

Toward a More Disaster Resistant Nation

Public awareness about natural disasters is higher than ever. During 2004, Japan suffered major damage in many parts of the country due to a succession of typhoons and torrential rains and the Mid Niigata Prefecture Earthquake in October. In December, the Major Earthquake off the Coast of Sumatra brought about tsunamis, ravaging countries along the Indian Ocean. In addition, the year 2005 marks the tenth anniversary of the Great Hanshin-Awaji Earthquake.

With these circumstances in mind, this special part describes major natural disasters during 2004 and the progress in restoration of the devastated areas. It also discusses what should be done to prevent such disasters.

Responses to natural disasters that occurred in 2004

[Responses to damage from torrential rains and typhoons]

○Extent of damage

A total of ten typhoons made landfall on Japan during 2004—the largest number on record—with Typhoon No. 4 in June of 2004 being the first one. These typhoons and other torrential rains left more than 230 people dead or missing and flooding some 170,000 homes across the country.

Two separate torrential rains in July 2004 caused major deluges, including urban areas. A torrential rain in Niigata and Fukushima led to the collapse of riverbanks along the Ikarashi, Kariyata and other rivers in the Shinano River system. Another torrential rain in Fukui resulted in bursts in the riverbanks of the Asuwa and other rivers in the Kuzuryu River system.

Typhoon No. 16 in August brought storm surges and heavy rains to many areas mainly in Chugoku and Shikoku. Typhoon No. 21 in September caused many large-scale sediment related disasters to Mie, Ehime and other prefectures. In October, Typhoon No. 23 brought about large-scale flood damage to the northern part of Hyogo Prefecture and other areas with the collapse of the riverbanks of the Maruyama and other rivers in the Maruyama River system. This typhoon also caused coastal disasters associated with storm surges in Kochi Prefecture.

<Damage from torrential rains and typhoons>

(i) Torrential rain in Fukui in July (Fukui city, Fukui Prefecture)



(ii) Typhoon No. 16 in August [storm surge disaster] (Takamatsu city, Kagawa Prefecture)



(iii) Typhoon No. 21 in September [sediment related disaster] (Saijo city, Ehime Prefecture)



(iv) Typhoon No. 23 in October [coastal disaster] (Muroto city, Kochi Prefecture)



○Disaster relief and restoration efforts

The Ministry of Land, Infrastructure and Transport (MLIT) conducted damage assessment and prompt relief and restoration activities.

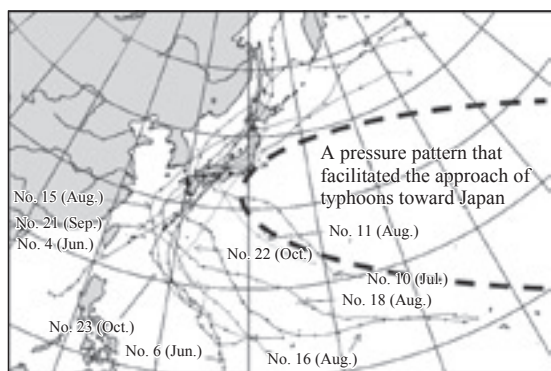
With allocations from the supplementary budget for fiscal 2004, MLIT organized relief and restoration works and disaster preparedness associated with torrential rains, typhoons and so on.

○Record-breaking number of typhoon landfalls on Japan

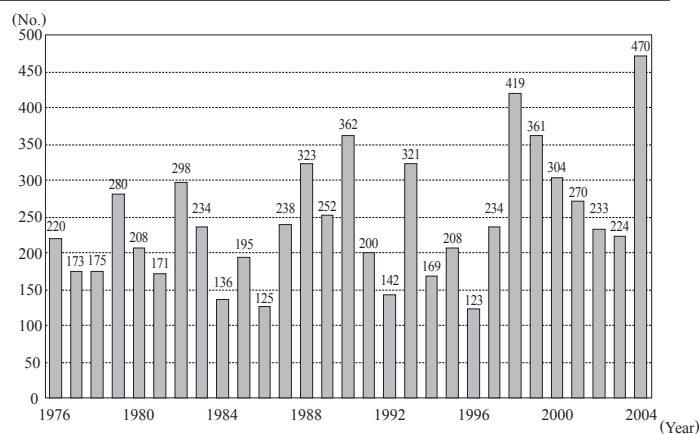
One of the major factors for repeated landfalls of typhoons is considered to be the location of the Pacific High shifted northward and extended toward Japan in summer and autumn, which led the typhoons to Japan's vicinity.

