

Article

Analyzing China's International Rescue Capabilities Through the Türkiye Earthquake

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Abstract: In addition to mutual cooperation between neighboring regions, cross-border (inter-regional) international relief can be effective in the event of a major disaster or accident. According to the Charter of the United Nations, one of the purposes of the United Nations is to promote international cooperation to solve international problems that belong to the nature of international economic, social, cultural and human welfare. For the first time in human history, international aid was embodied because the United Nations helped rebuild the post-war region through international cooperation for the first time on the European continent, which has been devastated since World War II. In modern society, the international community relies on the coordination of the United Nations to provide humanitarian relief (UN) in emergencies caused by natural or man-made disasters in areas beyond the independent capacity of national authorities. The 6 February 2023 earthquake in Turkey killed 59,259 people, 297 missing and 121,704 injured in the region, including Turkey and Syria, one of the strongest earthquakes experienced in at least a century. In this international relief operation, China participated in the post-disaster international relief operation with a total of 440 people, including Chinese rescue teams, ram rescue teams, and blue sky rescue teams. This article will help optimize China's international relief capabilities by analyzing the current status and structural capabilities of China's international relief capabilities (government + private) and structural action processes in the event of a Turkish earthquake.

Keywords: disaster; earthquake; international rescue; humanitarian aid; rescue team

1. Introduction

Through the Fourth Industrial Revolution, human society has entered an unprecedented stage of rapid development. Accepting the convenience and efficiency of development, various risk factors and instability threaten our living environment, that is, risk factors. As a component of risk factors, natural disasters generally represented disasters and extreme climatic times in human living environments. It occurs worldwide, but some areas are more vulnerable to certain disasters than others. If people's lives and plans for life are destroyed, they will become natural disasters.

According to the 2015 United Nations Office for Disaster Risk Reduction (UNISDR) Global Disaster Mitigation Assessment Report, the annual average global loss estimate from building environments related to tropical cyclones, earthquakes, tsunamis and floods was \$314 billion. At the same time, these risks (nature) have become global challenges to the sustainable development agenda. From the perspective of absolute values, the global average annual loss is concentrated in large, high-income, and disaster-prone economies. However, in terms of annual capital investment or social spending, the risks are most concentrated in many low- and middle-income countries, especially small island developing countries (SIDS).

Since 2000, disasters and accidents have been increasingly large, extensive, and

cross-regional, including the Asian SARS Sanitary Crisis (2003), Indian Ocean Tsunami (2004), Hurricane Katrina (2005), and the Wenchuan Earthquake in Sichuan, China (2008). Without exception, the extent, scale, and casualties of these disasters and crises are remarkably high, and the impact of disasters on the region reveals the vulnerability of the region.

In the event of a disaster or accident, if the affected area is much larger than the disaster capacity it can afford, effective lifesaving should be carried out within the "golden time" to provide assistance and external relief capabilities for surviving victims to quickly conduct rescue and search.

In addition to mutual cooperation between neighboring regions, cross-border (inter-regional) international relief can be effective in the event of a major disaster or accident. According to the Charter of the United Nations, one of the purposes of the United Nations is to promote international cooperation to solve international problems that belong to the nature of international economic, social, cultural and human welfare. For the first time in human history, international aid was embodied because the United Nations helped rebuild the post-war region through international cooperation for the first time on the European continent, which has been devastated since World War II. In modern society, the international community relies on the coordination of the United Nations to provide humanitarian relief (UN) in emergencies caused by natural or man-made disasters in areas beyond the independent capacity of national authorities.

The 6 February 2023 earthquake in Turkey killed 59,259 people, 297 missing and 121,704 injured in the region, including Turkey and Syria, one of the strongest earthquakes experienced in at least a century.

The U.N. Procurement Service of India issued a situation overview (Earthquake: Türkiye and North-West Syria Flash Update No. 1 As of 6 February 2023, reliefweb) in Greenwich, with nearly 2,000 reported deaths in Turkey and Syria, with at least 78 aftershocks since. Meanwhile, the Turkish government issued a four-step warning and asked for international aid.

While Turkey is actively operating its own relief forces, international relief forces have also arrived one after another to work on international relief. At the disaster relief site, search and rescue teams from 66 countries, including China, had more than 900 cranes and more than 500,000 temporary accommodations.

