcolonial state pursued a strategy of infrastructural consolidation barrages, link canals, and mega-dams designed to secure control over water and territory. However, this strategy also entrenched a pattern of hydro-hegemony, whereby upstream Punjab's developmental priorities increasingly overshadowed downstream Sindh's ecological concerns.

The Water Apportionment Accord (1991) sought to formalize equity by allocating 55.94 MAF to Punjab and 48.76 MAF to Sindh, yet its ambiguous provisions regarding surplus and shortage conditions left room for discretionary interpretation (Rehman, 2023). The creation of the Indus River System Authority (IRSA) in 1992 was intended to enforce impartial regulation, but political interference and weak enforcement mechanisms have undermined its credibility. Evidence of consistent over-drawing by upstream users averaging nearly 10 percent in recent low-flow seasons has fueled perceptions of systematic deprivation in Sindh, where cumulative losses since 1999 are estimated to exceed 40 percent of entitled flows (Mustafa, 2024).

These historical grievances crystallized most visibly around the Kalabagh Dam controversy, where Sindh's opposition invoked existential fears of ecological collapse and ethnic marginalization. The Six Canals project revives these unresolved tensions. By fast-tracking approvals under the GPI without transparent climate-adjusted reassessment or binding provincial consent, the state has effectively reinscribed a historical pattern of extractive governance. In Gellert's terms, this reflects the persistence of an extractive regime that privileges infrastructural expansion over ecological limits and distributive justice, perpetuating a cycle in which past inequities are reproduced under new developmental banners.

Climate Change as an Enabler of Extractive Expansion

Climate change does not operate in this framework as an autonomous driver of conflict but as a force multiplier that intensifies the contradictions of extractive water governance. Himalayan glaciers, which contribute between 60 and 70 percent of dry-season Indus flows, have lost approximately 25 percent of their mass since 2010, with retreat rates accelerating by 15-20 percent under current warming trajectories (Ullah et al., 2025). The data of Sindh Irrigation Department (2025) shows monsoon variability and declining winter snowfall 31 percent below normal in the year of 2025 have further eroded the system's buffering capacity, shifting peak flows earlier in the year and undermining late-Rabi irrigation reliability. Under CMIP6 SSP2-4.5 scenarios, basin-wide flows are projected to decline by 18-22 percent by 2035. These trends fundamentally alter the risk calculus of new infrastructure. The Six Canals project, designed around assumptions of historical averages, introduces rigid, perennial demands into an increasingly volatile system. Within Gellert's framework, climate change thus enables extraction by narrowing ecological margins and transforming water into a scarce commodity whose control yields disproportionate political and economic power.

For downstream Sindh, the implications are severe. Reduced freshwater releases exacerbate salinity intrusion in the delta, where mangrove loss has tripled since 2020 and agricultural productivity has collapsed (Tasya 2024). Climate stress interacts with extraction to produce cascading human insecurities malnutrition, displacement, and disease that are subsequently politicized. The project's failure to incorporate robust climate-risk assessments exemplifies how extractive regimes often discount ecological feedbacks until they manifest as political crises (The Water Diplomat 2025).

The Babarloi Bypass Protest: Extraction Meets Resistance

The April 2025 Babarloi Bypass protests represent the most vivid empirical illustration of how extractive water governance under scarcity translates into national instability. Triggered by acute irrigation shortfalls and fears of permanent deprivation under the Six Canals project, the twelve-day blockade paralyzed nearly 45 percent of national freight traffic and inflicted economic losses exceeding PKR 70 billion (Mongabay, 2025). What began as a localized protest by farmers and women's groups rapidly escalated into a nationwide disruption, drawing professionals, civil society actors, and political movements into a broader confrontation with the state. Within the extractive regime framework, Babarloi is not an aberration but a predictable outcome. As ecological costs are externalized downstream, affected populations mobilize to defend access to survival resources. The protest's gendered leadership particularly by Sindhiyani Tehreek activists highlights how human insecurity becomes the mechanism through which extractive governance is contested. Social media amplification (#NoMoreCanalsOnIndus) transformed localized grievances into a national narrative of "hydrological colonialism," forcing federal authorities to halt the project temporarily through the Council of Common Interests (The Dawn; 2025). Yet the protest also revealed the fragility of these concessions. Ultimatums to expand blockades to railways underscored the latent potential for escalation in the absence of structural reform. Babarloi thus serves as a warning: under conditions of scarcity, extractive water projects can rapidly convert infrastructural decisions into security crises.

Discussions

This study is grounded in Gellert's Extractive Regime Theory (2010), which conceptualizes large-scale resource governance as a political–economic formation through which the state, allied corporate actors, and security institutions reorganize nature to secure accumulation, territorial control, and regime legitimacy. Within this framework, water infrastructure is not a neutral development instrument but a mechanism through which scarcity is governed, redistributed, and externalized. Applied to Pakistan's Indus Basin, the Six Canals project represents the expansion of an extractive water regime, wherein hydraulic infrastructure is mobilized to convert ecological stress into opportunities for state-led accumulation and frontier expansion, particularly under the discursive banners of food security and national resilience.

