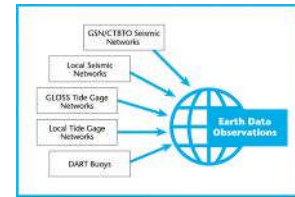


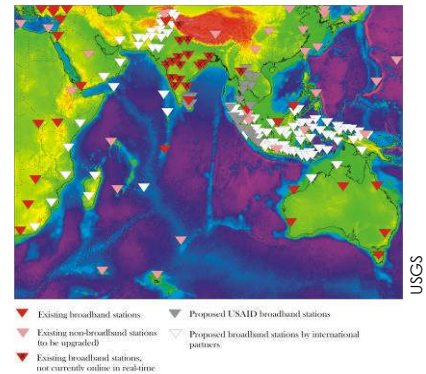
# SEISMIC MONITORING



The ability to warn a vulnerable population of the approach of a tsunami depends on a variety of measurements, initially seismic network data. Building capacity is critical to developing an effective warning system that addresses multiple coastal hazards, including earthquakes and tsunamis. The U.S. Geological Survey (USGS) supports a Global Seismic Network (GSN) that includes over 120 stations in more than 80 countries on all continents. The GSN improves the quality, coverage, and quantity of data for earthquake reporting and research. Data are reported to orbiting satellites, and then to the internet where information can be viewed publicly. Many stations are now part of a warning system that monitors earthquakes that may generate tsunamis.

## US IOTWS Contribution

Under the US IOTWS Program, USGS has helped governments in the region to upgrade their seismic monitoring capacity. This includes the integration of four seismic stations (one in Thailand and three in Malaysia) into global networks; installation of three accelerometers and three broadband stations in Indonesia; and strengthening of technical skills to monitor seismic activity using specialized software. Seismologists in warning centers and research institutes in Indian Ocean countries now have improved capacity to obtain and analyze data from seismic monitoring stations, which helps determine the location and magnitude of large seismic events in the region. With this data, they can determine the depth and type of the earthquake, and whether it has the potential to cause a tsunami.



*Suggested seismic station deployments and upgrades for the*

USGS also developed a five-day technical training program for Indonesia, Sri Lanka, Thailand, the Maldives, and India, and conducted many of the trainings in cooperation with UNESCO's International Oceanographic Commission (IOC). The training addressed earthquake monitoring and tsunami warnings, with an emphasis on seismology. In addition, the courses included discussions of methods to facilitate interagency coordination, communicate warnings, and share seismic and oceanic data among participating regional countries. With a good understanding of the use of earthquake and tsunami detection instruments, and through cooperation with the international community, Indian Ocean nations have increased their ability to detect and analyze earthquakes, and to issue warnings within the time frame needed to save lives.

## Next Steps

Carrying forward in its technical support role throughout the US IOTWS Program, the California Institute of Technology will continue to provide assistance and funding for the maintenance of seismic monitoring equipment. Each of the countries will

maintain and utilize the expanded monitoring capacity for hazard detection and tsunami analysis.

#### **For Further Information**

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