

= Mount Tambora =

Mount Tambora ( or Tamboro ) is an active stratovolcano which is a peninsula of and the highest peak on the island of Sumbawa in Indonesia . Sumbawa is flanked both to the north and south by oceanic crust , and Tambora was formed by the active subduction zone beneath it . This raised Mount Tambora as high as 4 @, @ 300 m ( 14 @, @ 100 ft ) , making it one of the tallest peaks in the Indonesian archipelago in the 18th century . After a large magma chamber inside the mountain filled over the course of several decades , volcanic activity reached a historic climax in the eruption of 10 April 1815 . This eruption had a volcanic explosivity index ( VEI ) of 7 , the only unambiguously confirmed VEI @-@ 7 eruption since the Lake Taupo eruption in about AD 180 . ( The 946 eruption of Paektu Mountain might also have been VEI @-@ 7 . )

With an estimated ejecta volume of 160 km<sup>3</sup> ( 38 cu mi ) , Tambora 's 1815 outburst is the largest volcanic eruption in recorded history . The explosion was heard on Sumatra , more than 2 @, @ 000 km ( 1 @, @ 200 mi ) away . Heavy volcanic ash falls were observed as far away as Borneo , Sulawesi , Java , and the Maluku Islands . Most of the deaths from the eruption were from starvation and disease , as the eruptive fallout ruined agricultural productivity in the local region . The death toll was at least 71 @, @ 000 people , of whom 11 @, @ 000 ? 12 @, @ 000 were killed directly by the eruption ; the oft @-@ cited figure of 92 @, @ 000 people killed is believed to be an overestimate .

The eruption caused global climate anomalies that included the phenomenon known as " volcanic winter " : 1816 became known as the " Year Without a Summer " because of the effect on North American and European weather . Crops failed and livestock died in much of the Northern Hemisphere , resulting in the worst famine of the 19th century .

During an excavation in 2004 , a team of archaeologists discovered cultural remains buried by the 1815 eruption . They were kept intact beneath the 3 @-@ metre @-@ deep pyroclastic deposits . At the site , dubbed the " Pompeii of the East " , the artifacts were preserved in the positions they had occupied in 1815 .

= = Geographical setting = =

Mount Tambora is on Sumbawa Island , part of the Lesser Sunda Islands . It is a segment of the Sunda Arc , a string of volcanic islands that forms the southern chain of the Indonesian archipelago . Tambora forms the Sanggar peninsula on Sumbawa . At the north of the peninsula is the Flores Sea , and at the south is Saleh Bay , 86 km ( 53 mi ) long and 36 km ( 22 mi ) wide . At the mouth of Saleh Bay is a 30 @, @ 000 @-@ hectare islet called Moyo ( Indonesian : Pulau Moyo ) which has a guest shelter or luxurious resort where celebrities such as Princess Diana once stayed .

Besides its interest for seismologists and volcanologists , who monitor the mountain 's activity , Mount Tambora is an area of scientific studies for archaeologists and biologists . It also attracts tourists for hiking and wildlife activities . The two nearest cities are Dompu and Bima . Three concentrations of villages are around the mountain slope . At the east is Sanggar village , to the northwest are Doro Peti and Pesanggrahan villages , and to the west is Calabai village .

Three ascent routes are used to reach the caldera . The first route starts from Doro Mboha village south of the mountain , and follows a paved road through a cashew plantation until it reaches 1 @, @ 150 m ( 3 @, @ 770 ft ) above sea level . The end of this route is the southern part of the caldera at 1 @, @ 950 m ( 6 @, @ 400 ft ) , reachable by a hiking track . This location is usually used as a base camp to monitor the volcanic activity , because it takes only one hour to reach the caldera . The second route is southwest of the mountain , starting from Doro Peti village ; the Tambora volcanic monitoring station is in Doro Peti . The third route starts from Pancasila village northwest of the mountain , and passes through a coffee plantation . Using the third route , the caldera is accessible only by foot . The highest point of Tambora is on a hill near the western rim of the caldera .

In August 2011 , the alert level for the volcano was raised from level I to level II after increasing activity was reported in the caldera , including earthquakes and smoke emissions .

= = Geological history = =

= = = Formation = = =

Tambora is 340 km ( 210 mi ) north of the Java Trench system and 180 ? 190 km ( 110 ? 120 mi ) above the upper surface of the active north @-@ dipping subduction zone . Sumbawa island is flanked to both the north and south by the oceanic crust . The convergence rate is 7 @. @ 8 cm ( 3 @. @ 1 in ) per year . Tambora is estimated to have formed around 57 @, @ 000 years ago . Depositing its strata has drained off a large magma chamber inside the mountain . The Mojo islet was formed as part of this geological process in which Saleh Bay , collapsing into the caldera of the drained magma chamber , first appeared as a sea basin , about 25 @, @ 000 years ago .

According to a geological survey before the 1815 eruption , Tambora had the shape of a typical stratovolcano , with a high symmetrical volcanic cone soaring up to 4 @, @ 300 m ( 14 @, @ 100 ft ) above the sea level , and a single central vent . The diameter at the base is 60 km ( 37 mi ) . The central vent emitted lava frequently , which cascaded down a steep slope .

Since the 1815 eruption , the lowermost portion contains deposits of interlayered sequences of lava and pyroclastic materials . The 1 to 4m thick lava flows constitute about 40 % of the layers ' thickness . Thick scoria beds were produced by the fragmentation of lava flows . Within the upper section , the lava is interbedded with scoria , tuffs , and pyroclastic flows and falls . At least 20 subsidiary or parasitic cones are known . Some of them have names : Tahe , 844 m ( 2 @, @ 769 ft ) ; Molo , 602 m ( 1 @, @ 975 ft ) ; Kadiendinae ; Kubah , 1 @, @ 648 m ( 5 @, @ 407 ft ) ; and Doro Api Toi . Most of these parasitic cones have produced basaltic lavas .

= = = Eruptive history = = =

Radiocarbon dating has established the dates of three of Mount Tambora 's eruptions before the 1815 eruption . The magnitudes of these eruptions are unknown . The estimated dates are 3910 BC  $\pm$  200 years , 3050 BC and 740 AD  $\pm$  150 years . They were all explosive central vent eruptions with similar characteristics , but the 740 AD eruption had no pyroclastic flows .

In 1812 , Mount Tambora entered a period of high activity , with its climactic eruption being the catastrophic explosive event of April 1815 .

Mount Tambora is still active . Minor lava domes and flows have been extruded on the caldera floor during the 19th and 20th centuries . The last eruption was recorded in 1967 . However , it was a very small , non @-@ explosive eruption ( VEI = 0 ) .

There were reports of a similarly small eruption in 2011 .

= = 1815 eruption = =