

## The development of the European collaborative mechanism of volcanic monitoring systems after 2010 Eyjafjallajökull eruption - from the perspective of European Union law -

\*荒島 千鶴<sup>1</sup>

\*Chizu Arashima<sup>1</sup>

1. 神戸学院大学

1. KOBE GAKUIN UNIVERSITY

The eruption of Icelandic volcano Eyjafjallajökull in 2010 caused huge international air traffic disturbances and left significant economic and social damages to the international society. The lesson learned from the disaster is that not only the estimates by Volcanic Ash Advisory Centre (VAAC) but also the on-going observations are needed to estimate the concentration more accurately. These observations are carried out by various volcanic observatory institutions. They play key roles in reducing/preventing possible economic, environmental, health or social damages caused by such trans-boundary volcanic disaster, by providing key scientific information and interpretation during eruption crises. To address the fragmentation of scientific data and make use of scientific information, the European collaborative mechanism of volcanic monitoring systems to share information should be established on a sufficient financial basis.

At present, European Network of Observatories and Research Infrastructures for Volcanology (EUROVOLC) is coordinated by Icelandic Meteorological Office with 16 other partners from 7 European countries. EUEVOLC is a 3-year project from February 1 2018 and is funded by the European Commission of the European Union (EU) under “Horizon 2020” with 5 million Euros. Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) was established by REGULATION (EU) No 1291/2013. Its Article 7 provides association of third countries to Horizon 2020. Associated countries include European Free Trade Association members, including Iceland. Therefore, EUROVOLC is funded by the EU. Horizon 2020 falls under the areas of research, technological development and space where the EU has shared competence with the Member States and the EU “shall have competence to carry out activities, in particular to define and implement programmes; however, the exercise of that competence shall not result in Member States being prevented from exercising theirs” (Article 4(3) of the Treaty on the Functioning of the European Union (TFEU)).

Concerning natural disasters, the 2007 Treaty of Lisbon introduced new provisions of TFEU. They are included both in the areas of civil protection under PART THREE UNION POLICIES AND INTERNAL ACTIONS of TFEU and humanitarian aid under PART FIVE THE UNION'S EXTERNAL ACTION of TFEU. Disaster prevention is provided in the former, as Article 196(1) of TFEU provides that “(t)he Union shall encourage cooperation between Member States in order to improve the effectiveness of systems for preventing and protecting against natural or man-made disasters”. Civil protection is the area where “(t)he Union shall have competence to carry out actions to support, coordinate or supplement the actions of the Member States” (Article 6 of TFEU).

For the implementation, the Directorate-General for European Civil Protection and Humanitarian Aid Operations (ECHO) of the European Commission plays the role. Under ECHO, there is EU Civil Protection Mechanism (UCPM). It was established by DECISION No 1313/2013/EU. Iceland is a participating state of the UCPM. UCPM is not at present a forum to establish a European collaborative mechanism of volcanic monitoring systems. However, it is worthy to note that Proposal for a DECISION amending Decision No 1313/2013/EU in 2017 acknowledges that disaster prevention efforts are crucial to limit the

need for crisis and emergency support. It proposes that UCPM "shall support, complement and facilitate coordination of Member States' action" "to increase the availability and use of scientific knowledge on disasters". It also proposes that the Commission shall "take actions to improve the knowledge base on disaster risks and facilitate the sharing of knowledge, the results of scientific research, best practices and information, including among Member States that share common risks".

At present, the European collaborative mechanism of volcanic monitoring systems is financially supported by project-based funds of Horizon 2020. However, if the Proposal is adopted and the importance of sharing scientific information in disaster prevention is recognized, more opportunity and regular financial support to develop European collaborative mechanism of volcanic monitoring systems may be given.

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