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Disaster risk governance in Iran: Document analysis

Mehdi Safari^{1,2}, Hesam Seyedin^{3,4}, Katayoun Jahangiri⁵

Abstract:

BACKGROUND: Disaster risk is a product of a combination of hazard, exposure, and vulnerability. Governance in the health system is a multifaceted sphere, with political, economic, and legal dimensions. Disaster risk governance is an analytical framework employed for assessing the capacity of institutional governance. This study has been conducted to investigate the current status of national strategy documents concerned with disaster risk governance in Iran through document analysis.

MATERIALS AND METHODS: The investigated documents were collected through requests from the secretariat and the archives. 102 documents were analyzed. Twelve documents in the domain of accountability, 7 in participation, 9 in state and nonstate actor, 14 in knowledge sharing, 21 in sustainable developments, and 19 documents in integrated risk management were analyzed. The process of analysis included selecting documents and evaluating and analyzing them by content analysis method.

RESULTS: Documents coded according to the main areas of policymaking in disaster risk governance were analyzed, and sub-component and related topics were deduced in each domain. The acquired themes include unity of command, trustee, commitment, capacity prosperity, align strategy, information synergy, knowledge enhancement, sustainable security, justice clarity, land use planning, climate change adaptation, environment reform, wisdom, environment, diplomacy, capacity and coherence.

CONCLUSIONS: Disaster good governance is strengthened by the trustee, commitment, capacity prosperity, align strategy, and organize. Information synergy and knowledge enhancement are effective in the culture of prevention. Collective wisdom, diplomacy, and capacity coherence raise the alignment of public organizations and the government in the risk management process.

Keywords:

Disaster risk governance, document analysis, Iran, risk governance

Introduction

Risks impede long-term development of the countries. The probability of bad consequences or expected losses is called risk which will lead to life-threatening, financial and environmental damage.^[1] A disaster is an occurrence disrupting the normal conditions and causing a level of suffering of existence that exceeds the capacity of adjustment of the affected community.^[1,2] Disaster risk reduction, the conceptual framework of elements

considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society.^[3,4]

Disaster management is a governance issue and is made up of a horizontal structure built upon state and nonstate actors.^[5,6] The government, as a provider of disaster risk reduction services, is ineffective in supporting investment, regulating, and coordinating private sectors' activities. In other words, the main actor is not just government, sovereignty is also possible without government. Governance is not government. Governance, as a concept, recognizes that power exists inside and outside the formal authority and institutions

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¹Department of Health in Disasters and Emergencies, School of Health Management and Information Sciences, International Campus (IUMS-IC), Iran University of Medical Sciences, ²School of Public Health and Safety, Shahid Beheshti University of Medical Sciences, ³Department of Health in Disasters and Emergencies, School of Health Management and Information Sciences, Iran University of Medical Sciences, ⁴Health Management and Economics Research Center, Iran University of Medical Sciences, ⁵Department of Health in Disasters and Emergencies, School of Public Health and Safety, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Address for correspondence:

Dr. Hesam Seyedin, Health Management and Economics Research Center, Department of Health in Disasters and Emergencies, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran. E-mail: h.seyedin@iums.ac.ir

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of government. In modern societies, a combination of government, institutions, economic agents, and actors of civil society distributes roles according to the goals, responsibilities, and organized self-regulated functional structure. Sovereignty, as defined in political sciences, consists of the state and nonstate actors, and the decision-making process points to a formal institutional arrangement.^[7]

Governance in the health system, being multi-faceted, has a political, economic, and legal dimension that regulates the broad participation of various actors, the private sector, as well as health-care investors through an effective and transparent accountability mechanism.^[8] Risk governance in the health system evolves within the framework of government relations, citizens, civil society, and political-economic conditions.^[9]

Disaster governance is a challenge to the key concepts of "globalization, system dynamics and social inequality."^[6] Participation of actors in integrated disaster risk management at a local, national, and global level requires an outlook, plan, and inter-organizational coordination.^[10] Initially in 1980, with the advent of the multilevel strategy of the people, state, and private sector, the active participation of civil society in risk management" was described.^[9,11] The constituents of disaster risk governance are "accountability, participation, state and nonstate actor, knowledge share, sustainable development, and integrated risk management."^[11]

Referring to accountability, two concepts of "mechanism and measurement of behavioural quality" have been put forward those monitor actors, organizations, institutions, and beneficiaries' activities.^[12] In this regard, the civil society takes on responsibilities in formulating economic political goals, the distribution of power, promoting culture and civilization, and strengthening the sense of responsibility and mutual emotional collective action by means of taking part in social, cultural, and spiritual activities.^[13,14] Meanwhile, the state as an actor observes the affairs between the people and the state, while nonstate actors are affected by the processes of globalization, privatization, internal, and external conflicts.^[15,16]

Another aspect of governance is knowledge share that is the process of identifying, distributing, and applying the existing knowledge to solve issues effectively. This constituent improves coordination between actors by making use of its political motivation and support.^[17] The sustainable development constituent refers to the concept of development to meet the current human needs without compromising the need of future generations and the environment.^[18] Accountability, participation, predictability, and transparency are

key elements of the governance structure which lead to the development of a risk reduction policy.^[19] In the last two decades, natural disasters have affected 4.4 billion people and caused 1.3 million deaths.^[20,21] In these years, disaster risk reduction policymakers have focused on prevention and preparedness.^[22] Studies show that executive management of disasters in Iran is based on the responses and not structures. The most important reasons for the lack of integrity and coherence of the disaster executive management system are lack of coordination among departments, administrative issues, focus on response phases, relief and rescue absence of disaster governance, the ineffectuality of the regulations and the adoption of a new laws, directives and abrogating the previous ones, the interference of unrelated departments, disintegration in the line of commands, weak documentation, inability to attract and distribute national and international aids during a disaster, and government's interference and bureaucracy in disaster governance."^[23,24]

Having considered the existence of national strategy documents, the lack of a risk-oriented approach in all activities of public departments and private organizations, policymakers' uncertain authority to reduce the risk in the country, and the dearth of risk awareness among people and authorities, The researcher made the first stage of a qualitative study in the country. The present study aims to analyze the national strategy documents regarding the identification of the present status of disaster risk governance in Iran by looking at its challenges.

