Journal of Research and Development

A Multidisciplinary International Level Referred and Double Blind Peer Reviewed, Open Access

ISSN : 2230-9578 | Website: https://jrdrvb.org Volume-17, Issue-12| December 2025

Original Article

Disaster Management in Karnataka: State Capacity Perspective

Madhu Hunasagi[1], Dr. S.N. Hullannavar[2]

[1,2]Dept. of Political Science, Karnatak University, Dharwad

Email: madhupatil1195@gmail.com

Manuscript ID:

JRD -2025-171226

ISSN: 2230-9578

Volume 17

Issue 12

Pp.137-141

December 2025

Submitted: 18 Nov. 2025

Revised: 28 Nov. 2025

Accepted: 12 Dec. 2025

Published: 31 Dec. 2025

Abstract

This paper examines disaster management in Karnataka through the lens of state capacity, focusing on how financial arrangements shape the state's ability to govern risks. Disaster financing in Karnataka remains predominantly relief-oriented, with nearly 80–90% of allocations directed toward post-disaster response and only 10–20% for mitigation and capacity building. This imbalance weakens fiscal capacity by creating a "two-time investment in one disaster," as the state spends heavily on relief while simultaneously losing revenue during crises. By contrast, preventive and capacity-building funds function as refundable investments, reducing future liabilities, safeguarding livelihoods, and sustaining revenue flows. Drawing on the Disaster Management Act, Finance Commission recommendations, and the 2023–24 Annual Report, the study argues that while Karnataka has established strong institutional frameworks such as SDRF, NDRF, and SDRMF, its strategic and fiscal capacity remain constrained by the dominance of relief-centric expenditure. A greater emphasis on mitigation and resilience would not only align with global frameworks, such as the Sendai Framework, but also enhance Karnataka's long-term state capacity, resilience, and legitimacy.

Introduction

Disaster management has emerged as a central concern in India's governance framework, due to the increasing frequency and intensity of natural and human-induced hazards. Karnataka, with its diverse geography and climate variability, is particularly vulnerable to recurrent droughts, floods, cyclones, and landslides. These disasters impose not only human suffering but also significant fiscal stress on the state, as expenditures on relief and rehabilitation continue to rise year after year. Traditionally, disaster management in India has been guided by the recommendations of the Finance Commissions under Article 280 of the Constitution, which emphasized relief-centric expenditure to provide immediate support to affected populations and restore basic utilities. While effective in offering short-term assistance, this approach constrained states like Karnataka from building long-term resilience and institutional capacity.

The enactment of the Disaster Management Act, 2005 marked a paradigm shift by legally institutionalizing Disaster Management Governance the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF), thus were created strengthening procedural legitimacy in disaster management and financing. More recently, the 15th Finance Commission expanded the framework to include the State Disaster Risk Management Fund (SDRMF) and State Disaster Mitigation Fund (SDMF), recognizing the importance of prevention, mitigation, and capacity building alongside response. Despite these reforms, Karnataka's disaster financing continues to be dominated by relief and response, with preventive allocations remaining marginal. From the perspective of state capacity, this imbalance has significant implications. Relief expenditures are consumptive, creating what can be described as a "two-time investment in one disaster," where the state not only spends heavily on response but also suffers simultaneous revenue loss as livelihoods and economic activity are disrupted. Preventive and capacity-building investments, on the other hand, function as refundable funds, strengthening resilience, safeguarding revenue flows, and expanding the state's long-term fiscal and institutional capacity.

