

THE ESTABLISHMENT OF THE BELT AND ROAD INTERNATIONAL COOPERATION FRAMEWORK FOR DISASTER RISK REDUCTION AND EMERGENCY MANAGEMENT AND THE CHINESE APPROACH

Liu Endong, Chen Zihao¹

Received:

October 11, 2025

Revised:

November 17, 2025

Accepted:

December 3, 2025

DOI:

10.56289/ijcsrp.209

ABSTRACT

The countries along the Belt and Road are located in regions highly prone to various natural disasters. From 1900 to 2022, these areas experienced 9,595 major natural disasters, resulting in over 16 million deaths and economic losses exceeding two trillion USD. This article first reviews global disaster risk assessment and governance frameworks, then examines the development and practical achievements of the Belt and Road International Cooperation Framework for Disaster Risk Reduction and Emergency Management (BRIDRREM). Using policy analysis and case study methods, it evaluates the framework's effectiveness at multilateral, regional, and bilateral levels, and delves into the three key challenges: evolving climate risks, capacity disparities among nations, and institutional gaps. Finally, policy recommendations are proposed, including alignment with the Sendai Framework, strengthened top-level design and legal and institutional processes, and enhanced practical cooperation with neighbouring countries, offering a Chinese approach to improve regional disaster control resilience and emergency response capabilities.

Keywords: Belt and Road; Natural Disasters; Emergency Management; International Cooperation; Framework Development.

INTRODUCTION

Since its inception in 2013, the Belt and Road Initiative (BRI) has developed to include over 140 countries and international organisations across Asia, Africa, and Europe, becoming the world's largest infrastructure and policy coordination platform. However, BRI countries and regions face complex geological and climatic conditions, exposed to compounded risks from earthquakes, floods, landslides, storm surges, and other disasters (Titti, et al., 2021). According to the Disaster Assessment Report for Belt and Road Countries, from 1900 to 2022, BRI partner countries experienced 9,595 major disasters, which caused over 16 million deaths, affecting 5.525 billion people, and incurring direct economic losses exceeding two trillion USD (Ministry of Emergency Management of China, 2023). Notably, seven of the top ten countries most affected by meteorological disasters from 1995 to 2015 were BRI partner countries with relative losses more than double the global average.

Climate change has exacerbated the frequency and intensity of extreme weather events, particularly heatwaves, heavy rainfall, and droughts. The United Nations' (UN) *Sendai Framework for Disaster Risk Reduction (2015-2030)* outlines four priorities: (i) understanding disaster risk; (ii) strengthening disaster risk governance to manage disaster risk; (iii) investing in disaster reduction for resilience; and (iv) enhancing disaster preparedness for effective response, providing a template for international cooperation (UNDRR, 2015). Against this backdrop, China has promoted disaster prevention and emergency management cooperation more than once at the Belt and Road Forum for International Cooperation since 2019. The

¹ Party School of the CPC Central Committee, China National Academy of Governance, high-level think tanks.
E-mail: jiakangccps2025@163.com.

Beijing Declaration (2021) formally launched the Belt and Road International Cooperation Framework for Disaster Risk Reduction and Emergency Management (BRIDRREM), and in 2023, the establishment of a governing council comprising 31 member states and organisations marked its institutionalisation.

With all the progress, challenges persist, including evolving regional risks, disparities in emergency response capacities, and the lack of unified cross-border rescue protocols. Existing research on BRI disaster governance focuses on three aspects: First, it is about risk characteristics and governance challenges in BRI regions, highlighting inadequate infrastructure and governance capacity as key obstacles to development (Shi, 2021). Second, it is the research on international cooperation models, drawing lessons from such multilateral mechanisms as the UN Office for Disaster Risk Reduction (UNDRR, 2022) and the ASEAN Coordinating Centre for Humanitarian Assistance (Wu, et al., 2023), emphasising information sharing, early warning systems, and joint rescue operations. Third, it is about the theoretical refinement of the Chinese solution and relevant practice. Over recent years, many studies focused on China's institutional advantages in disaster governance (e.g., earthquakes and floods) and its role in providing international public goods under the BRI framework (Ma and Chen, 2021).