The number of heavy rain events, with an hourly precipitation of 50 mm or more, and its year-to-year variations have been on the rise. More research is needed to clarify relationship between global warming and the growing number of torrential-rain events.

<Paths of typhoons that hit Japan in 2004>



<Number of heavy rains with an hourly rainfall of 50 millimeters or more>



Note: The yearly total of torrential downpours as observed by the AMeDAS (Automated Meteorological Data Acquisition System) at some 1,300 points
Source: Japan Meteorological Agency

[Response to the Mid Niigata Prefecture Earthquake]

○Extent of damage

On October 23, 2004, an earthquake measuring 6.8 on the Richter scale struck the Chuetsu region of Niigata Prefecture. Kawaguchi-town, Niigata Prefecture, registered a maximum seismic intensity of 7 on the Japanese scale of 0-7 for the first time after the Great Hanshin-Awaji Earthquake. The devastating earthquake left 40 people dead. Over 100,000 people had to evacuate their homes at least temporarily. Damage from the earthquake included the derailment of a running Joetsu Shinkansen train, landslide dams, road damage, and damage to utilities.

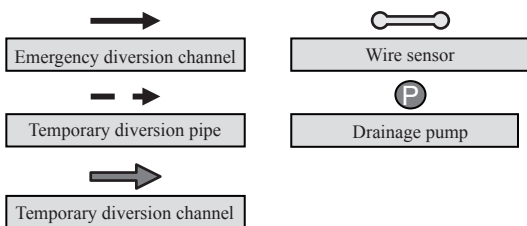
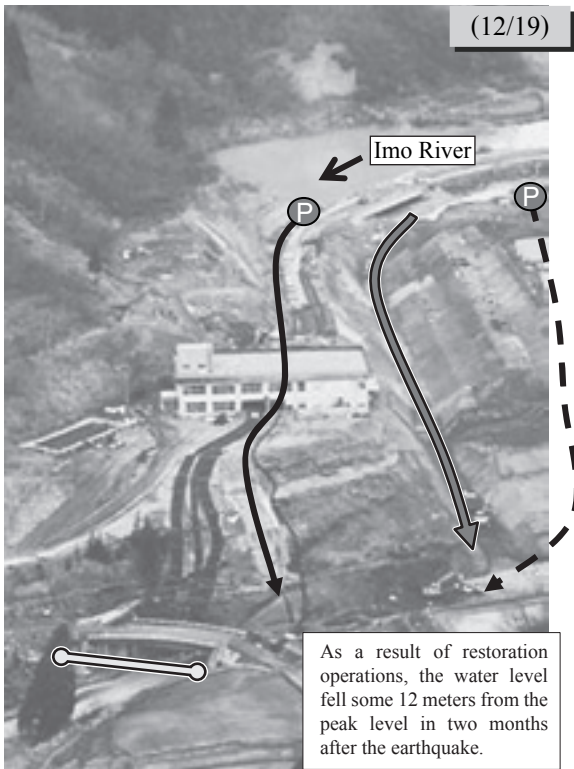
○Disaster relief and restoration efforts

MLIT promptly moved to assess the damage, with the dispatch of investigating teams to the disaster areas right after the earthquake. The ministry also sent experts and equipment to facilitate restoration efforts and support the victims.