Materials and Methods

This study is a part of a qualitative study conducted in the form of document analysis. In order to examine the documents, the policy analysis, regulations, and existing rules have been used, which is a systematic method for the evaluation of printed and electronic documents and is interpreted in order to obtain meaning, understanding, and experimental development.^[25,26] Keywords coded for search documents have been: "risk," "disaster," "risk management," "crisis management," "governance," "risk governance," "disaster risk governance," "law," "bylaw," "circular," and "policy."

Document analysis is often combined with other qualitative research methods as a reinforcement and combination method and has advantages such as efficient, affordable, cost-effective, stable, accurate, and comprehensive coverage.^[27] In this study, related documents have retrieved by requesting from the secretariat and archives departments, and from official internet portals of the Ministries of the Health and Medical Education, Interior, Cooperatives, Labour

and Social Welfare, Energy, Roads and Transportation and Agriculture, the Parliament Secretariat, the Expediency Council, the Red Crescent Society, the Crisis Management Organization, Tehran Municipal Crisis Management Organization as well as the Passive Defense Organization." Data were collected from October 2017 to June 2018. Data collection was done by a researcher-made tool, whose validity was evaluated and verified by the content validity method of the research team and nine experts in disaster science. In this regard, the necessary corrections in the tool were made to the research team's discretion and were used to evaluate the documents and collect data. Documents were analyzed by the content analysis method. Documents from two aspects of risk management, crisis management, and related regulations were analyzed by guided content analysis method. All documents were not accessible through databases. At this stage, after receiving the necessary references and permissions, attendance at the documents centers and the secretariat of the relevant organizations was carried out.

The inclusion criteria were as follows: "Internal documents of Iran, set up in Persian, from 1979 to 2018, registering by the secretariat as for document authenticity, no duplicate documents." In the first step, 148 documentaries were obtained. After evaluation, 102 documents related to the field of research were studied and evaluated, and the rest of the documents were excluded from the study due to their lack of relevance to the research field. Tool structure with questions such as document title, trustee organization, target organization, approval date, delivery date, content, the point of strength, and weakness was analyzed and elaborated.

Results

During the study, 102 documents were identified. According to the findings, the term crisis management has been mentioned in 11 documents and risk management in 12 documents; no document, however, has mentioned the term "disaster risk governance." Documents were coded according to the major areas are analyzed and component and sub-component have been extracted.

Twelve documents in accountability, 7 in participatory, 9 in state and nonstate actor, 14 in knowledge sharing, 21 in sustainable development, and 19 in integrated risk management areas were analyzed, as shown in Tables 1-6.

Discussion

In the analysis of the encoded documents in the field of accountability, the concept of "Security" with the

sub concepts such as governance and respecting the laws, promotion of deterrent power; the concept of "Safety" with sub concepts such as development of the infrastructure, promotion of healthy driving and transportation, failure of the nongovernmental, military and police institutions, regulations and code of construction, safe places for gatherings; the concept of "Unity of command" with the sub concepts such as permanent management; the concept of "Trusteeship" with sub-concepts: Immediate treatment of injured, trustee of Health in Disasters; and the concept of "Commitment" with the subconcepts such as health system responsibility, Justice in the health system were inferred. Gulbrandsen, in a study entitled "Dynamic governance interactions: Evolutionary effects of state responses to non-state certification programs," and Davari *et al.*, in another study entitled "Health care financing in Iran; is privatization a good solution?," stated that Ministry of Health and Medical Education, the main authority of and responsible for the health during accidents and disasters, has always been affected by the major external and external organizational conditions of the country.^[28,29] Accountability in disaster risk reduction is a prerequisite for scrutiny and understanding of what has been done at different levels. Disaster risk reduction depends on the inter-sectorial coordination mechanism. Full participation, transparency of the government and stakeholders to ensure more accountability is required.^[28] Amaratunga D., referring to the role of accountability within disaster risk governance stated that, after the adoption of the Hyogo framework in 2005, public and private accountability has reduced risk and vulnerability.^[30]

In the field of participation, the concept of "capacity" with sub concepts such as expanding capacities, promotion of understanding and skills; the concept of "Welfare" with the sub concepts such as justice and cooperation during implementation, promotion of compensation and insurance; the concept of "alignment" with the sub concepts such as creating proper inter-sectorial as well as extra-sectorial context, collaboration of the insurance companies for compensation, and promoting people's role in organizing being people's deliberate and voluntary participation in public affairs, administrative activities, as well as administrative, political, and social decision-making, according to the experts, have been inferred. Syafwina S., in a study titled Recognizing indigenous knowledge for disaster management, among, early warning system, stated presently, participation is considered as an integral part of the development of disaster risk management. In fact, participation is a process that involves a variety of individual and group actions for playing a role in controlling their society's destinies as well as influencing on decision-making on public affairs.^[31]

Table 1: Documents, code, component and, sub-component extracted in the domain of accountability in disaster risk governance

