DOI: 10.66224/jorar.18.2.110

An Assessment of the National Crisis Management System with Emphasis on Natural Disasters: A SWOT Analysis

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Received: 25 Jan. 2026 *Accepted: 29 Jul. 2026*

Original Article

Abstract

INTRODUCTION: Iran is among the most disaster-prone countries due to its geographical, geological, and climatic conditions, making crisis management a key issue in public policy and development planning. This study aims to provide a comprehensive assessment of the country's crisis management system, with an emphasis on identifying structural challenges.

METHODS: This applied research adopts a mixed-methods approach. Data were collected through semi-structured interviews, a survey of managers and experts involved in the Kermanshah earthquake, and analysis of the National Disaster Management Strategic Document. Qualitative data were analyzed using directed content analysis, quantitative data using SPSS, and findings were integrated within a SWOT framework.

FINDINGS: The results demonstrate strong convergence across data sources, indicating that the primary challenges are structural and governance-related. Key weaknesses include the absence of a unified command structure, inadequate inter-organizational coordination, underdeveloped information systems, and an overemphasis on response-oriented strategies. In contrast, strengths include high levels of social capital, active public participation, and valuable operational experience.

CONCLUSION: Improving the effectiveness of crisis management in Iran requires fundamental governance reforms, including the establishment of a unified command system, enhancement of inter-agency coordination, development of integrated information systems, and a strategic shift to disaster risk reduction.

Keywords: Crisis Management; Governance; SWOT; Disaster Risk Reduction; Iran.

How to cite this article. Golshani A, Heidari-Nejat A. **An Assessment of the National Crisis Management System with Emphasis on Natural Disasters: A SWOT Analysis**. J Rescue Relief 2026; 18(2):110-116.

Introduction

Iran, due to its unique geographical location, complex geological structure, and diverse climatic conditions, is recognized as one of the most disaster-prone countries in the world and ranks among the leading nations in terms of the diversity of natural hazards (1). Its location along a major seismic belt, coupled with the frequent occurrence of hazards such as earthquakes, floods, droughts, landslides, storms, and dust storms, has made crisis management a central issue in public policy and national development planning (2, 3).

In recent decades, the impacts of such disasters have extended beyond human casualties, generating widespread consequences for the national economy, infrastructure, social security, public health, the environment, and sustainable development (4–6). Accordingly, establishing a comprehensive and effective system encompassing prevention, preparedness, response, and post-disaster recovery has become an essential priority.

Evidence from major disasters in Iran—including the Rudbar–Manjil, Bam, Varzaghan, and Kermanshah earthquakes, as well as extensive floods in recent years—reveals that, despite notable improvements in the operational capacity of relief organizations, significant structural challenges persist within the national crisis

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management system. The repeated occurrence of similar inefficiencies across different disaster events indicates that these challenges are largely structural and governance-related rather than event-specific (7, 8). This underscores the need for a comprehensive reassessment of crisis management policies, legal frameworks, institutional arrangements, and operational mechanisms.

Over the past four decades, numerous initiatives have been undertaken to strengthen Iran's crisis management capacity. These efforts include the enactment of relevant legislation, the establishment of the National Disaster Management Organization (NDMO), the formation of the Supreme Council of Crisis Management, the development of national risk reduction programs, the expansion of early warning systems, and the enhancement of the operational capabilities of the Red Crescent Society and other responsible agencies (9). Despite these advancements, evaluations of major disaster responses indicate that many fundamental challenges remain unresolved and that the intended policy outcomes have not been fully achieved (8). This suggests that merely expanding resources and infrastructure, without addressing underlying governance and decision-making deficiencies, is insufficient to substantially improve system effectiveness.

At the global level, crisis management has, over the past two decades, evolved from a predominantly reactive approach toward a comprehensive risk management paradigm. This paradigm emphasizes prevention, risk reduction, resilience-building, public participation, good governance, and evidence-based decision-making (2, 10–12). The Sendai Framework for Disaster Risk Reduction further underscores the importance of strengthening risk governance, hazard identification, investment in risk reduction, and effective preparedness. Accordingly, a meaningful evaluation of Iran's crisis management system must extend beyond operational performance to encompass governance quality, institutional coordination, policy effectiveness, and inter-organizational dynamics.

One of the major challenges facing Iran's crisis management system is the multiplicity of responsible agencies and the overlap of their mandates. Institutions such as the National Disaster Management Organization, the Ministry of Interior, the Red Crescent Society, the Ministry of Health, the Emergency Medical Services Organization, the armed forces, and municipalities all play roles across different phases of crisis management (13). While this reflects considerable institutional capacity, in the absence of unified command structures, clear delineation of responsibilities, and effective coordination mechanisms, it often results in duplication of efforts, delays in decision-making, inefficient resource allocation, and reduced operational effectiveness. Empirical evidence indicates that weak inter-agency coordination has been a major factor undermining efficiency in past disaster responses.

