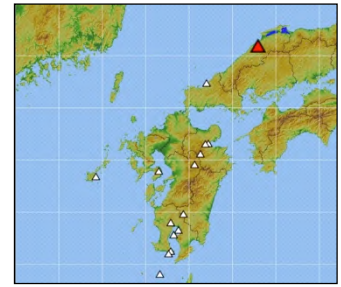


## 79. Sanbesan

Latitude: 35°08'26" N, Longitude: 132°37'18" E, Elevation: 1,126 m  
(Osanbesan)  
(Triangulation Point - Sanbesan)



Sanbesan taken from the north side. Courtesy of the Tourism Promotion Division, Oda City Office.

### Summary

Sanbesan volcano, located in the west Shimane Prefecture, started the eruptive activity 100,000 years ago and has repeatedly erupted explosively. Several plinian and pyroclastic flow eruptions have been confirmed. A caldera with a diameter of approximately 4.5 km is located in the central part and accommodates lava domes (Hattori et al., 1983; Hayashi and Miura, 1987). The eruption products is between 63.9 and 72.1 wt.%.



### Red Relief Image Map

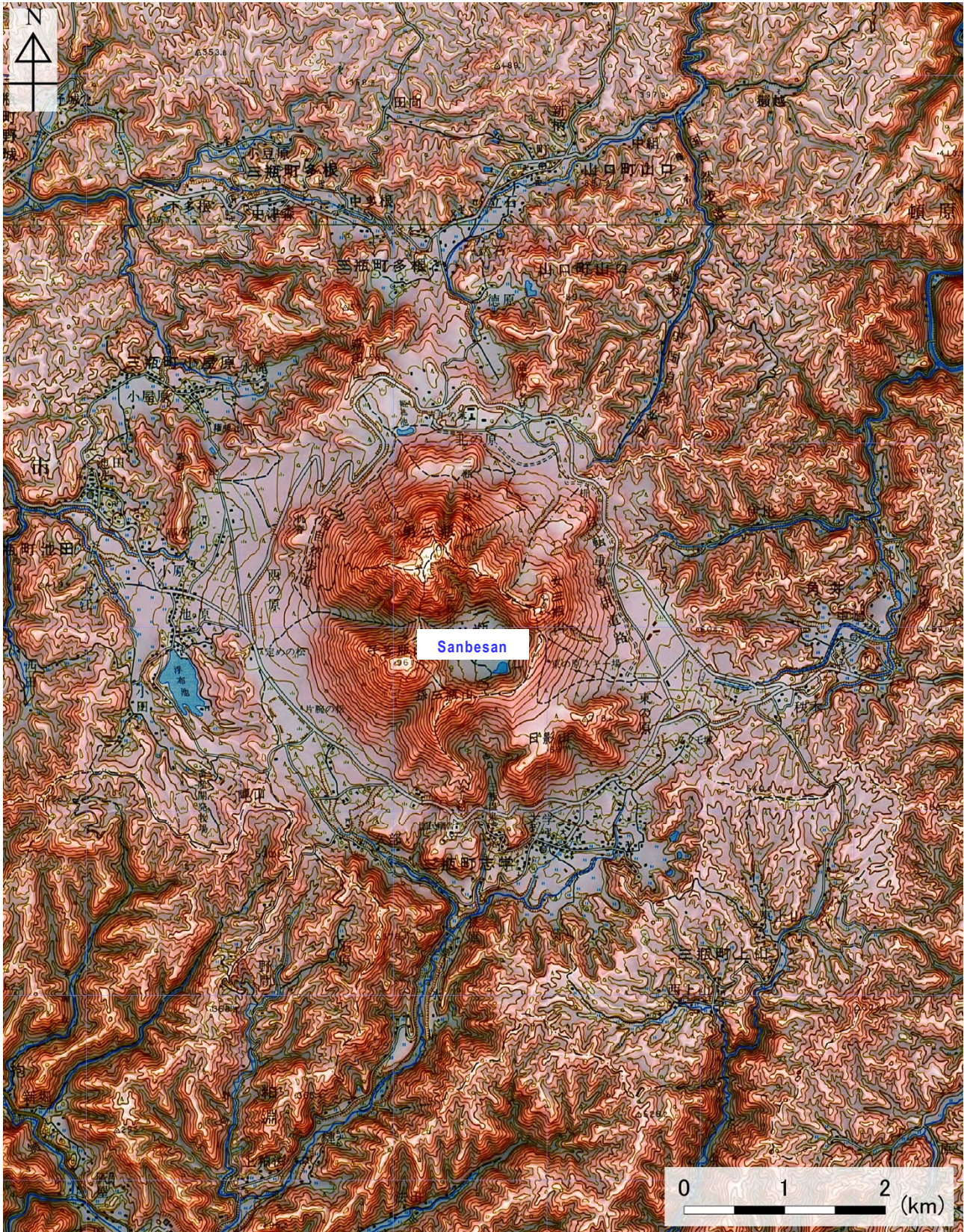


Figure 79-1 Topography of Sanbesan

1:50,000 scale topographic maps (Sanbesan and Iwami-oda) and digital map 50 m grid (elevation) published by the Geospatial Information Authority of Japan were used.



## Chronology of Eruptions

### ▪ Volcanic Activity in the Past 10,000 Years

In the past 10,000 years, Sanbe volcano erupted at about 4,500 years ago, 3,600 years ago, followed by three or more times of active period. The products of these eruptions include pyroclastic falls, pyroclastic