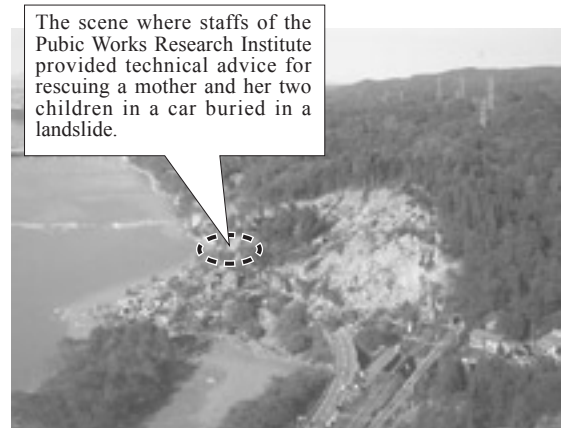
With allocations from the supplementary budget for FY2004, MLIT is now working on both disaster restoration projects and disaster-preparedness with priority given to projects designed to minimize earthquake disasters.

<Damage from the Mid Niigata Prefecture Earthquake >

**A project to cope with a landslide dam at the Imo River channel
(Yamakoshi-village, Niigata Prefecture)**



**Sediment related disaster
(Nagaoka city, Niigata Prefecture)**



**National Highway 252
(Horinouchi-town, Niigata Prefecture)**



<Disaster relief and restoration efforts>

Restoration of infrastructure and facilities and related support
<ul style="list-style-type: none"> • The central government conducted a restoration project for National Highway 291, which was under the prefectural management by law, as a national project (direct MLIT intervention). The start of work was announced on November 11. • The central government decided on November 5 to conduct an emergency project to cope with landslide dams at the Imo River channel as MLIT directly-control Sabo works request from the Niigata Prefectural Government. • A decision was made on December 20 to take a special measure that designed to expand the scopes of two types of projects—“disaster-related steep slope failure emergency prevention works” and “disaster-related steep slope failure regional prevention works”—to include retaining walls and others. • MLIT set up a sewerage engineering study committee in the wake of the earthquake. The committee put together a set of recommendations titled “emergency technical advice on the rehabilitation of sewer systems” and reported it to the Niigata Prefectural Government on November 22. • Work to make emergency risk assessment of damaged buildings was launched on October 24. • The headquarters and regional development bureaus of MLIT, research institutions and local governments sent experts in various fields to the disaster areas to assess damage, prevent secondary disasters, inspect hazardous places and support restoration and other efforts on the ground. • MLIT’s regional development bureaus and others sent or provided disaster relief machinery, snowplows and other equipment. • MLIT streamlined the disaster assessment process for its prompt completion on November 17.
Disaster relief and support
<ul style="list-style-type: none"> • Japan Coast Guard rescued stranded victims and transported doctors and other personnel to the disaster areas. • Niigata airport operated 24 hours a day between October 27 and November 11. • MLIT provided part of the Echigo Hillside National Government Park for relief purposes on request from the Self-Defense Forces, effective from November 8. • The Public Works Research Institute assigned staff members to support the operation to rescue a mother and her two children buried in a landslide.
Special arrangements for administrative procedures
<ul style="list-style-type: none"> • MLIT special arrangements for administrative procedures included: the extension of the term of validity of vehicle inspection certificates for vehicles of disaster-area residents; and easier procedures to change vehicle inspection places for damaged vehicle maintenance workshops.
Information services
<ul style="list-style-type: none"> • Local governments provided information on the vacancies of both public and private apartments for those who lost their homes. • Geographical Survey Institute provided geographical information and information on crustal movements (maps, aerial photos, etc.). • The Japan Meteorological Agency strengthened information services regarding the weather and aftershocks in and around the disaster areas. • MLIT provided damage information by taking advantage of aircraft, optical cables and the satellite transmission system. • MLIT also compiled and released disaster information with the help of GIS.
Activities by the industries and organizations concerned
<ul style="list-style-type: none"> • Industries and organizations provided experts in various fields to support restoration efforts. • The Japan Prefabricated Construction Suppliers & Manufacturers Association constructed temporary housing. • Relevant organizations provided consultation services on repairing damaged housing. • Carpenters and other skilled construction workers set up a support team for housing repair. • As many as 39 prefectural trucking associations transported relief supplies to the disaster areas. • The Niigata Trucking Association and major haulers offered full support for the transportation of relief supplies from the Niigata Prefectural Government to the disaster areas, including the dispatch of physical distribution experts. • The Niigata Prefectural Government established a prefectural relief supplies distribution center in cooperation with institutions and organizations concerned. • Bus operators began to use detour routes to maintain expressway bus services and started to provide alternate services for the disrupted railway sections on October 25. • Air carriers offered special services between Haneda and Niigata airports (between October 24, 2004 and January 4, 2005). • Many hotels and inns offered accommodations, bath services and meals for earthquake victims at no or low charges. • The Niigata Prefectural Government launched a program whereby the elderly and disabled among the quake victims were invited to stay at inns within the prefecture free of charge.

