

Review

Civil Societies and Disaster Risk Reduction in China: Policy and Literature Analysis

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Abstract

This study examines the roles, policy alignment, and challenges of civil society organizations (CSOs) in China's disaster risk reduction (DRR) efforts post-2008 Wenchuan Earthquake. Using qualitative analysis of national policies, international frameworks, and academic literature, it traces the evolution of Chinese CSOs from peripheral actors to state-integrated partners in disaster risk governance. Findings reveal that China's top-down system has progressively institutionalized CSOs through Five-Year Plans, enabling their participation in emergency response and community resilience by using technological innovation. However, their contributions remain skewed toward short-term relief, with limited engagement in risk reduction or global humanitarian initiatives. Challenges include fragmented government–CSO collaboration and reliance on informal networks. While CSOs demonstrate growing technical proficiency, systemic barriers—such as funding gaps, weak institutionalized partnerships, and ideological divergences—hinder sustainability. Recommendations emphasize capacity building in risk education, policy literacy, and technology adoption, alongside reforms to formalize cross-sector collaboration and expand international engagement. By addressing these gaps, Chinese CSOs could transition from crisis responders to proactive agents of sustainable resilience, aligning local actions with global DRR agendas. This research offers critical insights for policymakers and practitioners seeking to optimize CSOs' role in national and local risk governance and invest in their development.

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Keywords: civil society organizations (CSOs); disaster risk reduction (DRR); China; policy integration; resilience; Sendai Framework

1. Rationale

The Sendai Framework for Disaster Risk Reduction acknowledges that DRR requires engagement and partnership with all of society. In particular, civil society actors play an important enabling role in supporting UN member states in their responsibility to implement the Sendai Framework for disaster risk reduction, including the development and implementation of relevant policies, laws, and regulations (<https://www.undrr.org/implementing-sendai-framework/partners-and-stakeholders/civil-society> (accessed on 22 March 2025)). By leveraging their local knowledge, networks, and grassroots mobilization capabilities, CSOs can enhance community resilience, facilitate risk communication, and advocate for inclusive and participatory approaches to DRR [1].

Globally, CSOs work on the short-, medium-, and long-term post-disaster activities, i.e., emergency response, disaster relief, and recovery. Some CSOs, especially the

local ones, work on broader DRR activities such as disaster preparedness, education and capacity-building, and community resilience-building [2]. Moreover, CSOs serve as vital conduits between communities, governments, and other stakeholders, bridging gaps in information dissemination and fostering collaboration for effective risk management [3]. After the 2008 Wenchuan Earthquake, the importance of civil society organizations (CSOs) in DRR gained acknowledgement from the government and the public, and the development of CSOs was encouraged in China. A top-down system called community-based disaster risk reduction is endorsed as a key component in China's national strategies [4]. CSOs working on DRR play important roles in this system. Therefore, it is important to understand the development of Chinese DRR CSOs from the aspects of policy support and working areas in order to provide evidence for DRR investment and multi-stakeholder collaborations.

1.1. Concept and Definition of Civil Society Organizations in China

Task-oriented and driven by people with a common interest, CSOs perform a variety of services and humanitarian functions, bring citizens' concerns to governments, monitor policies, and encourage political participation at the community level (<https://www.un.org/en/civil-society/page/about-us> (accessed on 22 March 2025)). Civil society actors vary from NGOs, volunteers, and religious organizations to (organized or unorganized) non-governmental individuals, grassroots communities, and so on [5].

The use of the term civil society (Chinese: gongmin shehui 公民社会) has become politically sensitive after the years 2011/2012. In China, nonprofit organizations (NPOs) are officially called social organizations (shehui zuzhi 社会组织) or civil organizations (minjian zuzhi, 民间组织) in government policies and documents. According to the Ministry of Civil Affairs of the People's Republic of China, social organizations include social associations (shehui tuanti 社会团体), non-commercial enterprises (minban feiqiye 民办非企), and foundations (jijinhui 基金会). It should be noted that non-commercial enterprises were renamed as social service entities (shehuifuwujigou 社会服务机构) in the Charity Law of the People's Republic of China in 2024 (https://www.gov.cn/yaowen/liebiao/202312/content_6923390.htm (accessed on 22 March 2025)), and this revision reflects that government entities are suggested to buy services from social organizations. Concerning legal issues and the work of international nonprofits, the term NGOs (non-governmental organizations) is mostly used. The national strategies for DRR use the term of social forces (shehui liliang 社会力量). The CSOs discussed in this paper will cover all the above terms and concepts.

1.2. The Blossom Period in China: Starting in 2008

Due to the Wenchuan Earthquake, it is a consensus that 2008 was the inaugural year of Chinese NGOs, as NGOs and voluntary organizations played important roles in the disaster response [6], and also the local authorities changed their attitudes towards CSOs. The number of social organizations in China are officially released by Ministry of Civil Affairs through the Statistical Bulletin on the Development of Social Services (until 2017) and the Statistical Bulletin on the Development of Civil Affairs (since 2018) (the statistical bulletin is released every year and there are numbers from the past five years in each report. The report can be downloaded from <https://www.gov.cn/>). The growth rates of social associations, non-commercial enterprises, and foundations from 2008 to 2024 are 66%, 164%, and 515%, which provide obvious evidence of blossoming (Figure 1). A recent study utilized web-scraping techniques to extract data from the China Organization Data Service (CODS) Platform, identifying the number of CSOs that claim their engagement in emergency response-related domains [7]. It also shows a rapid increase after 2008 (Figure 2).

