Optimization of Early Warning Mechanism for Public Emergencies in Shiqian County

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Abstract: This paper aims to research the early warning mechanism of public emergencies in Shiqian County and advise for constructing a sound early warning mechanism.It takes Shiqian County as the research object, and adopts the literature research method and the case study method. To sort out the early warning results of public emergencies, and find that problems in the early warning of public emergencies, and then propose optimization strategies for the early warning of public emergencies in Shiqian County. The study found that the early warning mechanism for sudden public events in Shiqian County has problems such as lack of comprehensive early warning coordination institutions, insufficient early warning resources, imperfect early warning information systems and weak public crisis awareness. To improve the early warning mechanism, it is necessary to establish an integrated early warning coordination mechanism, supplement the early warning resources, improve the information early warning system, and strengthen crisis education.

1. Introduction

In recent years, public emergencies in China have occurred frequently, causing huge losses to the government and families. In order to respond more effectively to public emergencies, the academic community and the government have tried to continuously improve the early warning mechanism for public emergencies. Early warning of public emergencies is a hot issue in society, and it is also the first problem that needs to be solved in government emergency management. As the number of Internet users in China increases and the popularity of new media increases, the spread of emergencies is faster and wider. Correspondingly, the public lacks the common sense of crisis management, and the spread of crisis news is often accompanied by panic among the people. To enhance the destructive power of the crisis. How to improve the government's ability to respond to public emergencies,and improve the public crisis management mechanism is an urgent problem that the government needs to solve. As the first stage of crisis management, crisis early warning aims to effectively prevent and reduce the destructive power of the crisis. Therefore, it is necessary and urgent for the government to construct a complete and effective crisis early warning mechanism. Taking the "6·4 flood" in Shiqian County as an example, this paper analyzes the public emergency early warning and tries to provide suggestions for constructing the crisis early warning system.

At present, academic research on crisis early warning focuses on enterprise competitive intelligence, public crisis, financial crisis, corporate crisis, college students' psychological crisis and network public opinion events. Most articles discuss early warning mechanism, early warning system and early warning indicators.[1] The research results on public emergencies are quite fruitful. The scholars' concerns are in the public law, early warning mechanism and management mechanism. Huang Xisheng and Zhang Zhenyuan (2017) explored the dilemma and outlets for the operation of China's emergency environmental warning system. [2] Zhang Weiping (2009) constructed an early warning management system covering information collection, data processing, early warning countermeasures, risk assessment, and trend prediction. [3] Research will also be combined with current social development, from a diversified perspective, in big data, Internet +, Weibo, WeChat, Internet public opinion and so on. Tang Mingwei, Jiang Xun and Yao Xingshan (2016) studied the emergency response system for public safety under the "Internet +" environment, and provided guidance for the government to build a rapid response system for emergencies. [4] Xu Dianli (2013)

studied the network public opinion research of emergencies and put forward the countermeasures for public opinion management of emergencies.[5] In addition, there are many studies based on specific methods or theories. Zhu Xiaoning and Yuan Hejun (2006) take information technology as the core, based on grid management, and explore a set of early warning mechanisms for public emergencies.[6] In general, there are a large number of research results in public emergencies. The research on early warning management mechanisms, early warning indicators and system construction is quite fruitful, but it is far from the actual early warning needs. Applicative and practical research needs to be further explored. This paper is based on the analysis of the government's existing early warning mechanism and discusses the optimization of the early warning mechanism.

2. Current status of operation of early warning mechanism in Shiqian County

2.1 Event review

Shiqian County is a county-level city under the jurisdiction of Tongren City, Guizhou Province. The annual rainfall is abundant, floods and floods are prone to occur. Four major floods occurred in 2014 alone, and major floods occurred in 1991, 1994 and 1996 respectively. Figure 3-1 shows the annual variation of precipitation in the meteorological station of Shiqian County (Tangshan Town) from 1988 to 2010. From June 3rd to 4th, 2014, the torrential rain in Shiqian County reappeared. According to statistics, 10 people were killed and 1 person was missing. The number of people affected by the county reached 417,885, and 760 households collapsed in 2,453 houses. The house severely damaged 1,768 households with 5013 rooms. More than 200 schools were suspended. The county area was completely smashed, water circuit information was all interrupted, infrastructure was seriously damaged, the affected area of crops was 305.61 million mu, and the disaster area was 163,682 mu, and the harvest was not limited to 63.81 million mu. The county's direct economic losses amounted to 5.029 billion yuan.[7]

2.2 Early warning mechanism

According to the weather information, the Shiqi County Meteorological Bureau has made a weather map based on the temperature, pressure, wind direction, wind speed and other data detected by the meteorological station and the satellite image, radar echo map and rainfall distribution map. The government convened an emergency meeting, combined with the flood control command system, made predictions in advance, made arrangements, and launched a disaster warning feedback process. Early warning feedback includes time, location, source of information, nature of the event, scope of impact, trend of events, and actions taken.

