

# LESSONS LEARNT FOR DISASTER REDUCTION

In the year 1993, Japan has been subject to very frequent disasters. The Mt. Unzen volcano is still highly active and lahars are numerous. In June to August, the Japan archipelago was struck by six typhoons, two of which resulted in serious damages in Kagoshima. As for earthquake disasters, the Off-Kushiro Earthquake in January, Off-Noto Peninsula Earthquake in February and the 12 July Southwest-Off-Hokkaido Earthquake took place one after another.

For the January earthquake, in comparison with its magnitude, damages were relatively small. Very few buildings collapsed and the following fires were all extinguished immediately. As a result, building engineers felt that earthquake engineering in Japan had finally conquered earthquake disasters. The 12 July earthquake, however, enabled us to learn that even with perfect earthquake engineering to resist severe shakings, there are other problems such as landslides, fires and tsunamis.

Through the field investigation on this tragic disaster, the UNCRD investigation team learned multiple lessons to be shared with those who are fighting against similar disasters all over the world;

1. Since 50 per cent of the earthquakes occur at night, scenarios for nighttime disasters should be prepared.
2. When an earthquake occurs deep under the sea, the current warning system is not always reliable particularly in the vicinity of the epicenter; a specific warning system at the local level should be developed.
3. When tsunamis arrive very quickly, a fire is apt to follow because the residents have no time to extinguish fire sources.
4. Flammable materials placed outside accelerate the development of a mass fire.
5. To protect a wooden structure from being exposed to fire brands, the strength of Fire Preventive Construction against shakings should be assured.
6. An effective method for an emergency response operation targeted at an isolated place should be prepared.
7. A key issue for self-aid in recovering from the damage would be the reconstruction of productive facilities and job creation for the affected people.
8. Structural engineering to cope with the load of tsunami pressure should be developed.

This disastrous event has yet to come to an end. Okushiri island is now going through the rehabilitation and reconstruction stage. UNCRD would like to continue its observation of how the people on the island and the central and local agencies concerned take action for recovery from the devastation. Particularly, planning for reconstructing the affected settlements, housing for homeless people, restructuring economic activities and industries such as fishery and tourism, and establishing an improved disaster management system to cope with future hazards will be the targets of UNCRD's future research work.

The quick response investigation team of UNCRD concludes its report on the damages from the Southwest-Off-Hokkaido Earthquake by wishing the earliest recovery of the affected areas.