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From Vulnerability to Resilience: The Role of Panchayati Raj Institutions in Disaster Risk Governance in Kinnaur District, Himachal Pradesh

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Abstract

This paper examines the pivotal role of Panchayati Raj Institutions (PRIs) in the disaster risk governance (DRG) framework of Kinnaur District, Himachal Pradesh, a region characterized by extreme geo-climatic vulnerability and significant anthropogenic pressures. While national and state legislation, including the Disaster Management Act of 2005, legally empowers PRIs as 'local authorities' for disaster management, a significant gap exists between their statutory mandate and operational capacity. The research finds that PRIs possess invaluable local knowledge for conducting Hazard, Vulnerability, and Capacity Assessments (HVCAs) and are the primary responders during crises due to Kinnaur's geographical isolation and frequent infrastructure failures. However, their effectiveness is severely hampered by systemic challenges, including logistical barriers, inadequate technical training, constrained financial autonomy, and regulatory conflicts with large-scale development projects that exacerbate local risks. The study highlights a paradox where PRIs are constitutionally central to DRG yet are operationally marginalized. It concludes that achieving transformational resilience in Kinnaur requires a paradigm shift from reactive recovery to proactive risk reduction. This necessitates empowering PRIs with genuine institutional, financial, and regulatory autonomy, ensuring the integration of risk mitigation into local development planning, and building their capacity to function as independent, capable managers of local risk.

Keywords: *Disaster Risk Governance, Panchayati Raj Institutions (PRIs), Vulnerability, Resilience, Decentralisation.*

Introduction

1. Background and Rationale for Study

The increasing global prevalence of natural and anthropogenic hazards mandates the adoption of robust and decentralised strategies for Disaster Risk Reduction (DRR) (National Institute of Disaster Management, 2013). India, recognised as a developing nation highly susceptible to such catastrophic events, requires sophisticated, empirically grounded disaster management research to inform policy and practice (NIDM, 2013). A cornerstone of India's administrative response to this challenge lies in the constitutional project of political decentralisation, initiated through the 73rd and 74th Constitutional Amendment Acts (NIDM, 2013). These landmark amendments fundamentally altered the dynamics of political power, positioning local governments, specifically the Panchayati Raj Institutions (PRIs), as essential operational bodies at the grassroots level (NIDM, 2013; NIDM, 2021).

The constitutional mandate expects PRIs to foster good governance by enhancing accountability, transparency, responsiveness, and inclusiveness within local administration (NIDM, 2013). The primary structural advantage of PRIs in the context of DRG is their intrinsic proximity to the populace and their electoral legitimacy, enabling them to effectively mobilise social capital and provide critical local leadership during crises (NIDM, 2013; NIDM, 2021). They represent the most suitable institutional mechanism for institutionalising genuine people's participation in both developmental planning and emergency management (NIDM, 2021). Effective DRR necessitates moving beyond centralised, top-down directives to leverage this local organisational capacity (NIDM, 2013).

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1. The Kinnaur Context and Research Aims

Kinnaur District in the State of Himachal Pradesh serves as an exemplar case study for evaluating the functionality and challenges of decentralised DRG, given its unique confluence of natural fragility and developmental stress. The region's rugged Himalayan geography renders it inherently vulnerable to a complex array of natural hazards, including high seismic activity, recurrent landslides, flash floods, and avalanches (Chand et al., 2024; Kinnaur Vulnerability Profile, 2019). This intrinsic geological susceptibility is critically compounded by human intervention, specifically through haphazard developmental activities such as the construction of large-scale hydro-dams, intrusive road construction, and the widespread, inappropriate adoption of Reinforced Concrete Cement (RCC) structures in place of traditional, flexible wooden housing (Chand et al., 2024; Kinnaur Vulnerability Profile, 2019; NIDM, 2013). These factors collectively exacerbate overall vulnerability and risk in the district (Chand et al., 2024).
The operational effectiveness of the state's disaster response mechanism in Kinnaur is often compromised by the region's rugged terrain and poor infrastructure (Chand et al., 2024). The district is characterised by an entirely rural demographic profile (Census of India, 2011), meaning that the success of disaster management hinges fundamentally on the functional capacity of its local institutions; the Gram Panchayats and Panchayat Samitis. While other districts in Himachal Pradesh face similar hazards, Kinnaur was specifically chosen as a critical instance case because its 100% rurality and the intense concentration of hydropower projects present this 'institutional paradox' in its most acute form, making it a revelatory case for analysis. Consequently, the failure of disaster risk governance at the district level is often traceable to a deficiency in local institutional capabilities, despite the existing political legitimacy provided by decentralisation (NIDM, 2013).