While these studies offer valuable insights, gaps remain, as seen in the limited comparative research on cross-regional cooperation mechanisms, and the insufficient exploration of the logic and global applicability of the Chinese approach. This paper addresses these gaps by analysing global disaster governance experiences and China's institutional evolution. Through policy analysis and case studies, it evaluates the BRIDRREM's achievements and limitations, proposing recommendations to enhance top-level design, legal frameworks, and multilateral pragmatic cooperation, thereby contributing a Chinese solution to regional disaster control resilience.

I. Methods of Research on the Building of the Belt and Road International Cooperation Framework for Disaster Risk Reduction and Emergency Management

The study primarily employs text analysis. This research is based on a detailed review, summarisation, and analysis of existing literature. First, a text analysis database was constructed. The study systematically collected key documents, including the joint communiques of the Leaders' Roundtable of the Belt and Road Forum for International Cooperation between 2019 to 2023, the Beijing Declaration, charters of BRIDRREM, forum speeches, and the Disaster Assessment Report for Belt and Road Countries, to analyse the top-level design and development pathways of the BRIDRREM on natural disaster prevention and emergency management. Second, focusing on major contextual themes such as "global disaster distribution" and "climate change trends", the study extracted key topics from the corpus, summarising international organisations' perspectives on global disaster risk distribution and climate change impact trends. Special attention was given to databases and reports such as the United Nations for Disaster Risk Reduction (UNDRR) website and the IPCC Sixth Assessment Report (AR6). Third, by analysing the content of the aforementioned literature, the study summarised key elements of BRIDRREM, including its objectives and implementation pathways, and mapped out the framework's evolution timeline.

Additionally, the study utilised case analysis. First, it examined regional cooperation mechanisms such as disaster management collaboration among China, Japan, and the Republic of Korea (ROK); emergency management coordination with Central and Eastern

Europe; and the China-ASEAN earthquake-generated tsunami warning network, along with empirical cases such as Chinese rescue teams' missions to Mozambique and Turkey, constructing a multidimensional case database. Second, the study selected representative cases, including the China-Japan-ROK, Central and Eastern Europe, and China-ASEAN disaster management cooperation mechanisms, as well as Chinese rescue teams' international missions to Mozambique and Turkey. Based on public reports and official documents, it analysed their achievements and shortcomings in capacity building, practical drills, and cross-border coordination, providing empirical support for the development of BRIDRREM.

II. Results: Key Practices of the Belt and Road International Cooperation Framework for Disaster Risk Reduction and Emergency Management

Extreme natural disasters pose a common challenge to humanity, and enhancing international cooperation in disaster prevention has become a consensus in the global community. Over the years, guided by the vision of a community with a shared future for humanity, China has fulfilled its responsibility as the initiator of the BRI, continuously advancing the development of BRIDRREM.

First was to build a multilateral cooperation mechanism through BRIDRREM. In April 2019, leaders of BRI partner countries reached an agreement on "promoting cooperation in resilience and disaster-risk reduction and management" during the Second Belt and Road Forum for International Cooperation. On 3 November 2021, representatives from 19 national emergency management agencies and eight international and regional organisations attended the Belt and Road Ministerial Forum for International Cooperation in Disaster Risk Reduction and Emergency Management, officially adopting the Beijing Declaration and launching the construction of BRIDRREM. In October 2023, the "Third Belt and Road Forum for International Cooperation" reaffirmed the commitment to strengthening multilateral cooperation platforms in disaster reduction and other fields, pledging to further develop the framework.

On 16 November 2023, the Belt and Road Ministerial Forum for International Cooperation in Disaster Risk Reduction and Emergency Management was held in Beijing online and offline simultaneously. During the forum, the first council meeting of the cooperation framework was convened, officially announcing the establishment of the framework. Altogether 31 emergency management agencies and international organisations joined the BRIDRREM with 22 council members and partners delivering speeches. Participants included representatives from 81 countries (regions) and international organisations across five continents. The BRIDRREM is now being refined in an orderly and efficient manner.