Furthermore, crisis management is inherently a cyclical process encompassing prevention, mitigation, preparedness, response, and recovery (3). However, in practice, the majority of resources and managerial attention in Iran are concentrated on the response phase, whereas preventive measures—such as public education, risk awareness, vulnerability reduction, and resilience-building—remain relatively underdeveloped (14–16). This imbalance has contributed to the recurrence of avoidable damages in successive disasters.

From a theoretical perspective, this study is grounded in two complementary frameworks: (1) general systems theory, which conceptualizes crisis management as a subsystem within the broader governance structure; and (2) the risk governance approach, which emphasizes institutional coordination, accountability, information flow, organizational learning, and stakeholder participation (11, 17). Within this integrated framework, the effectiveness of crisis management is understood to emerge from the dynamic interaction among legal frameworks, institutional arrangements, human resources, information systems, technology, knowledge management, and social capital.

Accordingly, the present study aims to provide a comprehensive assessment of Iran's crisis management system by identifying its strengths, weaknesses, opportunities, and threats through a SWOT analytical framework. The novelty of this research lies in its integrated, multi-source analytical approach—combining expert interviews, surveys of managers and experts, and document analysis—while explicitly focusing on the governance dimension of crisis management. This approach enables the identification of persistent structural challenges

[DOI: 10.66224/jorar.18.2.110]

and facilitates the distinction between systemic weaknesses and context-specific issues.

The study seeks to address the following key research questions: (a) Are the challenges of crisis management in Iran structural in nature? and (b) How can these challenges be systematically explained within the SWOT analytical framework? Addressing these questions provides a scientific basis for policy reform, legal revision, and enhancing the overall effectiveness of Iran's crisis management system.

Methods

This study aims to assess the crisis management system of the Islamic Republic of Iran, with an emphasis on natural disasters, and to provide a comprehensive understanding of its current status. In terms of purpose, the research is applied, and in terms of methodology, it adopts a mixed-methods (qualitative–quantitative) design. This approach was selected due to the multidimensional and complex nature of crisis management and the need to simultaneously utilize empirical data, expert insights, and national strategic documents.

To enhance the robustness of the findings, the study employs a data triangulation approach by integrating and comparing evidence from multiple sources (18, 19). Given that crisis management systems, as complex adaptive systems, cannot be adequately understood through a single method or dataset (11, 17), three independent sources of data were used: interviews, surveys, and document analysis.

Qualitative Phase

In the qualitative phase, data were collected through semi-structured interviews. Participants included managers, experts, operational commanders, and relief personnel with direct experience in managing the Rudbar–Manjil earthquake. A purposive sampling strategy was employed based on criteria such as professional experience, organizational role, and familiarity with crisis management processes. Interviews continued until theoretical saturation was achieved.

The collected data were analyzed using directed content analysis. Initial codes were extracted and subsequently organized into categories aligned with the SWOT framework (Strengths, Weaknesses, Opportunities, and Threats).

Quantitative Phase

In the quantitative phase, data were collected through a survey of managers and experts in the field of crisis management. The statistical population consisted of managers and experts from the National Disaster Management Organization, the Red Crescent Society, and other responsible agencies who had practical experience in managing the Kermanshah earthquake. The data collection instrument was a researcher-made questionnaire. Its validity was confirmed through expert judgment, and its reliability was verified using appropriate statistical indices and tests. Finally, the collected data were analyzed using SPSS software to determine the level of agreement among respondents regarding the components of SWOT analysis.

Document Analysis

The third source of data was document analysis. The "National Disaster Management Strategic Document" was examined as the most important upstream policy document. Using document content analysis, the key policies, objectives, challenges, and proposed strategies were extracted and compared with the findings obtained from the qualitative and quantitative phases. This approach made it possible to assess the extent to which the perspectives of managers and experts aligned with the country's official policies.

Data Integration and Final Analysis

In the final stage, findings from all three sources were integrated within a SWOT analytical framework. Internal factors were categorized as strengths and weaknesses, while external factors were classified as opportunities and threats. Cross-source comparison allowed for the identification of recurring and convergent themes.

The repetition of certain challenges across all data sources suggests their structural nature within the crisis management system. Conversely, factors such as social capital, public participation, and the operational experience of relief forces emerged as consistent strengths.

Methodological Innovation

The primary contribution of this study lies in the systematic integration of qualitative, quantitative, and documentary evidence within a unified SWOT framework, with a specific focus on governance-level analysis. Furthermore, incorporating empirical insights from two major earthquakes (Rudbar–Manjil and Kermanshah) provides a longitudinal perspective on the

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persistence and evolution of systemic challenges over nearly three decades. This approach enhances analytical depth and facilitates the distinction between structural deficiencies and event-specific issues.