Row	Name of document	Key notes on the document (code)	Sub-component	Component
2	The Law of the Second Five-Year Development Plan	The effort to participate in the rule of law and the maintenance of universal security of the people and promotion of the culture of respect for the law, social order	Governance and respect for the law	Security
15	The overall policy of the system in the security of the space of production and communication of information	Monitoring, preventing, defending and promoting deterrence	Improvement of deterrent power	
4	The Law of the Fourth Five-Year Development Plan	Clause 40: The Red Crescent Society is required to enhance the human capacity and infrastructure necessary to improve the safety and security of the country, to develop public education, and to facilitate the rescue of the country	Infrastructure development	Safety
6	The Law of the Sixth Five-Year Development Plan	Clause 108 is aimed at “equipping and strengthening the police, improving the safety of vehicles, correct the accident points and developing the proper culture of traffic, strengthen the relief network and medical emergency, reducing the incidents of driving, installing and maintaining the intelligent control system of the municipality and the Ministry of Roads and Urban Development”. Holding training courses and supervising the staff	Promotion of driving culture and transport health	
6	The Law of the Sixth Five-Year Development Plan	In the context of organizations involved in risk reduction, “to develop rules and standards for dealing with violations, violence, and neglect in public, nongovernmental, military, law enforcement, and supervised institutions in the implementation of crisis-related directives and mandates”	Failure of nongovernmental, military and police institutions	
13	The general policy of communicating the supreme leader to prevent, reduce the risk of accidents and incidents	Prevention of nontechnical and insecure construction; insurance requirements; and application of design and implementation of rules; standardization of high-quality structural materials; promotion of new and sustainable technologies; approval of crime laws, regulations, and nontechnical regulations	Standard of regulations and building codes	
75	Health action guidelines in mass gatherings	Probable risk, the physical location of gathering place, population movement location; investigation of the risk of contagious diseases; terrorist actions; disturbance in the treatment system; preparation of specific risk maps for mass gathering; providing preventive strategies; reducing effects; preparing for exposure to risk; coping and responding; performance report	Secure gathering place	
16	The overall policy of the system in passive defense matters	Establishment of Permanent Unit Management, Effective Action, and Command; Approval of Principles and Standards, Criteria and NonActing Technical Guidance	Permanent management	Unity of command
4	The Law of the Third Five-Year Development Plan	The Ministry of Health is responsible for the immediate treatment of accidents and injuries	Immediate treatment of injured people	Trustee
22	Risk Management Plan and Disaster Risk Reduction in the Health System	The Ministry of Health and Medical Education, the main sponsor of health in disasters and emergencies, has always been affected by the macroeconomic conditions of the country and other countries) and the internal organizational conditions within the ministry	Counselor of Health in Disasters	
21	Map of the development of the health system of the Islamic Republic of Iran	Accountability, commitment to the anticipation of social responsibilities and service providers, and transparency of performance	Health system accountability	Commitment
20	The comprehensive scientific plan of the health of the country	Distribution of health system accountability in problems	Justice in the health system	

In the appraisal of the programs, people not getting involved in public affairs have been considered as the main cause of the failure of the development programs. The program, however, has come up mostly with a top-down design, which reaffirms the importance of public participation in disaster risk management.^[32]

Komendantova *et al.*, in a study on the same subject: Multi-hazard and multi-risk decision-support tools as a part of participatory risk governance: Feedback from civil protection stakeholders commented that despite the fact that knowledge is progressing, the lack of nonparticipation in events is still evident, so that slow transition of theoretical concepts into practice has created

Table 2: Documents, code, component and, sub-component extracted in the domain of participation in disaster risk governance

Row	Name of document	Key notes on the document (code)	Sub-component	Component
5	The Law of the Fifth Five-Year Development Plan	Instruction Manual on Coordination and Participation of Inactive Defense and Crisis Management with the Secretariat of the Joint Committee of the Standing Committee	Empowerment	Capacity
15	The general policy of the Islamic Republic of Iran in preventing and reducing the risk of accidents and incidents	Developing culture, education, participation and raising awareness and public skills in reducing disaster risk	Promoting culture and skills	
7	Constitution	Article 101: Preventing discrimination, attracting participation, co-operation and supervision of implementation in the provision of developmental programs	Justice and cooperation in the implementation	Prosperity
13	The general policy of communicating the supreme leader to prevent, reduce the risk of accidents and incidents	Expansion of effective compensation systems such as insurance, financial and emergency support, special facilities and funds	Propagation Compensation and insurance system	
17	Strategic Policy of the Ministry of Health, Therapy and Medical Education in the Third Development Plan	Providing a suitable platform for increasing community participation in decision making, implementation, and evaluation. Strengthening intergovernmental cooperation and outreach	Prepare between and ultra-sections	Alignment
26	Internal Regulations of the Accident and Disaster Risk Management Committee	Participation plan in the organization and improvement of villages with a nonproactive approach to the economic, social and cultural empowerment of coping with danger	Contribution to the organization	
105	The structure of the deputy of preparedness and confrontation	Promoting participation and the contribution of popular forces to the establishment of security and defense of the country and the optimal use of human resources	Promotion of the role of people	

difficulties in the process of linking knowledge to the process of policymaking.^[33]

As for the state and nonstate actors, the concept of “Strategy” with sub concepts such as nongovernmental sector encouragement policy, investment and technology support, aids organization, government capability nongovernmental organizations (NGOs) and armed forces, incentive support (insurance), cutting down the stakeholder, and trusteeship of crisis management; the concept of “Organizing” with sub concepts such as appealing charity NGOs or sponsors, organizing NGOs, and recruiting volunteers have been deduced. According to six observing principles, state and nonstate actors should pursue the United Nations’ goals and deeds while being an elected organization; being a known non-profit body. Guttman, *et al.* in a study titled Environmental governance in China: Interactions between the state and “Non state actors” expressed its authorities should be responsible before a democratic assembly and policy-making authorities not interfering with the internal affairs of the countries. The limited capacity of governments to solve environmental problems has led to an increase in the growth of various nonstate actors to complement the government efforts or to provide alternative mechanisms for dealing with the issues.^[34]

In the field of knowledge sharing, the concept of “information synergy” with sub concepts such as promotion of information network, cyber-information

system, comprehensive information management, information security, extension of knowledge communication network and improvement of human development index, facilitating communication with the community, information network management; the concept of “knowledge promotion” with sub concepts such as environmental knowledge and responsibility of the community, education, awareness and safety culture, risk reduction education in mass gatherings; the concept of “sustainable security” with sub-concepts such as public education of passive defence principles, regional and global electronic and informational interaction, promoting a culture of safety; the concept of “justice” with sub concepts such as balanced participation; and the concept of “transparency” with sub concepts such as documentation of operation were analyzed.