Climate change functions within this framework not as an autonomous causal force but as a contextual enabler that intensifies the extractive logic. Here, Environmental Security Theory (EST) is employed in a supporting role to explain how accelerating glacial retreat, erratic monsoons, and declining river flows generate structural water scarcity that amplifies the stakes of extraction. Scarcity transforms distributive politics into zero-sum contests, increasing the political payoff of upstream control while magnifying the downstream costs of diversion. In this sense, climate stress does not cause conflict directly; rather, it sharpens the contradictions inherent in extractive water governance by narrowing ecological margins and reducing institutional buffering capacity.

The operation of extraction across Pakistan's federal structure is further explained through the Hydro-Political Security Framework (HPSF), which is used to illuminate how power asymmetries shape water allocation outcomes within shared river basins. From this perspective, the Six Canals project exemplifies how upstream dominance, institutional opacity, and the circumvention of consensus-based mechanisms such as those mandated by the Water Apportionment Accord (1991) enable the consolidation of hydro-political power. HPSF thus clarifies how extractive regimes are operationalized through control over regulatory bodies,

data regimes, and infrastructural siting, allowing ecological risks to be systematically displaced downstream while maintaining a formal appearance of legality.

The downstream consequences of this extractive regime are analyzed through the Human Security Approach (HSA), which remains analytically subordinate to Gellert's framework but essential for tracing how structural extraction translates into social unrest and political instability. HSA shifts attention from aggregate water volumes to lived insecurities loss of livelihoods, displacement, food insecurity, and health risks that emerge when ecological costs are externalized onto vulnerable populations. Events such as the Babarloi Bypass protest are interpreted not as spontaneous disturbances but as predictable manifestations of extractive governance, where human insecurity becomes the mechanism through which ecological deprivation is converted into mass mobilization, supply-chain disruption, and challenges to state legitimacy.

Taken together, these supporting frameworks reinforce rather than compete with extractive regime theory. Environmental security explains why scarcity magnifies extraction's consequences; hydro-political analysis explains how extraction is structured and enforced; and human security explains how extraction is contested on the ground. The central analytical claim of this study is that under conditions of climate-induced water scarcity, the expansion of extractive water regimes exemplified by the Six Canals project poses a systemic risk to Pakistan's internal stability and federal cohesion by institutionalizing unequal access, externalizing ecological harm, and transforming water governance into a site of persistent political conflict.

Implications

The Six Canals project has intensified political polarization along provincial and ethnic lines, undermining coalition politics and eroding trust in federal institutions. Punjab's defense of the project as a developmental necessity clashes with Sindh's framing of it as an existential threat, producing a zero-sum discourse that destabilizes governance. This polarization has tangible economic consequences. Disruptions to supply chains during the Babarloi protests exposed the vulnerability of Pakistan's north–south corridor, while ongoing uncertainty threatens investment, export performance, and IMF stabilization efforts. Social unrest driven by water insecurity further compounds these risks, fertile ground for radicalization and low-level militancy, particularly in peripheral regions already marginalized by extractive development. At the systemic level, repeated bypassing of consensus mechanisms erodes the legitimacy of the federal bargain embodied in the 1973 Constitution and the 18th Amendment. In Gellert's terms, the extractive regime's short-term gains come at the cost of long-term political stability

Conclusion

Scholarly engagement with Pakistan's water crisis has expanded significantly over the past two decades, reflecting growing concern over declining availability, climate variability, and governance failure in the Indus Basin. Early hydrological studies framed water scarcity primarily as a function of population growth, inefficient irrigation practices, and limited storage capacity (Briscoe & Qamar, 2005; World Bank, 2010). Subsequent research, however, has increasingly emphasized that scarcity in Pakistan is not merely physical but politically produced, shaped by institutional design, power asymmetries, and contested development priorities. This shift mirrors broader trends in political ecology and critical development studies, which challenge technocratic narratives of resource management and foreground questions of authority, inequality, and distribution. The evidence assembled in this study underscores a stark conclusion: under conditions of climate-induced scarcity, the expansion of extractive water regimes poses an existential threat to Pakistan's internal stability and federal cohesion. The Six

Canals project exemplifies how infrastructural ambition, when divorced from ecological reality and distributive justice, can transform water from a resource into a vector of conflict. Babarloi Bypass was not an isolated episode but a preview of a future in which highways replace battlefields and supply chains become instruments of protest.

The choice confronting Pakistan is no longer between abundance and scarcity, but between managing scarcity collectively or allowing extractive logics to tear the federation apart. The Indus is running dry and with it, the margin for error.

Recommendations

The remedy lies not in abandoning development but in dismantling extractive governance: enforceable real-time telemetry, binding provincial consent, climate-adjusted allocation rules, and compensatory mechanisms for downstream losses. Without such reforms, the Six Canals will not irrigate deserts; they will fertilize disintegration.

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