

Seismological application in activity at Geopark

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1. Introduction

Geoparks are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. There are also many both natural and cultural heritages of earthquakes. The Seismological Society of Japan (SSJ) should supply appropriate contents for Geoparks as well as wait for the Geoparks to ask us to assist as the support for Geoparks. The SSJ established the working group of the preparation for Geopark support committee.

2. Questionnaire survey for Geoparks

In September, 2016, the working group conducted the questionnaire survey for 57 regions composing the Japan Geopark Network, which are the UNESCO Geoparks, the Japan Geoparks, and associate members for proceeding to be Japan Geoparks. We supplied the information on seismic stations operated by National Research Institute for Earth Science and Disaster Resilience (NIED) within the Geoparks with the questionnaire. The reply came back from 47 regions.

3. Result

The earth formed by earthquakes and crustal deformations is applied to guide in the over 80 % of the Geoparks. About 65 % of the Geoparks have seismic geocites, however, the others do not have. There is no seismic geocites in about a quarter of the about 35 % of Geoparks, however, the others do not know whether they have the seismic geocites or not. Historical earthquake and tsunami marks, surface ruptures of the active faults are used as the geocites. Active faults as the geocites are not limited in the 102 active faults evaluated by the Headquarters for Earthquake Research Promotion of the Ministry of Education, Culture, Sports, Science, and Technology in Japan, however, many Geoparks do not use the them in the guide despite those within the Geoparks.

There are over 3000 seismic stations in Japanese Islands operated by NIED, the Japan Meteorological Agency, national universities, and so on. About 60 % of Geoparks recognize the existence of the seismic stations within the Geopark, however, only 20 % of them use the seismic stations as geocites.

A half of the Geoparks hold seminars about the earthquakes. These seismologically educational activities are usually held regardless of a large earthquake since many of them are held before the 2016 Kumamoto earthquake.

4. Discussion

Geoparks with seismic geocites hope the SSJ to hold seminars about attractive geostories connecting seismic stations and the Geoparks, however, they hope us to do gratis or with low rates because of the tight budget. The SSJ needs to supply a tool to get easily the seismic information within the Geopark and construct the organization to respond to the request from the Geoparks.

Geopark with no seismic geocite hesitate to get support from SSJ since they cannot image the relationship with the SSJ. They hope to have relationship with us after the recognition of the obvious seismic geocites or active faults. However, the inland earthquakes also occur at the blind faults in any time anywhere in Japan. We need to hold seminars or give lectures at the Geoparks with no geocite nor earthquake record

just after the disastrous earthquakes.

Keywords: geopark, seismology, seismic station