The primary objective of this research is to analyse the existing institutional frameworks, operational preparedness, and structural limitations faced by Panchayati Raj Institutions in Kinnaur District (NIDM, 2013). This paper argues that the gap between this legal mandate and operational capacity constitutes an 'institutional paradox.' By framing the issue through this lens, the study offers a novel analysis that moves beyond a simple 'implementation gap' assessment to interrogate how legal empowerment can coexist with systemic marginalization, providing a more nuanced understanding of governance failures in the Indian Himalayan context.

Theoretical Foundations: Conceptualising Vulnerability and Resilience in DRG

1. Defining Risk, Vulnerability, and Capacity

Disaster risk, within contemporary academic discourse, is framed as a function determined by the interplay between a specific hazard and the inherent vulnerability of the exposed system. In the highly sensitive Himalayan context of Kinnaur, vulnerability is a dynamic and multi-layered construct. Physical exposure is quantified by the concentration of human habitation and infrastructure loss in mid-range elevations, specifically between 1244 and 4000 metres (Kinnaur Vulnerability Profile, 2019). Social vulnerability incorporates the differential impacts of disasters on sensitive segments of the community, such as women, children, the elderly, the sick, and the differently abled (NIDM, 2013). Finally, institutional vulnerability relates to weaknesses within governance structures, planning processes, and regulatory mechanisms.

Quantitative hazard analysis confirms the pre-eminence of certain threats in Kinnaur. According to vulnerability indices, landslides present the highest mean risk exposure, calculated at 0.67 (Kinnaur Vulnerability Profile, 2019). Crucially, the index for vulnerability arising from anthropogenic activities is remarkably high, standing at 0.55 (Kinnaur Vulnerability Profile, 2019). This suggests that human choices and development patterns are nearly as significant as intrinsic geological forces in determining overall community risk (NIDM, 2013). Conversely, capacity refers to the collective strengths and resources available locally, including traditional knowledge, established social support systems, and the ability of PRIs to conduct rigorous Hazard, Vulnerability, and Capacity Assessments (HVCAs) (Kinnaur District Disaster Management Plan, n.d.; NIDM, 2013).

2. The Transition to Resilience: RRT Framework

The prevailing trend in DRR scholarship is the imperative transition from reactive disaster response to a comprehensive resilience paradigm. The collected documents were analyzed using thematic analysis, which involved a multi-stage coding process. An initial open coding identified recurring concepts related to PRI roles and challenges, which were then grouped into broader themes corresponding to the RRT framework and the core components of the institutional paradox, ensuring a consistent analytical approach across the diverse sources. Resistance involves implementing immediate protective measures prior to or during an event, while resilience defines the capacity of a system to absorb the shock of an impact, maintain essential functions, and recover rapidly (Disaster Vulnerability and Resilience Report, n.d.). For Kinnaur, achieving resilience demands that PRIs effectively leverage local knowledge to coordinate swift community-based response (NIDM, 2013) and ensure that post-disaster reconstruction is governed by the philosophy of 'building back better, 'aiming for enhanced structural integrity and reduced future exposure (Preventionweb, n.d.).