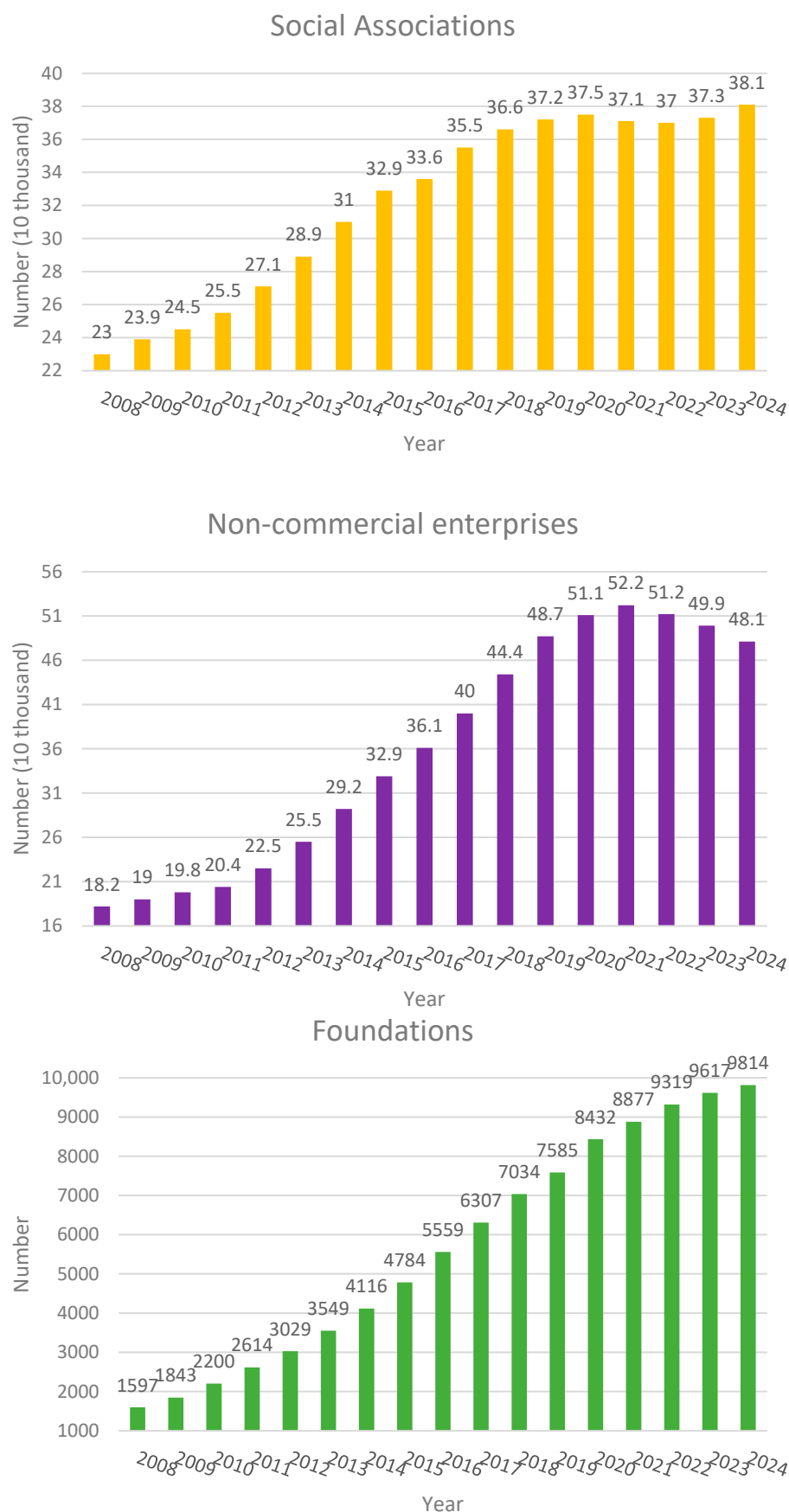


Figure 1. The number of social organizations (2008–2024).

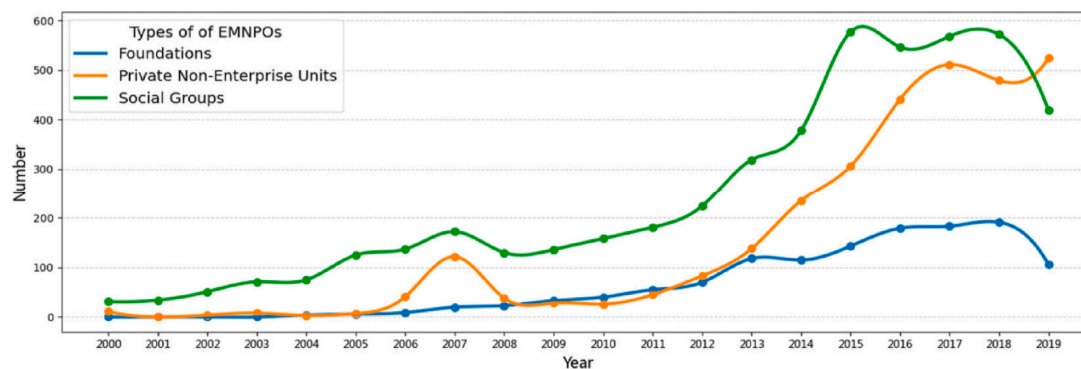


Figure 2. Emergency response-related non-profit organizations (EMNPOs) in China (2000–2019) [7].

1.3. The Research Objectives

Although a large number of studies focus on the participation of CSOs in certain catastrophes, there are still few research studies providing an overall landscape of Chinese CSOs that work in DRR. This study aims to comprehensively analyze the development, roles, and challenges of Chinese DRR CSOs, particularly following the transformative impact of the 2008 Wenchuan Earthquake. The research objectives are fourfold: First, to examine the evolving role of Chinese DRR CSOs within national policy frameworks, tracing their integration into China's top-down disaster governance system; second, to assess the operational capacities of these organizations, including their technological innovations, grass-roots mobilization, and participation across disaster phases (prevention, response, and recovery); third, to identify systemic challenges hindering sustainable development, such as fragmented collaboration mechanisms, reliance on informal networks, and limited international engagement; and finally, the study provides evidence-based recommendations for enhancing DRR investments and fostering multi-stakeholder collaborations.

2. Data and Methods

2.1. Review of Policies and Strategies

This research employs a qualitative approach by analyzing international agendas and national policies as primary sources for examining the policy development of CSOs in China's DRR framework (Table 1). The international frameworks on disaster management and disaster risk reduction released by the United Nations, which were adopted by member states worldwide, serve as international benchmarks for understanding global trends in CSO involvement in disaster risk reduction. The national strategies and government documents provide insight into China's regulatory and institutional landscape for CSOs. The national strategies are mainly the five-year disaster management plans launched by the General Office of the State Council of the PRC, which serve as the basic policies. The government documents are mainly the guidelines launched by ministries that are in charge of DRR-related issues.

Table 1. International and national policies and strategies.

UN Agenda for DRR	National Strategies	Government Documents
Yokohama Strategy and Plan of Action for a Safer World (1994)	Disaster Reduction Plan of the People's Republic of China (1998–2010).	Guiding Opinions of the Ministry of Civil Affairs on Supporting and Guiding Social Forces to Participate in Disaster Relief Work (2015)
Hyogo Framework for Action 2005–2014	National 11th Five-Year Plan for Comprehensive Disaster Prevention and Mitigation (2006–2010)	Opinions of the Central Committee of the Communist Party of China and the State Council on Promoting the Reform of the System and Mechanism for Disaster Prevention, Mitigation and Relief (2016)
Sendai Framework for Disaster Risk Reduction 2015–2030	National Comprehensive Disaster Prevention and Mitigation Planning (2011–2015).	Opinions on Further Promoting the Healthy Development of Social Emergency Response Forces (2022)
	National Comprehensive Disaster Prevention and Mitigation Plan (2016–2020).	
	The 14th Five-Year Plan for Comprehensive Disaster Risk Reduction (2021–2025)	

2.2. Review of Academic Literature

To analyze the capacity in DRR of Chinese CSOs, a PRISMA process was adopted to review academic research articles that provide cases or overall landscape reviews. The literature will be examined to answer the following questions (Table 2).