In this international relief operation, China participated in the post-disaster international relief operation with a total of 440 people, including Chinese rescue teams, ram rescue teams, and blue sky rescue teams. This article will help optimize China's international relief capabilities by analyzing the current status and structural capabilities of China's international relief capabilities (government + private) and structural action processes in the event of a Turkish earthquake.

1.2. The Purpose of Research

International relief forces are part of the national relief system, and construction and future-oriented social development play a certain role in establishing the entire emergency and crisis management system, ensuring international cooperation, and playing a positive role in regional vulnerability monitoring and regional resilience. At the same time, in the post-disaster rescue process, the life-saving and reconstruction stages of the disaster area are also adjusted according to the current rescue status.

Based on the Turkey-Syria earthquake disaster in early 2023, this study understands the behavior of the Chinese international rescue team, collects papers and literature in related fields, identifies and analyzes the current status of China's international rescue capabilities.

2. Previous research

2.1. Hazard and Disasters

A disaster is a risk event that interacts with the conditions of exposure, vulnerability, and capacity that severely disrupts the functioning of communities or societies of all sizes, resulting in one or more of the human, material, economic and environmental losses and impacts (UNDRR).

The effects of disasters can be immediate and local, but they are often widespread and can last for a long time. Its effects may test or exceed the ability of communities or communities to use their own resources to cope, thus requiring help from external sources that may include neighboring countries or international levels.

Emergency (China: Emergency) is sometimes used in conjunction with the term disaster in the context of biological and technical hazards or health emergencies, but can also be associated with dangerous events that do not cause serious disruption to the functioning of communities or communities.

A disaster occurs during and immediately after a disaster. This is typically measured in physical units (e.g., housing square meters, road kilometers, etc.), and accounts for total or partial destruction of physical assets, disruption of basic services, and damage to the livelihood of affected areas.

A disaster impact is an overall effect, including the negative effects of a hazardous event or disaster (e.g., economic losses) and positive effects (e.g., economic benefits). The term includes economic, human and environmental impacts, and may include death, injury, disease and other negative effects on human physical, mental and social well-being.

According to paragraph 15 of the contents of the Sendai Framework for Disaster Risk Reduction 2015-2030, the terminology for disasters includes the following:

1. Small-scale disaster: A disaster that affects only local communities and requires support outside of the disaster community.

2. Large-scale disaster: A disaster that affects society and requires state or international aid.

3. Frequent and rare disasters: Depending on the probability and duration of occurrence of a given disaster and its impact. The effects of frequent disasters can accumulate or have a long-term impact on the community or society.

4. A slow-onset disaster is defined as a disaster that gradually appears over time. Chronic disasters can be associated with drought, desertification, rising sea levels, and infectious diseases.

5. A sudden-onset disaster is a disaster caused by a rapid or unexpected dangerous event. Sudden disasters may be related to earthquakes, volcanic eruptions, mountain floods, chemical eruptions, major infrastructure failures and transportation accidents.

Disasters are often caused by various natural phenomena such as earthquakes, tsunamis, and hurricanes, and research on these natural phenomena is often called "hazard research." This is a field of study across natural sciences and engineering related to specific social sciences in recent years (National Research Council, 2006).

Currently, there is a mixed situation of words in many research documents, and I think that disasters and disasters are always dependent, that is, natural phenomena cause disasters and cause disasters after disasters have passed. The meaning of a disaster is understood to have been caused by a disaster, and there is a prior relationship between the two. Of course, disasters can also cause disasters. Disasters are generally divided into two types: natural disasters and social disasters, of which social disasters include artificial disasters.

I think the most representative case of disasters caused by disasters in recent decades is the Great East Japan Earthquake Incident(). In other words, a natural phenomenon, an earthquake, caused a tsunami near the sea, and then the tsunami

caused the worst radioactive spill in the history of Japanese disasters in Japan.

Clarke (1999) believes that most disaster response plans are invalid and are 'fictional documents' that cannot be applied to real situations. These disaster response plans are often based on ideal assumptions, such as calm sponges, no scale of disasters exceeding historical records, no other accidents, timely arrival of supplies and respondents, and no traffic or other obstacles.