flows and surges, and lava domes, pyroclastic cones mainly of dacite composition, occasionally accompanied by lahars and suspected debris avalanches. The pyroclastic flows and volcanic lahar are known to have reached particularly far.

Eruption Age	Eruption Site	Eruption Style	Main Phenomena/Eruption Volume
13←→12.9 ka	Summit area (not exactly confirmed)	Magmatic eruption	Pyroclastic fall.
5.6←→5.5 ka	Summit area (not exactly confirmed)	Magmatic eruption	Pyroclastic fall → pyroclastic flow → pyroclastic fall., pyroclastic surge.
3.87 ka	Summit area	Magmatic eruption → (dome collapse) → magmatic eruption, (dome collapse)	Shitsumi pyroclastic fall → Sanbe lava dome, Tateishi debris avalanche(subject of future investigation) → Ohirasan pyroclastic flow, pyroclastic surge, pyroclastic fall, Ibdani debris avalanche. Magma eruption volume = 2.6 km <sup>3</sup> DRE. (VEI 4)
1.4←→1.3 ka	Summit area (not exactly located)	Phreatic eruption?	Tephra fall.

\* Eruption ages, sites, and styles taken from the Active Volcano Database of Japan, AIST, latest version. All years are noted in Western date notation. "ka" means 1000 years before the year 2000.

A←→B: Possible range in which eruption events took place.

### ▪ Historical Activity

There are no records of volcanic activity.