Table 2. Questions for selecting literature.

Questions	Content
What are the working domains of Chinese DRR CSOs?	• Types of hazards • Phase of disaster management: Prevention, Preparedness, Response, and Recovery • Disaster Risk Reduction and Sustainable Goals • International cooperation • Technology innovations
What are the challenges of the development of Chinese DRR CSOs?	• Capacity • Mechanism

The papers in English were searched and obtained from Web of Science (<https://webofscience.clarivate.cn/wos/woscc/summary/588aec18-65b9-421d-a276-7765ccb0cfcf-0157f16f31/relevance/1> (accessed on 22 March 2025)). The papers in Chinese were searched

and obtained from CNKI. To ensure the largest number of records was identified for further selection, the query that was conducted in each database was set more inclusively, as presented in Appendix A.

In order to ensure the suitability of the literature for this research, the records of both databases were screened by title and topic to delete the papers that (1) only mentioned China in the paper instead of illustrating Chinese cases, and (2) only mentioned CSOs in the paper instead of illustrating CSO cases. The literature review revealed limited evidence concerning organizations based in Hong Kong SAR or Macao SAR. To ensure methodological consistency with the sources identified through the literature review, a case from Taiwan was excluded because its disaster management system operates under a distinct legal and institutional context. Therefore, 62 studies met the inclusion criteria based on relevance, credibility, and explicit discussion of CSOs' roles in DRR, with the primary foci being CSOs registered in mainland China.

To ensure completeness, 9 additional studies were incorporated through citation tracking, and 1 presentation from an expert workshop was selected as it provided comprehensive information that was not yet represented in peer-reviewed publications. The cases were finally obtained to support this literature review (Figure 3).

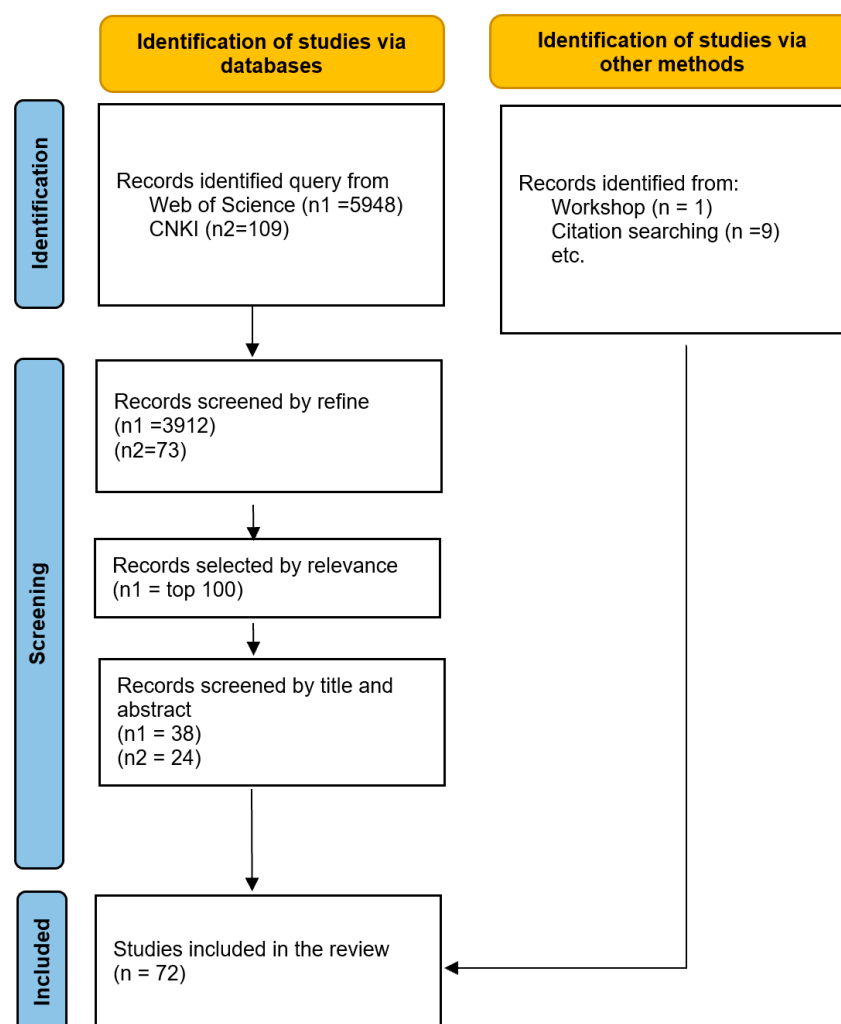


Figure 3. The PRISMA flow diagram for the literature review.

3. The Policy Support and Development of DRR CSOs

3.1. The International Frameworks Shaping the Development of DRR CSOs

In the Yokohama Strategy and Plan of Action for a Safer World (1994), the roles of CSOs and the policy recommendations were reflected in the paragraphs of the Yokohama Message, Principles, and Plan of Action. In the context, the term “Non-governmental Organizations” was adopted. In the Hyogo Framework for Action (2005–2014), the roles of CSOs and policy recommendations were reflected in the paragraphs on implementation and follow-up. The term “Civil Society” was adopted. In the Sendai Framework for Disaster Risk Reduction 2015–2030, the roles of CSOs and the policy recommendations were reflected in the paragraphs on Hyogo lessons, national level action recommendations of Priority 1, understanding disaster risk, and Priority 2, strengthening disaster risk governance to manage disaster risk, and the role of stakeholders. The terms “civil society organizations” and “civil society” were adopted. Meanwhile, a group of actors was identified as the civil society. The roles regarding the policy guidance for CSOs implicated in the UN agendas are summarized as shown in Table 3.

Table 3. The roles and policy guidance for CSOs in the UN DRR agendas.

International Consensus	Role of CSOs	Support/Guidance	Integration into Governance
Yokohama Strategy and Plan of Action for a Safer World (1994)	Identified as a <i>consultative</i> body, focused on community participation and knowledge sharing.	Offer <i>limited</i> guidance, relying on governments to involve civil society.	Approached civil society as an <i>auxiliary</i> to state-driven processes.
Hyogo Framework for Action 2005–2014	Formalized the <i>partnership</i> role, emphasizing active implementation and advocacy.	<i>Urge</i> governments to empower civil society through capacity building, resource allocation, and training.	Recognized civil society as <i>co-implementers</i> alongside governments.
Sendai Framework for Disaster Risk Reduction 2015–2030	Elevated to a <i>strategic</i> role, with responsibilities in policy-making, monitoring, and advocacy.	<i>Institutionalize</i> support mechanisms, including financial aid, technical assistance, and systemic integration of civil society into governance structures.	Positioned civil society as a <i>core participant</i> in global disaster governance.