Second, it was to leverage regional platforms to support BRI cooperation. China has achieved fruitful results in disaster prevention and emergency management cooperation with regional organisations. As early as in the 2000s, China participated in establishing a trilateral disaster management cooperation mechanism with Japan and the ROK, holding the first ministerial meeting for related purposes in 2009. By 2023, seven such meetings had been convened. China-ASEAN cooperation in disaster prevention has yielded significant outcomes, including the establishment of the China-ASEAN Ministerial Meeting on Disaster Management, the China-ASEAN earthquake-generated tsunami warning network, and joint development of guidance documents such as the ASEAN Disaster Resilience Outlook (Xu, et al., 2021).

Furthermore, China has worked to integrate regional cooperation mechanisms and promote collaboration among regional organisations in emergency management and disaster prevention and reduction. For instance, it has facilitated the establishment of the ASEAN Plus

Three (China, Japan, and the ROK) Disaster Management Cooperation Mechanism and the China-Central and Eastern Europe Emergency Management Cooperation Mechanism. China has also expanded the cooperation realms of organisations such as the Shanghai Cooperation Organisation (SCO), BRICS, and the Asian Development Bank. These efforts strengthen strategic and institutional alignment in emergency management among BRI partner countries, collectively addressing sudden natural disasters and advancing efforts towards the vision of a shared future for humanity.

Third, it was to enhance bilateral cooperation to share disaster management and reduction expertise. In response to the BRI's call, partner countries – regardless of size or wealth – have strengthened practical cooperation in disaster prevention, mitigation, emergency response, and workplace safety to promote global disaster governance. China has actively exchanged disaster management experiences with BRI partners that have rich expertise, such as through joint emergency management projects with the EU. These initiatives contribute to the improvement of emergency management concepts and the establishment of bilateral dialogue mechanisms. At the same time, China has shared rescue expertise and collaborated with BRI partners with limited disaster management experience. For instance, China's rescue teams have conducted two highly praised international missions in Mozambique and Turkey, demonstrating professionalism, dedication, and humanitarian spirit. These actions exemplify China's commitment to the vision of a community with a shared future for humanity.

III. Discussion: Major Challenges Facing the Belt and Road International Cooperation Framework for Disaster Risk Reduction and Emergency Management

Currently, international cooperation lacks universally accepted regulations and procedures for cross-border and transnational emergency rescue operations. Given the increasing frequency of disasters and varying response capabilities among partner countries, BRIDRREM faces multiple challenges.

Regional disaster risks show escalating uncertainty and complexity. With rising global temperatures, the probability of extreme heatwaves, heavy rainfall, and regional droughts has increased. According to a 2023 UN assessment report, human activities have already caused a 1.1°C rise in global temperatures, exposing the world to unprecedented changes (Intergovernmental Panel on Climate Change, 2023). The Disaster Assessment Report for Belt and Road Countries indicates that over the past century, the characteristics of natural disasters and their impacts in these countries and regions have undergone significant changes. The cooperation framework must contend with an evolving risk landscape, where hazards are highly interconnected across countries, time scales, and spatial dimensions. Additionally, climate change is leading to new compound extreme disaster events, further challenging the framework's adaptability.

The disaster reduction and relief coordination among partner countries is inadequate. Economic disparities among BRI partner countries lead to varying levels of investment in disaster prevention, mitigation standards, and infrastructure resilience. More economically developed nations hold advantages in pre-disaster preparedness, emergency response, post-disaster compensation, and recovery capabilities (Chen, et al., 2024). Bridging these gaps poses a critical challenge: How can the cooperation mechanism minimise disparities in disaster response capacities caused by uneven infrastructure development? Furthermore, division of labour and coordination, and information sharing among countries with vastly different management capabilities will test the framework's ability to foster cohesive collaboration.

The cross-border rescue systems need improvement. First, the cooperation framework still lacks clearly defined cross-border and transnational emergency rescue procedures. Without a standardised procedure recognised by all partner countries, misunderstandings or conflicts may arise between disaster-affected nations and assisting countries during rescue operations. Second, many countries need to refine institutional details in emergency response agencies' structures, management authority, and coordination safeguards. To enhance the framework's effectiveness, it is imperative to establish comprehensive rescue plans and detailed coordination protocols that improve disaster prevention, mitigation, workplace safety, and emergency response capabilities. Finally, information-sharing mechanisms need to be improved. After major disasters, efficient dissemination and analysis of critical disaster data are essential. The framework must address challenges such as how to share real-time disaster information and scientifically process aid requests to optimise response efforts.