Findings

The findings of this study were derived from three independent data sources—semi-structured interviews, a survey of managers and experts, and an analysis of the National Crisis Management Strategy document—and systematically integrated within a SWOT analytical framework.

A comparative analysis across these sources reveals a high degree of convergence, indicating that despite methodological differences, a relatively stable and consistent pattern of strengths, weaknesses, opportunities, and threats emerges. This convergence suggests that the identified challenges are not context-specific or incident-bound, but rather rooted in the institutional arrangements and governance structures of the crisis management system. In other words, inefficiencies are not episodic but are structurally reproduced over time.

At the functional level, the findings indicate that the crisis management cycle is, in practice, unbalanced, focusing primarily on the response phase. This imbalance reflects the dominance of a reactive over a proactive approach, rooted in weak risk reduction policies, insufficient investment in prevention, and a lack of institutionalized risk management. The persistence of this situation has led to the recurrence of avoidable losses in various incidents.

In the area of crisis communication, the lack of a coherent information structure was identified as a key weakness. The dissemination of contradictory information, delays in official announcements, and the absence of a single spokesperson not only reduce operational efficiency but also undermine public trust. This finding can be analyzed within the framework of a crisis of communication legitimacy.

Qualitative Findings

The analysis of semi-structured interviews highlights the absence of a unified command structure as a central and recurring challenge. At the operational level, this manifests in the simultaneous involvement of multiple organizations without effective coordination. At a deeper level, however, it reflects institutional fragmentation and overlapping mandates.

The consequences of this fragmentation include duplication of efforts, conflicting directives, inefficient resource allocation, and delays in decision-making. Although formal regulations define organizational roles, the findings indicate a lack of operational clarity and enforceability, which can be conceptualized as a policy–implementation gap.

Furthermore, inter-organizational coordination failure emerged as a persistent theme. This issue extends beyond formal structures and is associated with the absence of a shared operational language, limited joint training and exercises, and a lack of integrated information systems. Collectively, these factors point to a broader pattern of network governance failure within the crisis management system.

At the functional level, the findings reveal a systematic imbalance in the crisis management cycle, with a dominant focus on the response phase. This reflects a reactive governance logic, driven by weak risk reduction policies, insufficient investment in prevention, and a lack of institutionalized risk management.

In the domain of crisis communication, the absence of a coherent information structure constitutes another critical weakness. Key issues include the dissemination of inconsistent information, delays in official communication, and the lack of a unified spokesperson. These shortcomings not only reduce operational effectiveness but also erode public trust, constituting a crisis of communication legitimacy.

Quantitative Findings

The survey results significantly confirmed the qualitative findings, indicating that the perceptions of managers and experts also emphasize the existence of structural problems. The most significant identified weaknesses include weak enforcement of laws, a lack of unified command, inter-organizational coordination issues, a weak information system, insufficient training, and an excessive focus on the response phase.

The analysis of these findings indicates that the main issue is not a lack of laws, but rather a weakness in accountability mechanisms. In other words, the crisis management system is facing a form of “legal inflation,” while the effective implementation of these laws is confronted with serious challenges.

In contrast, the survey results emphasize the existence of significant capacities at the

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operational level. The performance of rescue forces, particularly the Red Crescent Society, has been assessed as a prominent strength. This indicates a misalignment between operational capacity and governance effectiveness, meaning that while on-the-ground operational capability is acceptable, managerial and institutional structures are unable to make optimal use of these capacities.

Document Analysis: The Gap Between Knowledge and Implementation

An analysis of the National Crisis Management Strategy document showed that many of the challenges identified at the policy level are also acknowledged. The document's emphasis on governance reform, integrated management, developing an information system, and strengthening inter-agency coordination indicates a relative understanding of the issues at the macro level. However, the convergence of documentary findings with field data reveals a key point: the main issue is not a lack of knowledge, but rather a weakness in the implementation and institutionalization of policies. This situation can be interpreted as a persistent institutional gap that prevents the realization of policy objectives.

SWOT Analysis Synthesis: A Systemic Pattern of Inefficiency

The synthesis of findings within the SWOT framework revealed that strengths are primarily concentrated at the operational and social levels—such as social capital, public participation, and the experience of emergency response forces—while weaknesses are largely institutional and governance-related, such as coordination gaps, poor implementation, and the absence of unified command.

Furthermore, the opportunities are mostly related to external developments and technology, while the threats indicate an increase in environmental complexity and risks. Ultimately, this pattern indicates a structural imbalance in which existing capacities are not fully realized due to weaknesses in governance mechanisms.