Address for correspondence:

Madhu Hunasagi, Dept. of Political Science, Karnatak University, Dharwad

How to cite this article:

Hunasagi, M., & S.N. Hullannavar. (2025). Disaster Management in Karnataka: State Capacity Perspective. Journal of Research and Development, 17(12), 137–141.
https://doi.org/10.5281/zenodo.18125718

Quick Response Code:

Website: https://jrdrvb.org/

DOI: 10.5281/zenodo.18125718

OPEN ACCESS

Journal of Research and Development
A Multidisciplinary International Level Referred and Double Blind Peer Reviewed, Open Access
ISSN : 2230-9578 | Website: https://jrdrvb.org Volume-17, Issue-12| December 2025

This paper situates Karnataka's disaster management governance within a state capacity framework to analyze how financial arrangements shape its ability to anticipate, respond to, and recover from disasters. It argues that while Karnataka has built strong institutional and procedural mechanisms under the Disaster Management Act and Finance Commission frameworks, its fiscal and strategic capacity remains constrained by the dominance of relief-oriented expenditure. A shift toward preventive investment and resilience-building is essential not only to reduce vulnerability but also to enhance the state's legitimacy and effectiveness in disaster governance.

Theoretical Framework:

State capacity is broadly understood as the government's ability to govern and administer its territory effectively (Skocpol, 1985). The predatory theory of state-building emphasizes that this capacity evolves through processes shaped by internal and external challenges, including rivalries and threats (Kisangani & Pickering, 2013; Thies, 2007; Tilly, 1992). While military pressures are often central drivers of stronger states, natural disasters can also have significant state-building implications. Similar to wars, disasters may reduce population size, lower land and capital productivity, destroy infrastructure, diminish tax revenues, and create widespread dissatisfaction that can lead to opposition or unrest (Hendrix & Salehyan, 2012). Because such events threaten political authority and fiscal stability, ruling elites occasionally incorporate disaster management into state-building strategies. However, in many developing contexts, leaders may lack the foresight, resources, or technical knowledge to prioritize disaster preparedness, instead focusing on short-term political survival and immediate needs (Bueno de Mesquita et al., 2003; Keefer, Neumayer, & Plümper, 2011).

Even when disaster preparedness is not a deliberate policy priority, state-building often produces institutional capacities that indirectly strengthen disaster management. Investments in taxation, fiscal institutions, and military organization create forms of "infrastructural power" (Mann, 1986), such as population registries, administrative systems, transportation and communication networks, and policing mechanisms. Though designed for governance and revenue extraction, these institutions often become critical during emergencies by enabling evacuations, coordinating responses, and mobilizing resources in crises like floods and storms (Levi, 1988; Olson, 2000; Jha et al., 2010). Similarly, fiscal and legal systems established for economic governance provide states with the capacity to regulate markets and finance disaster relief and recovery (Besley & Persson, 2009). In this sense, fiscal capacity forms the foundation of state efforts to minimize disaster-related losses.

The effectiveness of state responses to disasters also depends heavily on the quality of administrative institutions. Drawing from Weber's (1958) concept of rational bureaucracy, states with transparent and accountable administrations are better equipped to implement policies, maintain legal frameworks, and ensure reliable information flow. Such bureaucracies help reduce corruption and clientelism, which otherwise compromise safety and resilience—such as when poor regulatory oversight results in substandard construction that collapses during disasters (Rose-Ackerman, 1978; Escaleras, Anbarci, & Register, 2007). In this way, administrative strength enhances disaster preparedness and mitigates human losses.

Disaster Management in India

India is among the most disaster-prone countries globally due to its geo-climatic diversity and rapid socio-economic change. About 58.6% of the landmass is earthquake-prone, 68% of cultivable land faces drought risk, and over 5,700 km of coastline is exposed to cyclones and tsunamis. Historically, disaster governance in India was relief-centric, focusing on immediate assistance and rehabilitation.

The Disaster Management Act, 2005 marked a paradigm shift by establishing the National Disaster Management Authority (NDMA), chaired by the Prime Minister, and mandating State Disaster Management Authorities (SDMAs) and District Disaster Management Authorities (DDMAs). This framework emphasizes prevention, mitigation, preparedness, response, and recovery, integrating both hard capacities (infrastructure, funds, equipment) and soft capacities (training, awareness, community participation). From a state capacity perspective, the DM Act enhanced institutional legitimacy but also revealed the persistent imbalance between relief expenditure and preventive investment—an imbalance that strongly shapes Karnataka's disaster governance.

