Evolution of eruptive process at Sabancaya Volcano (Perù) 2014- 2018

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Sabancaya Volcano (5960 m) is a stratovolcano located approximately 80 km southeast of the city of Arequipa in southern Peru. In the Holocene, activity at Sabancaya has included several Plinian eruptions which were followed by effusion of massive andesitic and dacitic lava flows that now cover large portions of the west, north and east flanks of the edifice.

The Volcanological Observatory of INGEMMET (OVI) uses geophysical and geochemical monitoring techniques to track changes in activity at Sabancaya. The first precursors of the current eruptive crisis were detected in 2014, when a slight but visible increase in fumarolic emissions was observed. Around the same time, sulfur dioxide (SO_2) emissions were detected for the first time. In 2015, volcano-tectonic and hybrid-frequency earthquakes set in, and their frequency of occurrence increased throughout 2015 and into early 2016. Clearly, magma was rising towards the surface. Finally, on November 6, 2016, the volcano erupted with an explosive ash emission.

Events similar to this first magmatic explosion have been occurring at Sabancaya ever since. Ash from these explosions travels up to 60 km downwind before it is deposited on the ground. This ash currently represents the main hazard at Sabancaya. Located as close as 20 km to the volcano, several communities in the Colca Valley are reporting negative impacts on crops and livestock, as well as more frequent occurrence of respiratory diseases and eye problems, particularly in young children. SO_2 emissions also remain high, with scanning DOAS instruments from the Network for Observation of Volcanic and Atmoshpheric Change (NOVAC) measuring average emission rates of about 2,000 tons per day and average plume heights of about 3 km above the volcano's summit. The local authorities are providing support to the affected population, as well helping them mitigate the ash hazards as best they can.