

Research and countermeasures of fire protection in southwest rural areas

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Abstract

Take the southwest rural areas as an example. Faced with such stern fact of rural fire accidents frequent occurrence, things were pointed out, such as characteristics and hazards of the rural fires, the current situation of fire control work and the problems existing according to the situation of rural fire control work; Combined with the research, some suggestions of solution and improvement were discussed, such as how to establish various forms of fire brigades, to improve the villagers' fire protection soft power, to solve the financial difficulties and to build grid management of rural fire control work, etc.

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1. Introduction

Fire is one of the main disasters of the current society. It is still a serious threat to people's life, property safety and stable life. On January 25, 2014, there was a big rural fire in Baojing village of Guizhou province. Based on the statistics, more than 100 houses, more than 1000 rooms were destroyed by the blaze and more than 290 households, more than 1180 people were affected. Finally, it led to a direct economic loss about 9.7 million yuan; In the morning of January 11, 2014, there was a fire in Kezong ancient city of Shangri-la in Yunnan Province. As an ancient city on the Road of tea and horse, it was important for its thousand-year-old history. As we know, most buildings in it were old and built with wood. When the fire occurred, it spread quickly to all around, destroying more than 240 houses and affecting 339 households. Part of the cultural relics, thangka art and other buddhist culture in the ancient city were burned due to the fire besides the houses, shops and infrastructures. Finally, the fire led to an economic loss about 100 million yuan. According to the ministry of public security fire department, in recent years, there were a total of more than 376000 fires up the countryside, leaving 8539 people dead and 8539 injured and direct property losses of 3.53 billion yuan. The losses of recent four years were respectively over the total number of 61.2%, 65.7%, 62.9% and 64.6% of the same period. In recent years, although under the drive of "three rural" policy, rural fire control work had an unprecedented development. But due to the urban-rural dual structure, lifestyle factors, such as rural production, and the deficiency of rural fire control fundamental construction, rural works haven't been improved fundamentally. With the improvement of living standard, the farmers newly batched purchase high-power household appliances. But wires and electric protection device of the villages couldn't update in time, which brought new problems and tests to the rural fire control work. So under the new situation, it's necessary for further study of characteristics and causes of rural fires in the multi-ethnic gathering southwest area. Meanwhile, it's of great significance for achieving several goals, such as disaster prevention and control, finding proper measures, raising the level of rural fire

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control work and protecting people's life and property security. In order to finding problems of rural fire prevention work targetedly, the topic group researched six representative villages in Guangxi, Guizhou and Yunnan areas. During the questionnaire survey, 90 questionnaires were distributed and 76 were received back. Finally, abundant information was collected, based on detailed data, the characteristics and reasons of fires in rural areas were analysed. Moreover, the fire power and management were investigated and effective rural fire prevention measures were put forward.

2. Characteristics and reasons analysis of fires in southwest rural areas

2.1. Fire risk analysis of southwest rural areas

2.1.1. The fire resistance rating of houses in southwest rural areas was generally low, leading to high fire risks

6 villages of 3 provinces were covered and 73 residences were investigated through the research. The architectural form statistical analysis of the villages was shown in table 1; The age of the buildings was divided into decades and with the growth of age, the numbers respectively were 19,28,13,8,1,4, as shown in figure 1. Some of the common models were shown in figure 2:

Table 1. Architectural form

Name	Number of household	Building structure			Building storey		Electric transformation	Kitchen transformation
		Bamboo and wood	Brick and wood	Brick-concrete	2	3		
Guandong village in Guangxi Province	12	3	9	0	3	9	12	12
Yayi village in Guangxi Province	15	5	10	0	5	10	15	15
Guangnali village in Yunnan Province	13	11	2	0	1	12	13	13
Bubeng village in Yunnan Province	11	8	1	2	11	0	11	11
Pojiao village in Guizhou Province	11	9	2	0	2	9	11	11
Fuyu village in Guizhou Province	12	9	2	1	5	7	12	12

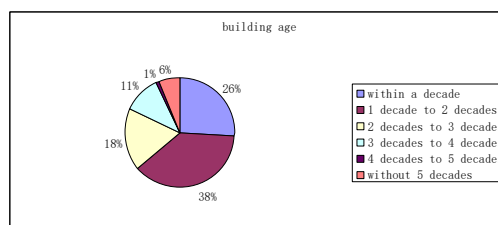


Fig. 1. Division of building age

It can be seen from table 1 that minorities were majority in the southwest areas. Obviously, the houses were all wood structure and brick-wood structure. As a result, level 3 and level 4 fire resistance rating construction accounted for 95.9%; It can be seen from figure 1 that the buildings existing for more than 20 years, which were old, accounted for 36%. It can be seen from figure 2 that a large number of level 3 and level 4 fire resistance rating construction were built one next to one. The structure of the buildings was poor, as we can see, the wall, roof and floor were made of flammable materials, such as bamboo, wood and color plate. The buildings were generally 2-3 storeys, 5-10meters in height. The first storey, built on stilts, was mostly used to raise livestock and pile straw. While the second storey and above were residential areas. Generally, a large amount of flammable materials was piled up in the rooms. There were still a few farmers cooking and heating on the

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