Disaster Risk and Governance in Karnataka

Karnataka is one of India's most disaster-prone states, shaped by its diverse geography and socio-economic vulnerabilities. Nearly 80% of the state's area is drought-affected, 22% lies in moderate earthquake zones, 24% is cyclone-prone, and 30% of slopes are vulnerable to landslides (Government of Karnataka, 2020). Historical evidence underscores the severity of this exposure: in 2012, drought struck 157 of 176 taluks, damaging 45.85 lakh hectares of crops; in 2013–14, hailstorms killed 23 people, destroyed 1.6 lakh houses, and caused losses of over ₹872 crores, while floods and drought together affected 22 districts. The 2014–15 floods killed 218 people and damaged 27,377 homes, while drought persisted in nine districts. By 2016–17, drought spread across 30 districts and 164 taluks, alongside floods in six districts. In 2018, Kodagu faced devastating floods and landslides, while 30 districts suffered drought. The 2019–20 floods impacted 103 taluks, coupled with drought in 49 taluks, forest fires in Bandipur and Chamundi Hills, and the COVID-19 pandemic, which caused over 1.12 lakh infections and 2,147 deaths. These recurring disasters highlight both Karnataka's natural vulnerability and its institutional gaps, as disaster governance remains largely

Journal of Research and Development
A Multidisciplinary International Level Referred and Double Blind Peer Reviewed, Open Access
ISSN : 2230-9578 | Website: https://jrdrvb.org Volume-17, Issue-12| December 2025

reactive, with fragmented response and limited preventive mechanisms. The socio-economically weaker groups—women, children, the elderly, and the poor—bear the greatest burden, underscoring the urgent need for enhanced state capacity and stronger governance.

The institutional framework for disaster management in Karnataka was established under the Disaster Management Act, 2005, which created multi-tiered systems at the state, district, and local levels. At the apex, the State Disaster Management Authority (SDMA) is chaired by the Chief Minister and includes key cabinet ministers, ensuring political leadership. The State Executive Committee (SEC), led by the Chief Secretary, functions as the operational arm, translating policy into practice and coordinating across departments. A Cabinet Sub-Committee on Natural Disasters periodically reviews crises such as droughts. At the district level, the Deputy Commissioner-chaired District Disaster Management Authorities (DDMAs) prepare and implement disaster plans with support from elected representatives and officials, including the Superintendent of Police, health officers, and fire services. At the grassroots, tahsildars, Panchayat Development Officers (PDOs), Gram Panchayats, and community-based organizations form the last mile of disaster governance, particularly in early warning, relief, and recovery. This arrangement demonstrates both centralized policy direction and decentralized execution, but effectiveness depends on coordination, accountability, and community participation.

A key component of Karnataka's disaster governance is the State Disaster Response Force (SDRF), organized under the Department of Fire and Emergency Services. Its hierarchy ranges from the Director General of Police (DGP) and senior officers (ADGP, DIGP, Directors, Deputy Directors) to Chief Fire Officers, station officers, and firemen. Karnataka has about 230 fire and emergency service offices, though manpower distribution is uneven—urban centers often have strong units, while smaller taluks remain understaffed. The SDRF currently consists of five companies (A–E) located in Bengaluru, Mangaluru, Belagavi, Kalaburagi, and Davanagere, though actual deployment remains below sanctioned levels. Recruitment draws from ex-servicemen, the Karnataka State Reserve Police (KSRP), and fire service personnel, with growing specialization in areas like chemical, biological, radiological, and nuclear (CBRN) response. While the SDRF reflects the state's institutional commitment to disaster governance, challenges remain in manpower shortages, uneven geographical coverage, dependence on deputation, and limited specialized equipment.

