

Practical use of Seismic Intensities for Municipalities' Protection Policy -An Attempt to Arrange Emergency Responses Flows-

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1. Introduction

The purpose of this study is to make good use of seismic intensity information for municipalities' earthquake responses. Japanese municipalities' emergency responses consist of very extensive and multiple activities. However, disaster management staffs move another section within three years in many municipalities. As a result, it is very difficult that they become experts for emergency responses. For each municipality's in Japan, JMA (Japan Meteorological Agency) seismic intensity value is announced immediately after an earthquake. Therefore it will support disaster management staffs, if translation of seismic intensity scale to practical information as emergency responses would be made in advance. We create emergency responses flows in relation with seismic intensity scale as an application example.

2. Emergency responses flows

Emergency responses flows are made based on Koyama and Midorikawa's three emergency responses models; 1) the intensity and operation activity contents model, 2) the intensity and operation activity time model and 3) the operation activity time and volume model. These models constructed through investigations of response activities taken at the 2000 Tottoriken-Seibu Earthquake and the 1995 Hyogoken-Nanbu Earthquake. A form of flows is based on the first model. This model is in a flowchart style and it has been constructed under seven major response groups as organizing their emergency system, damage investigation, restoration activities, treatment for dwellings damage, mass care, life and health support, socioeconomic rehabilitation aid. These groups have three to five separate activities. Each activity's borderline color means execution rate of operation municipalities. This model does not explain well difference between 6-upper (disastrous-strong) and 7 (very disastrous) degree on the JMA seismic intensity scale. The rate means execute or not, regardless of evacuees or treatment number as operating degree. Consequently, the information of operating level needed have been extracted from the third model, and incorporated as background color into flows.

These three models are developed so as to grasp municipalities' activities after an earthquake, and to use for decision support system is manageable but for officer, they must refer to three another charts, has insufficiency from user-friendliness point of view. Our new flows can support officers' rapid responses and even inspire their earthquake protecting consciousness. In addition, we prepared simplified flows by a response group unit, which will be easier for quick book.

3. Conclusion

Emergency responses flows related to the seismic intensity scale have been produced. These flows correspond to one another kind of explanation of JMA Seismic Intensity Scale, and give key knowledge for activating municipality's optimal emergency responses. That is, for even disaster management staff who has no enough disaster management skills could behave with no much difficulty when they refer to our flows. Actually, these flows in the wallpaper form have been popularized at municipalities in Gifu prefecture, and so emergency management staffs can refer anytime. However, the environment surrounding of the municipalities' emergency management is drastically changing – as seen in the great Heisei merger, which urges us continuous studies.

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References

M. Koyama and S. Midorikawa, A Modeling of Emergency Responses of Municipalities after an Earthquake for Support of Their Decision Making, JOURNAL OF JAPAN SOCIETY FOR NATURAL DISASTER SCIENCE (to appear in).