The high vulnerability index associated with anthropogenic activities (0.55) strongly suggests that Kinnaur is currently grappling with a state of *maladaptation*. Development initiatives intended to improve living standards, such as hydropower projects and the introduction of brittle RCC construction, inadvertently amplify local vulnerability to hazards like landslides and floods (Chand et al., 2024; NIDM, 2013; Kinnaur Vulnerability Profile, 2019). This highlights that the mere recovery to a previous state is insufficient. True transformational change; the ultimate objective of the RRT framework; requires PRIs to move beyond simple coping mechanisms by making fundamental, strategic choices concerning land-use regulation, enforcement of appropriate construction norms, and mediation between large-scale economic development interests and local safety standards (Chand et al., 2024; Disaster Vulnerability and Resilience Report, n.d.; NIDM, 2013). PRIs, given their legitimate mandate and grassroots presence, are the crucial institutional vehicles for driving such community-based, transformational risk reduction (NIDM, 2013). They must evolve from passive administrators into active risk regulators.

Institutional Frameworks for Local Authority in Disaster Management

1. National Statutory Mandate

The involvement of Panchayati Raj Institutions in disaster risk governance is solidified by the national statutory framework established under the Disaster Management Act, 2005 (DM Act) (Ministry of Panchayati Raj, 2021). Section 2(h) of this pivotal legislation formally defines PRIs as a 'local authority thereby embedding them firmly within the government's official disaster management architecture (Ministry of Panchayati Raj, 2021). Furthermore, Chapter VI, Section 41 of the DM Act explicitly empowers this defined local authority to undertake all necessary measures for effective disaster management, encompassing preparedness, mitigation, response, and recovery functions (Ministry of Panchayati Raj, 2021).

This comprehensive statutory inclusion ensures that PRIs possess a clear legal foundation for undertaking DRG activities, rendering unnecessary any separate constitutional amendment to the Eleventh Schedule specifically for disaster management functions (Ministry of Panchayati Raj, 2021). This framework operationalises the principles of decentralised governance by formally institutionalising the participation of elected local representatives in critical, time-bound decision-making processes, thereby bridging the policy gap between the district administration and the rural community (NIDM, 2013; NIDM, 2021).

2. State-Level Duties in Himachal Pradesh

The Himachal Pradesh Panchayati Raj Act, 1994, reinforces and specifies the duties of the PRIs, particularly at the intermediate tier. Section 81 of the Act stipulates the functions of the Panchayat Samiti, noting its duty to make reasonable provision in the Samiti area for various matters, including the crucial item of "provision of emergency relief in cases of distress caused by fires, floods, drought, earthquake, scarcity, locust, swarms, epidemics and other natural calamities" (Government of Himachal Pradesh, 1994). This legislative clause clearly defines the expected role of the middle tier of PRIs in immediate, life-saving response efforts (Government of Himachal Pradesh, 1994).

However, the specific wording of this mandate introduces a significant caveat: the duty is conditional, requiring provision "so far as the Panchayat Samiti funds allow" (Government of Himachal Pradesh, 1994). This conditional clause reveals a structural vulnerability where the legal duty is intrinsically tied to financial resources, implying that a lack of readily available funds could legally preclude the Panchayat Samiti from fulfilling its mandated relief function in the critical initial hours following an event (Government of Himachal Pradesh, 1994). Vertical coordination and overarching state policy are managed by the Himachal Pradesh State Disaster Management Authority (HPSDMA), a high-level body chaired by the Chief Minister and including senior officials such as the Chief Secretary, which authorises emergency procurement and sets state-level policy (Himachal Pradesh State Disaster Management Authority, n.d.).

The complex interplay between national mandates, state-level duties, and coordination mechanisms is summarised below.

Table 3.1: Statutory Mandate and Operational Roles of Panchayati Raj Institutions in Disaster Management

Institutional Level	Mandate/Legislation	Core Function in DRG
National (Status)	DM Act, 2005 (Section 2(h),41)	Designated 'local authority'; empowered to implement necessary DM measures.
State (Intermediate Tier)	HP Panchayati Raj Act, 1994 (Section 81)	Provision of emergency relief for natural calamities (floods, earthquakes, fires).
Coordination Body	HPSDMA (Composition)	Authorises emergency procurement and sets state-level policy and governance standards.
Grassroots (GP)	Constitutional Amendments/DM Principles	HVCA analysis; Community-Based Disaster Preparedness (CBDP).