From a state capacity perspective, Karnataka's disaster governance demonstrates both institutional strength and structural weakness. On one hand, it has established a comprehensive legal framework, built specialized agencies like the KSNDMC, and created professional forces like the SDRF. On the other hand, it remains constrained by financial imbalance, reactive orientation, fragmented coordination, and underdeveloped community participation. Effectiveness is highest in relief and response, moderate in reconstruction, and weakest in prevention and mitigation. Strengthening both hard capacities (infrastructure, technology, manpower) and soft capacities (training, awareness, local participation) is essential for Karnataka to move from a reactive relief-centric model to a proactive, resilience-oriented disaster governance system.

Disaster Management Fund Allocation System

The financial architecture of disaster management in India reflects both the strengths and limitations of state capacity. Historically, the fiscal framework has been shaped by the Finance Commissions under Article 280 of the Constitution, which emphasized immediate relief and restoration of public utilities. This relief-centric approach, while vital for short-term survival, restricted states from developing long-term strategies for disaster risk reduction, capacity building, and mitigation. In Karnataka, as in many other states, disaster management expenditure is overwhelmingly borne by state governments and district administrations, with fiscal planning tied closely to centrally recommended allocations. From a state capacity perspective, this highlights a narrow fiscal mandate: the state has the means to respond and rehabilitate, but remains constrained in investing in preventive resilience.

The enactment of the Disaster Management Act, 2005, deepened institutional financial capacity by establishing the State Disaster Response Fund (SDRF) and the National Disaster Response Fund (NDRF) under Sections 46 and 48. These funds created a predictable, rules-based system for mobilizing resources, thereby enhancing the procedural legitimacy of disaster financing. In practice, however, SDRF allocations remain modest and are often insufficient to address the scale of recurring disasters in Karnataka. For severe calamities, the state is required to prepare memoranda and await central approval for NDRF assistance. This dependency on central mechanisms—through Inter-Ministerial Central Team (IMCT) assessments and clearance by the High-Level Committee—creates delays and exposes the limits of Karnataka's autonomous fiscal capacity.

A significant institutional reform came with the 15th Finance Commission, which expanded the framework beyond response to include risk reduction and mitigation through the creation of the State Disaster Risk Management Fund (SDRMF). Karnataka's allocation in 2020–21 was ₹1054 crore, earmarked for response and relief (₹421.6 crore), recovery and reconstruction (₹316.2 crore), and capacity building (₹105.4 crore). The creation of the State Disaster Mitigation Fund (SDMF) marks an important step toward anticipatory governance, enabling local-level and community-based risk reduction interventions. This represents a gradual institutionalization of strategic capacity, moving disaster financing beyond short-term relief toward long-term resilience.

In addition, Karnataka has sought to broaden its fiscal instruments through flexi-funds within Centrally Sponsored Schemes, externally aided projects such as World Bank-supported cyclone risk mitigation, and risk-transfer

Journal of Research and Development
A Multidisciplinary International Level Referred and Double Blind Peer Reviewed, Open Access
ISSN : 2230-9578 | Website: https://jrdrvb.org Volume-17, Issue-12| December 2025

mechanisms like the Pradhan Mantri Fasal Bima Yojana (PMFBY). Despite these innovations, significant structural challenges persist: delays in the release of central funds, rigid guidelines for drought declaration, and limited experimentation with innovative financing tools such as catastrophe bonds or climate risk pooling. These gaps reveal a mismatch between the growing complexity of climate-induced risks and the incremental evolution of fiscal frameworks.In sum, Karnataka's financial arrangements reflect a hybrid model of state capacity:
Strong in procedural legitimacy (anchored in Finance Commission recommendations and the DM Act).
Dependent in fiscal autonomy (reliant on central funds and norms).
Expanding in strategic capacity (through SDRMF/SDMF and risk-transfer tools).
Weak in adaptive capacity (due to rigid guidelines and resource gaps in mitigation financing).