CONCLUSION AND RECOMMENDATIONS

Natural disaster prevention and control, and emergency management, are both key areas of cooperation in the joint pursuit of the BRI and shoulder the crucial mission of safeguarding its progress. Since the 18th National Congress of the Communist Party of China, the Party Central Committee with Xi Jinping at its core has attached great importance to disaster prevention and mitigation, deepened reforms in emergency management systems and mechanisms, accelerated efforts for the establishment of comprehensive natural disaster prevention and control systems, and comprehensively enhanced disaster prevention, control, and emergency rescue capabilities. These efforts have provided solid guarantees for safeguarding people's lives and property and promoting high-quality economic and social development. Sharing the "Chinese Approach," "Chinese Experience" and "Chinese Achievements" with the international community and making China's contributions to international disaster reduction and global sustainable development are integral aspects of building an emergency management system with Chinese characteristics for a major country in the new era. China implements the neighbourhood diplomacy concept of amity, sincerity, mutual benefit, and inclusiveness, leveraging cooperation mechanisms as platforms and focusing on practical operations to make new contributions to emergency management in building a community with a shared future for humanity.

First, China has conducted top-level design and built the central framework for BRIDRREM. With the goal of creating a new global platform for disaster governance, China has formulated charters of the framework; planned and established its council, coordinators' meeting, secretariat, and advisory committee; initiated the construction of a cooperation network; and launched the official website of BRIDRREM. This has initially formed a platform system, led by intergovernmental cooperation and supplemented by cooperation networks and supporting institutions, which has gradually moved into a phase of substantive operation.

BRIDRREM has been included in the China's eight major steps to support high-quality BRI cooperation, and its charter was inscribed on the List of Multilateral Cooperation Deliverables of the Third Belt and Road Forum for International Cooperation. Meanwhile, China emphasises aligning BRIDRREM with international initiatives such as the UN's Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development, and the Paris Agreement, receiving positive responses from numerous international organisations, institutions, and BRI partner countries. China also convenes coordinators' meetings, engaging in exchanges on framework building with representatives from the emergency management departments, embassies in China, and international

(regional) organisations of over a hundred countries and regions. China continuously deepens cooperation with relevant UN agencies, and participates in, and guides multilateral cooperation within frameworks such as BRICS, the G20, and APEC. It focuses on strengthening policy communication and practical cooperation with BRI partner countries, continuously enriching the connotations of bilateral cooperation and expanding cooperation areas.

Second, China has pragmatically implemented the multi-tiered operation of BRIDRREM. China has focused on deepening cooperation in disaster prevention, mitigation, and relief, work safety, and emergency rescue to effectively safeguard the lives, property, and sustainable economic and social development of people in BRI partner countries. First, it hosted the Belt and Road Ministerial Forum for International Cooperation in Disaster Risk Reduction and Emergency Management, convened the first council meeting, announced the establishment of BRIDRREM, and released the Disaster Assessment Report for Belt and Road Countries. Based on publicly available global disaster data, socioeconomic data, and the latest research findings, this report provides a comprehensive and systematic analysis of disaster trend changes and their varying impacts on different economies. It also identifies the risk characteristics and development trends of major disaster types, offering crucial information for disaster risk perception to relevant countries.

Second, China has actively carried out training and drills. The Chinese government has organised training courses on policies, regulations, and disaster medicine, training over 500 key personnel from international rescue teams. It has also held more than 10 foreign aid training courses, training over 600 emergency management and rescue personnel from various fields. Two international rescue teams have participated in the “Emergency Mission” earthquake relief exercises for three consecutive years. Joint search and rescue drills have been conducted under mechanisms such as the BRI, the UN, ASEAN, the SCO, and BRICS to enhance collaborative operational capabilities and levels in cross-border and transnational rescue missions.