Overall, across the three UN disaster risk reduction frameworks—the Yokohama Strategy (1994), the Hyogo Framework for Action (2005–2014), and the Sendai Framework (2015–2030)—the recognized roles of civil society organizations (CSOs) have expanded markedly, evolving from supportive participants to strategic partners in disaster governance. This progression provides the basis for the comparative analysis summarized below. The Yokohama Strategy identified civil society as a consultative body, primarily focused on community participation and knowledge sharing. The Hyogo Framework formalized civil society’s role as an active partner, emphasizing its involvement in implemen-

tation and advocacy. The Sendai Framework further elevated civil society to a strategic role, assigning responsibilities in policy-making, monitoring, and advocacy.

Support mechanisms for CSOs have also strengthened across these frameworks. The Yokohama Strategy provided limited guidance, relying on governments to engage civil society at their discretion. The Hyogo Framework introduced capacity-building initiatives that fostered partnerships and enhanced resource allocation for CSOs. The Sendai Framework institutionalized these support systems by integrating financial aid, technical assistance, and structured involvement of civil society into governance frameworks.

Integration into governance structures has also evolved. The Yokohama Strategy positioned civil society as an auxiliary to state-driven processes. The Hyogo Framework recognized CSOs as co-implementers working alongside governments. The Sendai Framework positioned CSOs as core participants in global disaster governance, bridging local and national efforts with international frameworks. This progressive shift reflects the increasing recognition of CSOs as key stakeholders in disaster risk reduction.

3.2. *The National Policy Development in China*

3.2.1. The Related Paragraphs in the National Policies

In the Disaster Reduction Plan of the People's Republic of China (1998–2010) (https://www.gd.gov.cn/zwgk/gongbao/1998/20/content/post_3359181.html (accessed on 22 March 2025)), the CSOs were reflected in social actions. The term “social organization (shehui tuanti, 社会团体)” was adopted. This strategy encouraged the social organizations to participate extensively in disaster reduction work. In the National 11th Five-Year Plan for Comprehensive Disaster Reduction (2006–2010) (https://www.gov.cn/gongbao/content/2007/content_764165.htm (accessed on 22 March 2025)), the role of CSOs and the policy recommendations were reflected in the main tasks of strengthening the capacity building of national emergency rescue and the major projects of strengthening the cultivation and development of professional teams. The terms “civil society organization (minjian tuanti, 民间团体)” and “social welfare organization (shehui gongyi zuzhi, 社会公益组织)” were adopted. The work scope of CSOs indicated in this strategy covered disaster prevention, emergency relief, disaster relief donations, medical assistance, health and epidemic prevention, recovery and reconstruction, and post-disaster psychological support. The volunteer services were also highlighted. In the National Comprehensive Disaster Prevention and Mitigation Plan (2011–2015) (https://www.gov.cn/zwgk/2011-12/08/content_2015178.htm (accessed on 22 March 2025)), the roles of CSOs and policy recommendations were reflected in the capacity building of social mobilization for disaster prevention and mitigation. The term “social organization (shehui zuzhi, 社会组织)” was adopted. It was recommended that smooth channels for social participation should be established to form a good atmosphere for the active participation of the whole society. Meanwhile, it also advocated providing DRR knowledge and skills for CSOs and volunteers. In the National Comprehensive Disaster Risk Reduction Plan (2016–2020) (https://www.gov.cn/gongbao/content/2017/content_5165781.htm (accessed on 22 March 2025)), the roles of CSOs and policy recommendations were reflected in the basic principles of stakeholders' engagement and the main tasks of disaster management. The term “social force (shehui liliang, 社会力量)” was adopted. It is required to improve the mobilization and coordination mechanisms for the engagement of CSOs and accelerate the related research. In the 14th Five-Year Plan for Comprehensive Disaster Risk Reduction (2021–2025) (https://www.mem.gov.cn/gk/zfxxgkpt/fdzdggknr/202207/t20220721_418698.shtml (accessed on 22 March 2025)), the roles of CSOs and policy recommendations were illustrated in the basic principles of stakeholders' engagement, of which the main task was the establishment of systems and mechanisms. The terms “mass organization (quntuan zuzhi, 群团组织)”, “social force”, and

“social organizations” were adopted. In this strategy, CSOs are encouraged to participate in the practices of risk assessment, early-warning systems, and risk management. The professional training for CSOs, especially for the rescue teams, is emphasized.

3.2.2. The Development of Roles and Policy Guidance for CSOs Implicated in the National Policies

China’s policies toward CSOs have evolved significantly over the years. From 1998 to 2010, the government focused on regulating social organizations and encouraging their participation in disaster relief. The 2011–2015 plan emphasized the professionalization and training of CSOs, allowing them to play a more active role in disaster governance. In the 2016–2020 Plan, policies aimed at strengthening governance, transparency, and resource allocation for CSOs were introduced. The 2021–2025 plan marked the integration of CSOs into national emergency management systems, recognizing them as key players in disaster response and community resilience. The development trends can be summarized in the following aspects: gradual relaxation of regulation and increased support; expanded functional roles; strengthened accountability and transparency; and integration into national governance.

The following stages were categorized according to the implementation periods of each national disaster reduction strategy. It should be noted that the first stage is defined as 1998–2005, rather than extending to 2010 as in the original national plan, because the 2006–2010 strategy was issued before the completion of the earlier plan. This adjustment ensures that each stage corresponds to a distinct policy cycle and reflects the actual sequence of national DRR planning in China.

1998–2005: Establishing Regulatory Frameworks. The early stage of social organization development in China primarily focused on regulation and framework establishment. Policies emphasized strict registration requirements and government oversight to align social organizations with national interests while encouraging their participation in public welfare.

2006–2010: Expanding Social Organization Roles. Policies during this period broadened the role of social organizations, encouraging their involvement in disaster relief, education, and poverty alleviation. The government promoted collaboration between public institutions and social organizations, fostering a resource-complementary service mechanism. While supporting these organizations, the policies also reinforced the necessity for compliance with laws and standardized operations.

2011–2015: Professionalization and Independence. The 2011–2015 plan emphasized the professionalization and independence of social organizations. A direct registration system was introduced, lowering entry barriers for public welfare organizations, community service groups, and industry associations. Additional support was provided for training and development, empowering social organizations to play an active role in cultural construction, economic development, and grassroots governance.

2016–2020: Capacity Building and Governance Integration. This phase focused on strengthening governance structures and integrating social organizations into the national governance system. Financial support and policy incentives were introduced to enhance the operational capacity of public welfare organizations. Emphasis was placed on transparency, standardized management, and expanding the role of social organizations in public services, community governance, and social innovation, while maintaining strict supervision.