In Clark's other book, *Worst Cases*, Clark points out that all disasters of the time occurred in worse conditions than ideal conditions, such as a series of disasters (2011) caused by the Great East Japan Earthquake and a huge tsunami off the coast. Clark (2006) believes that the concept of probability is meaningless in disaster issues. Because a disaster is a small probability event, but the consequences of any small probability disaster are enormous and unaffordable. A similar question to what the author mentioned in the disaster prevention class is, "Is it safe to fly or ride a car?" Indeed, there is no exact answer to the problem, which supports Clark's idea that both cars and planes are transportation, there is some risk during boarding, and the risk probability is 50%, but the consequences cannot be predicted in the event of a traffic accident.

2.2. *International humanitarian aid*

Humanitarian aid is a physical or logistical support based on humanitarian aid (in the event of a humanitarian crisis) that aims to save lives, alleviate disadvantaged situations, and maintain human dignity (wiki). The main difference between "humanitarian aid" and "development aid" is that the latter strives to address potential socio-economic factors that can lead to crisis or emergency situations. According to the Charter of the United Nations, one of the purposes of the United Nations is to promote international cooperation to solve international problems that belong to the nature of international economic, social, cultural and human welfare.

Humanitarian aid is provided by government agencies, NGOs and other non-governmental humanitarian agencies in accordance with humanitarian principles. The United Nations Office's Office for Humanitarian Affairs (Humanitarian Procurement) coordinates response to emergencies through a permanent interagency committee. The Interagency Standing Committee includes the main bodies of the United Nations system responsible for providing emergency relief. Major U.N. organizations providing humanitarian aid include UNDP, UNHCR, UNICEF, the World Food Agency, and WHO, among which UNDP, UNHCR, UNICEF and the World Food Program play an important role in relief aid activities.

In recent years, major natural disasters, public health crises, political confrontations, and regional armed conflicts have occurred frequently around the world, bringing new and more complex humanitarian challenges to the world, and global demand for humanitarian aid continues to grow.

According to the 2023 World Humanitarian Situation Overview, released in Geneva by Griffiths, UN Deputy Secretary-General for Humanitarian Affairs, on November 30, 2022, it summarizes current global trends and global humanitarian demand in 2023 and asks member states for funding to ensure the development of international humanitarian measures. The content says that one in 23 people around the world now needs humanitarian aid. In 2023, there will be 339 million people in need of humanitarian aid and protection, a significant increase from 274 million in early 2022, the highest ever. The United Nations and its partner organization must provide \$51.5 billion to the 230 million most in need in 68 countries next year, and demand for funds has increased 25% over 2022. (UN News, Nov. 30, 2022). The demand and scale for humanitarian aid have reached an unprecedented level in human history.

After returning to the permanent seat of the United Nations, China gradually began to integrate into the United Nations humanitarian aid system based on bilateral humanitarian aid, becoming an important beneficiary, participant, and builder (CHENG,

2021). As a beneficiary, China received humanitarian supplies, help and support from the United Nations in the face of extreme disasters. As a participant, China participated in UN humanitarian work as a permanent member, going through three stages of integration, rapid development, and full-scale development, and China's participation in the UN humanitarian aid system is now being further normalized. As a builder, we actively participate and support the stable and effective sustainable development of international humanitarian work. The virtuous cycle is the cornerstone of maintaining the humanitarian partnership between China and the United Nations and maintaining order.

CHENG believes that humanitarian aid is an international public good, and there is no distinction between absolute suppliers and consumers. A country's ability to supply public goods has a certain correlation with its overall national power, but in the face of a sudden humanitarian disaster, strong national power may receive international support for Hurricane Katrina in 2005 and tsunami damage in Japan in 2011. On the other hand, countries with weak national power may be reluctant to provide support outside the country for one reason or another, even if they need support immediately. Disasters, disasters, and crises are often characterized by unpredictability and complexity, and before the 9/11 attacks, the US FEMA's notion of crisis management on the mainland remained at a military security level, and after the 9/11 FEMA expanded the scope of crisis management to a greater level. In other words, it includes all threats and risks that threaten the U.S. mainland. In the face of disasters and disasters that threaten human survival space, the level of national development (developing or advanced countries) is incapable of measuring risk.

China is a country where natural disasters occur frequently, and there are many types of natural disasters, high frequency, high intensity, and widely distributed, so there is a very high demand for structural response, especially the ability to procure relief goods. The U.N. systematic aid could materially and in a timely manner ease China's disaster response pressure, which was marked by the 2008 Wenchuan earthquake.