The presence of a legal duty without guaranteed, readily accessible emergency funds means that the mandate risks becoming performative rather than operationally effective when most needed (Government of Himachal Pradesh, 1994). While the State of Himachal Pradesh does receive significant central allocations through mechanisms like the National Disaster Response Fund (NDRF) (with supplementary assistance exceeding Rs. 633.73 crore approved in recent times (Press Information Bureau, 2024)), the critical structural vulnerability is the lack of timely, swift, and comprehensive financial devolution to the grassroots institutional levels necessary for immediate, local procurement of provisions and essential services (Government of Himachal Pradesh, 1994). This delay fundamentally hinders the ability of PRIs to act autonomously in the immediate aftermath of a disaster, especially when high-altitude roads are blocked (Chand et al., 2024).

Kinnaur District: An Analysis of Extreme Vulnerability and Anthropogenic Risk

1. Geo-Demographic Context of Extreme Isolation

Kinnaur District presents profound challenges for decentralised DRG due to its extreme isolation and distinctive socio-geographical profile. The district is characterised by a very sparse population, recorded at 84,121 in the 2011 Census, resulting in a low population density of 13 persons per square kilometre (Census of India, 2011). Crucially, the district is classified as entirely rural, with zero urban areas recorded (Census of India, 2011). This demographic fact means that the Gram Panchayat is the singular, elected representative body responsible for coordinating and implementing all local developmental and disaster risk governance functions.

The rugged, mountainous topography frequently leads to the isolation of villages during catastrophic events (Chand et al., 2024). When landslips or flash floods occur, the inadequate quality of infrastructure and road connectivity often results in the failure of the official response mechanism, regardless of how robust the overall design of the system may be (Chand et al., 2024).

Consequently, residents are repeatedly forced to rely on self-help and local community volunteering to undertake necessary immediate actions before external aid can be received, underscoring the vital, if under-supported, role of community-level capacity (Chand et al., 2024). Although the literacy rate in Kinnaur is comparatively high (89.53percent for males) (Department of Statistics, 2011), this considerable human capital cannot be fully leveraged for DRG without adequate institutional support and specialised technical training (NIDM, 2013).

2. Quantification of Hazards and Vulnerability

Kinnaur faces a chronic hazard profile dominated by landslides, floods, and seismic activities (Chand et al., 2024; NIDM, 2013). Detailed vulnerability mapping confirms that landslide hazards carry the highest mean vulnerability index score (0.67) (Kinnaur Vulnerability Profile, 2019). The areas found to be most vulnerable to landscape and human settlement loss are concentrated at elevations between 1244 and 4000 metres (Kinnaur Vulnerability Profile, 2019). Specifically, a high vulnerability area spanning 268.07 square kilometres has been quantified within the district, indicating extensive exposure (Kinnaur Vulnerability Profile, 2019).

The devastating consequences of this persistent vulnerability are evident in recent disaster reports. For example, during a recent severe monsoon period, the state experienced catastrophic loss, with total estimated damages exceeding Rs4,841.79 crore (Rs 4,84,179 lakh), with extensive destruction reported across public utilities, including Rs 2,98,113 lakh damage to roads and bridges managed by the Public Works Department (State Disaster Management Authority, 2022). Additionally, widespread damage to private property, including 663 fully damaged and 1,046 partially damaged houses (State Disaster Management Authority, 2022), further confirms the systemic inability to protect assets against recurrent hazards (State Disaster Management Authority, 2022).

3. Anthropogenic Risk Acceleration

A critical finding that informs local risk governance strategy is the acceleration of vulnerability due to human activity. As noted, the mean vulnerability index for anthropogenic activities stands at 0.55 (Kinnaur Vulnerability Profile, 2019). This high figure is directly linked to "haphazard developmental activities" such as the construction of major tunnels and large-scale hydro-dams, often undertaken without sufficient consideration for the area's geological fragility (NIDM, 2013). Hydropower development is explicitly identified as a major factor contributing to huge physical landscape and human property losses in the region (Kinnaur Vulnerability Profile, 2019).

