

PRECURSOR TO ERUPTION OF LOKON VOLCANO - NORTH SULAWESI, INDONESIA DURING 2011 - 2012

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Lokon volcano has erupted many times since 1829. It has short interval of 1 until 8 years between eruption, and long interval of 64 years. Eruption character of Lokon volcano precede by phreatic eruption for several months and continue with short periode of magmatic explosions. Eruption produces mostly ash and ejected glowing material around the crater. In 1991 a pyroclastic flows about 1 km from the crater.

The eruptive activity of Lokon volcano in 2011 began with small phreatic eruption on February 22 and repeated on June 26. The explosions frequency was getting higher in July 2011. The main explosion on July 17, produced a 3000 until 5000 dark ash column and ejected glowing material that burned the bush around the crater. Hundreds of explosion earthquakes recorded everyday during June 2011 till June 2012. In July 2012, the explosion stopped but the seismicity remains high. August 2012, explosions continue and getting higher in the middle of September 2012. Till first week of October 2012, explosions activities ongoing with explosion column maximum of 2000 m high. During first week of December 2012, the explosions occured every two days and produced 2000 - 4000 m high of dark ash column.

Precursor of each explosion always showed increasing number of shallow volcanic earthquakes (VB type), surface burst earthquakes (hembusan type) and increasing amplitude of volcanic tremor. Those things indicate fluid pressurized before the explosion, supported by inflation and SO₂ flux reduce approaching the explosion.

Monitoring of Lokon volcanic activity supported by scientific data gained from five seismic stations, three CGPS sites, periodical gas measurement and continuous visual observation from Lokon volcano observatory by CCTV. One tiltmeter station deployed in October 2012 as complementary. January 2013, the alert level of Lokon volcano is still in level III (SIAGA) from four highest level that standardized by CVGHM.