The results of the study conducted by Audefroy and Sánchez show that, in the area of knowledge sharing, the purpose is to create new knowledge through the combination of existing knowledge or better exploitation of it. Knowledge sharing involves voluntary interactions between people, in the form of shared funds considering ethical norms, special habits and behaviours.^[35] Also, Weichselgartner and Pigeon emphasized the role of knowledge in reducing risk and ensuring informed decision-making and coordinated implementation of disaster risk reduction policies.^[36] Studies Cadag and Gaillard showed that the discussion of the integration of

Table 3: Documents, code, component and, sub-component extracted in the domain of state and nonstate actor in disaster risk governance

Row	Name of document	Key notes on the document (code)	Sub-component	Component
5	The Law of the Fifth Five-Year Development Plan	Ministry of Housing Supports and municipalities the policy of encouraging nonstate sector measures to revitalize and rebuild worn out textures	Nongovernmental sector encouragement policy	Strategy
6	The Law of the Sixth Five-Year Development Plan	Supporting public-private and nongovernmental environment-friendly investment and technology using tools such as green taxes	Supporting investment and technology	
13	The general policy of communicating the supreme leader to prevent, reduce the risk of accidents and accidents	Strengthening the readiness and facilities necessary for rapid and effective search, rescue, relief and resettlement of injured, setting up a publicity and information policy and organizing domestic, foreign, governmental and nongovernmental assistance	Organize aids	
15	The overall policy of the system in the security of the space of production and communication of information	In the field of health and safety of places 1 - provision of government facilities and public institutions and NGOs in the time of crisis 2. Provide special facilities and incentive support (insurance) in order to secure and improve the seismicity of residential, service and production, and nongovernmental structures	Empowerment and encouragement by government, nonstate actors and armed forces	
17	Strategic Policy of the Ministry of Health, Therapy and Medical Education in the Third Development Plan	Increasing the share of the nongovernmental sector, charity co-operation in health services, health care and rehabilitation, and reducing state ownership	Reducing government ownership	
22	Risk Management Plan and Disaster Risk Reduction in the Health System	In the country's structure, two organizations are responsible: the crisis management organization under the control of the president with the Ministry of Interior Affairs and the nonactive defense organization under the auspices of the Supreme Leader	Trustee of crisis management	
105	The structure of the deputy of preparedness and confrontation	Description of the duties of NGOs and NGOs in the event of unplanned incidents: supporting the promotion of the necessity of membership and training of people; providing a proposal to remove legal barriers to activity; developing a card with the Crisis Management Organization; conducting research on how volunteers participate in relief services; Indigenous and charitable organizations inside and outside the country; A program for attracting charities and benefactors; Providing women with activation in families; and the rescue aid option	Managing the attraction of nongovernmental charities	Organize
110	The activities of the deputy of affairs of preparation and counteraction	Planning, coordinating, organizing and training popular organizations and mobilization in the four stages of crisis management; holding a workshop for experts to formulate a comprehensive training system for organizations and volunteers; set up a comprehensive system of NGOs in the subsystem (SAMA).	Designing People's organizations	
175	Resolution on the formation of Emergency response volunteer in the city's neighborhoods (DAVAM)	Training, equipping and employing organized volunteers	Attract a volunteer citizen	

NGOs=Non-Governmental Organisations

local and national knowledge in the field of disaster risk reduction is difficult, but it is very important.^[37]

As for sustainable development, the concept of "spatial planning" with sub concepts such as adjustment of the spatial structure of development, securing physical environment, territorial development plan at national and regional, urban coordinated management, spatial planning based on comparative advantage; the concept of "environmental protection" with sub concepts such as environmental strategic assessment, healthy human approach, hazard and contamination reduction; the concept of "climate change adaptation" with sub concepts such as national development based on

adapting to climate change, biological preparation; the concept of "Environment sanitation" with sub concepts such as reducing pollution and degradation of environmental standards, revitalization of worn texture, Horizontal and vertical development of the city based on considerations and notes, cost-effective principles of passive defence; the concept of "guidance" with sub concepts such as sustainable development process, contribution to sustainable development; the concept of "wisdom" with sub concepts such as knowledge-based development; the concept of "environmental diplomacy" with sub concepts such as enhancing environmental diplomacy and institutions, understanding the constructive elements of culture and

Table 4: Documents, code, component and, sub-component extracted in the domain of knowledge sharing in disaster risk governance