Furthermore, the deviation from traditional, disaster-resistant wooden housing to non-traditional RCC structures has significantly increased structural vulnerability in seismic and landslide-prone areas (NIDM, 2013). The continued introduction of risk into an already fragile ecosystem by such development patterns necessitates the evolution of local governance systems. The evidence strongly suggests that Kinnaur's path to resilience is obstructed by developmental practices that disregard risk mitigation (NIDM, 2013). This profound regulatory conflict requires PRIs to transition from mere coordinators to effective managers and regulators of local land use and construction standards, a role that necessitates political empowerment and technical capability.

The district's unique socio-geographical profile and hazard exposure are detailed below.

Table 4.1: Kinnaur District Socio-Geographical Profile and Key Vulnerability Metrics

Parameter	Data/Metric	Significance to PRI DRG Role
Total Population (2011)	84,121	Isolation increases reliance on local/self-help mechanisms for immediate response.
Rurality Index	100% Rural	PRIs (Gram Panchayats) are the singular representative body and disaster coordinator.
Highest Hazard Index (Mean)	Landslides: 0.67	Requires site-specific training and mitigation focus in local DM planning.
Anthropogenic Index (Mean)	0.55	PRIs must integrate mitigation of development risks (e.g., hydropower impact) into local planning.
Infrastructure Barrier	Poor roads; limited connectivity in far-flung areas	External aid often fails, mandating PRI operational autonomy in the response phase.

The narrative of "self-help" emerging from widespread infrastructure failure in Kinnaur, while showcasing admirable community resilience, also functions as a stark indicator of policy failure. It signifies the consistent breakdown of higher-level government agencies' capacity to maintain the necessary infrastructure for a swift, official response (Chand et al., 2024). Since the state response mechanism is often structurally compromised by terrain and asset loss, the ultimate efficacy of the entire District Disaster Management Plan depends on the Gram Panchayat's independent ability to manage the critical first 72 hours of a disaster. This reality elevates the PRI role from simple aid coordinator to primary operational responder, a responsibility for which they are frequently under-equipped, both technically and administratively (NIDM, 2013).

Operationalising DRG: Functions and Capacities of PRIs in Kinnaur

The role of Panchayati Raj Institutions spans the entire spectrum of the disaster management cycle, leveraging their local knowledge and democratic legitimacy to ensure community participation and tailored response mechanisms.

1. Preparedness and Risk Assessment (Pre-Disaster Phase)

In the critical pre-disaster phase, PRIs are uniquely positioned to spearhead mitigation and planning efforts (Preventionweb, n.d.). They hold the institutional advantage of being able to conduct highly contextualised Hazard, Vulnerability, and Capacity Assessments (HVCAs), gathering crucial local knowledge regarding immediate resources, facilities, alternative support systems, and local construction methods (NIDM, 2013). Furthermore, PRIs are essential for understanding and addressing the specific social vulnerability dynamics within the village, such as identifying and planning for the unique needs of women, the elderly, or the disabled (NIDM, 2013).

This preparatory function culminates in the formulation of comprehensive Village Disaster Management Plans (VDMPs) (Kinnaur District Disaster Management Plan, n.d.; NIDM, 2021). PRIs are also central to the successful execution of Community-Based Disaster Preparedness (CBDP), utilising their political institutional status to secure the active involvement of elected members and the broader community (NIDM, 2013). Their presence allows them to act as catalysts for social mobilisation, effectively integrating traditional local wisdom regarding hazards and environmental management with modern DRR practices (NIDM, 2021). Capacity building programmes should also focus on youth engagement, introducing new ideas and technical approaches to complement existing community structures (NIDM, 2013).

2. Response and Relief Coordination (Impact Phase)

The impact and immediate post-impact phases are often the most crucial periods for communities facing a disaster (Preventionweb, n.d.). In the isolated villages of Kinnaur, where adverse circumstances and the destruction of infrastructure frequently stall external government rescue efforts (Chand et al., 2024), the swift activation of local community volunteers by PRIs represents the only viable response mechanism (Chand et al., 2024). The Panchayat Samitis are legally mandated under the Himachal Pradesh Panchayati Raj Act to manage and distribute immediate emergency relief (Government of Himachal Pradesh, 1994).