After the disaster, Shiqian County officially launched the second-level emergency response, and the county public security bureau launched a three-level emergency plan, and quickly set up an emergency rescue team to carry out flood relief work. According to the "General Emergency Plan for Public Emergencies in Shiqian County", the "6·4 flood disaster" is a natural disaster. The county civil affairs bureau is responsible for formulating emergency plans, forming the county natural disaster rescue emergency headquarters, and other relevant departments as members of the emergency committee. Actively cooperate with the work of the Ministry of Civil Affairs.

3. Problems in the early warning mechanism of Shiqian County

3.1 Lack of integrated early warning coordination agency

Although Shiqi County has established the County Emergency Committee and the Emergency Office, they are not responsible for the monitoring and early warning of public emergencies. The relevant functions are undertaken by the competent authorities of various industries. For example, the earthquake bureau is responsible for the monitoring of earthquake disasters. The Civil Affairs Bureau is responsible for the monitoring and handling of public health emergencies by the Health Bureau.[8] It can be seen from the policies and regulations issued by Shiqian County that the emergency

committees of each emergency plan have different organizational members and different leaders. The core members of the crisis monitoring are also dispersed in different government organizations. Lack of information sharing leads to more pre-plans, less effective operations, and chaotic management. Taking Shijiazhuang County's "Emergency Plan for Disposal of Illegal Fund Raising Incidents in Shiqian County" as an example, the prefecture advocates that the competent departments of various industries report the illegal fund-raising incidents within their respective administrative areas to the county people's government within 2 hours. At the same time, the county emergency department headquarters and member units are notified. Therefore, in order to clarify the main responsibility, it is necessary to establish an early warning and comprehensive coordination mechanism.

3.2 Insufficient early warning resources

Resources include legal resources, economic resources and infrastructure. First of all, in terms of legal protection. The government has enacted various laws to deal with natural disasters, accident disasters, public health events, and social security incidents. However, these laws focus on post-crisis response and treatment, and cannot be applied to the causes and prevention of crisis research. [9] Shiqian County prepared a plan in 2008. The plan provided normative guidance for early warning, response, and aftermath of sudden public events in Shiqian County. However, because the plan is a government regulation, the force cannot be compared with the law. Most of them are guiding opinions and lack of specific implementation plans, which determines the uniformity of the plan to guide all emergencies. Second, in terms of economic security. Shiqian County is a national poverty-stricken county with a backward economy. Only a small part of the budget is used for public crisis warning. In addition, the reserve of materials is small, and the reservoir of disaster relief materials in Guizhou Province is mainly established by provincial-level municipal units, and only a few are distributed in county-level cities. Finally, in terms of infrastructure security. A large number of flood discharge facilities have been built in Shiqian County, but urban development has led to irregular urban expansion, which has led to an increase in the destructive power of disasters.

3.3 Imperfect warning information system

The imperfection of the early warning information system is mainly reflected in the passive monitoring and release channels of early warning information. The current crisis warning in Shiqian County is still in the initial stage of early warning. The early warning process is mostly to find the crisis, issue warnings and deal with the crisis. The government still uses traditional monitoring methods to identify disasters. The monitoring of the crisis is passive. It relies mainly on the staff's consciousness and does not form an automatic system process. Each department is responsible for the disaster warning of its own scope of responsibility. The information between departments is not shared. Only a few departments have established crisis warning levels and warning lines. Therefore, these departments do not have a complete information monitoring network. There are few channels for issuing early warning information and the speed of information dissemination is slow. The current information release mechanism in Shiqian County is chaotic and unsystematic. After predicting the occurrence of a disaster, it will artificially decide how to issue early warning information. This will not only cost manpower, but also make the government public officials have no backbone. The public is likely to cause confusion.

3.4 Low public awareness

In 2005, the crisis management team of the School of Public Administration of Tsinghua University conducted a survey on the crisis awareness of Chinese urban residents. The survey showed that "85.7% of the respondents believe that Chinese citizens are currently unable to cope with the crisis, and 81.2% believe that Chinese citizens are The crisis is not focused enough." [10] There are two main reasons for the lack of awareness of the people in China. On the one hand, the people's awareness of self-education is not strong, and on the other hand, the government that bears the primary responsibility for public safety is not in fulfilling its duties. [11] The occurrence of disasters such as "6·4 Floods" reminded the public of the need for a strong sense of crisis and anxiety. The damage caused by this disaster and rapid information dissemination awakened the public's

consciousness, and the crisis awareness and emergency response ability were obtained. Improvement, but there is still a long way to go to truly raise public awareness of crisis and crisis response, and the need for the public to acquire crisis management common sense and skills is increasing.