### Recent Volcanic Activity

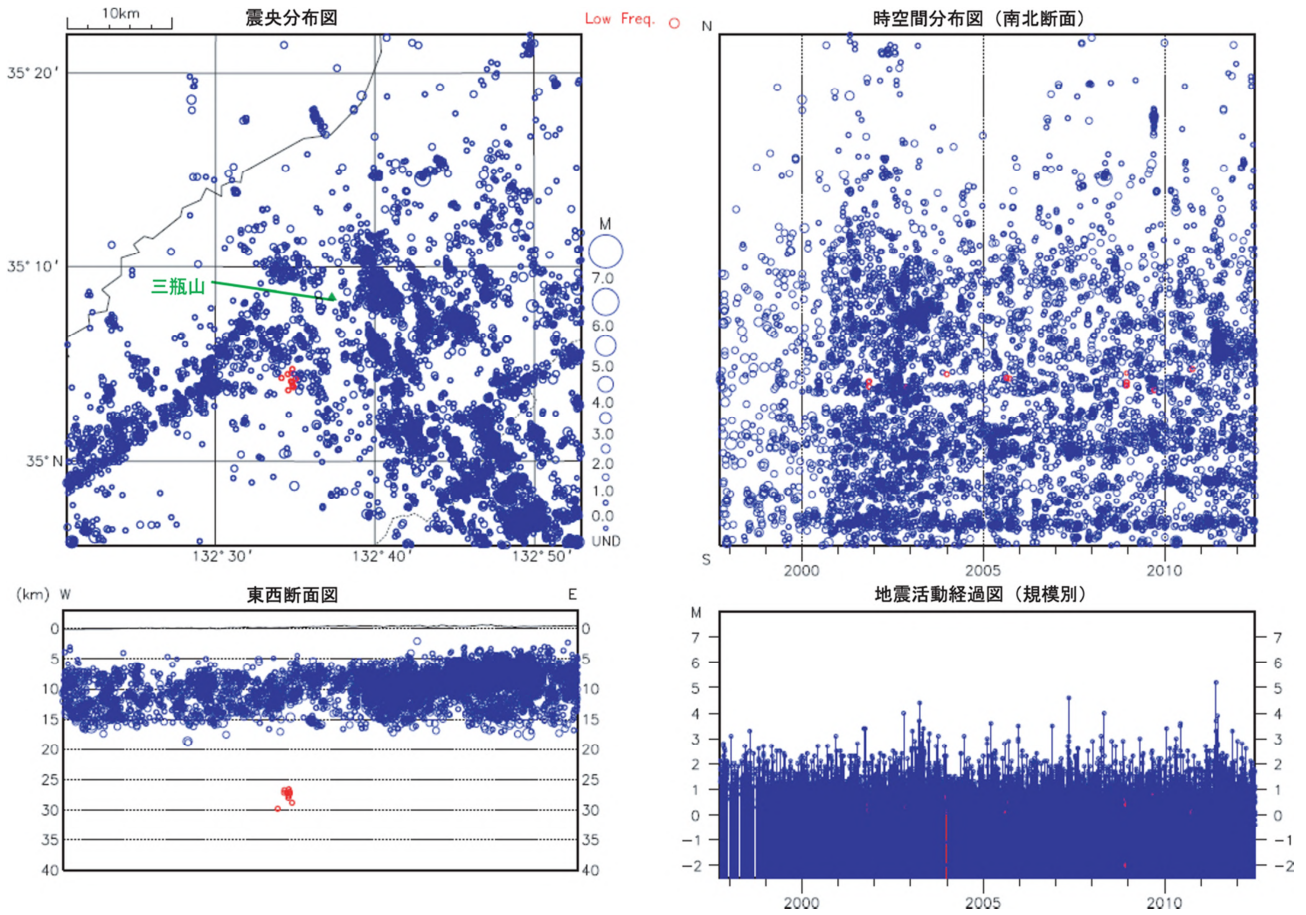


Figure 79-2 Activity of shallow VT earthquakes (blue circles) and deep low-frequency earthquakes (red circles) observed by a regional seismometer network (October 1, 1997, to June 30, 2012). Epicenter distribution(upper left), space-time plot (N-S cross-section) (upper right), E-W cross-section (lower left) and magnitude-time diagram (by scale) (lower right).

## Information on Disaster Prevention

### ① Hazard Map

None

## Social Circumstances

### ① Populations (as of December 1, 2011)

- Oda: 38,879
- Iinan: 5,532

### ② National Parks, Quasi-National Parks, Number of Climbers

- Daisen-Oki National Park
- Number of sightseers: 592,000 per year (number of sightseers in 2010: Oda Tourism Promotion Division materials)
- Statistics regarding number of mountain-climbers: None

