

## **Investigation of people's behavior at heavy rainfall disaster in the highly flood disaster information age - A case study on the typhoon No.0206 July, 2002 -**

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This study aims to investigate efficiency of the disaster information at the time of real heavy rainfall on the emergency management, mitigation, and human evacuation. Data of the information, damage and reaction of the people at Higashiyama town and Kawasaki village, Iwate prefecture are obtained through internet, field investigation, and questionnaire (the number of respondents: 700) in August 2002. The damaged area has repeatedly suffered flood and the typhoon No.0206 in July 2002 caused the worst damage over recent 30 years. During the heavy rain, the only 5 % respondents to get real time rainfall and river water level through Internet, the 70% respondents did not know the system to obtain the information, suggesting the less known system among the residents even through real time data with the various information is available. However, the 74% of respondents at Kawasaki village answered that we referred to rainfall and water level information for reaction against disaster. The village office of Kawasaki announced the rainfall and water level information through the disaster wireless service, which were obtained by the people, meaning that the wireless service is more efficient than the Internet. The success or failure of carrying household goods from their homes is closely related with the use or non-use of the data of rainfall and water level information. This implies the importance of the disaster information such as rainfall and water level in the river in real time and prediction. Internet is one of the most efficient ways to provide with the information, however the access and use of it are still problem for the people.

**Key Word:** heavy rainfall disaster on July 2002, typhoon No.0206, real time rainfall and river water level information, flood damage mitigation, Iwate prefecture



Fig. 1 Research area map.

○ : Water level observatory. □ : Precipitation observatory.

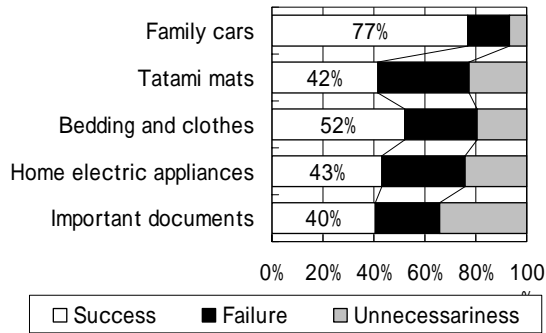


Fig. 2 Success or failure of carrying out of household goods (answer of victims of inundation damage)

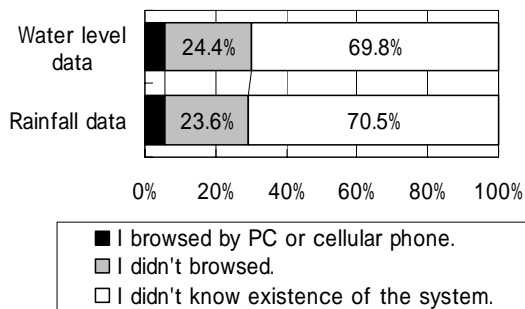


Fig. 3 Actual condition of the browsing of the real time rainfall and river water level display system on Internet.

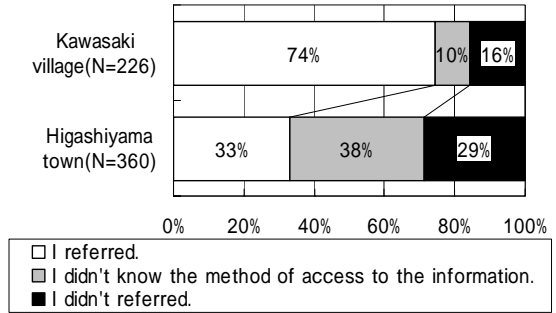


Fig. 4 The reply to the question of "Did you referred the rainfall or river water level information for judgment of evacuation behavior?".

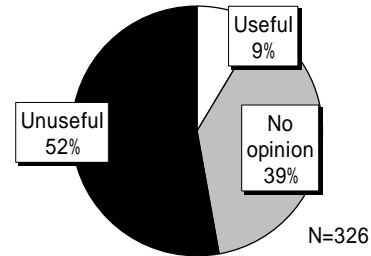


Fig. 5 Evaluation to flood hazard map

**Table 1 Cross tabulation of "carrying out of household goods" and "reference of rainfall or river water level information" (answer of victims of inundation damage)**

Carrying out of household goods	Reference of rainfall or river water level information			Chi-square test
	I referred	I didn't know access method	I didn't referred	
<b>Important documents</b>				- -
Success	35(45%)	36(41%)	25(34%)	
Failure	17(22%)	28(32%)	15(21%)	
Unnecessariness	25(32%)	24(27%)	33(45%)	
<b>Home electric appliances</b>				Significant
Success	45(56%)	38(42%)	23(30%)	
Failure	18(22%)	33(36%)	29(38%)	
Unnecessariness	18(22%)	20(22%)	24(32%)	
<b>Beddings and clothes</b>				Significant
Success	50(63%)	46(49%)	34(45%)	
Failure	13(16%)	31(33%)	24(32%)	
Unnecessariness	17(21%)	16(17%)	18(24%)	
<b>Tatami mats</b>				- -
Success	35(44%)	40(43%)	31(42%)	
Failure	26(33%)	35(37%)	23(31%)	
Unnecessariness	18(23%)	19(20%)	20(27%)	
<b>Family cars</b>				- -
Success	63(82%)	71(77%)	49(70%)	
Failure	9(12%)	16(17%)	15(21%)	
Unnecessariness	5(6%)	5(5%)	6(9%)	