China's disaster relief mechanisms have been continuously developed and improved with the cooperation of disaster recovery and the United Nations system. In 1950, the State Council (the predecessor of the State Council) officially established the Central Disaster Relief Committee, and on December 11, 1987, the 42nd United Nations General Assembly designated the 1990s as the "10 years of international disaster relief." The main objective is to reduce the loss of life, property and economic disruption caused by disasters through joint efforts by the international community, especially in developing countries. On March 1, 1989, China established the China International Mitigation Committee, which means that China's disaster relief combined disaster relief and mitigation. More importantly, China has begun to work with the international community to improve its deployment of its own relief mechanisms and integrate them into coordinated and consistent global disaster prevention and mitigation plans. At the same time, he changed the closed relief (self-help) paradigm and began to volunteer for international support (international aid) in the event of a disaster. Thanks to cooperation with the UN system and the use of the UN's expertise and cheering equipment, the ability of the Chinese to prevent disasters and support public emergencies has also greatly improved.

In the early days of the COVID-19 outbreak, UN agencies provided specific medical and treatment equipment to China's Hubei epidemic prevention frontline, and when the pandemic blocked international trade logistics, the World Food Program-managed UN Humanitarian Emergency Warehouse and the UN Humanitarian Agency used its own global logistics system.

The United Nations system conducts seminars and training on relevant emergency departments and personnel in China and conducts some rescue training activities. Through various forms of exchange and learning, China can learn the advanced

practices of the international community and the experiences and lessons learned in the process of emergency response in a relatively timely manner. The emergency services team always maintains close contact with the United Nations Office for Coordination of Humanitarian Affairs during construction, and guides and targets the United Nations' norms and standards. In April 2001 and August 2018, China formed a series of China's National Earthquake Disaster Emergency Rescue Team, namely China International Rescue Team and China Rescue Team. Both teams passed the U.N. International Medium Rescue Service's rating and were certified as International Medium Rescue Service. In May 2016, the China International Emergency Medical Team (Shanghai) became one of the world's first international emergency medical teams to pass the WHO's rigorous certification process. On October 23, 2019, two disaster rescue teams from China, the Chinese Rescue Team and the Chinese International Rescue Team, today obtained UN International Heavy Rescue Team qualification through UN International Heavy Rescue Team evaluation and re-examination. It is the first country in Asia to have two certified international relief teams.

2.3. China International Relief and Development

The United Nations International Rescue Team Classification (IEC) is a comprehensive, in-depth, objective, and standardized assessment and verification of the management, protection, search, rescue and medical relief capabilities of international rescue teams. The content of hierarchical evaluation mainly includes two aspects: management coordination and technical skills. Management and coordination evaluations mainly focus on organizational leadership and coordination command capabilities of the units that make up the rescue team, while technical function evaluations mainly focus on the rescue team's ability to perform specific tasks. In other words, the 'INSARAG Directive' divides the international rescue team into three stages: medium, medium and light, and stipulates that only the rescue team that has passed the International IEC evaluation can carry out the international rescue (ZHANG, 2009). The rating assessment divides the international rescue team into three stages: Heavy Rescue Squad, Medium Rescue Squad, and Light Rescue Squad. Heavy rescue teams have the ability to search and rescue collapsed structures, especially steel mixed structures, and to carry out international rescue missions. Through the United Nations-organized evaluation activities, it was qualified for the International Heavy Rescue Team, which became a certificate of access for all international rescue teams to carry out international rescue missions.

The mid-rescue team's evaluation activities are divided into three stages, one is for the rescue team to apply to the UN International Relief Agency, the other is to submit necessary documents, including rescue team management and domestic and international rescue experience, and the third is to conduct more than 36 hours of comprehensive evaluation training. The United Nations dispatches a group of 5-10 experts to conduct the evaluation, and the overall evaluation activity typically lasts for five days. The United Nations has established a strict International Heavy Rescue Assessment Table, including preparations for domestic mobilization, arrival of affected countries, conducting rescue operations, 4 stages of rescue withdrawal, 21 items and 150 criteria, all of which are derived from the International Search and Rescue Guidelines and Methods (INSARAG Guidelines). The China International Rescue Team is currently the 12th in the world and the second in Asia to qualify as an international heavy rescue team.

In response to the earthquake in Turkey, China is sending a national rescue team (Chinese rescue team) and a civilian rescue team (Chinese blue sky rescue team and ram rescue team), which includes Chinese fire rescue team, Chinese emergency search team and hospital medical staff.