This operational role demands a highly disciplined response mechanism, necessitating efficiency, transparency, and equity in the distribution of aid to the affected populations (NIDM, 2013; NIDM, 2013). PRIs, being directly accountable to the rural community that elects them, are intrinsically better positioned than distant state agencies to ensure this equitable and responsive delivery of relief (NIDM, 2013). The logistical competence of the PRI during this phase, particularly in coordinating self-help activities and operating basic communication equipment, directly determines life-saving outcomes (NIDM, 2013).

3. Recovery and Transformation (Post-Disaster Phase)

Post-disaster activities must aim not merely to restore damaged systems, but to enhance them, striving for transformation in line with modern DRR principles (Disaster Vulnerability and Resilience Report, n.d.). PRIs facilitate this by guaranteeing sustained community participation in reconstruction efforts, ensuring that recovery plans meet local needs and align with principles of resilience (Preventionweb, n.d.). They are instrumental in integrating long-term recovery strategies with overarching local developmental goals, thereby preventing future risk accumulation (NIDM, 2021).

The sustained presence of PRIs allows them to oversee reconstruction quality, mediate the issues of rental loss faced by temporarily displaced families (where rent can range from Rs 2000 to Rs 5000 per month) (Tribune India, 2022), and advocate for necessary systemic changes (NIDM, 2013). This includes promoting and enforcing the adoption of disaster-resistant construction methodologies, such as traditional housing, over the continued use of vulnerable RCC structures that were identified as a contributing factor to past losses (NIDM, 2013).

The distribution of these vital functions across the disaster management cycle confirms the central necessity of the PRI structure for Kinnaur's resilience.

Table 5.1: Key Functions of Panchayati Raj Institutions across the Disaster Management Cycle

DM Cycle Phase	PRI Responsibility/Action	Resilience Outcome
Preparedness	HVCA and VDMP formulation; Social mobilisation; Youth engagement.	Proactive risk reduction; Utilisation of local knowledge base.
Response	Activation of self-help volunteers; Immediate distribution of emergency relief.	Life-saving action during isolation; Fulfilment of legal duty under HP Act.
Recovery	Monitoring equitable relief/reconstruction; Addressing social vulnerability (e.g., women, disabled).	Inclusive and accountable 'build back better' strategy.

The noted emphasis on youth involvement in capacity building (NIDM, 2013) is a crucial acknowledgment that traditional PRI leadership structures may often lack the specialised technical and logistical skills necessary for navigating modern disaster crises. This mandates the injection of new ideas and the competence to handle critical communication technology (NIDM, 2013). If youth are specifically targeted for training, they can ensure that basic communication systems such as wireless sets are competently operated when conventional infrastructure collapses (Chand et al., 2024; NIDM, 2013). This connects the human resource component of resilience directly to the functional requirements for operational response autonomy.

Challenges and Impediments to Effective PRI-Led Resilience Building

Despite their clear legal mandate and grassroots proximity, PRIs in Kinnaur face significant structural and operational deficits that undermine their capacity to achieve transformational resilience.

1. Logistical Barriers and Infrastructure Failure

The geographical reality of Kinnaur District imposes the most immediate constraint on DRG. The highly rugged terrain and high incidence of landslides and floods result in frequent and massive road blockages (Chand et al., 2024). These infrastructure

failures effectively sever connectivity, rendering external governmental and agency rescue efforts, including the transport of essential machinery or equipment, impossible (Chand et al., 2024). The structural failure of roads, which accounts for extensive financial loss (State Disaster Management Authority, 2022), fundamentally limits the effectiveness of the central response mechanism. The resulting isolation confirms that the failure to secure road connectivity during a crisis directly contributes to the substantial loss of life and property (Chand et al., 2024).