Row	Name of document	Key notes on the document (code)	Sub-component	Component
4	The Law of the Fourth Five-Year Development Plan	The Ministry of Communications and Information Technology is required to establish the necessary infrastructure for the development of a national network of information and secure and stable internal data centers with appropriate bandwidth	Network Information Upgrade	Information synergy
6	The Law of the Sixth Five-Year Development Plan	The Resolution of the High Council for Cyberspace by establishing a passive defense system and increasing the level of national-level cyber training and upgrading the power of observation, monitoring, detection, warning, and information	Cyber notification system	
16	The overall policy of the system in passive defense matters	The use of passive defense principles in order to preserve and protect the information, telecommunication and computer networks of culture, public education and the forecasting of materials at various levels of education in the field of application of the principles and rules of passive defense in the public and nongovernmental sectors	Safeguarding information	
18	The general policy land use planning	Generalize and expand the communication and information network; improve human development indicators emphasizing the flourishing of talents and creativity, the spread of health and the promotion of general knowledge	Expansion of knowledge network communication and improvement of human development index	
19	The general policies of the system in the perspective period	Facilitate and establish the relationship between public relations of universities with the community, civil society organizations in intelligence, public cultural institutions, innovation, and health	Facilitate communication with the community	
83	The law to strengthen and operational the crisis management system in Tehran	Managing the information network in order to optimize the relevant organizational tasks. To create a mechanized and up-to-date database of buildings, facilities, urbanization, industrial and commercial centers	Information Network Management	
6	The Law of the Sixth Five-Year Development Plan	Extending the level of environmental knowledge of the community, sharing social responsibility for environmental protection	Environmental Knowledge and Society Responsibility	Knowledge enhancement
13	The general policy of communicating the supreme leader to prevent, reduce the risk of accidents and incidents.	Extending education, awareness, safety culture of authorities and people to deal with accidents, climatic phenomena. Strengthening scientific research to identify and reduce the issue (priority of earthquake hazard)	Education, awareness and safety culture	
75	Instructions for health system measures in mass gatherings	Public education is a potential danger in mass gatherings, training packages, and media cooperation, rapid alert in the event of a confrontation with suspicious cases (terrorist incidents), coordination of actions with the incident command post, documentation of measures and attention to information security	Risk reduction training in mass gathering	
12	The general policy of communicating the Supreme Leader to the passive defense sector	Knowledge sharing through culture-building, public education, the application of nonstate-of-the-art principles and rules of the public sector and nonstate sector, and the provision of curriculum materials at educational levels	The basic teaching of passive defense	Sustainable security
15	The overall policy of the system in the field of security of production space and the exchange of information and communication	Regional and global effective and constructive engagement; joint ventures in knowledge domains; electronic network security technology; information and communication organizations with national interest and national security	Interactive regional and global electronic and informational	
110	The activities of the deputy of affairs of preparation and counteraction	Prepare and draft a document for the documentation of crises, natural disasters; Prepare a book for the collection of laws and regulations and formulation a national division of labor for the promotion of community safety culture, with the cooperation of ministries, organizations and institutions related to crisis management	Promoting safety culture	
20	The comprehensive scientific plan of the health of the country	Equity of household participation	Balanced participation	Justice
105	The structure of the deputy of preparedness and confrontation	Documentation of operations and measures of coping in accidents	Documentation of operations	Clarity

Table 5: Documents, code, component and, sub-component extracted in the domain of sustainable development in disaster risk governance

Row	Name of document	Key notes on the document (code)	Sub-component	Component
1	The law of the first five years of the Islamic Republic of Iran development	Equipping and strengthening according to the objective geographical distribution of population and activities in the country, land-use planning policies to improve the spatial structure of the country's development with emphasis on organization	Correction of the spatial structure of development	Land use planning
2	The Law of the Second Five-Year Development Plan	Use of passive defenses with regard to land use planning, (a) Formation, approval and monitoring of the establishment of the main elements (b) Approval of territorial development plans at the national, regional level. – Point 194 (e) Improvement, renovation, restoration, and safety of the physical structure of the environment and rural housing with the participation of people and public institutions. In point 171 (a) the Supreme Council for Urban Development and Architecture is required to account for worn out textures; The Ministry of Housing and Urban Development and the Municipality are obliged to rehabilitate at least 10 percent of urban wastewaters annually	Securing the environment	
5	The Law of the Fifth Five-Year Development Plan	The arrangement of land and regulation of the relations of the integrated system of planning and management of territorial development; drafting, approval, and supervision of the establishment of the main pillars; examination and approval of the program and the territorial development plan at the national and regional levels	Territorial development plan at national, regional levels	
5	The Law of the Fifth Five-Year Development Plan	Provide a comprehensive urban management plan to achieve a proper structure with a sustainable development approach	Coordinated urban management	
45	Emergency Standard Planning	Land use planning based on the relative advantage of the regions	Preparation based on relative advantage	
6	The Law of the Sixth Five-Year Development Plan	The government is required to protect the environment and natural resources (Article 38), overseeing the strategic environmental assessment, the private and cooperative sector, the public nongovernmental organizations; the proper restoration and proper operation of the country's wetlands, with the participation of the executive agency and local communities; monitoring the implementation of the comprehensive waste management plan on the shores of the sea, river, forest and wetland; preparation and implementation a comprehensive forest and rainforest prevention and fire prevention plan and the Environmental Protection Agency in cooperation with executive, military and law enforcement agencies	Strategic Environmental Assessment	Environmental protection
8	The general policy of communicating the supreme leader to the fifth development plan	Emphasis on the healthy and healthful approach towards people; policy integration, planning, evaluation, monitoring, and public resource allocation; promotion of air health indicators, food security, physical and mental health and; reduction of health hazards and contaminants.	Healthy human approach and reducing risks and contaminations	
13	The general policy of communicating the supreme leader to prevent, reduce the risk of accidents and incidents	Setting up a national development plan with a climate-friendly approach; Identifying climate change with the land-use axis; Developing and implementing a comprehensive climate management disaster management system;	National development based on adaptation to climate change	Climate change adaptation
14				
19	The general policies of the system in the perspective period	Land Use Planning, Environmental Affairs, and Sustainable Development	Biological Preparation	
42	Emergency Standard Planning			
4	The Law of the Fourth Five-Year Development Plan	Enhancing the technical specifications of the vehicle, which are subject to point 30 of the Law on the Prevention of Air Pollution, in accordance with environmental standards to reduce pollution and degradation of natural resources and water	Reducing pollution and destroying environmental standards	Environment Reform
10	The general policy of informing the Supreme Leader in the housing sector	Revitalizing Urban Texture	Reviving the city	

Contd...

Table 5: Contd...