2021–2025: Social Forces in Emergency Management. The most recent policy framework highlights the importance of social forces in emergency management. It encourages volunteer groups and social organizations to participate in disaster prevention, response, and recovery. Collaboration mechanisms between government agencies and grassroots

social forces have been established, promoting professionalized emergency training and mobilization. The integration of social resources aims to improve the efficiency and effectiveness of emergency rescue efforts.

Apart from the national strategies analyzed above, it should be noted that the launch of the national Charity Law in 2016 and its revision in 2018 brought impacts to the format and working domain of CSOs. The decline in registered non-commercial enterprises and foundations since 2018, as presented in Figures 1 and 2, does not necessarily indicate a contraction of civil society activity but reflects stricter administrative registration and regulatory consolidation following this law. Many organizations were reclassified or merged into broader social service categories. This trend highlights the dynamic nature of China's regulatory environment and the ongoing balance between supervision and participation.

3.3. Comparison of International and National Policy Development

The UNDRR frameworks progressively expanded the role of CSOs from consultative participants to strategic actors in disaster governance. These frameworks provided increasing levels of policy support, institutionalization, and integration of CSOs into DRR strategies. Over time, international policies emphasized capacity building, financial support, and active participation of CSOs in disaster management and governance.

On the national level, China's policies have followed a trajectory of gradual integration and institutionalization of CSOs. The early plan (1998–2010) primarily focused on regulation and oversight, ensuring CSOs aligned with national interests. By 2011–2015, policies shifted toward professionalization, allowing CSOs to take on more independent roles while maintaining government supervision. The 2016–2020 plan introduced capacity-building initiatives, financial support, and governance frameworks to integrate CSOs into national disaster management systems. The most recent plan (2021–2025) highlighted CSOs as crucial partners in emergency response, resource mobilization, and community resilience.

Despite these similarities, a key difference remains in the level of autonomy and institutional support. International frameworks advocate for greater CSO independence and multi-stakeholder governance, whereas China's national policies maintain a strong government-led approach, ensuring CSOs operate within a state-supervised structure. While both frameworks recognize the importance of CSOs in disaster risk reduction, China's policy development reflects a more controlled and state-managed integration process compared to the broader participatory approach seen in international policies. Table 4 presents the overall comparison.

Table 4. Comparison of international and national policy development.

Dimension	International Frameworks	China's National Plans	Key Observations
Policy Orientation	Gradual shift from disaster response (Yokohama, 1994) to proactive risk governance and resilience-building (Sendai, 2015).	Transition from regulatory control (1998–2010) to active state–society partnership in DRR (2021–2025).	Both systems evolved toward comprehensive risk management; China mirrors global trends, but within a government-led structure

Table 4. Cont.

Dimension	International Frameworks	China's National Plans	Key Observations
Role of CSOs	Yokohama: consultative role; Hyogo: implementing partner; Sendai: strategic stakeholder with policy and advocacy responsibilities.	1998–2010: restricted participation in relief; 2011–2015: volunteerization and capacity building; 2016–2025: institutionalized as “social forces” in emergency response and recovery.	China's policies increasingly acknowledge CSOs but still emphasize coordination under government leadership.
Support and Capacity-Building Mechanisms	Progressive inclusion of financial, technical, and educational support for CSOs (Hyogo and Sendai).	Introduction of government procurement of social services (2016–2020) and professional training of social emergency forces (2021–2025).	China's mechanisms echo Sendai priorities but remain state-managed rather than independent.
Integration into Governance	Encourages multi-stakeholder, decentralized governance; promotes autonomy and accountability of CSOs.	Integrates CSOs into hierarchical DRR governance through Five-Year Plans, ministerial guidelines, and emergency management platforms.	Integration achieved, but autonomy limited — participation primarily consultative and operational.
Governance Philosophy	“All-of-society” and participatory approach to resilience.	“Led by government, participated by society” principle in all DRR plans.	Shared goal of inclusiveness, but China emphasizes top-down coordination.

4. The DRR Working Areas and the Development of Chinese CSOs

The working areas and the development patterns of Chinese CSOs in the field of DRR were analyzed and synthesized based on the 73 academic papers and gray literature identified in Section 2. The analysis of working domains focuses on three dimensions: the hazard types addressed, the different phases of disaster management in which CSOs are engaged, and the broader thematic domains of DRR reflected in their activities. The development of CSOs is mainly illustrated through their increasing participation in international activities and the adoption of emerging technologies that enhance their coordination, information-sharing, and resilience-building.

4.1. Working Domains

4.1.1. Focusing on Response and Recovery of Natural Hazard Events

In China, the engagement of civil society organizations in disaster response of natural hazards has a very long history since ancient China [8]. The literature reflected significant and diverse efforts of Chinese CSOs in disaster events in recent years. Table 5 clusters selected cases in this research based on the hazard glossary. Table 6 clusters selected cases in this research based on the different phases of disaster management and the overall disaster risk governance and reduction.

The glossary combines the IRDR 2014 peril classification and ISC-UNDRR 2021 Hazard Information Profiles to reflect the newly emerging hazard types, especially the biological, technical, and chemical ones [9,10]. Meanwhile, the disaster events defined in the most recently published Emergency Response Law of the People’s Republic of China (https://www.gov.cn/yaowen/liebiao/202406/content_6960130.htm (accessed on 22 March 2025)) refer to the ones caused by natural hazards, accidents, public health, and social security. This definition aligns with the international guidelines. It should be noted that Chinese CSOs have started to work on the new hazard types beyond traditional natural hazards.

The most concerning hazard is earthquakes. Earthquakes with a magnitude exceeding 7.0 frequently involve the participation of numerous CSOs in disaster rescue, relief, and recovery. The cases mainly focused on the 2008 Wenchuan Earthquake, 2010 Yushu Earthquake, 2013 Lushan Earthquake, and 2017 Jiuzhaigou Earthquake. Some cases also addressed the 2023 Jishishan Earthquake and 2014 Ludian Earthquake.

The most engaged phases of disaster management among Chinese CSOs are emergency response, risk governance, and capacity building. During emergencies, search-and-rescue and relief operations are primarily led by professional volunteer teams such as Blue Sky Rescue, while foundations like the One Foundation coordinate public donations and distribute supplies in collaboration with local authorities. In the areas of risk governance and capacity building, CSOs contribute by establishing collaborative networks and information-sharing mechanisms that enhance coordination among the government, NGOs, and communities. Organizations such as the Zhuoming Disaster Information Service Center have developed digital platforms to support data exchange during emergencies. In addition, some CSOs provide disaster education and community training to raise public awareness and strengthen social resilience. These practices reflect how state policies that promote “government leadership and social participation” have guided CSOs to align their operations with national DRR objectives while gradually professionalizing their internal management and partnerships.

Table 5. Types of hazards that Chinese CSOs provided services to.

