

Analysis of Disaster Prevention and Mitigation and Emergency Management under Disaster Sociology

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Abstract: China has a vast territory and abundant resources. Disasters have been frequent since ancient times. Disasters have been an important factor affecting the sustainable development of society from ancient times to the present. In this case, disaster prevention and mitigation are particularly important. Disaster prevention and mitigation includes people's subjective initiative to reduce the losses caused by disasters and a series of disaster prevention and mitigation measures in society. The realization of the goal of disaster prevention and mitigation is largely related to human disaster education and safety culture. Disaster sociology is a branch of sociology. It explores the relationship between disasters and society to reduce the losses caused by disasters to society.

Keywords: Disaster Society; Disaster Prevention and Mitigation; Emergency Management.

1. Introduction

In today's society, the frequency and impact of disasters are becoming increasingly prominent, posing severe challenges to human survival and development. Disaster sociology, as a discipline that studies the relationship between disaster phenomena and society, provides a unique perspective for us to gain a deeper understanding of disaster prevention, mitigation, and emergency management. From the perspective of disaster sociology, we can see that disasters are not only natural phenomena, but also the result of social construction. The occurrence of disasters is closely related to various factors such as social structure, social system, social culture, and human behavior. When facing disasters, social response and measures are not only technical issues, but also involve deep social problems such as organization, coordination, cooperation, and values. Therefore, analyzing disaster prevention, mitigation, and emergency management in the field of disaster sociology has important theoretical and practical significance. It helps us better understand the social essence of disasters, grasp the social laws of disaster occurrence, improve the disaster prevention and mitigation capabilities and emergency management level of society, thereby minimizing the losses caused by disasters to human society, ensuring the safety of people's lives and property, and the stable development of society.

2. Disaster Prevention and Reduction in Chinese History

Chinese culture has a 5000 year long and profound civilization, as well as extremely rich experience and ideas in disaster prevention and reduction. However, the process of disaster prevention and reduction is full of obstacles, and even today our struggle against natural disasters is still in the stage of improvement and development.

2.1. Disaster Prevention and Reduction in Ancient China

Our ancient society was a feudal society with agriculture as the main production sector. The productivity was backward, the technology was backward, and the ideology was feudal.

There was no subjective initiative in the face of disasters, and the losses caused by natural disasters were enormous, posing a serious threat to the country and the people. After long-term practice, feudal rulers began to explore and formulate a series of policy measures to prevent disasters and reduce the losses caused by disasters, which to some extent had achieved results. However, due to historical limitations, these policies also have certain flaws. The disaster prevention and reduction policies in history also have certain inspirations for our contemporary response to disaster prevention and reduction. The main disaster prevention and mitigation policies in ancient China were as follows: firstly, the warehousing system. The warehousing system refers to the state storing food to respond to emergencies when disasters occur. The warehousing system plays a very positive role in disaster prevention and reduction. However, due to the limited financial strength of the feudal government based on agriculture, the amount of food invested in warehouses was not sufficient, which greatly reduced its function of providing relief to disaster victims. The second is to build water conservancy projects. Floods and droughts were very frequent and destructive disasters in ancient China. Throughout ancient feudal dynasties in China, water conservancy was highly valued, with the main measure being the construction of water conservancy projects to prevent floods. From the earliest Dayu flood control to the famous water conservancy project Dujiangyan Irrigation Project built by Li Bing in the Warring States Period, it shows the importance of flood and drought disasters in ancient times. The expenditure on water conservancy is enormous, and feudal governments find it difficult to bear this heavy burden. The third disaster prevention policy is afforestation. The policy of afforestation originated in the Song Dynasty, which allowed people to plant trees on both sides of the Yellow River to prevent soil erosion and strengthen river embankments[1]. However, most feudal lords did not have a long-term vision and could not realize the disaster prevention function of afforestation from the depths of their minds. Afterwards, some emperors began to cut down trees extensively to satisfy their own desires, seriously damaging the ecological environment. Years of war later severely affected the quantity and quality of the forest, and a large number of trees were used to build and guard the city

walls and build tombs. The continuous occurrence of natural disasters such as floods and droughts is closely related to the large-scale deforestation and the decline of forestry policies. Warehousing, water conservancy construction, and afforestation policies all have a certain positive impact, but also have certain problems. The inspiration it brings us is worth considering. Firstly, the warehousing system should be adhered to, with the state's allocation of grain as the main source of warehousing. Secondly, the water conservancy department should strictly control the use of funds and establish a sound and rigorous supervision mechanism during the investment process. Finally, we must fully recognize the importance of afforestation in disaster prevention and reduction, implement afforestation in practice, benefit future generations, and severely crack down on indiscriminate logging.

2.2. Disaster Prevention and Reduction in Ancient China

With the outbreak of the Opium War, China became a semi colonial and semi feudal society, and the closed door policy of the Qing government was broken. The people suffered greatly from the war and also suffered from disasters. Due to the opening of the country's borders, Western ideas began to be introduced into China, and China also began to use Western modern thinking to respond to disasters and explain them. Some Western science and technology have also begun to be introduced into China, such as building reinforcement and surveying, which have been used for flood and river prevention.

