Study on the Development of Emergency Logistics System in Sichuan Province

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Keywords: Emergency Logistics, Security System, Internet of Things Technology.

Abstract. Due to the sudden disasters have occurred frequently, unpredictable, impact and characteristics of growing, in order to do better Management of disaster prevention and mitigation, it should from the strategic level to build an efficient emergency logistics system. In this paper, research progress at home and abroad, through the analysis of emergency logistics system, Sichuan development present situation and main problems of emergency logistics system, targeted the proposed hierarchical management mechanism of emergency logistics management system, establish a coordination mechanism of the government and social resources, break through the emergency logistics management system of technical methods and strengthening the construction of disaster emergency logistics risk early warning management system in our province, so as to promote the development of emergency logistics management system in Sichuan province.

Introduction

Emergency logistics is a special logistics activity through the realization of logistics efficiency to achieve the benefits of logistics. It aims at providing emergency materials for emergency public events - including serious natural disasters, major outbreaks, terrorist activities, military conflicts and other emergencies, pursuing the goal of maximizing the time efficiency and minimizing the disaster loss. There are four main features include unexpected, uncertainty, unconventional and weak economy. The logistics links of Emergency logistics include collection, transportation, storage, loading and unloading, handling, packaging and distribution.

It refers to a flow process of operation system of Sichuan emergency logistics. The Government agencies and other organizations rescue people and distribute the abnormal tissue relief items, medical services and information in disaster areas at a short period of time, after the sudden unexpected natural disasters, accidents, disasters, public health emergencies, war occurs in the territory of Sichuan province. It is necessary to set up integrated management system, in order to implement the emergency supplies under the condition of sudden disasters effective organization, personnel and funds.

I. The Significance of Constructing Emergency Logistics System in Sichuan Province

1.1 Guidance of strategic management of disaster prevention and reduction

It is an important practical significance of studying on the construction of disaster emergency logistic support. In recent years, it caused great casualties and property losses, including the frequent natural disasters such as earthquakes, storm debris flow in Sichuan province. Such as the Wenchuan earthquake killed more than 80,000 people and 45.55 million people affected.

It is urgently needed to build disaster emergency logistics system that disaster relief support is the key to disaster emergency management engineering. Most natural disasters are difficult to predict, such as earthquakes, landslides, Shan Hong, a large area of food poisoning, sudden infectious disease
and so on, even if we can predict that the disaster is inevitable, can be used for disaster reduction time is too short, it is difficult to realize the disaster emergency supplies logistics support in the effective time.

It can minimize the loss caused by disasters through the construction of emergency logistics system. With the rapid development of society, the scale and impact of the disaster and the damage to human society production and life are increasingly a geometric progression. It plays a unique and important role in the emergency management system of disaster relief. It is the urgent need to research the emergency rule of mechanism research, operational management and approach, in order to minimizing the loss caused by disasters.

1.2 Extension of the “short board” of emergency logistics

There is the short board of the organization and guarantee in the emergency logistics. First of all, it includes the amount of material security, involving a wide range. Such as the Wenchuan earthquake relief area of more than 100 thousand square kilometers, emergency logistics task is very heavy. Secondly, it is great threat of the organization of the emergency logistics, due to the traffic, transportation, communications, and power outages.

There is the short board of the tissue aging in the emergency. It exposed the defects of the emergency logistics management system. There is the phenomenon such as expired drug and metamorphism food, because relief supplies can’t reach the designated position in the Wenchuan earthquake.

There is the short board of the organization and coordination in the emergency. The sources of relief supplies are complicated, including donations, military support, national allocations, volunteer organizations, etc. The movement of this disorder increases the difficulty of logistics, while millions of people flow to the affected areas.

II. Research Progress of the Security System of Emergency Logistics in Domestic and Abroad

Many countries have developed national or local government coordination mechanisms, and made a lot of legislative work in response to sudden events.

A network transfer model is designed by Clark & Culkin, which is mainly used to develop the assistant model of humanitarian relief plan after natural disasters [1]. Ukkusuri & Yushimoto studied the selection and optimization of logistics distribution route in the humanitarian relief [2]. Mete, H. O. proposed to deal with the uncertainty of the situation of the flood disaster caused by the emergency logistics in the government’s point of view [3]. It is very important to consider the rapid response of emergency logistics, and Jia H put forward a kind of hybrid fuzzy clustering method to deal with the problem of material distribution in emergency logistics [4]. Meng Can believed that the direct goal of establishing the emergency logistics support system is to realize the spatial and temporal benefit of the materials, and to realize the reasonable connection of each link in the logistics activities [5]. Wang Xu-ping points out that the construction of emergency logistics system has two basic objectives, that is to improve openness, scalability and rapid response capability. Its principle is to adhere to the prevention and emergency combination, time to benefit of economic benefits, market mechanism and administration mechanism and legal system [6]. Zhao Yan thinks that the construction of emergency logistics system is the goal in the shortest time and the lowest possible cost to get emergency supplies needed. The appropriate transport will take delivery of emergency supplies to the proper place at the proper time, the final distribution in an appropriate manner to the demand in hand [7]. Geng Peng pointed out that the emergency logistics system is composed of the main system, the object system and the support system [8]. Xie Ru-he proposed that the coordination and command center of emergency logistics should be set up by the procurement, transportation security and logistics management center, and the coordination and command of the emergency logistics information platform. [9]
III. Development and the Main Problems of Emergency Logistics System in Sichuan Province