Source: Compiled by MLIT from:

Cabinet Office, *Heisei 16 nen (2004 nen) Niigata-ken Chuetsu Jishin ni Tsuite* [Regarding the Mid Niigata Prefecture Earthquake in 2004].

MLIT, *Niigata-ken wo Shingen to Suru Jishin ni Tsuite* [Regarding the Earthquake Centering Niigata Prefecture].

Hokuriku Shin’etsu District Transport Bureau, MLIT, *Niigata-ken Chuetsu Jishin Oukyu Taisaku no Gaiyo to Kongo no Kadai (Gaiyo-ban)* [Outline of Emergency Measures for the Mid Niigata Prefecture Earthquake and Issues to be Addressed (Summary)].

○Responses toward the rehabilitation of the disaster areas

MLIT supports post-disaster rehabilitation and reconstruction. As part of such support, the ministry has launched a number of support programs designed to promote tourism in Niigata Prefecture, where the tourism industry was significantly damaged by the Mid Niigata Prefecture Earthquake.

[**Responses to the Major Earthquake off the Coast of Sumatra and resultant tsunamis in the Indian Ocean**]

On December 26, 2004, an earthquake with a magnitude of 9.0 on the Richter scale occurred off the coast of northern Sumatra, Indonesia, to the west. The subsequent tsunamis devastated countries along the Indian Ocean, reportedly leaving some 300,000 people dead or missing.

MLIT assigned staff members of Japan Coast Guard to join the Japan Disaster Relief Teams sent to the disaster areas. The ministry also dispatched experts in tsunamis and those in restoration and reconstruction to Thailand, Sri Lanka, and the Maldives.

MLIT will continue to work together with other ministries, agencies and institutions concerned to assist affected countries in two major aspects: restoration and reconstruction of the devastated areas; and capacity development in disaster preparedness. As part of this initiative, MLIT will proactively support the establishment of a tsunami early warning system in the Indian Ocean.

<Activities of the Japan Disaster Relief Teams>



Thorough examination of the existing disaster management and development of new measures

A spate of natural disasters in 2004 have prompted MLIT to thoroughly examine its disaster management measures and commit itself further to disaster prevention and mitigation, as part of efforts toward a more disaster resistant nation.

[**Management of torrential rains and typhoons**]

○Developing an emergency action plan for torrential rain disaster management

Based on the lessons learned from a spate of torrential rain disasters during 2004, MLIT has come up with an “emergency action plan for torrential rain disaster management.” This plan is made up of five key policies: (i) improving disaster information services; (ii) ensuring the sharing of disaster information; (iii) maintaining and improving the functions of disaster prevention facilities; (iv) rebuilding the local disaster management capacity; and (v) thorough reviewing disaster preparedness for improvement. Deadlines and numerical targets have been established for these policies.

○Sediment related disaster management

The year 2004 has seen some 2,500 cases of sediment-related disasters across the country—a record annual number since statistics were first compiled. MLIT is now studying measures that address structural and non-structural counter measures against sediment related disasters.