Glossary of Hazards	Hazard Perils with Cases
Geophysical	Earthquake [11–20]
Hydrological	• Flood and extreme precipitation [21–25] • Landslide [26]
Meteorological	Typhoon [27,28]
Climatological	Drought [29]
Biological	COVID-19 pandemic [30–32]
Environmental	Waste [33]
Chemical	Chemical accidents [34]
Technical	Flood-related Natech [35]

Table 6. The phase of disaster management and DRR activities that Chinese CSOs engage in.

Phase of Disaster Management and DRR	Cases
Prevention	[36]
Emergency Response (Rescue and relief)	[11,15,20,22,24,26–28,34,37–39]
Reconstruction and Recovery	[16,18,40–46]
Risk Governance and Capacity Building	[4,19,21,23,30,47–54]

4.1.2. Coherence of DRR, CCA, and SDGs

With the commencement of the Sendai Framework, 2030 Agenda, and Paris Agreement, the coherence of disaster risk reduction (DRR), climate change adaptation (CCA), and sustainable development goals (SDGs) was gradually known and accepted by civil societies. The Chinese CSOs, who work in domains such as public health, ecosystems, agriculture and fisheries, and clean water, started to include the concept of disaster risk reduction in their activities, or committed to their activities serving as DRR solutions.

CSOs are active and play mature roles in the environment-related domain. They participated in the public–private partnership project to protect marine environments and resources [55], engaged in environmental governance [56,57] and water governance [58], and supported the carbon neutrality targets [59]. They are also involved in the climate policy-making process, as they are notably beneficial to the endeavor in terms of increasing transparency, representing otherwise marginalized interests, and providing skills and knowledge relevant to problem-solving [60].

4.2. Engaging in International Activities and Events

It was believed that the first substantial international humanitarian activity by Chinese NGOs was in response to the 2004 earthquake and tsunami in the Indian Ocean [61]. The 2015 Gorkha earthquake marked a milestone for the increasing international participation of Chinese NGOs [61]. Dozens of Chinese NGOs participated in the disaster response, such as search-and-rescue (SAR), maps, relief delivery, and even long-term recovery and reconstruction. The types of NGOs included SAR teams, charity foundations, and other community-based NGOs. They worked not only with local NGOs but also with international organizations and UN agencies, learning from this valuable experience for both domestic and international efforts afterwards. Due to the collaboration mechanism of China–ASEAN and the Belt and Road Initiative, Chinese CSOs are active in ASEAN countries and the Belt and Road region [62,63]. After 2015, Chinese NGOs have been providing humanitarian responses in major disaster events in more than 20 countries (Table 7).

Despite the humanitarian aid, the Chinese NGOs started to play leading roles in the international DRR collaboration and activities. The Peaceland Foundation is recognized as one of the most active NGOs for extending Chinese civil society’s participation to international humanitarian operations, as repeatedly documented in the literature. Founded in 2018, the newly formed Peaceland Foundation positions itself as a Chinese NGO focusing on international humanitarian aid and disaster relief. It works with the national authorities, science stakeholders, and other NGOs to initiate international projects and create a systematic and sustainable training mechanism. For example, in 2024, the Peaceland Foundation and the Ministry of Emergency Management of China, Beijing Normal University, initiated the “Hands in Hands” forum to provide emergency response capacity training and rescue skills training [63]. The Peaceland Foundation also co-organized sessions at the biggest international humanitarian event, Humanitarian Networks and Partnerships Week (HNPW), since 2023, presenting the experience of Chinese CSOs and their commitment to humanitarian actions and global initiatives (<http://en.peaceland.org.cn/article/87> (accessed on 22 March 2025)).

Table 7. International humanitarian responses provided by Chinese NGOs (revised from [64]). F. for foundation, and R. for rescue team.

When	Where	Hazard/Context	Who	What
2016	Yunnan border with Myanmar	Conflict migrants	Blue Sky Rescue (BSR) (Dehong)	Shelter, Camp Coordination, and Camp Management (CCCM)
	Ecuador	Earthquake	Amity F., China Foundation for Rural Development (CFPA), Pearl R., Ramunion R.	Emergency management (EM), assessment, and shelter
	Italy Haiti	Earthquake Hurricane	Ramunion R. Pearl R.	Search and rescue (SAR) EM
2017	Ethiopia	Drought	Amity F.	Water, Sanitation, and Hygiene (WASH)
	Sri Lanka	Flood	Amity F., BB. BSR, China Merchant F.	EM, WASH, and early recovery
	Iran	Earthquake	Union ad hoc (BJR, Shenzhen R.)	Assessment
2018	Laos	Flood	At least 9 rescue teams	Evacuation, EM, and aid distribution
	Philippines	Typhoon	Amity F.	Food, WASH
	Uganda	Refugee	CFPA	Livelihood, Education
	Indonesia	Earthquake	BSR, Peaceland F., Shenzhen R.	WASH, and EM
2019	Mozambique, Zimbabwe	Hurricane	Ramunion R., Peaceland F., BJR	EM, WASH
	Iran	Flood	Peaceland F.	WASH
	Sri Lanka	Explosion	Peaceland F.	Health
	Kenya, Cameroon, South Sudan	Refugee	Amity F.	Food, CCCM, and WASH
2020	Cambodia	COVID-19	BSR	Disinfection, capacity building
	Ethiopia, Kenya	COVID-19	Amity F.	Food, WASH
2021	Afghanistan	Food insecurity	Peaceland F.	Food
	Ethiopia, Kenya	COVID-19	Amity F.	Food
2022	Nepal	Flood	CFPA	Food, CCCM

4.3. Embracing Technologies and Innovations

The extensive application of web-based information and communication technologies (ICTs) and cyber crowdsourcing has become a signature feature of Chinese CSOs' disaster management efforts [37]. A mix of conventional and interactive digital tools—SMS, email, blogs, forums, instant messaging, and social media—played a key role in facilitating resource mobilization and cross-group coordination. Among social media, WeChat is a classic app and platform utilized by CSOs for action-oriented communication [65]. WeChat's interactive features and closed-network dynamics facilitated targeted outreach, enabling CSOs to convert informed audiences into active participants, and thus enhancing civic engagement in environmental governance through strategic digital communication. During the 2021 Henan extreme precipitation disaster, Online Collaborative Documents (OCDs) were adopted by NGOs and volunteers [22]. The OCD, a digital platform enabling real-time multi-user editing, aggregated fragmented distress signals from social media into a structured database, facilitating efficient resource matching. It provides benefits in enhanc-

ing emergency response efficiency, reducing bureaucratic coordination costs, and empowering public participation through self-regulation.