Thus, while institutional reforms have enhanced Karnataka's fiscal resilience, the financial architecture remains predominantly response-oriented, with true strategic and adaptive capacity for disaster risk reduction still under development.

Observation and Discussion

The financial arrangements underpinning disaster management in Karnataka provide a critical lens for understanding the state's broader governance capacity. As discussed earlier, Karnataka is exposed to multiple hazards—droughts, floods, landslides, urban flooding, and pandemics—which demand both responsive relief mechanisms and preventive resilience-building. While institutional frameworks such as the SDMA, DDMAs, SDRF, and KSNDMC provide the organizational base, the funding system ultimately determines the strength and sustainability of state capacity in disaster governance.

Historically, India's disaster financing has been anchored in the recommendations of successive Finance Commissions under Article 280 of the Constitution. These recommendations prioritized relief and rehabilitation, providing gratuitous aid to victims and restoring utilities to resume economic activity. This relief-centric orientation created a fiscal structure where Karnataka, like many other states, received allocations primarily for post-disaster response, with limited provisions for prevention and capacity building. The Disaster Management Act, 2005 institutionalized the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF), giving disaster financing a rule-based structure and enhancing procedural legitimacy. However, practice reveals a structural imbalance.

Karnataka continues to channel nearly 80–90% of resources into response and relief. During the 2023–24 drought, the state sought ₹18,171 crore from the NDRF, but was compelled to pre-release ₹324 crore from its own treasury for immediate relief. At the same time, district calamity accounts and SDRF allocations remained the primary instruments. While these channels deliver urgent support, they are consumptive and non-refundable: funds are exhausted in humanitarian needs without reducing vulnerability to future disasters.

The 15th Finance Commission attempted to correct this imbalance by creating the State Disaster Risk Management Fund (SDRMF) and the State Disaster Mitigation Fund (SDMF). Karnataka's 2020–21 allocations of ₹1054 crore earmarked ₹843.2 crore for response (SDRF) and ₹210.8 crore for mitigation (SDMF). Within this, ₹421.6 crore was allocated for relief, ₹316.2 crore for recovery and reconstruction, and ₹105.4 crore for capacity building. This marked a modest but significant shift from relief to resilience, yet preventive and capacity-building allocations still represent only 10–20% of the total pool.

From a state capacity perspective, this imbalance has critical implications. Responsive funds are non-refundable expenditures, effectively a two-time investment in one disaster: the state incurs heavy direct relief costs while simultaneously losing revenue, as disasters disrupt livelihoods, consumption, and production. The result is a cycle of fiscal strain, weakening both financial and institutional resilience. By contrast, preventive and capacity-building funds act as refundable investments. Allocations to resilient infrastructure, hazard monitoring, climate-adaptive agriculture, and community-based disaster risk reduction reduce future relief obligations and preserve economic continuity. For example, drought-resilient agriculture sustains farmer incomes and tax contributions, while resilient urban infrastructure stabilizes GST and property tax flows. In this way, mitigation funds "refund" themselves by creating resilient societies that safeguard public revenue and reduce fiscal liabilities.

Thus, Karnataka's financial arrangements reflect both the strengths and weaknesses of state capacity. On one hand, the institutionalization of SDRF, NDRF, and SDRMF has strengthened procedural legitimacy and coordination capacity, ensuring predictable fund flows. On the other hand, the dominance of relief-centric expenditure demonstrates a narrow fiscal mandate, locking the state into a cycle of reactive spending and revenue erosion.

To break this cycle, Karnataka must pursue a strategic rebalancing of allocations, shifting more resources toward mitigation, capacity building, and preventive measures. Such a shift would align with the Sendai Framework for Disaster Risk Reduction (2015–2030), which emphasizes investment in resilience, and would transform disaster management from a recurring liability into a generator of resilience. Preventive financing would expand Karnataka's fiscal capacity through stable revenue, enhance its strategic capacity through resilient planning, and strengthen its political capacity through legitimacy in safeguarding vulnerable communities.

