Seismic Ground Disaster Assessment System (SGDAS) and its estimation results for the 2024 Noto Earthquake

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The Geospatial Information Authority of Japan has been operating a system named Seismic Ground Disaster Assessment System (SGDAS) since 2019, which automatically estimates the area and possibilities of ground disasters (landslides and liquefaction) and distributes information to disaster response officials of public organizations (Fig. 1) in several minutes after large earthquakes. Input data used for SGDAS are estimated seismic intensity distribution map from the Japan Meteorological Agency and geographical characteristics such as geomorphology and geology. Output information consist of a report containing information on the potential areas of ground disasters, and maps of the approximate location and possibility of the ground disasters. This output information is used to formulate rapid and accurate initial response policies (e.g., setting aerial photography areas and patrol routes).

In this presentation, we specifically present a case study of the 2024 Noto Peninsula Earthquake, which resulted in numerous landslides and liquefaction. For this earthquake, SGDAS completed delivery report and maps of ground disasters within 8 minutes after the earthquake. Comparing the possibilities of landslides estimated by SGDAS with the distribution of landslides deciphered from aerial photographs and other sources, the density of landslides was greater in areas where the possibility was higher. In other words, the landslide estimation by SGDAS was valid for this earthquake.

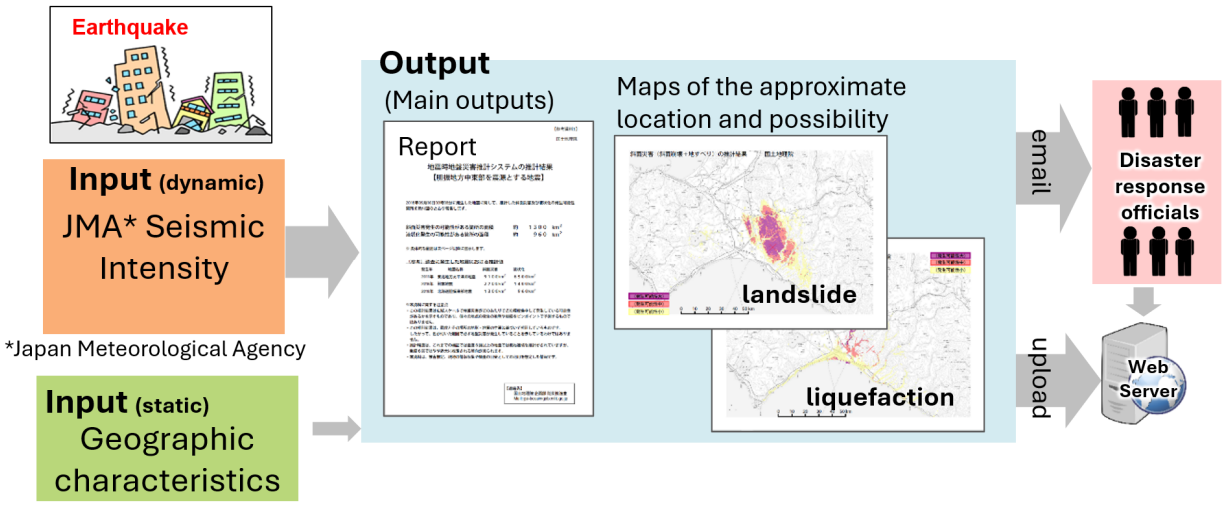

Fig. 1 Flow of operation of SGDAS