

The evacuation action in 2017 volcanic warning of Mt. Agung and the experience in 1963 volcanic eruption

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1. Introduction

Mt. Agung is a stratovolcano in the northeastern Bali island, Indonesia. The eruption from 1963 to 1964 had occurred (Self & Rampin, 2012). The PVMBG has released a hazard map, and the BNPB defined the volcanic activity level and volcanic hazard area.

In this study the reason of excessive evacuees in 2017 warning, and the effect of experience in 1963-1964 to evacuation actions, are focused.

2. Evacuation inside of the prefecture and memories in 1963

Interviewees are three elders of evacuees from the hillside Banjar (town) near mountaintop, who were 6th grade in 1963. The river flowed out everything in front of me. The first flow was not hot. After that, he saw a blowing stone like a bird and noticed the volcano erupted. Materials like asphalt flowed in the river. The wooden bell sounded, and residents evacuated with livestock and Gargang tools. Banjar head guided residents to a shelter where residents in Jungutan village gathered. They felt earthquakes also even in shelters. They temporarily went home to feed from the shelter. They stayed for about six months in the shelter. On 19th September, 2017, the government had an advance notice about evacuation, and on September 22, all 435 residents in Banjar evacuated to the shelter in Sibetan village with the truck arranged by the government. They gave highly appreciative of the government's arrangement to evacuation before the eruption began and before dangerous situations, prior notice of evacuation, arrangements for evacuation trucks, and arrangements for the evacuation destination. A person in Hindu temple at the mountain foot Banjar had experienced the 1963 eruption at the age of 11. He saw the volcanic ash eruption, listened the sound of the eruption, saw a flying bright red stone, and falling pebbles. They did not evacuate just after the eruption, and evacuated after mud flowing in the river. The Banjar head hit a wooden bell to inform residents about evacuation. They could actually evacuate when the flow of mud flow stopped. Although the evacuation destination was not decided, they heard that the high place is good to evacuate, and residents in Banjar headed for Sibetan village of about 15 minutes on foot. After the evacuation, many livestock in the area died of heat, but his livestock had survived, so he had to go home through. He walked fast on a pyroclastic flow which was slightly cold but still hot yet with hearing his father's voice of "run fast." The shelter life has reached about for one year. On 22nd September, information was transferred from the local government to the head of the household about the evacuees. He and his family evacuated to the sibetan village on the hill from risks of the pyroclastic flow / mud flow. He highly appreciated the government's information dissemination and response in 2017, however they felt inconveniences in living in a shelter, so then they hoped to live at home as much as possible by using the early warning of a mobile terminal application service.

3. Evacuation outside prefecture

Interviews were held on 5-6 October 2017 and 2-5 December in 2017 (Kuri et al., 2018). Migrants of the eruption in 1963 called and supported to evacuation in some places in 2017. Temboku village is a typical case, with mixture of its own evacuation, family evacuation, private evacuation shelters and public shelters. For the evacuation in September, about 7 thousand evacuees were accepted

at 75 locations in the village. The local government had not enough knowledge and had been in panic. They could not enough grasp the entry and exit of evacuees / goods, and complaints were also abundant due to failure to distribute goods fairly, which hindered the operation of shelters. The public shelter were closed once when evacuees came home around Gargan, and resumed due to the eruption in late November. After thw resumption of public shelters, in principle, evacuees accepted in contract with Tenbok village in Banjar unit, to participate in shelter management by means of the duty system, clarify evacuation life rules, etc. As the result, Smooth shelter management was carried out.

4. Discussion and conclusion

Although they hsd no advance evacuation drill and evacuation plan formulation, both of quick judgment and action of the evacuation was caused in their custom to act on the entire Banjar according to judgment of Banjar from everyday, in addition to the elders memory of 1963 eruption. In 1963, evacuation assistance by migrants contributed to the quick and wide evacuation initial movement in September.

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