Row	Name of document	Key notes on the document (code)	Sub-component	Component
11	The general policy of the Supreme Leader in the field of urban planning	Determining the dimensions of the cities in the horizontal and vertical expansion with emphasis on the Islamic identity of the Islamic Republic, and observing the cultural, social, economic, security, neighborhood rights and infrastructure, and environmental and climate requirements. - Providing sustainable resources for development and civil and urban and rural management with regeneration. Historical texture, upgrading or renovating old texture to prevent the extension of marginalization in the city and the management of marginal texture	Horizontal and vertical expansion of the city	
16	The overall policy of the system in passive defense matters	Observing inactive principles and criteria with respect to the principle of cost-benefit	Cost-effective principles of passive defense	Environment Reform
43	National Road Safety Action Plan	Sustainable development process	Sustainable Safety	Guidance
48	Tehran 1404 Urban Cultural World	Participation in the establishment of the sustainable development plan for Tehran based on the considerations of managers	Participation in urban development	
44	National health system response to disasters	Realization of sustainable development based on knowledge in social, economic, cultural and environmental terms	Knowledge-based development	Wisdom
5	The Law of the Fifth Five-Year Development Plan	Correction of biological conditions and observing justice and intergenerational rights; Low carbon industry; Clean energy; Organic agricultural products and waste management; Improving the economic, social and economic model of water consumption, food and energy, especially promoting environmentally friendly fuels; Strengthening Environmental Diplomacy and Regional Institutions to Cope with Risk and Water Pollution	Strengthen the institution and environmental diplomacy	Environment diplomacy
46	Achievements, challenges, and horizons of the health system	Understanding the elements of Iranian culture, art, knowledge, and civilization as elements of national identity in the environment	Understanding culture and national identity	
109	The Sixth Development Plan	Improvement of the health system's ability to deal with unexpected accidents	Improving the health of the health system	Capacity

national identity; and the concept of “capacity” with sub concepts such as improvement of health system power” have been deduced.

Florin, A., introduced a reduction in environmental pollution and improved socioeconomic status for the next generation. In this context, the United Nations has focused global goals on commercial partnerships and nonstate actors that are less harmful to nature.^[38] Hudec stressed that, in the culture of society, the principles of crisis management and passive defense are emphasized on sustainable development.^[39]

In integrated risk management, the concept of “promoting safety and security” with sub concepts such as safety and renewal of locations, sanitation, promoting social capital, public awareness and education, promotion of sustainable security, a comprehensive plan for improving housing conditions, comprehensive scientific plan, compilation of regional risk map; the concept of “coherence” with sub concepts such as the passive defence comprehensive plan, the establishment of a disaster management system, integrated city management and development, comprehensive and integrated system, coordination, and coherence have deduced and analyzed. Waldman, *et al.*,

in another study on Canadian citizens volunteering in disasters: From emergence to networked governance, stated that according to Canada’s Social Security and Emergency Preparedness Organization safety of roads and critical infrastructure, networks, water supply systems, electricity grids, oil and gas pipelines, sewage and surface water collection, communications networks, transportation and information and physical services are interconnected, which, if broken or destroyed, will have a serious impact on health, safety, security, and the economy.^[40]

Today, the development of urbanization, the inappropriate geographic location of the populated centres’, failure to hazard zoning, lack of realization of regional development plans, unbalanced growth of the regions, and increasing population density have caused serious challenges in times of natural disasters.^[41] A large number of responsible organizations and institutions make it essential to take advantage of information and communication technology to organize a large amount of data.^[42,43] Shi P., also said that “Integrated Risk governance is at the heart of regional and national risk management and plays an important role in improving the “up-down and down-to-top” of the template.^[44]

Table 6: Documents, code, component and, sub-component extracted in the domain of integrated risk management in disaster risk governance

Row	Name of document	Key notes on the document (code)	Sub-component	Component
5	The Law of the Fifth Five-Year Development Plan	In the area of earthquake-risk disaster and risk studies: Developing seismological network, laws on building materials standardization and retrofitting; Article 63: Improving the safety and protection of schools and training spaces; matter 198: Protecting people and national resources of the country	Safety and retrofitting of spaces	Promote safety and security
7	Constitution	Identification of vulnerable villages in order to implement the immunization plan; Determining the indicators of worn-out and unhealthy texture; Implementing the rural improvement of humanitarian services of the Red Crescent to increase the safety and community development, preventing and reducing the risk; Helping to preserve and promote social capital with social participation; Development; And the rescue of the country; increasing public awareness and education	Improvement, promotion of public awareness and education	
25	Internal Regulations of the Committee on Disaster Management and Disaster of the Ministry of Health			
76	Guidelines for the coordination of crisis management, passive defense			
8	The general policy of communicating the supreme leader to the fifth development plan	Strengthening and promoting sustainable, comprehensive and guaranteeing national goals and interests; creating a proper governance structure (policy making, guidance, and supervision)	Promote Sustainable Security	
10	The general policy of informing the Supreme Leader in the housing sector	Comprehensive planning for improving the situation of rural housing with the priority of vulnerable areas; the requirement for the standard construction of the National Building Regulations and the Rural and Urban Energy Efficiency Plan	A comprehensive plan for improving the housing situation	
13	The general policy of communicating the supreme leader to prevent, reduce the risk of accidents and incidents.	Compilation of comprehensive scientific plan for psychosocial rehabilitation of the injured; Increasing the safety factor of construction: Locating the use of rural-urban population centers with partial zoning of the earthquake; Improving supervision; Preventing nontechnical, insecure construction; Applying insurance and standards and regulations for design and implementation. Provision of special facilities and incentive aid (insurance) for seismic improvement of residential, production and nonresidential buildings	Comprehensive scientific program	
14				
23	Roadmap for the healthcare team in incidental accidents	Road Map of the Working Group on Health in Accidental Events: Developing a Covered Area Risk Map; Developing a Coverage-Based Risk Analysis Scenario Based on Previous Experiences; Designing and Establishing an Early Warning System	Compilation of regional risk maps	
16	The overall policy of the system in passive defense matters	Prepare a comprehensive plan for the nonproliferation of weapons of mass destruction; prevent the creation of hazardous facilities in population centers; anticipate safety measures by defining privacy	Passive Defense Master Plan	Coherence
17	Strategic Policy of the Ministry of Health, Therapy and Medical Education in the Third Development Plan	The Ministry of Health and Medical Education Disaster Management Document for four phases: "First Period * :Environmental Health: Comprehensive Rescue and Emergency Plan", Establishment of an Accident Chief and Preparatory Team at the Ministry of the Interior, together with the Secretariat of the Environmental Health Center, entitled "Specialty Committee for Health Care in Accident" Second Period * Secretariat of Health Deputy: In the Management of the Special Committee, Third Period * EMS (115): "Hospital Management Center of Medical Accidents" Fourth Course * Present Period	Creating a disaster management system	
5	The Law of the Fifth Five-Year Development Plan	Provide a comprehensive urban management plan to achieve the appropriate structure, coordinated and integrated urban management	Integrated City Management	
1	The law of the first five years of the Islamic Republic of Iran Development	Linking population centers for the integrated development of urban and rural communities	Integrated development	
5	The Law of the Fifth Five-Year Development Plan The Law of the Sixth Five-Year Development Plan	For unity and integrity, the Center for Statistics of Iran is the official reference publication; the maximum integration of activities, management, and programs of rural development, nomadic and agricultural development in the form of a comprehensive program	Unity and integrity	
6				

Contd...

