



## **Analysis of Distribution of Volcanoes around the Korean Peninsula and the Potential Effects on Korea**

Eun-kyeong Choi (1) and Sung-wook Kim (2)

(1) Geotechnical Lab., Gi Co. Ltd., Busan, South Korea(choiek@naver.com), (2) Geotechnical Lab., Gi Co. Ltd., Busan, South Korea(suwokim@chol.com)

Since the scale and disaster characteristics of volcanic eruptions are determined by their geological features, it is important not only to grasp the current states of the volcanoes in neighboring countries around the Korean Peninsula, but also to analyze the tectonic settings, tectonic regions, geological features, volcanic types, and eruption histories of these volcanoes. Volcanic data were based on the volcano information registered with the Global Volcanism Program at the Smithsonian Institute. We created a database of 289 volcanoes around Korea, Japan, China, Taiwan, and the Kamchatka area in Russia, and then identified a high-risk group of 29 volcanoes that are highly likely to affect the region, based on conditions such as volcanic activity, types of rock at risk of eruption, distance from Seoul, and volcanoes having Plinian eruption history with volcanic explosivity index (VEI) of 4 or more. We selected 29 hazardous volcanoes, including Baekdusan, Ulleungdo, and 27 Japanese volcanoes that can cause widespread ashfall on the Korean peninsula by potentially explosive eruptions. In addition, we identified ten volcanoes that should be given the highest priority, through an analysis of data available in literature, such as volcanic ash dispersion results from previous Japanese eruptions, the definition of a large-scale volcano used by Japan's Cabinet Office, and examination of cumulative magma layer volumes from Japan's quaternary volcanoes. We expect that predicting the extent of the spread of ash caused by this hazardous activity and analyzing its impact on the Korean peninsula will be help to predict volcanic ash damage as well as provide direction for hazard mitigation research.

### **Acknowledgements**

This research was supported by a grant [MPSS-NH-2015-81] through the Disaster and Safety Management Institute funded by Ministry of Public Safety and Security of Korean government.