Among the literature reflecting this phenomenon, the Zhuoming Disaster Information Service Centre is frequently cited as a pioneer and represents a new form of CSOs enabled by Web 2.0 technologies [32,37]. The Zhuoming Disaster Information Service is a volunteer organization that specializes in disaster information, helping connect disaster relief resources and promoting disaster relief efficiency. In disaster response efforts, social media such as QQ and Wechat are adopted for action-oriented communications, online meeting apps such as Tencent Meeting are utilized for discussion and public awareness, and online collaborative tools such as Shimo, Tencent Document, Wechat mini-program of Tencent Map [66], and Google Maps to enable volunteers to work together and provide products.

5. Discussion and Recommendations

5.1. *The Challenge of Development*

5.1.1. CSOs' Participation in Diverse Aspects of DRR Efforts

Learning from international experiences, civil society organizations (CSOs) can play multiple roles across all stages of DRR, given the different governance models and policy environments. The literature has proved that CSOs in countries such as Japan, Iran, Vietnam, Indonesia, the Philippines, and India are fully engaged in integrated DRR practices, including quality buildings and infrastructures, knowledge and education, research and advocacy, coordination for different stakeholders, risk and need assessment, and local capacity building [67]. These international models demonstrate that mature DRR systems recognize CSOs as strategic partners with diversified functions. They operate through institutionalized collaboration, sustained funding, and inclusive decision-making. For example, through community-based education [68], dissemination of risk information, and participation in early-warning communication chains [69], CSOs help reduce risk by improving risk awareness and enabling informed decision-making. By identifying the most vulnerable groups (e.g., children, the elderly, and migrants) and facilitating relocation planning or temporary shelter support, CSOs can reduce exposure during emergencies [70]. Finally, CSOs play a significant role in building resilience by supporting long-term community preparedness [71], developing volunteer networks [72], promoting social cohesion, and creating mechanisms for multi-actor collaboration [73]. These functions demonstrate that CSOs are not merely responders but play a crucial part in shaping the underlying determinants of risk reduction.

In contrast, as was the implication from the 2021–2025 national policy, CSOs were encouraged to work in the area of emergency response, such as relief and short-term recovery. A rapid and significant increase in CSOs working in rescue and emergency response was also observed, according to the quantified analyses of registered organizations [7]. This limited diversity reflects structural constraints, including hierarchical coordination mechanisms and uneven professional capacity.

Some NGOs had explored evolving their strategies and expanding their work patterns with the experience gained from participation in various disasters. For example, the One Foundation (TOF), which is one of the biggest foundations in China, provided more knowledge output, conducted more projects, and worked with more stakeholders in the following five years after the Wenchuan Earthquake (Figure 4). However, it should be noted that emergency response is only one node of the disaster management chain, and DRR is more than emergency response. Expanding the scope of Chinese CSOs to include community-based risk education, preparedness training, and long-term resilience programs could strengthen alignment with the Sendai Framework's four priority areas (Table 8) and enhance the Chinese CSOs' capabilities and sustainability.

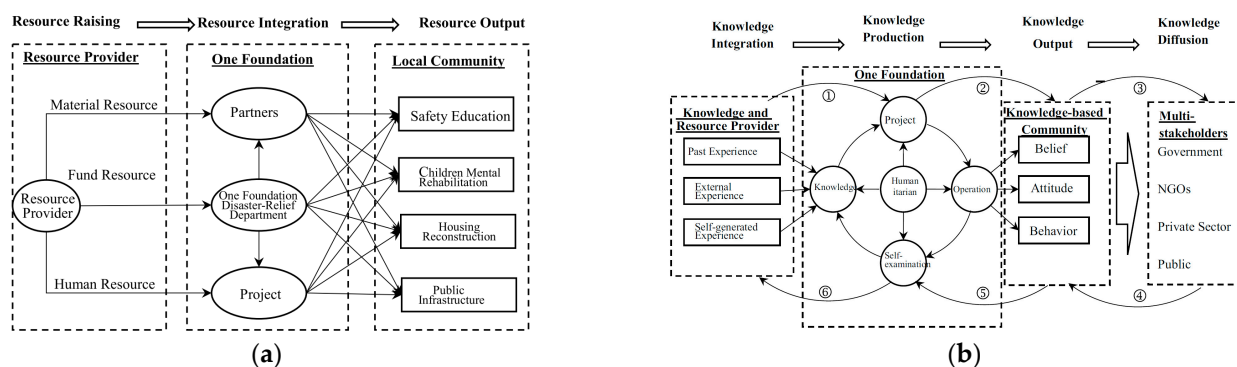


Figure 4. The strategy of TOF participating in post-disaster community reconstruction in the 2008 Wenchuan Earthquake (a) and 2013 Lushan Earthquake (b) [41].

Table 8. CSOs’ implementation of the Sendai Framework, revised from [5].

Priority Actions	What CSOs Can Do
Priority 1. Understanding disaster risk	- Promotion of inclusive baseline risk assessment that ensures inclusion of marginal groups in risk assessment and planning - Disaster education - Raise risk awareness through social media and other cultural media - Incentivize local government officials to allocate re-sources in DRR
Priority 2. Strengthening disaster risk governance	- Building local capacities to monitor disaster risk and help local governments to be accountable for disaster risk budgeting - Help strengthen coordination forums composed of relevant stakeholders at the national and local levels - Foster collaboration across global and regional mechanisms and institutions for the implementation and coherence of instruments and tools relevant to DRR
Priority 3. Investing in DRR for resilience	- Promotion of the private sector’s responsibility in disaster reduction - Working with local governments and insurance to promote disaster insurance in developing countries
Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction	- Capacity building of local NGOs to play effective roles in local DRR platforms - Promotion of sustainable disaster recovery and rehabilitation - Help the local government train existing workforce and voluntary workers in disaster response, and strengthen technical and logistical capacities to en-sure better response in emergencies

Meanwhile, the “going out” of Chinese NGOs was still in its infancy [74]. Limited scales of funding and challenges of professional talents were the main barriers to Chinese NGOs working internationally and generating international impacts. The number of Chi-

nese NGOs that work internationally remains small. And this phenomenon could be further reflected in that few papers provided such cases.

5.1.2. Government–CSO Collaboration and CSO–CSO Collaboration

The collaboration between CSOs themselves and between government agencies and NGOs remains challenged. Similar discussions on the dilemma of NGOs participating in emergency response were raised after the 2008 Wenchuan Earthquake, highlighting the central problem with the collaboration mechanisms [75–77].

It is believed that in the 2013 Lushan Earthquake, mechanisms were explored with a process achieved. After the Lushan Earthquake, the “joint mission” mechanism was preferred by CSOs in disaster relief efforts. The temperate emergency response networks are often established based on the task-driven collaboration in earthquake emergencies [78–80]. The emergence of “self-organized cooperation” networks, which are initiated by foundations or government-organized social organizations, ensures efficiency and smooths the collaboration [81,82]. The leading CSOs in this type of network play a vital role in mobilizing network participants, standardizing operational mechanisms, and achieving collaborative goals. For example, One Foundation established coordination networks to coordinate the local NGOs and facilitate the resources for disaster relief efforts [83].

