

**STUDY ON RISK IMAGE OF FLOOD  
AND ITS EFFECT ON EVACUATION BEHAVIOR**

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When the water level of a river rises and evacuation is deemed necessary, the authority issues an evacuation order. However, the evacuation rate of residents is said to be fairly low. Probably, residents think that a flood is not dangerous, so they don't evacuate in spite of the dangerous situation.

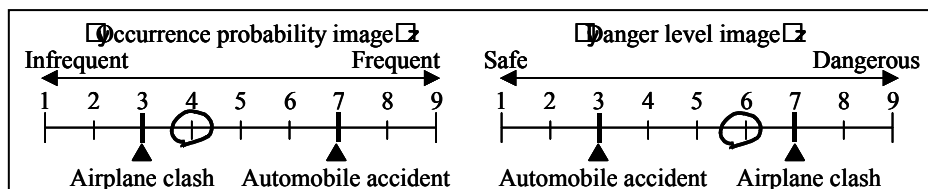
In this study, we carried out a questionnaire survey among residents of Kiryu City, which had suffered heavy damage from the flood disaster caused by Kathleen Typhoon in 1947, and we analyzed the actual situation of the risk image of a flood and its effect on an evacuation behavior.

We defined the risk image of a disaster as the following two recognitions:

- The recognition of the probability of a disaster occurrence, "occurrence probability image".
- The recognition of the danger level when one is exposed to the disaster, "danger level image".

Then, we examined the risk image about 5 disasters (flood, earthquake, volcanic eruption, fire and accident of a nuclear power plant). As residents replied questions about the risk image, they compared the risk image of each disaster with the risk image of an airplane clash and an automobile accident, and they put a mark on the scale of the risk image like Fig.1.

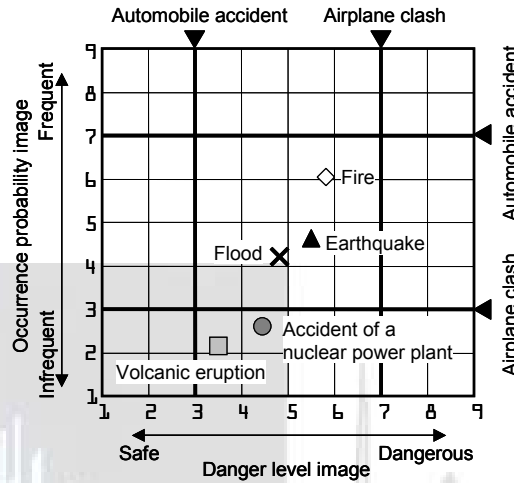
The results of this study are shown below.



**Fig.1.** The scale of the risk image

**1) The actual situation of the risk image**

Fig.2 provides a plot of the average of occurrence probability image and danger level image of each disaster. The risk image of a flood is lower than the risk image of fire and earthquake though Kiryu city have suffered heavy damage from the flood.



**Fig.2.** The actual situation of the risk image of disaster

**2) Formation factors of the risk image**

We analyzed the relation between the risk image of a flood and experience of the flood disaster caused by Kathleen Typhoon, resident’s age, and so on. Residents who have experienced the flood recognize that it is either frequent and danger or infrequent and safe. In addition, it is the same as the advanced age group.

**3) The risk image of a flood effects on an evacuation behavior**

Relation between the risk image of a flood and the timing of decision-making of an evacuation behavior when residents supposed a flood disaster is shown in Fig.3. Residents who think that a flood occurs frequently indicate early evacuation timing, while residents who think it is not dangerous replied that they evacuate when their house is inundated.

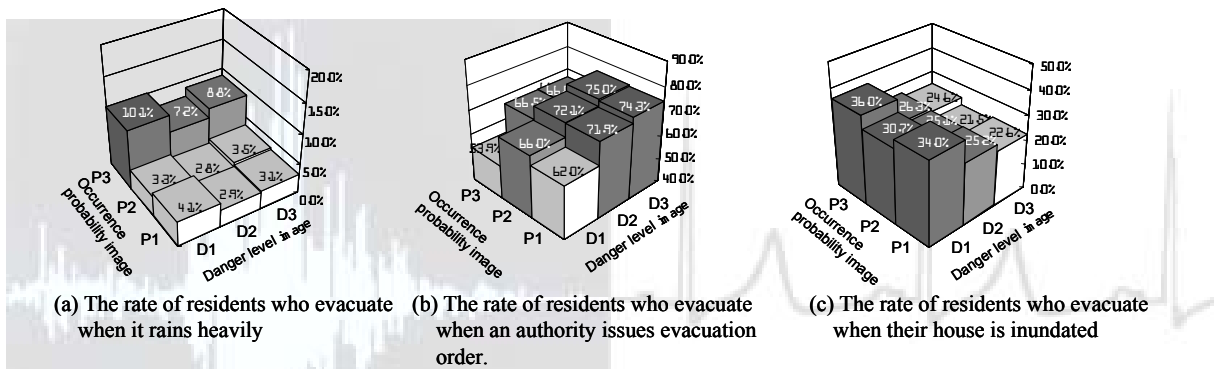
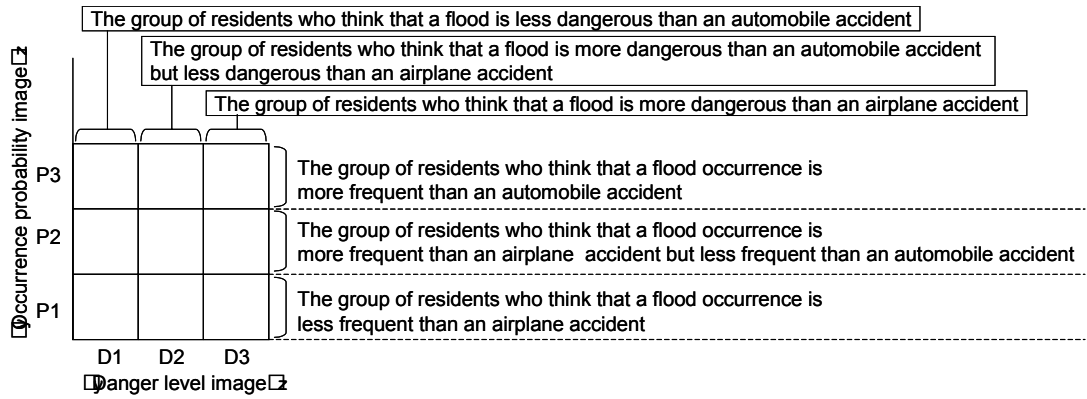


Fig.3. Relation between the risk image of a flood and an evacuation behavior