China's National Earthquake Disaster Emergency Rescue Team was established on

April 27, 2001 as CISAR, and its main mission is to search and rescue people buried by buildings (structure) collapsing due to earthquake disasters or other unexpected events. The National Earthquake Disaster Emergency Rescue Team is a team of earthquake experts from China's earthquake bureau, the People's Liberation Army's engineering unit, and medical relief personnel from armed police general hospitals. The China International Rescue Team consists of one general, three vice general, and 20-30 general and direct teams. The rescue team is divided into three zones and one direct team, and each zone has about 65 people, with a branch leader and a deputy leader, and a squad under its wing. The three zones consist of a search squad, a rescue squad, a medical squad, a technical squad, and a security squad, and the direct team consists of a staff team, a technical team, and a security team. The equipment is equipped with an editor China International Rescue Team and has over 6,000 rescue equipment and about 20 search dogs in over 300 categories.

The China International Rescue Team consists of 480 people, including management and technical experts from the China Earthquake Bureau, search and rescue workers from the 38th Army Corps of Engineers, and medical personnel at the Armed Police General Hospital. The 2003 Algerian earthquake caused China's international rescue team to leave for the first time on an international relief mission. China's international relief team is closely linked to the United Nations Office for Coordination of Humanitarian Affairs (OCHA), cooperating with China's foreign policy, actively participating in UN humanitarian emergency relief projects such as INSARAG (International Search and Rescue teams from friendly rescue teams such as Switzerland, Singapore, Germany, and the Netherlands. A magnitude 6.2 earthquake struck Algeria on 21 May 2003, making its first appearance on the international rescue stage, searching and discovering one survivor, which has officially been involved in international rescue efforts.

After repeated practice and demonstration, the Chinese international rescue team determined four standardized training criteria (ZHENG, FAN and YANG, 2011).

A. General Skills Training: Search and structural common sense, use of communication equipment, outdoor survival common sense, foreign language training, rescue humanities knowledge, physical training, psychological training

B. Basic Skills Training: Disaster site trauma emergency technology, disaster site test classification technology, cardiopulmonary resuscitation (CRP), organization and command of disaster relief, and use of rescue and medical equipment

C. Special Skills Training: Cutting, burns, frostbite, extrusion syndrome, etc

D. Rescue Synthesis Training: Tent installation, real simulation, remote off-

Since the 2008 Wenchuan earthquake, domestic civilian rescue teams and rescue organizations have developed rapidly, and rescue teams are being established in almost all cities. Beijing, for example, has 16 districts and more than 100 private rescue teams and rescue organizations registered in civil affairs-related departments at various levels, with an average of more than 5 per district and a team application rate exceeding 100%.

In November 2008, almost at the same time as the Beijing Team of China's Blue Sky Rescue Team was established, the Blue Sky Rescue Team established the Blue Sky Rescue Team based on the Blue Sea Outdoor Federation to select excellent members with professional rescue functions. You have to face a very strict technical screening to get into the Blue Sky Rescue. The Beijing squad leader showed a newspaper reporter the required certificates of the three members. 1. National Radio Station Licence, may get used to using wireless communication equipment. 2. It has pre-hospital first aid capabilities such as Red Cross paramedics card, cardiac resuscitation, fracture bandages, and hemostasis. 3. It has the ability to lead the structure of snow mountain above 3,500 meters above sea level with alpine cooperation card. Currently, one in five "Blue Sky Rescue Team" holds the above certificate. There are also professionals such as telecommunications experts, air force pilots, and medical masters, and members with expertise in various fields such as outdoor survival experience, medical relief,

communication technology, geology, animals, and plants. In addition to rescue, the "Blue Sky Rescue Team" should regularly provide first aid knowledge training to the public to ensure communication and rescue for some mountain activities.

2.4. Rescue situation of earthquake disaster in Turkey

At the request of the Turkish government, the Chinese government sent a Chinese rescue team to Turkey for international relief. A Chinese rescue team left Beijing International Airport on a chartered flight on Feb. 7 and headed for the disaster area.

Under the unified deployment, the emergency management dispatched 82 first Chinese rescue teams to the disaster area, mainly consisting of Beijing Fire and Rescue, China Earthquake Emergency Search Center, and emergency general hospital personnel.