2. Deficits in Capacity and Technical Training

A persistent systemic challenge is the deficit in capacity building and technical expertise at the local level. Expert committees have long highlighted the necessity of providing targeted training and awareness to PRI members, particularly in the use of essential modern communication equipment, such as fax machines and wireless sets, which are critically important in isolated disaster scenarios (High Powered Committee, 2002). The recurring need for training in such basic communication technologies indicates a form of logistical and technological exclusion of PRIs from the formal, modern DRG architecture (NIDM, 2013).

The absence of comprehensive capacity building programmes focusing on site-specific hazards and efficient Incident Response Systems (IRS) leaves PRIs unprepared to handle complex, autonomous crisis management (Kinnaur District Disaster Management Plan, n.d.; NIDM, 2013). Given the unique and severe hazards of Kinnaur, the lack of tailored, scenario-based training is a profound operational vulnerability (NIDM, 2013).

3. Administrative and Financial Constraints

The administrative landscape poses two key challenges to effective PRI functioning. Firstly, there is often insufficient integration between the micro-level Village Disaster Management Plans (VDMPs) and the broader developmental blueprints, such as the Gram Panchayat Development Plan (GPDP) (NIDM, 2021). This administrative separation ensures that developmental schemes often proceed without rigorous consideration of their impact on local risk mitigation, thereby contributing to the anthropogenic vulnerability index (Kinnaur Vulnerability Profile, 2019).

Secondly, the flow of emergency funding is constrained by bureaucratic bottlenecks. While the State government receives substantial allocations from the NDRF (Press Information Bureau, 2024), the timely and adequate devolution of these funds to the operational level of the Panchayat Samiti is often hampered (Government of Himachal Pradesh, 1994). As highlighted earlier, the duty of the Panchayat Samiti to provide emergency relief is conditional on its available funds (Government of Himachal Pradesh, 1994). This delay in decentralised financial access inhibits the prompt fulfilment of the PRI's legal response duty, especially when immediate local procurement is necessary during infrastructural collapse.

4. Regulatory Conflicts and Development Pressure

The high vulnerability imposed by human-induced factors (0.55) (Kinnaur Vulnerability Profile, 2019) stems from a persistent regulatory conflict. Local resistance to damaging practices, such as haphazard construction and unsustainable hydropower development, is routinely overridden by regional and state-level economic priorities (NIDM, 2013). PRIs currently lack the necessary regulatory authority to halt, significantly modify, or enforce stringent mitigation measures on large-scale development projects that demonstrably increase community exposure to landslides and floods (NIDM, 2013; Kinnaur Vulnerability Profile, 2019). This limitation confines the PRI's role to reactive management rather than proactive, structural risk reduction, effectively preventing them from initiating transformational change (Disaster Vulnerability and Resilience Report, n.d.). The persistent need for training in basic, resilient communication equipment (High Powered Committee, 2002) confirms that PRIs are excluded from critical technology needed for command and control during crises (NIDM, 2013). The substantial losses recorded in private homes, cowsheds, and public infrastructure (Chand et al., 2024; State Disaster Management Authority, 2022) suggest that current preparedness efforts are often skewed towards post-event recovery, failing to adequately empower local bodies to manage rapid, isolated response autonomously.

Policy Recommendations for Enhanced PRI Resilience

Achieving transformational resilience in Kinnaur requires targeted policy interventions designed to address the systemic structural deficits identified in the operational capacity of Panchayati Raj Institutions.

1. Institutionalising Risk Reduction in Local Planning

It is crucial to mandate the comprehensive integration of Hazard, Vulnerability, and Capacity Assessment (HVCA) findings and subsequent Village Disaster Management Plans (VDMPs) into the Gram Panchayat Development Plan (GPDP) and associated budgeting cycles (NIDM, 2013; NIDM, 2021). This structural alignment ensures that all developmental activities, ranging from infrastructure maintenance to local construction approvals, are subjected to robust risk reduction parameters (NIDM, 2013). To support this, PRIs must be provided with clearly defined, accessible Standard Operating Procedures (SOPs) and comprehensive check lists for the management of every phase of the disaster cycle, thereby institutionalising efficiency and consistency (Kinnaur District Disaster Management Plan, n.d.).