In this sense, Karnataka's future disaster governance depends not only on institutional frameworks but also on how funds are allocated and utilized—whether for short-term relief or for building the long-term resilience that strengthens state capacity.

Conclusion

Karnataka remains highly vulnerable to disasters such as droughts, floods, landslides, and urban crises, which strain both its institutions and finances. The state has established a strong institutional framework through the SDMA, DDMAs, KSNDMC, and SDRF, which have improved response capacity. However, disaster financing continues to be relief-centric, with nearly 80–90 percent of funds allocated to post-disaster relief and only 10–20 percent directed toward prevention and capacity building. This imbalance undermines state capacity, as responsive funds are non-refundable and create a "two-time investment in one disaster," combining heavy relief costs with revenue loss. By contrast, preventive funds function as refundable investments, reducing future liabilities and safeguarding revenue flows. A strategic rebalancing toward resilience-oriented financing would not only align Karnataka with the Sendai Framework but also strengthen its fiscal sustainability, political legitimacy, and long-term state capacity.

References

1. Besley, T., & Persson, T. (2009). The origins of state capacity: Property rights, taxation, and politics. American Economic Review, 99(4), 1218–1244.
2. Bueno de Mesquita, B., Smith, A., Siverson, R. M., & Morrow, J. D. (2003). The logic of political survival. MIT Press.
3. Escaleras, M., Anbarci, N., & Register, C. A. (2007). Public sector corruption and major earthquakes: A potentially deadly interaction. Public Choice, 132(1–2), 209–230.
4. Government of Karnataka. (2020). Karnataka State Disaster Management Plan 2020. Karnataka State Disaster Management Authority (KSDMA).
5. Government of India. (2005). Disaster Management Act, 2005. Ministry of Law and Justice, Government of India.
6. Government of India. (2019). Report of the Fifteenth Finance Commission. Ministry of Finance, Government of India.
7. Government of India. (2023). Annual Report 2023–24: Ministry of Home Affairs. National Disaster Management Authority (NDMA).
8. Hendrix, C. S., & Salehyan, I. (2012). Climate change, rainfall, and social conflict in Africa. Journal of Peace Research, 49(1), 35–50.
9. Jha, A. K., Bloch, R., & Lamond, J. (2010). Cities and flooding: A guide to integrated urban flood risk management for the 21st century. World Bank.
10. Keefer, P., Neumayer, E., & Plümper, T. (2011). Earthquake propensity and the politics of mortality prevention. World Development, 39(9), 1530–1541.
11. Kisangani, E. F., & Pickering, J. (2013). War, conflict, and human security: International and national responses. Routledge.
12. Levi, M. (1988). Of rule and revenue. University of California Press.
13. Mann, M. (1986). The sources of social power: Volume 1, A history of power from the beginning to AD 1760. Cambridge University Press.
14. Olson, M. (2000). Power and prosperity: Outgrowing communist and capitalist dictatorships. Basic Books.
15. Rose-Ackerman, S. (1978). Corruption: A study in political economy. Academic Press.
16. Skocpol, T. (1985). Bringing the state back in: Strategies of analysis in current research. In P. Evans, D. Rueschemeyer, & T. Skocpol (Eds.), Bringing the state back in (pp. 3–43). Cambridge University Press.
17. Thies, C. G. (2007). The political economy of state building in sub-Saharan Africa. Journal of Politics, 69(3), 716–731.
18. Tilly, C. (1992). Coercion, capital, and European states, AD 990–1992. Blackwell.
19. United Nations Office for Disaster Risk Reduction (UNDRR). (2015). Sendai Framework for Disaster Risk Reduction 2015–2030. UNDRR.