After arriving at the local disaster area on 8 February, the rescue team moves to one of the most serious earthquake disasters, Hatai Castle, to carry out search and rescue operations. In the search, rescue teams don't give up all hope to find signs of life. During the rescue mission, a total of 21 deployments and 308 rescue workers were dispatched, and 87 buildings and a total area of more than 700,000 square meters were surveyed, six victims were rescued and 11 victims were searched. On the night of February 16, China sent 82 Chinese rescuers to Turkey for international relief on a chartered plane. The rescue team of the Hong Kong Special Administrative Region of China returned home with a companion.

134 Chinese sky rescue workers arrived in Turkey on Feb. 9 and began an urgent rescue operation.

On February 12, the Blue Sky Rescue Team 2 arrived in Turkey. China's Blue Sky Rescue Team has teamed up with other rescue teams to search for eight survivors and 85 victims as of 12:00 p.m. on Feb. 13, Beijing time.

Compared to the two aforementioned teams, the ram rescue team launched an international rescue response plan at 12 o'clock on February 6 and submitted an agreement to the relevant department and the Turkish consulate in Shanghai, China, and dispatched the first international urban search and rescue team to the Turkish disaster area. The advance team consists of eight earthquake rescue experts with extensive international rescue experience, equipped with advanced radar life probes, dismantling rescue equipment and search and rescue dogs. From the afternoon of February 8 to the night of February 12, Chinese ram rescue teams searched 178 buildings, nine rescue survivors and 15 victims in four cities in Hata Province.

3. Problems and Improvement of International Relief

After the earthquake, global rescue teams rushed to Turkey, and the rescue operation continued until the 16th. According to the United Nations Rescue Coordination Platform, during the rescue operation, international rescue teams rescued 216 survivors and searched for 608 victims. Among them, the Chinese rescue team rescued 35 survivors and searched for 121 victims. In addition to the China Rescue Team, there are also many social rescue teams including the Ram Rescue Team, Shenzhen Public Welfare Rescue Team, Blue Sky Rescue Team, Amity Foundation, Luoyang Tiejun Disaster Relief Educational Aid Team, Shenying Rescue Team, etc. to participate in the rescue.

Qu Guosheng, head coach of the Chinese rescue team and former chief engineer of the China Earthquake Emergency Search and Rescue Center, said that there were six difficulties in the entire international rescue process. One is the high magnitude, with two 7.8-magnitude earthquakes; the other is the serious distribution of earthquake damage along the surface rupture zone of the earthquake, which affects a large area; The distribution of earthquake damage; the fourth is related to the structure of local buildings, that is, the first floor of Turkish buildings is often the ground floor business, garages, etc., and the large bays are easy to cause damage; the fifth is that the building's

anti-seismic fortification capacity is poor, and the local volcanic tuff is used as an example. The construction is mainly made of local materials, and the seismic performance of the buildings is poor. Sixth, the low temperature and snowstorm after the earthquake aggravated the earthquake damage. These have brought varying degrees of impact on rescue work. Since the disaster-stricken areas include Syria and Turkey, avoiding earthquake disasters is also accompanied by terrorist attacks. For example, the Syrian earthquake-stricken areas are constantly fighting and terrorist attacks continue throughout the life-saving stage, which hinders the smooth development of rescue operations in the disaster-stricken areas. The Turkish earthquake was mainly caused by the collapse of high-rise buildings, mainly in the form of pies, which was the main cause of the death of a large number of people in the city. The second 7.8-magnitude earthquake caused large-scale collapse of damaged high-rise buildings again, but the casualties were relatively light. From the information sent back from the earthquake-stricken area, we can see that, first, during the strong earthquake, buildings collapsed shatteredly, leaving no room for the rapid opening of rescue channels, and no room for life to survive. The second is that the local buildings are old, and most of the materials are taken from the local white tuff. The anti-seismic structure and anti-seismic performance of houses built with this material are slightly weak. Therefore, during the collapse of the first earthquake, the ruins of the building formed were almost devastating. Large areas of high-rise buildings collapsed, making search and rescue more difficult. A large number of people rescued by light and social rescue forces were mainly buried in the surface and shallow layers. Therefore, a large number of deeply buried people lost their chance of survival due to the difficulties in search and rescue.