4. Optimization Countermeasures of Early Warning Mechanism in Shiqian County

4.1 Establishment of an integrated early warning coordination agency

The scientific and mature early warning mechanism for public emergencies depends on mature and efficient forecasting and early warning systems. To improve the early warning system for public emergencies in Shiqian County, it is necessary to establish a permanent comprehensive early warning coordination mechanism. In the process of promoting the improvement of public emergency management, Shixian County established the Shiji County Emergency Public Emergency Committee in the county government, set up the government emergency management office as the subordinate office, and set up special emergency headquarters in each special department. . As the county's emergency committee's office, the county emergency office is mainly responsible for the daily work of the county emergency committee, and fully fulfills the duty of emergency, information aggregation and coordination. According to the nature and type of emergencies, the county government has set up 38 special emergency headquarters in 35 county direct departments (units) to be responsible for the prevention and response of various types of emergencies. In view of the fact that the Shiji County Early Warning Monitoring and Analysis Agency is distributed in various functional departments and the principle of saving manpower and material resources, the Shiqian County Government should reform the Emergency Office and add an independent early warning agency to the existing organizational structure of the Emergency Office. Comprehensively coordinate the forecasting and warning work of various functional departments.

4.2 Supplementary warning resources

First of all, in terms of legal protection, it regulates laws, regulations and administrative regulations for public emergency warnings and improves legal protection. Shiqian County should pass the public emergency plan in the form of regulations to ensure the legal validity of the documents and facilitate the government public affairs personnel to handle public emergencies according to law. Secondly, in terms of financial security, a complete catastrophe risk insurance system is established to make up for the lack of financial funds. The Shiqian County government can learn from the US flood insurance plan and Japan's earthquake insurance system, a multi-level catastrophe insurance risk-sharing mechanism supported by the government. The underlying losses and middle-level losses of the catastrore are respectively insured by the insurers and reinsurers. The insurance protection fund and the capital market assume that the excess losses are borne by the government. In each level of loss, the insured needs to share a certain percentage of losses to mobilize their enthusiasm for disaster prevention and reduction. [12] In order to ensure the adequateness of disaster relief materials, Shiqian County can set up a separate county-level material emergency management office, designing the material transportation routes in the county to ensure that emergency materials should be delivered to the disaster area in the shortest time. Finally, in terms of infrastructure security, Shiqian County should continuously improve its infrastructure. It is possible to strengthen the dam, build a reservoir, widen the river, and improve the city's fishing facilities.

4.3 Sound information early warning system

Early warning information monitoring. First, establish an information monitoring network,the competent (supervisory) departments of various industries establish qualitative,quantitative monitoring and early warning indicator systems for major problems and sensitive issues of the system, strengthen tracking, monitoring,analysis, set warning lines for emergencies, and release risks in a timely manner. Prompt message. The second is to formulate a plan for the management of public emergency forecast information and implement the regulations in the form of an institution. The forecast information management plan needs to include clear organizational command system,

responsible units, and supervision of information collection, collation, analysis and release. The third is to establish a crisis data management database. All departments will send the monitored information and the results of the forecast analysis to the emergency office, and the emergency office will handle the filing and filing, and collect the information of the conventional crisis.

The early warning information can be released in the following way. One is the traditional way of TV and telephone. The broadcast of TV messages is mainly for urban residents. The other way to send text messages is more suitable for township citizens.The second is to use modern communication tools to QQ and WeChat. Mainly, the Internet spreads faster and has a wider scope, which can transmit warning information to everyone faster. Third, it uses the village collective broadcast to transmit messages, or the village director delivers to the household. This method is more suitable for remote mountainous areas.

4.4 Strengthening crisis education

Government's education and training on the crisis can be started from the following aspects,First, the emergency office introduces professional talents and sets up training institutions. The emergency training organization develops its own training materials and training instructors, and conducts training drills for various types of personnel in a planned, hierarchical and targeted manner. For example, the objects are divided into general public, crisis disposal professionals and crisis decision-makers, and different objects. The training knowledge should be designed separately. Second,ensuring public crisis education is effective.The emergency office can broadcast public crisis events and natural disaster prevention matters and coping skills through local TV stations to ensure that the public understands the basic operational skills of self-rescue in the form of different disasters.[13]Simultaneously, The emergency office can carry out crisis education throughout the compulsory education stage and increase the awareness of youth crisis prevention. Community and township governments need to regularly issue various emergency management disaster prevention and disaster reduction manuals to the public to promote public crisis education. Third, strengthening the simulation exercise of the crisis.The Emergency Committee may issue a notice requesting that the crisis drill be conducted in the form of a unit and improve the ability of the people to solve the crisis through large-scale drills.

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