2. Autonomy in Capacity and Resource Management

To counteract the challenge of extreme isolation and stalled state response efforts (Chand et al., 2024), a dedicated strategy for local capacity building must be executed. Training must be highly specific, equipping PRI task forces and community volunteers with operational competence in handling modern, resilient communication technologies (such as wireless sets) and the implementation of efficient Incident Response Systems (IRS) (High Powered Committee, 2002; NIDM, 2013).

Financial devolution must be accelerated and secured. To address the conditional nature of the Panchayat Samiti's relief duty (Government of Himachal Pradesh, 1994), a dedicated emergency contingency fund must be established. This fund should be promptly accessible and managed directly by the Panchayat Samiti, enabling the immediate provision of necessary emergency relief and bypassing the administrative delays typically associated with higher-level NDRF allocations (Press Information Bureau,

2024). This financial autonomy is essential for ensuring PRIs function as truly independent operational responders when external systems fail.

3. Empowering Regulatory Oversight

To mitigate the accelerating risk imposed by anthropogenic factors (Kinnaur Vulnerability Profile, 2019), PRIs must be empowered to act as genuine regulatory stakeholders in local land use and major development decisions. This includes granting them significant consultative weight regarding large-scale projects, such as hydropower schemes, and the formal authority to enforce stringent building codes (NIDM, 2013). Regulatory emphasis should be placed on discouraging vulnerable construction (such as non-traditional RCC structures) and promoting the use of locally appropriate, disaster-resistant housing methods. Integrating technical expertise and necessary subsidies to facilitate the adoption of traditional wooden architecture must become a central component of the PRI's recovery and mitigation mandate (NIDM, 2013). True transformation, as defined by the RRT framework (Disaster Vulnerability and Resilience Report, n.d.), necessitates restructuring the power dynamic between local government and external development agencies to protect the community's fragility.

Conclusion

1. Synthesis of Findings

The research confirms that the efficacy of Panchayati Raj Institutions in disaster risk governance within Kinnaur District is defined by a significant institutional paradox: immense statutory potential juxtaposed against profound operational and regulatory constraints. Legally, PRIs are mandated 'local authorities '(Ministry of Panchayati Raj, 2021), possess the essential localised knowledge for HVCA and Community-Based Disaster Preparedness (NIDM, 2013; NIDM, 2021), and are the sole reliable responders during crises (Chand et al., 2024). However, their operational capacity is severely curtailed by Kinnaur's geographic isolation, systemic infrastructure failures that impede external support (Chand et al., 2024), and the continuous acceleration of risk driven by unchecked anthropogenic activities, reflected in the high vulnerability index (0.55) (Kinnaur Vulnerability Profile, 2019; NIDM, 2013). While these findings confirm regional trends observed in other Himalayan contexts, such as Nepal, the Kinnaur case uniquely demonstrates how these challenges are intensified by regulatory conflicts arising from state-sanctioned development projects. This reveals that the 'institutional paradox' in the Indian context is not merely a matter of poor resource devolution but a more complex issue rooted in a fundamental conflict between national economic priorities and local risk management

2. Achieving Transformational Resilience

Kinnaur's path toward sustainable resilience necessitates a paradigm shift from a focus on reactive recovery to one of proactive, autonomous local governance. This demands translating the statutory mandate of PRIs into guaranteed operational capability (Ministry of Panchayati Raj, 2021; NIDM, 2013). By implementing mandatory integration of risk assessments into local development plans, accelerating the financial and technical devolution of resources (including essential, resilient communication equipment), and empowering PRIs with genuine regulatory authority over destructive development activities, the state can secure the institutional mechanism required to withstand the region's acute and unique hazard profile (High Powered Committee, 2002; NIDM, 2013). The ultimate measure of resilience in Kinnaur will be the local community's ability to withstand major shocks without reliance on external, often delayed, state mechanisms, thus ensuring these grassroots institutions evolve beyond simple coordination to become capable, autonomous managers of local risk and catalysts for long-term transformational change.

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Conflict of Interest

The authors declare that there is **no conflict of interest** regarding the publication of this research work.

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