During the rescue operation, it can be seen from the United Nations VO platform that Turkey has sent 148 teams, and there are also mobilized and standby teams, a total of more than 200 teams, including Chinese rescue teams and social rescue forces. Through the VO platform, you can also see very intuitively the search and rescue status and work progress of each rescue team. This is a prominent feature of this international rescue operation, allowing rescue teams from all over the world to quickly integrate into the local rescue coordination system.

3.1. Participate in the improvement plan of international rescue

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However, due to the terrain, temperature, life detection environment of the disaster-stricken area, and the emergency response measures of the Turkish government, effective rescue forces cannot be put into the disaster rescue scene at the same time. The biggest reason for the deaths of the victims of the earthquake was the collapse of buildings induced by the earthquake. According to search documents and interviews, aftershocks occurred one after another after the earthquake, causing damage to nearly 160,000 buildings. The province established the "Earthquake Crime Investigation Bureau", but from the perspective of crisis management, it is not a response strategy at all. The construction process of the house, the year of construction, the materials used, and the quality inspection of the house are the basic information of the house. The biggest problem exposed by the earthquake is the worrying quality of Turkish buildings. Due to the collapse of a large number of buildings after the disaster, it has brought considerable obstacles to the follow-up life exploration and search and rescue.

The second is the issue of geopolitical conflicts. Since the rescue team dispatched

this time belongs to China's emergency management system and does not include military assistance, the rescue team needs to avoid conflict areas and armed areas between the two sides during the search and rescue process. Various reasons have also led to the slow progress of life rescue and There is a rescue white space.

4. Implication

This study only uses literature search and news review to understand the basic situation of China's participation in the international rescue after the earthquake. From the perspective of China's emergency management system, disaster relief is divided into two structures: the central and local (non-governmental) structures. The advantage of the rescue team is that the rescue force is scattered all over the country, and it can actively respond to disasters of different levels and quickly assemble and put into search and rescue work. However, the disadvantage is that each local search and rescue team has the problem of temporary participation or an unstable list of search and rescue personnel. , these search and rescuers may have certain differences in search and rescue skills, resulting in reduced efficiency of follow-up search and rescue operations or inability to cope with various new adverse environments in the disaster-stricken area. But because of its small size, its advantage is that it can quickly respond to external disaster relief requests, but it also means that there is a big difference in rescue facilities and overall establishment compared with national rescue teams, and most of China's private rescue teams are non-governmental and non-profit organizations (NGO), the cost and equipment invested in the rescue process often need to be paid by the team or the individual, which may also become one of the unfavorable factors in the rescue process.

The overall advantage of the national rescue team is that it has a relatively concentrated rescue core force, and has heavy rescue capabilities. It has advantages in rescue methods and equipment investment, and the rescuers are all internal professionals in the establishment. unexpected or unfavorable conditions. However, compared with the smaller civilian rescue teams, there may be slight differences in the response speed of external emergency plans, and the civilian rescue teams have advantages in the speed of applying for rescue and dispatching rescue forces. However, in the subsequent input of national-level rescue forces, the advantages of heavy-duty rescue have been reflected.

Through this international rescue, I think there is no big problem in the response speed of the rescue structure in China's emergency management system. However, since this dispatch is roughly divided into national and private levels, there is room for improvement and optimization in the process of search and rescue assistance. , that is to say, there are basic differences in rescue incidents and equipment investment between the two, and unified optimization and information sharing are required for follow-up collaboration. In different regions, the cooperation between the two can effectively improve the efficiency of life rescue. Since members of civilian rescue teams often participate in rescue operations temporarily, national rescue team members can provide professional rescue knowledge and experience to these team members.

I think that improving the basic rescue capabilities of the country's citizens can become the focus of the emergency management system in the next stage. Since China is also one of the countries with frequent disasters, the average self-rescue and rescue capabilities of citizens have become the focus of improving the country's overall emergency response. In an emergency situation, use your own emergency avoidance capabilities immediately to ensure your own survival and help other victims of the disaster.

National rescue teams and non-governmental rescue groups can cooperate to carry out social re-education projects to improve disaster adaptability and teach scientific risk avoidance skills for local residents, reduce regional vulnerability, and improve regional

residents' ability to resist risks. Improve life detection technology in complex situations. For example, most of the earthquake-stricken areas in Turkey have collapsed buildings. How to use advanced technology to replace rescuers to enter complex environments for life detection will also become the focus of China's future emergency management technology research and development.

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