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## Ranking Icelandic volcanoes by threat and prioritizing their monitoring requirements

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How well are our volcanoes monitored? When and why should we review and enhance the monitoring setup for volcano surveillance? These questions are often raised at Volcano Observatories or at those Institutions in charge of monitoring volcanoes and their associated hazards. The Icelandic Meteorological Office (IMO) is responsible for monitoring natural hazards in Iceland, including volcanoes and volcanic eruptions. IMO operates an extended multidisciplinary monitoring network which comprises seismometers, cGPS, gas sensors, MultiGAS and DOASes, hydrological stations, strainmeters and tiltmeters, infrasound networks and webcams, with the aim of detecting in a timely manner potential unrest at any of the 32 active volcanoes in the country. Limited resources and funding opportunities often pose limitations on how extensive (in terms of number of sensors and their variety) a volcano monitoring network can be. Therefore, the Volcano Observatories are often required to decide how to prioritize the monitoring needs and find a balance in sensitivity, reliability, and efficacy of the network.

In this contribution, we will present the results of the analysis performed at the IMO to rank the Icelandic active volcanoes by their threat and, consequently, to prioritize their monitoring needs. Some criteria (based on eruption frequency, potential hazards, infrastructure exposure and current status) are defined as guidelines and they are used to drive decisions regarding when and how to alter the monitoring setup. The specific case of Hekla volcano is used here to evaluate the validity of such criteria and to perform an analysis of the current capability of issuing a timely warning for one of the most dangerous volcanoes in Iceland.