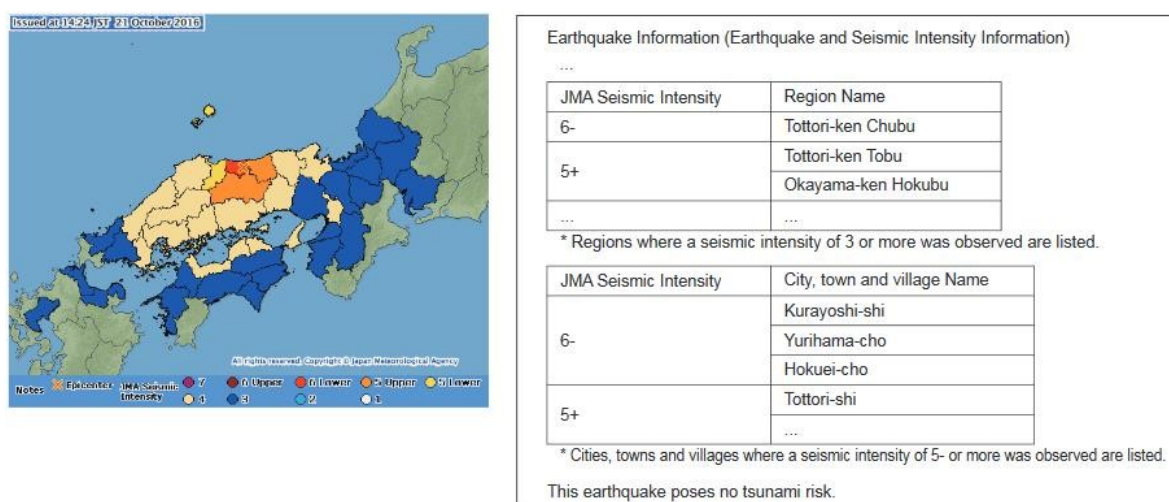


1.9 Natural Hazards Early Warning System (Japan)

OECD GP Activity	UN SF Activity	UN SD Goals / Targets
1. Natural hazards identification and communication, NH (early) warning systems	4. Enhancing disaster preparedness for effective response	3.D Strengthen the capacity of all countries ... for early warning, risk reduction and management of national and global health risks

Classification according to OECD Guiding Principles, UN Sendai Framework Priorities/Activities, and UN SDGs and Targets

Figure 1: Japan's Earthquake and Seismic Intensity Information



Source: © Japan Meteorological Agency

Short Facts:	Natural Hazard(s) Considered:
<p>Governance approach: Hazard communication</p> <p>Source: NOAA (National Oceanic and Atmospheric Administration)</p> <p>Entry into force: 2005</p> <p>Targeted Stakeholders: The public</p> <p>Scope of applicability: National</p>	<ul style="list-style-type: none"> • Tsunamis • Earthquakes • Volcanic activity • Typhoons • Extreme rainfalls <p>Climate change: Not included</p>

Description

Given its geological situation, Japan is very prone to a variety of natural hazards like earthquakes, tsunamis and typhoons. In 2011, massive damage was caused by the Great East Japan Earthquake, followed by a tsunami and heavy rain caused by typhoon Talas. In some cases, there were no efficient ways to inform relevant authorities and residents of the upcoming risk, and existing warning services did not advise residents to evacuate immediately. Based on these experiences, the Japan Meteorological Agency (JMA) decided to establish an emergency warning system to better prepare for such hazards.

Real-time data is continuously collected from JMA's seismometers, seismic intensity meters, sea level gauges, and other instruments in order to monitor for earthquakes and tsunamis. In the event that one data collecting centre is seriously damaged, the Earthquake Phenomena Observation System (EPOS) was installed to supplement the centres in Tokyo and Osaka.

JMA issues warnings and behaviour advisories to disaster management authorities, local governments and broadcasting media via a nationwide computer network. Such information is also provided to the public via Internet, TV, cell phones and other channels.

JMA issues Prompt Reports on Large Earthquakes and Tsunamis (PRLET) in the event of tsunami warnings or large earthquakes with a seismic intensity of 4 or greater. These PRLETS include a summary of earthquake information, seismic intensity distribution and an estimated seismic intensity distribution map within 30 minutes of the earthquake. In addition, JMA staff calls local governments in to the disaster management headquarters.

In the event of an earthquake that may cause a dangerous tsunami within the coastal regions of Japan, JMA issues Major Tsunami Warnings for specific regions, providing information on estimated wave arrival time and height.

Furthermore, volcanic observation reports are generated to complement volcanic alerts and volcanic advisories. In order to make volcano information easily understandable, the JMA developed the 'Volcano Activity Level,' an additional volcano index, which describes the magnitude of volcanic activity and necessary actions in case of disaster. Different types of severe weather warnings and weather advisories are issued in order to alert citizens of extreme weather events, such as typhoons, rainfall, and snow. These warnings provide information about the time, duration, and intensity of the upcoming weather event.

The Northwest Pacific Tsunami Advisory Center (NWPATC), part of the JMA, monitors earthquakes and tsunamis in that region. In the event of an earthquake with a magnitude of 6.5 or higher, NWPATC generates tsunami advisories for relevant countries. These advisories include information on the location of the hypocentre, the tsunami's estimated arrival time, as well as the expected intensity and height when it hits the coastal regions.

Link/Contact:

<http://www.jma.go.jp/jma/indexe.html>

<http://www.bousai.go.jp/kokusai/kyoryoku/pdf/soukikeikai.pdf>

http://www.jma.go.jp/jma/kishou/books/jishintsunami/en/jishintsunami_en.pdf



Comments by the UN/OECD Natech-Steering Group:

Warning systems for several relevant natural hazards may be favourable, but there are limitations due to required response times and problems when it comes to taking local effects into account.

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