Table 6: Contd...

Row	Name of document	Key notes on the document (code)	Sub-component	Component
5 83	The Law of the Fifth Five-Year Development Plan	Organization of Tehran Municipality and coordination with government, military, civilian, law enforcement and beneficiary stakeholders in crisis management under coherent planning and management	Coherent management	
105	The structure of the deputy of preparedness and confrontation	Creating a comprehensive and integrated agricultural risk management system	The comprehensive and integrated system	
110	The activities of the deputy of affairs of preparation and counteraction	Coordination and coherence of state institutions in crisis management	Coordination and coherence	

EMS=Emergency medical system

The most fundamental thought of partnership infrastructure is the acceptance of the principle of equality among people with which change is achieved and through which transformation is achieved and rooted in building group relationships at the local, national, on the basis of a solidarity process.^[45] In summarizing the results, Westman and Broto in a study of 150 urban initiatives in China on climate governance through partnerships emphasized that consolidation to reduce the role of the state in economic activities, empowering civil society, is a prerequisite for the realization of human rights.^[46] The population affected by the disaster is expecting an efficient response, in which knowledge sharing is effective in integrating social actors, resources, and research into risk reduction policies.^[45,47]

Conclusions

Ensuring accountability in disaster risk management is part of a national, regional, and global partnership. In all crises, citizen participation plays a major role in reducing damage and complications. Given that hazard and natural disaster management is sensitive and a dynamic process, the extent to which people participate in decision-making, implementation, and monitoring and evaluation can act as a capable arm of the staff in the risk reduction process. Expanding the culture of community participation in prevention, mitigation, readiness, and planning is elemental to governance in reducing the risk of disasters. Disaster good governance is strengthened by the trustee, commitment, capacity prosperity, align, strategy, and organize. With the active participation of civil society, the private sector and the International Monetary Fund, synergies are being made between the education and health sector. Collective wisdom, diplomacy, and capacity coherence raise the alignment of public organizations and the government in the risk management process. Identifying barriers to knowledge transfer and sharing in governmental and nongovernmental organizations in Iran can be the first step in solving problems and is effective in moving toward sustainable development. The most important

reason for the inadequacy of the disaster risk governance in Iran is the lack of appropriate laws and regulations and difficulty in document clarification, executive issues, organizations' inconsistency, excessive paying attention to the response relief and rescue phases, and, lack of attention to pre-disaster stages, such as prevention and mitigation and public mistrust to some organizations.

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Conflicts of interest

There are no conflicts of interest.

References

- Garrido J, Saunders W, editors. Disaster risk reduction and land use planning: Opportunities to improve practice. In: IAEG/AEG Annual Meeting Proceedings. Vol. 5. San Francisco, California: Springer; 2018. p. 2019.
- Yew YY, Castro Delgado R, Heslop DJ, Arcos González P. The yew disaster severity index: A new tool in disaster metrics. *Prehosp Disaster Med* 2019;03:1-2.
- Cuthbertson J, Rodriguez-Llanes JM, Robertson A, Archer F. Current and emerging disaster risks perceptions in Oceania: Key stakeholders recommendations for disaster management and resilience building. *Int J Environ Res Public Health* 2019;16. pii: E460.
- Botzen WW, Bouwer LM, Scussolini P, Kuik O, Haasnoot M, Lawrence J, *et al.* Integrated disaster risk management and adaptation. *Loss and Damage from Climate Change*. London: Springer; 2019. p. 287-315.
- Chang SE, Yip JZ, Conger T, Oulahan G, Marteleira M. Community vulnerability to coastal hazards: Developing a typology for disaster risk reduction. *Appl Geogr* 2018;91:81-8.
- Tierney K. Disaster governance: Social, political, and economic dimensions. *Annu Rev Environ Resour* 2012;37:341-63.
- Maryudi A, Nurrochmat DR, Giessen L. Research trend: Forest

