Case study for utilization of seismic hazard information to local municipal program Nobusuke Hasegawa (NEID: Department of Integrated Research on Disaster Prevention) 1. Introduction

A governmental organization, the Headquarters for Earthquake Research Promotion (HERP) publishes the National Seismic Hazard Maps for Japan. National Research Institute for Earth Science and Disaster Prevention (NIED) shows the maps on the website "Japan Seismic Hazard Information Station (J-SHIS)" (http://www.j-shis.bosai.go.jp/), and seismic hazard data in 250m mesh size are available from the website. The 250m mesh size hazard data can provide useful information for citizens and local government to know local earthquake environment. But how citizens and local government make use of these hazard information for the enhancement of disaster prevention is a problem.

Therefore, this study explores hints and subjects for the utilization of seismic hazard information by examination of workshops which were carried out to enhance local disaster prevention capacity.

Seismic Hazard in Ami Town

Two workshops described as follows, were carried out in Ami town, Ibaraki prefecture. Shaking of JMA seismic intensity 5+ was observed in Ami in the 2011 off the Pacific coast of Tohoku Earthquake (Fig. 1). Fortunately, extensive damage by this earthquake was not occurred in Ami. However, probability to be hit by strong shaking further is high in the future. Fig.2 shows a probability map of shaking of JMA seismic intensity 6- or more in within the next 30 years. The probability around Ami town hall is rated as 37.5%, according to the data of J-SHIS.

Ami had never suffered a major natural disaster before this earthquake. For this reason, awareness of residents against natural disasters was low. However, in the wake of this earthquake, interest in disaster prevention of residents increased. The workshops were carried out in such a situation.

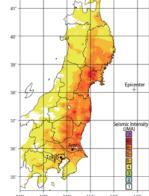


Fig.1 Seismic Intensity distribution in the 2011 off the Pacific coast of Tohoku Earthquake

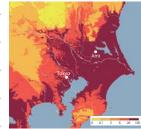


Fig.2 Probability map of shaking of JMA seismic intensity 6- or more in within the next 30 years (J-SHIS).





3. Workshop 1: Town walk to enlighten residents awareness for earthquake resistant of housing

A workshop was held to enlighten residents awareness for earthquake resistance of housing. Workshop participants thought about earthquake resistance of housing observing real houses in town walk (Photo 1), made a disaster scenario when a large-scale earthquake was occurred, and discussed the subjects facing local in the earthquake (Photo 2). Through this workshop, the findings with respect to the utilization of seismic hazard information are as follows.

- It is important to make a disaster scenario for finding subjects facing local. To do so, risk information not only hazard information is required.
- (ii) It is necessary to investigate local vulnerability to make a disaster scenario. Town walk is effective as a method to investigate such data easily.
- (iii) Risk assessment tool based on local vulnerability data is required to make a disaster scenario.

4. Workshop 2: Town walk to make disaster prevention map

A workshop was carried out to enlighten the awareness of residents for disaster prevention and to raise the interest of residents to local circumstance. Workshop participants investigated dangerous place and resource in the event of a disaster by town walk (Photo 3), wrote the investigated data on a map, and discussed the subjects facing local in the event of a disaster (Photo 4). Through this workshop, the findings with respect to the utilization of seismic hazard information are as follows.

- (i) There are many things that local residents should be doing, in order to overcome local vulnerabilities. Seismic hazard information is not necessarily required, in the initial stage began efforts to enhance local disaster prevention capacity. Efforts utilizing seismic hazard/risk information can be classified into advanced techniques for local residents. For this reason, the local residents to carry on their own such efforts is difficult, outside assistance is required.
- (ii) Local situation is different in each. Effort that is appropriate to local characteristics is required.

to 3 Town walk (in workshop 2)



Photo 4 A map participants make (in workshop 2)

Towards the utilization of seismic hazard information in local

It is necessary to adjust environment to take advantage of seismic hazard information, in order for local residents to use for enhancement of local disaster prevention capacity. It is difficult that local residents create on their own such an environment. For this reason, it is desired for local municipal government to provide such an environment for local residents. The following may be mentioned as specific efforts.

- (i) Local municipal government provides a menu of activities that local residents can select according to their actual local circumstance.
- (ii) Local municipal government provides opportunities to practice activities, person and tools to support residents.