### ③ Facilities

Oda

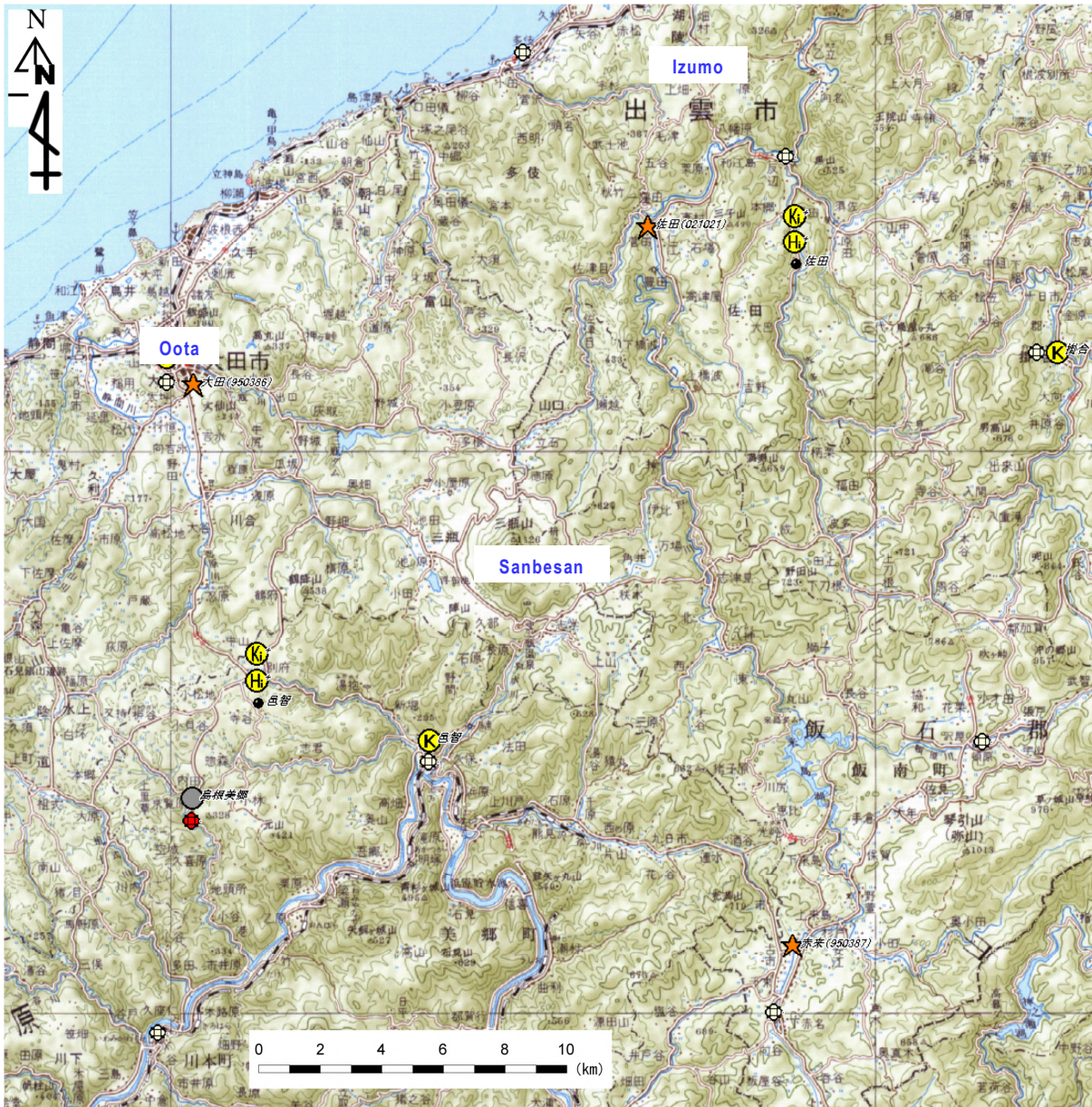
- Shimane Nature Museum of Mt. Sanbe



# Monitoring Maps

## Wide Area

\* Monitoring sites with multiple observation instruments are indicated by small black dots, and other symbols indicate types of monitoring.



1:200,000 scale regional map (Hamada) published by the Geospatial Information Authority of Japan was used.

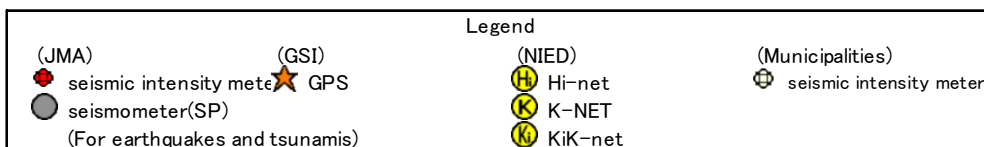


Figure 79-3 Regional monitoring map.

## **Bibliography**

Hattori, H. et al. (1983): Geology of the Sanbesan district. 1:50,000 Quadrangle Series, Geological Survey of Japan, AIST (in Japanese with English Abstract).

Hayashi, m. and Miura, K. (1987): San'in Chiiki Kenkyu (Natural Environment), **3**, 43-66 (in Japanese with English Abstract).

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