Disaster risk regions analyzed by formation processes for geographical and geologicalenvironments of Yamashiro basin,Kyoto

Yuka Ito[1]; Fujio Masuda[2]

[1] Dept.Science of Environment and Mathematical Modeling,Grad,Engin,Doshisha Univ.; [2] Dept. Geol. and Mineral., Grad. Sci., Kyoto Univ.

We found out that the urban areas have been expanded rapidly on the high risk region where earthquakes and floods cause severe damage in Yamashiro basin located in the southern Kyoto based on the analysis of the geomorphology and subsurface geology.

Our estimation from the formation processes of deposits and topography of this area indicates several new dangerous regions in Ywata, Jyoyo and Kumiyama.In the basin three rivers,the Uji,Kizu and Katsura rivers,were jointed and there was a retarding pound 'Oguraike'until the early Showa period. Since floods often occurred in this basin, landforms were artificially conducted in order to prevent the flood disasters. Nowadays, rapid urbanize occurs in this area, and new housing is build on the high risk area due to the lack of knowledge for the disaster.

Our analysis using GIS and subsurface geological data showed the basin has two types of high risk area for earthquake and flood, 'the thick mud deposits'and'flow marks'. The thick mud is the deposits of ponds and swamps due to dammed bank,retarding basins located in the upstream side of narrow segment of rivers between Otokoyama and Tennouzan, and flow marks,so called'crevasse channels',formed by overbank flooding or bank crevasse.The whole area of old Oguraike is also including in the high risk areas.The flow marks can be classified as the high risk region except for the former fluvial channels that consist of gravely deposits.