3.1 Development Status of Emergency Logistics System in Sichuan Province

Sichuan province is located on the eastern side of the Qinghai Tibet Plateau and the Longmen mountain seismic zone. It is an earthquake, geological and meteorological disaster prone area. It set up a corresponding establishment of disaster emergency management office, disaster prevention and mitigation group of the disaster prevention organization and the development of a type of disaster emergency plan, of all levels of administrative agencies at government in Sichuan Province. It promotes the sudden disasters event emergency response capacity in our province, in many aspects of natural disasters, and even beyond the level of developed countries.

Social donation balances in multi-level and multiple departments and units. Due to poor information, supply and demand gap, substandard products and other reasons, caused backlogs in some relief supplies in a particular district or not applicable. It damaged the interests of the affected people, as a small number of places and individual units in subsidies is a lift fee, to improve the standard of phenomenon. It is not enough match the construction activities of the board in some areas with the actual disaster requirements of convergence. It is inefficient on use of relief funds and goods.

3.2 Main Problems of Emergency Logistics System in Sichuan Province

Emergency logistics management security system is not perfect. It is inefficiency that emergency logistics mobilization mainly depends on the operation of local government administrative functions and the masses of spontaneous organizations, lack of legal norms and constraints of the system. Existing mechanisms for emergency logistics support with executive order as the main means, regardless of the logistics cost, once a crisis occurs. Governments at all levels will set up appropriate crisis management leadership group, to the timely processing of the crisis as the central task of overriding importance. As a result of this mechanism, it is no legal system, the disorder of emergency safeguard mechanism, the disorder of the whole system, the high cost and low efficiency.

It is lack of professional team and equipment of emergency logistics management in Sichuan province. It is difficult to save themselves when the disaster happens. Because there are not its own emergency logistics professional team of each region.

There is no establishment of an emergency logistics information release and sharing platform. It is unable to accurately grasp the disaster forecast early warning, emergency disaster situation details as well as the production and distribution of materials required for the number of capacity and the situation is not clear. The analysis judgment is not accurate. And it is unable to make a correct emergency logistics decision making, and therefore difficult to meet the requirements of the state of emergency.

Emergency logistics and distribution system is not perfect and less flexible. There is a big problem for transport. In the emergency rescue, there is no emergency rescue mission as the core to form a powerful force, the timeliness of poor emergency treatment is very poor, and not reflect the characteristics of the vehicle emergency.

IV. Countermeasures and Suggestions on the Construction of Emergency Logistics System Sichuan Province

4.1 Establishment of Classification Management of Emergency Logistics Management Systems Institution

The scale and extent of each disaster is different. It is necessary to carry on the research of emergency logistics management at different levels. It is the prone areas of the weather, earthquake, geology, floods and debris and other natural disasters in Sichuan province. There is no more grade construction of separate logistics system in Sichuan province. The emergency logistics system of Sichuan province can be divided into three parts, which are emergency logistics infrastructure,
organization network and policy support according to the composition and characteristics of emergency logistics related factors, from the perspective of logistics network and system engineering.

Figure 1. Structure of Emergency Logistics System in Sichuan Province.

4.2 Establish the Government and the Coordination Mechanism of Social Resources

Emergency logistics support system achieve the system’s spatial utility, time effectiveness and nature of the utility through its participation in the inter subject mutual coordination, cooperation or synchronization. The subject of emergency logistics system maximizes the overall efficiency and economic benefits through the interaction and mutual symbiosis of the collaborative operation, embodied in the standards, organization management, infrastructure, technology and equipment, information network interconnection.

Figure 2. Cooperative level emergency logistics system.
4.3 Strengthening the construction of risk early warning management system of disaster emergency logistics in Sichuan province

It becomes one of the keys to the successful operation of emergency logistics management through implement effectively risk management in the process of emergency logistics operation. It makes reduce disaster losses to prevent and control the risk factors of emergency logistics.

First of all, it is a systematic analysis of the uncertain factors that affect the realization of the objectives of the disaster. Secondly, it is necessary to establish a complete set of emergency logistics risk indicator system to realize the monitoring of emergency logistics risk. Finally, we should establish a set of scientific disaster emergency logistics risk dynamic early warning and disposal management system, realize the risk identification fast, accurate risk assessment, risk management in time, risk monitoring real-time target.

Summary

It should be applied to dynamic management, unified scheduling, integration of resources, management, departmental interaction, rapid response, coordination and cooperation, due to the environment of emergency logistics has certain uncertainty. It can rapid response to changing emergency needs, according to the change of external environment and the current situation of emergency logistics power dynamic adjustment timely emergency logistics strategy and plan.

Acknowledgement

This paper is phased research results of “Project of Research Center of Meteorological Disasters Forecast and Early Warning and Emergency Management in 2016” and “Research on the development of emergency logistics in Sichuan Province” (ZHYJ16-YB10).

References