The most important finding of this research is that the inefficiencies of Iran's crisis management system are structural, persistent, and governance-oriented in nature. The repetition of similar patterns between the Rudbar–Manjil and Kermanshah earthquakes suggests that these challenges have been reproduced over time and become institutionalized.

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Discussion and Conclusion

The findings of this study indicate that despite significant developments in legislation, organizational structures, and operational capacities in Iran's crisis management system over the past three decades, many fundamental challenges persist. A comparative analysis of data derived from expert interviews, surveys of managers and specialists, and the National Crisis Management Strategy document shows that these challenges have recurred across different periods and exhibit a structural and enduring nature. This suggests that the roots of inefficiencies lie primarily in governance arrangements—particularly in decision-making systems, distribution of authority, and inter-organizational coordination—rather than merely in resource constraints or the performance of individual organizations.

A central finding is the persistent absence of an effective unified command structure. Although responsibilities are formally defined in legal and strategic documents, the coexistence of multiple decision-making centers and overlapping mandates has hindered coordination during crises. This has resulted in slower and less coherent decision-making, duplication of efforts, inefficient resource utilization, and reduced effectiveness of response operations. Evidence from major disasters indicates that greater command coherence is associated with improved response quality and higher public satisfaction. Establishing a unified command system and clearly delineating organizational responsibilities therefore constitute essential prerequisites for systemic reform.

The study further shows that Iran's crisis management system remains predominantly reactive. Resources and managerial attention are largely concentrated on the response phase, while investment in prevention and preparedness—such as risk reduction, infrastructure resilience, public education, and community readiness—remains insufficient relative to the country's risk profile. Consequently, many disaster-related losses, despite being preventable, recur across successive events. This pattern is inconsistent with contemporary disaster management paradigms, including the Sendai Framework for Disaster Risk Reduction, which emphasizes proactive risk mitigation.

Another key finding concerns deficiencies in information and communication management. Major challenges include the absence of

[DOI: 10.66224/jorar.18.2.110]

integrated information systems, weak inter-organizational data exchange, fragmented institutional actions, and inconsistent public communication. In a context where information circulates rapidly through social media, delayed or contradictory messaging contributes to public anxiety, the spread of rumors, and erosion of social trust—amounting to a crisis of communication legitimacy. Addressing these challenges requires the establishment of a national crisis information system, strengthened communication infrastructure, and the designation of a single official spokesperson.

Despite these challenges, the study identifies significant internal capacities, including strong social capital, widespread voluntary participation, substantial operational experience among rescue forces, and high public trust in organizations such as the Red Crescent Society. These assets indicate considerable potential for enhancing societal resilience. However, their effective utilization depends on structured volunteer management, continuous training, strengthened roles for non-governmental organizations, and the integration of cultural considerations across all phases of the crisis management cycle.

The findings are consistent with previous research, including studies by Abbasi (2018) and Kaviani and Ghofrani (2025), which similarly highlight persistent shortcomings in institutional coordination and clarity of responsibilities despite improvements in the legal framework, particularly following the 2019 crisis management law. This reflects an enduring gap between policy formulation and implementation.

Overall, the results suggest that reforming Iran's crisis management system is fundamentally a governance challenge. Effective reform requires reconfiguring crisis management as an integral component of the broader public governance system. Key priorities include revising and harmonizing legal frameworks, clarifying institutional roles, establishing a unified command structure, strengthening inter-organizational coordination, developing a comprehensive crisis information system, institutionalizing risk management, expanding professional and public training, and leveraging emerging technologies. In addition, crisis management must be embedded within national development planning to ensure alignment of urban, infrastructural, environmental, and economic policies with risk reduction objectives.

In conclusion, the shortcomings of Iran's crisis management system are largely structural and deeply embedded. Without governance-level reforms, increases in financial resources, equipment, or operational capacity are unlikely to yield substantial improvements. A strategic transition from a reactive model toward a comprehensive risk management approach—supported by strengthened coordination, unified command, enhanced social capital, and the application of modern knowledge and technologies—represents the most critical pathway for improving system effectiveness. These findings provide a basis for informing policy reform, guiding national program design, and advancing resilience against natural hazards.

Compliance with Ethical Guidelines

This study, derived from a PhD thesis, was conducted in accordance with established ethical research standards. Informed consent was obtained from all participants, and confidentiality and anonymity were rigorously maintained throughout the research process.

Funding/Support

This research has not received any financial support.

Author's Contributions

Ali Heidari-Nejat contributed to data collection, project coordination, and correspondence with the journal. Alireza Golshani was responsible for the study conceptualization, methodology design, and overall supervision. All authors contributed to the development of the manuscript and approved the final version for publication.

Conflict of Interests

The authors declare no conflict of interest.

Acknowledgments

None

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[DOI: 10.66224/jorar.18.2.110]