After the founding of the People's Republic of China, we carried out reform and opening up, opened up our doors, and actively connected with the world through exchanges. Our country's ability to understand natural disasters and resist attacks has greatly improved. The increase in international exchanges allows us to learn more cutting-edge theories and advanced scientific technologies. China's research on disasters is also increasingly developing towards deepening and integrating multiple fields. Especially for the monitoring of natural disasters, various high-tech applications are applied in disaster prevention and reduction work. Especially the application of remote sensing technology, global positioning system, and meteorological satellites. With the rapid development of urbanization in China and the application of various new seismic resistant technologies in buildings, China has made greater progress in resisting natural disasters. From hydrological monitoring, meteorological warning, earthquake monitoring, and ocean monitoring, China has established a comprehensive and three-dimensional monitoring system, which has made great contributions to disaster prevention and reduction.

3. Strengthen Personal Resilience to Disasters

Disaster sociology is a branch of sociology that explores the relationship between disasters and society, aimed at reducing the losses caused by disasters to society. After a disaster occurs, people adjust their physical, psychological, and mental states to adapt to the living conditions after the disaster and continue to survive. Firstly, we need to strengthen our ability to adapt to disasters. People have a certain adaptability to changes in the natural environment and living conditions. However, human adaptability has its limits. Some

people have strong adaptability, while others have weak adaptability. Taking the Tangshan earthquake as an example, some people were buried in the ruins for several days or even dozens of days, enduring hunger, pain, loneliness, and other hardships to survive tenaciously. Some people were buried under the ruins for not long, and their bodies were not fatally injured, but they died before being rescued. This is caused by people's different adaptability to disasters. Strengthening people's adaptability in the face of disasters can reduce the loss of life and property. Secondly, we need to strengthen people's ability to adapt to disasters. After being affected by disasters, people should further exert their subjective initiative and creativity. Utilize all measures to change one's living conditions and ensure the preservation of oneself. You can eat anything that can satisfy your hunger, and if a house collapses, you can build a temporary shelter, even a shack. This is to improve people's adaptability to disasters, the stronger this ability, the stronger their survival ability under disaster conditions. Finally, we need to enhance people's creativity in the face of disasters. People need to exert subjective initiative to transform nature, which is a process of gradually transitioning from passive to active. People need to transform their living conditions after disasters through various means. As Duan Huaming [2] pointed out, after disaster events, people often learn from their past grievances and build closer relationships with each other. People helping each other are more united and can better exert the collective power and subjective initiative. The new Tangshan built on the ruins after the Tangshan earthquake is the best proof.

4. Strengthen and Improve the Emergency Management System

With the rapid development of China's social economy and the continuous improvement of people's living standards, the public's awareness of safety has also generally increased, and there is a more objective need for emergency management.

4.1. The Development History of Emergency Management in China

Since the establishment of the People's Republic of China, the scope of emergency management work in our country has continuously expanded and improved. At the beginning, China established a single item corresponding model, in which each department was independently responsible for its own disaster prevention and rescue mode[3]. During the SARS outbreak in 2003, there was a decentralized coordination and temporary response model. After the SARS outbreak in 2003, China gradually established an emergency management system based on the "one case, three systems" approach. And then to the later comprehensive emergency management system. Looking at the overall development process, China's emergency management system has made tremendous progress from single response to comprehensive coordination, and China's emergency management work has made great progress.

4.2. Development and Innovation of Emergency Management System in the New Era

The emergency management system is a part of the national security system, so it must comply with the overall national security concept. Therefore, in order to develop and innovate emergency management systems, we must adhere to putting

people's safety at the center and strive to build an emergency management system that is in line with national security governance. We need to accelerate the construction of resilient cities and strive to build an emergency management system that can effectively defend against and reduce the occurrence of disasters and accidents, as well as respond promptly and recover quickly in the event of emergencies. Building a new management system based on smart science technology, breaking down barriers between different departments and systems with information technology, enabling departments to share information and respond in a timely manner. Relying on quantum information technology for artificial intelligence prediction, providing decision-making and suggestions for people's prediction and rescue [4].

5. Summary

Overall, disaster prevention and mitigation in the field of disaster sociology should rely on human subjective initiative

and decisions made by social sectors. People should strengthen their awareness of disaster prevention and reduction, and adjust their mentality and thoughts in a timely manner to adapt to the environment after disasters occur. All sectors of society should strive for innovation, share information, and do a good job in predicting disasters and providing timely rescue work after disasters occur. Make the best decisions based on information technology and artificial intelligence. Reduce the losses caused by disasters

References

- [1] Y. BU. Disaster Sociology[J]. China Social Work, 1998(01):51.
- [2] H.M. Duan. Disasters and Human Society[J]. Gansu Social Sciences, 1997(05):4-8.
- [3] G.H Xu, Y, F Chen. Disasters and Prevention[J]. Overview of Disaster Prevention, 2009(03):48-51.
- [4] P. Tao. Integrated Research on Disaster Management from the Perspective of Vulnerability[D]. Nanjing University, 2017.