However, such a mechanism has its own limitations due to its vulnerability to external policy shifts, weak internal governance, and reliance on informal coordination [6]. Lack of institutionalized structures, transparency, and accountability fosters distrust, misinformation, and fragmented efforts among member organizations. Ideological divergences and leadership conflicts further exacerbate instability, often leading to coalition dissolution under pressure.

Consequently, some necessary factors should be considered to ensure the sustainability of these mechanisms. As stated in the national policy document, the basic principle for multi-stakeholders’ engagement is “led by the government, participated by the society.” Therefore, the CSOs, especially the leading ones in the network, should build cooperative relationships with government agencies [46,84]. The leading CSOs in a network should also play the bridging roles between government agencies and CSOs in order to assist the CSOs in the mutuality and identity dimensions [85]. Furthermore, professional capacities are required to gain the trust and accountability of the public and the government agencies [12,27,86].

5.2. The Recommendations in DRR Education for Chinese CSOs

In order to face the challenge of the changing risk landscape and diverse working areas of DRR, it is important to enhance the capacity building of the Chinese CSOs. One of the most crucial aspects is education, which plays a fundamental role in improving disaster preparedness, response, and governance. Educational efforts should focus on four key areas: understanding risk, developing skills and knowledge in relevant technologies, increasing awareness of DRR policies and organizational frameworks, and strengthening collaboration mechanisms.

Understanding the Risk. A comprehensive understanding of disaster risks is essential for CSOs to develop effective strategies and interventions. Education programs should incorporate risk assessment training, scenario planning, and historical analysis of past disasters. CSOs must be equipped with the ability to identify vulnerabilities and anticipate potential risks to reduce their impact proactively. This will ensure that organizations can provide evidence-based recommendations and implement targeted measures that reduce disaster-related damage and loss.

Skills and Knowledge of Technologies. The increasing role of technology in DRR highlights the need for CSOs to develop technical expertise. Training in geographic information systems (GIS), early-warning systems, data analysis, and digital communication tools can significantly enhance the ability of CSOs to respond effectively to disasters. Furthermore, leveraging artificial intelligence, remote sensing, and real-time monitoring technologies can strengthen decision-making processes and disaster response efficiency. Ensuring that CSO personnel are well-versed in these technologies will increase their operational capacity and improve coordination with government agencies and emergency response units.

DRR Policy and the Policy of Organizations. Awareness and understanding of national DRR policies and organizational frameworks are vital for CSOs to operate effectively within China's governance system. CSOs should be educated on the latest disaster risk management policies, including emergency response protocols, legal requirements, and funding mechanisms. Additionally, internal governance policies within CSOs must align with national regulations to ensure compliance and seamless integration into broader disaster management efforts. Policy training and workshops should be conducted to keep CSO personnel informed of evolving regulations and best practices in disaster governance.

The Mechanism of Collaboration and Management. Effective collaboration and management mechanisms are necessary for CSOs to work efficiently with government agencies, private sector partners, and local communities. Training programs should focus on inter-organizational coordination, multi-stakeholder engagement, and strategic partnership building. Establishing clear communication channels and standardized operational procedures will enhance CSOs' ability to respond swiftly and effectively to disasters. Furthermore, strengthening leadership and management training for CSO personnel can help optimize resource allocation, project implementation, and long-term sustainability.

By prioritizing education in these key areas, CSOs in China can enhance their capacity to contribute meaningfully to disaster risk reduction efforts. A well-educated and technologically proficient CSO workforce will enable more effective disaster response, improved policy implementation, and stronger partnerships within national and international disaster management frameworks.

6. Conclusions

The study reveals that Chinese CSOs have become indispensable actors in disaster risk reduction (DRR), evolving from peripheral responders to strategic partners in national disaster governance. Since the 2008 Wenchuan Earthquake, successive policy reforms—aligned with international frameworks like the Sendai Framework—have progressively institutionalized CSOs into China's state-led system. National policies, such as the Five-Year Plans, transitioned from strict regulation (1998–2010) to structured support (2021–2025), enabling CSOs to contribute to disaster preparedness, recovery, and cross-sector collaboration. Chinese CSOs also excel in leveraging digital technologies for resource mobilization and real-time coordination.

Despite these achievements, CSOs' participation remains concentrated in short-term emergency response, with limited engagement in long-term risk governance and international cooperation. Yet challenges persist: Dependency on informal networks, weak institutionalization of partnerships, and restricted autonomy under state supervision hinder sustainability. Internationally, while organizations like the Peaceland Foundation demonstrate growing humanitarian engagement, most Chinese NGOs lack funding, expertise, and global influence compared to their international counterparts. These challenges continue to constrain CSOs' effectiveness and sustainability.

The study also provides recommendations emphasizing four pillars for capacity building: (1) Risk education to enhance disaster preparedness through scenario-based

training; (2) technological upskilling in GIS, AI, and data analytics; (3) policy literacy to align CSO operations with national frameworks; and (4) strengthened collaboration mechanisms via standardized protocols and leadership training.

Ultimately, this study calls for policy reforms to institutionalize CSOs' roles in DRR governance, expand their diverse participation in climate change adaptation and SDG-aligned projects, and foster international partnerships. By addressing these gaps, Chinese CSOs can transition from crisis responders to proactive agents of sustainable resilience, bridging local action with global DRR agendas. Such progress will not only enhance China's disaster governance system but also contribute to accelerating the implementation of the Sendai Framework and Sustainable Development Goals, especially SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action), through inclusive, multi-stakeholder participation. This study, therefore, contributes to the field of sustainability by demonstrating how civil society participation enhances the social and institutional dimensions of resilience, promotes inclusive governance, and supports long-term pathways toward sustainable development in China and beyond.

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Appendix A

To maintain conciseness in the main text, the detailed search queries and keyword combinations originally presented in Section 2.2 are provided here for reference. The inclusion of this appendix ensures methodological transparency while allowing Section 2 to remain focused on summarizing the review process.

The query for WoS was:

Topic: Disaster

AND Topic: Civil Society Organizations OR Non-Governmental Organizations OR Social Organizations

AND Public Date: 12 May 2008 To 31 December 2024

The records of WoS were initially refined based on:

Countries/Regions: Peoples R China

Not Document Types: Proceeding Paper or Retracted Publication or Early Access or Meeting Abstract or Editorial Material or Data Paper or letter or Book Chapters or Book Review

The query for CNKI was:

- Topic: 社会组织 (social organizations) OR 社会力量 (social forces)
- AND Topic: Disaster
- AND Topic: China
- AND after May 2008

The records of CNKI were initially refined to exclude the gray literature, proceeding papers, and editorial material.

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