Third, focusing on neighbouring countries, China has continuously increased its practical cooperation efforts in natural disaster prevention and control. In terms of disaster prevention and mitigation, it has engaged in earthquake disaster reduction cooperation, assisting countries such as Laos, Myanmar, Pakistan, Indonesia, and Nepal in building earthquake monitoring stations. In work safety, it has helped Laos to formulate a work safety law and gradually promoted “soft connectivity” with neighbouring countries in emergency management policies, regulations, and standards. In emergency rescue, it has actively participated in international emergency humanitarian assistance, dispatching Chinese rescue teams to countries such as Mozambique and Turkey for emergency humanitarian relief. It has provided 30,000 m² of iron sheet tiles, 3,000 solar lamps, and 20 tonnes of rice and other food supplies to Vanuatu, which was hit by a tropical cyclone, and offered emergency relief supplies to Nepal, which suffered from an earthquake, to support its emergency rescue efforts.

In strengthening joint prevention and control with neighbouring countries, the Chinese government has continuously promoted the establishment of forest and grassland fire joint prevention and control mechanisms in border areas with countries such as Mongolia, Myanmar, Russia, and Kazakhstan. This has enhanced the operational capabilities and efficiency of joint border fire responses, mitigated the threat of cross-border forest and grassland fires to China, and safeguarded the lives, property, and ecological environment security of the people in border areas.

REFERENCES

- Chen, Y., Liu, B., and Zhang, F. (2024). Vulnerability Assessment in Economy-Society Environment of the Belt and Road Initiative Countries. *Environment, Development and Sustainability*, 26(5), 21529-21552. <https://doi.org/10.1007/s10668-023-03542-0>
- Ma, T., and Chen, X. (2021). Creating Inclusive Global Value Chains under the BRI from the Perspective of Public Goods Supply and Demand. *China Economist*, 16(4), 60-69. <https://doi.org/10.19602/j.chinaeconomist.2021.07.05>
- Ministry of Emergency Management of the People's Republic of China (2023). *Disaster Assessment Report for Belt and Road Countries*. Beijing: Ministry of Emergency Management of the People's Republic of China.
- Shi, J. (2021). The Belt and Road Initiative Law: An Analysis from the Perspective of the Supply of International Public Goods. *Social Sciences in China*, (1), 156-179, 207-208. https://m.qikan.cqvip.com/Article/ArticleDetail?id=00002EGG59707JP0MNDO8JP16PR&from=Article_ArticleDetail
- The Intergovernmental Panel on Climate Change (2023). *IPCC Synthesis Report: Climate Change 2023*. New York: The Intergovernmental Panel on Climate Change.
- Titti, G., Borgatti, L., Zou, Q., Cui, P., and Pasuto, A. (2021). Landslide Susceptibility in the Belt and Road Countries: Continental Step of a Multi-Scale Approach. *Environmental Earth Sciences*, 80(1), article 630. <https://doi.org/10.1007/s12665-021-09910-1>
- United Nations for Disaster Risk Reduction (2015). *Sendai Framework for Disaster Risk Reduction 2015-2030*. New York: United Nations for Disaster Risk Reduction. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>
- United Nations Office for Disaster Risk Reduction (2022). Webinar: Outcomes of the Belt and Road Ministerial Forum for International Cooperation in Disaster Risk Reduction and Emergency Management. <https://www.undrr.org/event/webinar-outcomes-belt-and-road-ministerial-forum-international-cooperation-disaster-risk>
- Wu, S., Lei, Y., Xu, W., Yang, S., Han, Q., Lian, F., Wu, S., and Cui, P. (2023). International Cooperation Mechanism of Collaborated Disaster Risk Management in the Belt and Road Region. *Bulletin of the Chinese Academy of Sciences*, 38(9), 1282-1293. <https://doi.org/10.16418/j.issn.1000-3045.20230721004>
- Xu, Z., Liang, S., Rahman, M., Li, H., and Shi, J. (2021). Historical Earthquakes, Tsunamis and Real-Time Earthquake Monitoring for Tsunami Advisory in the South China Sea Region. *Natural Hazards*, 107(1), 771-793. <https://doi.org/10.1007/s11069-021-04605-z>