

Learning Volcano Disaster Prevention and Mitigation through Disaster Imagination Game (DIG)

zhexin hu[1]; yasushi saitou[1]; toyoharu itou[1]

[1] Institute for Fire Safety & Disaster Preparedness

<http://www.isad.or.jp/cgi-bin/hp/index.cgi>

1. Background

Since volcanic eruption is an extremely rare type of nature phenomenon, experience accumulation becomes to be very difficult. Thus, it is essential to work out measurements on the assumption that a volcanic eruption might break out in the future. Most local governments are make efforts on drawing volcano hazard maps, distributing them to residents and promoting various lectures for volcanic disaster educations.

However, since nowadays science and technology are not advanced enough to estimate volcanic disaster exactly, and the estimation result alters dramatically according to initial conditions of volcanic eruption, the hazard maps become no more than a reference for disaster measurements. Detailed estimation and concrete measurement based on which turn to be indispensable. Besides, with the only way of lecture-based (passive) education has been proved to be not effective enough. An interactive workshop-based disaster education and training style, called DIG (Disaster Imagination Game), in which participants conduct disaster estimation and reach agreement on countermeasures by themselves, is receiving more and more attention.

Institute for Fire Safety & Disaster Preparedness (ISAD), with the commission of Fire and Disaster Management Agency, has been conducting a promotion project of table-top disaster exercise since 2004. As a part of that, DIG has been planned and operated at several model municipalities, and most of those were about earthquake. DIG on volcanic eruption was hold at Nasu town of Tochigi prefecture on Dec. 22, 2006. The paper reports an outline of that.

2. Contents

- 1) Location: Kougen community center
- 2) Main participants: 6 groups (43 persons) from Neighborhood Self-governing Body, Social Worker, Fire Company, Hotel Cooperative and Tourism Association.
- 3) Facilitator: 1 person from ISAD.
- 4) Materials: DIG Manual, Volcano Hazard Map and Disaster Prevention Guide Book that show the Nasutake volcano, disaster phenomenon, affected area and locations of refuges and etc.
- 5) Blank maps for entry: topographical map of Nasu town (1/10,000) and ground plan of Yumoto area, Nasu town (1/5,000)
- 6) Program:
 - 10:00-10:30 greeting and orientation
 - 10:30-11:00 vulnerability assessment
 - 11:00-11:30 damage estimation on given presupposition
 - 11:30-12:00 discuss measurements for disaster response and daily preparation
 - 12:00-12:30 presentation of 6 groups and comments from facilitator

Details on the proceeding of DIG will be introduced at the general meeting.

Generally speaking, from the beginning to the end, the hall has been full of active atmosphere with lively discussions. Comments from the participants have been collected as:

- 1) Its enjoyable to learn and to exchange ideas with various people
- 2) Cooperation should be strengthen not only between residents but also between the Neighborhood Self-governing Body in the future
- 3) Only if everyone could become to hold awareness of constructing disaster establishment from now on

3. Conclusion

DIG on volcano disaster turned to be an effective field for practical use of volcano hazard maps. On the other hand, meaningful discovers were able to be brought out through disaster imagination and measurements discussions by residents themselves. For instance, concerning to the imagined situation in which [the town would by separated to 2 parts due to falling of bridge], concrete and constructive opinion were proposed as [refuges and spaces for temporary landing of helicopter are needed for both sides of the town], [aged and week people should descend mountain and be evacuated as soon as early], and etc. Besides, problems related to [owner of country resort and newly transferred people] were also propounded, which could become important theme for next DIG. If these discovers could be make the best use in improvement from standpoint of residents or local government, it can be valuated that DIG does result in disaster Prevention and Mitigation.