- policy and governance-Future analyses in multiple social science disciplines. *For Policy Econ* 2018;91:1-4.
8. Ogbuabor DC, Onwujekwe OE. Scaling-up strategic purchasing: Analysis of health system governance imperatives for strategic purchasing in a free maternal and child healthcare programme in Enugu state, Nigeria. *BMC Health Serv Res* 2018;18:245.
 9. Twigg J. *Disaster Risk Reduction*. London, UK: Overseas Development Institute; 2015.
 10. Morris ZA, Hayward RA, Otero Y. The political determinants of disaster risk: Assessing the unfolding aftermath of hurricane maria for people with disabilities in Puerto Rico. *Environ Justice* 2018;11:89-94.
 11. Klinke A, Renn O. A framework of adaptive risk governance for urban planning. *Sustainability*, 2013;5:2036-59.
 12. Bongo PP, Manyena SB. From government' to governance': Tensions in disaster-resilience leadership in Zimbabwe. *J Disaster Risk Stud* 2015;7:1-10.
 13. Renn O. *Risk Governance: Coping with Uncertainty in a Complex World*. London: Routledge; 2017.
 14. de Oliveira JA, Paleo UF. Lost in participation: How local knowledge was overlooked in land use planning and risk governance in Tōhoku, Japan. *Land Use Policy* 2016;52:543-51.
 15. Pal I, Ghosh T, Ghosh C. Institutional framework and administrative systems for effective disaster risk governance-perspectives of 2013 cyclone phailin in India. *Int J Disaster Risk Reduct* 2017;21:350-9.
 16. Pal I, Bhatia S. Disaster risk governance and city resilience in Asia-pacific region. *Science and Technology in Disaster Risk Reduction in Asia*. Tokyo, Japan: Elsevier; 2018. p. 137-59.
 17. Ahmed MT, Moroto H, Sakamoto M, Matsuyama A. Exploring implementation gaps between policy and practice for disaster management in Bangladesh. *IDRIM J* 2017;6:79-101.
 18. Broto VC. Urban governance and the politics of climate change. *World Dev* 2017;93:1-15.
 19. Edmonds C, Noy I. The economics of disaster risks and impacts in the Pacific. *Disaster Prev Manage* 2018;27:478-94.
 20. Wood MM, Bourque LB. Morbidity and mortality associated with disasters. *Handbook of Disaster Research*. Springer, Cham: Springer; 2018; 357-83.
 21. Allen LA, Horney JA. *Methods: Study designs in disaster epidemiology*. Disaster Epidemiology. Academic Press. London Elsevier; 2018. p. 65-74.
 22. Reifels L, Arbon P, Capon A, Handmer J, Humphrey A, Murray V, et al. Health and disaster risk reduction regarding the Sendai Framework. *Aust J Emerg Manage* 2018;33:23.
 23. Vaziri N, Ardalan A, Ahmadnezhad E, Rahimi Foroshan A. Designing and determining the validity and reliability of questionnaire of disaster management performance. *J Hosp* 2015;14:63-70.
 24. Mohebifar R, Tabibi S, Asefzadeh S. Designing a structure of disaster management for Iran. *Journal of Health Administration* 2008;11, 33:47-56.
 25. Corbin J, Strauss A, Strauss AL. Basics of Qualitative Research Canadian Journal of University Continuing Education. 2010; 36; 2:1-3.
 26. Bowen GA. Document analysis as a qualitative research method. *Qual Res J* 2009;9:27-40.
 27. Viswambharan AP, Priya KR. Documentary analysis as a qualitative methodology to explore disaster mental health: Insights from analyzing a documentary on communal riots. *Qual Res* 2016;16:43-59.
 28. Gulbrandsen LH. Dynamic governance interactions: Evolutionary effects of state responses to nonstate certification programs. *Regul Gov* 2014;8:74-92.
 29. Davari M, Haycox A, Walley T. Health care financing in Iran; is privatization a good solution? *Iran J Public Health* 2012;41:14-23.
 30. Amaratunga D, Haigh R, Hettige S. The Role of Accountability within Disaster Risk Governance. Auckland: Massey University; 2016:688698
 31. Syafwina S. Recognizing indigenous knowledge for disaster management: Among, early warning system from Simeulue Island, Aceh. *Procedia Environ Sci* 2014;20:573-82.
 32. Schor KW, Altman BA. Proposals for aligning disaster health competency models. *Disaster Med Public Health Prep* 2013;7:8-12.
 33. Komendantova N, Mrzyglocki R, Mignan A, Khazai B, Wenzel F, Patt A, et al. Multi-hazard and multi-risk decision-support tools as a part of participatory risk governance: Feedback from civil protection stakeholders. *Int J Disaster Risk Reduct* 2014;8:50-67.
 34. Guttman D, Young O, Jing Y, Bramble B, Bu M, Chen C, et al. Environmental governance in China: Interactions between the state and "nonstate actors". *J Environ Manage* 2018;220:126-35.
 35. Audefroy JF, Sánchez BN. Integrating local knowledge for climate change adaptation in Yucatán, Mexico. *Int J Sustain Built Environ* 2017;6:228-37.
 36. Weichselgartner J, Pigeon P. The role of knowledge in disaster risk reduction. *Int J Disaster Risk Sci* 2015;6:107-16.
 37. Cadag JR, Gaillard J. Integrating knowledge and actions in disaster risk reduction: The contribution of participatory mapping. *Area* 2012;44:100-9.
 38. Florini A, Pauli M. Collaborative governance for sustainable development goals. *Asia Pac Policy Stud* 2018;5:583-98.
 39. Hudec O, Reggiani A, Šiserová M. Resilience capacity and vulnerability: A joint analysis with reference to Slovak urban districts. *Cities* 2018;73:24-35.
 40. Waldman S, Yumagulova L, Mackwani Z, Benson C, Stone JT. Canadian citizens volunteering in disasters: From emergence to networked governance. *J Conting Crisis Manage* 2018;26:394-402.
 41. March A. *Urban Planning for Disaster Recovery*. Oxford UK and Cambridge MA Routledge. Urban policy and research. 2018;36:527-532
 42. Huang G, Shen Z, Mardin R. Overview of urban planning and water-related disaster management. *Urban Planning and Water-related Disaster Management*. Switzerland: Springer, Cham; 2019. p. 1-10.
 43. Béné C, Mehta L, McGranahan G, Cannon T, Gupte J, Tanner T. Resilience as a policy narrative: Potentials and limits in the context of urban planning. *Clim Dev* 2018;10:116-33.
 44. Shi P. Integrated disaster risk governance. *Disaster Risk Science*. Cham: Springer; 2019. p. 635-751.
 45. Bruun O, Ngoc LB. Local and indigenous knowledge for disaster prevention and livelihood protection in rural North central Vietnam. *J Vietnam Stud* 2018;13:74-101.
 46. Westman L, Broto VC. Climate governance through partnerships: A study of 150 urban initiatives in China. *Global Environ Chang* 2018;50:212-21.
 47. Seyedin H, Dolatabadi ZA, Rajabifard F. Emergency nurses' requirements for disaster preparedness. *Trauma monthly*. 2015;20(4).