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EMERGENCY RESPONSE MANAGEMENT

Case Study of Japan

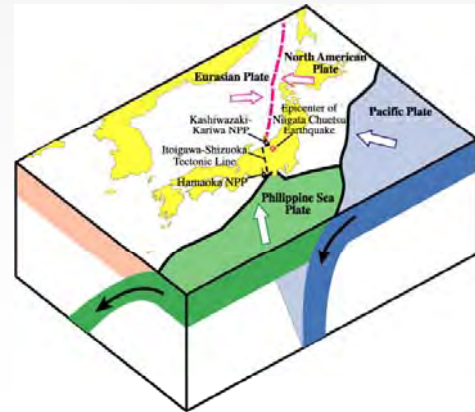
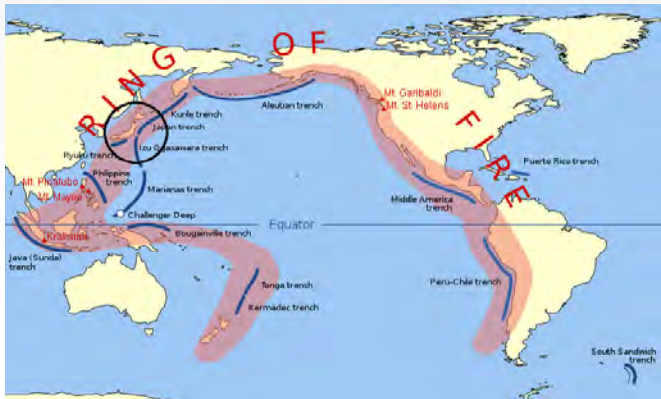
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2011

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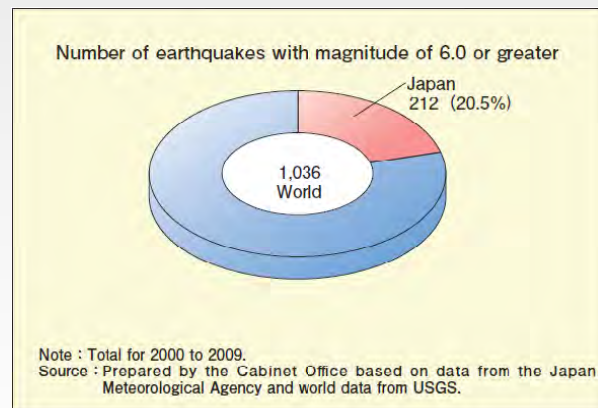
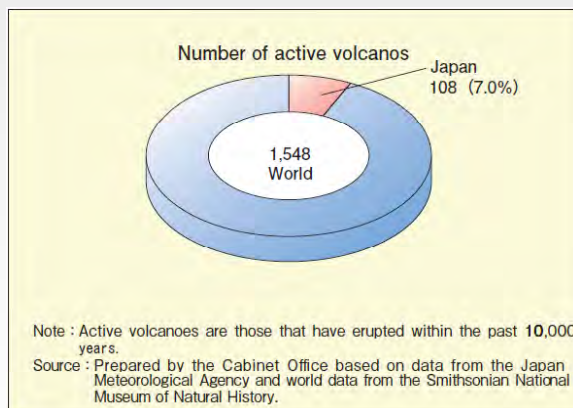
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INTERNATIONAL EMERGENCY RESPONSE**

DISASTER PROFILE

- ◆ UNFAVORABLE GEOGRAPHICAL, METEOROLOGICAL AND TOPOGRAPHICAL CONDITIONS ARE MAJOR CAUSES OF FREQUENTLY OCCURRING NATURAL DISASTER IN JAPAN
- ◆ EARTHQUAKES, TSUNAMIS, TYPHOONS, FLOODS, LANDSLIDES AND VOLCANO ERUPTIONS ARE MOST FREQUENT NATURAL DISASTER
- ◆ JAPAN IS LOCATED WITHIN THE BOUNDARIES OF RING OF FIRE AND AT THE JUNCTION OF 4 TECTONIC PLATES - EURASIAN PLATE, NORTH AMERICAN PLATE, PACIFIC PLATE AND PHILIPPINE SEA.

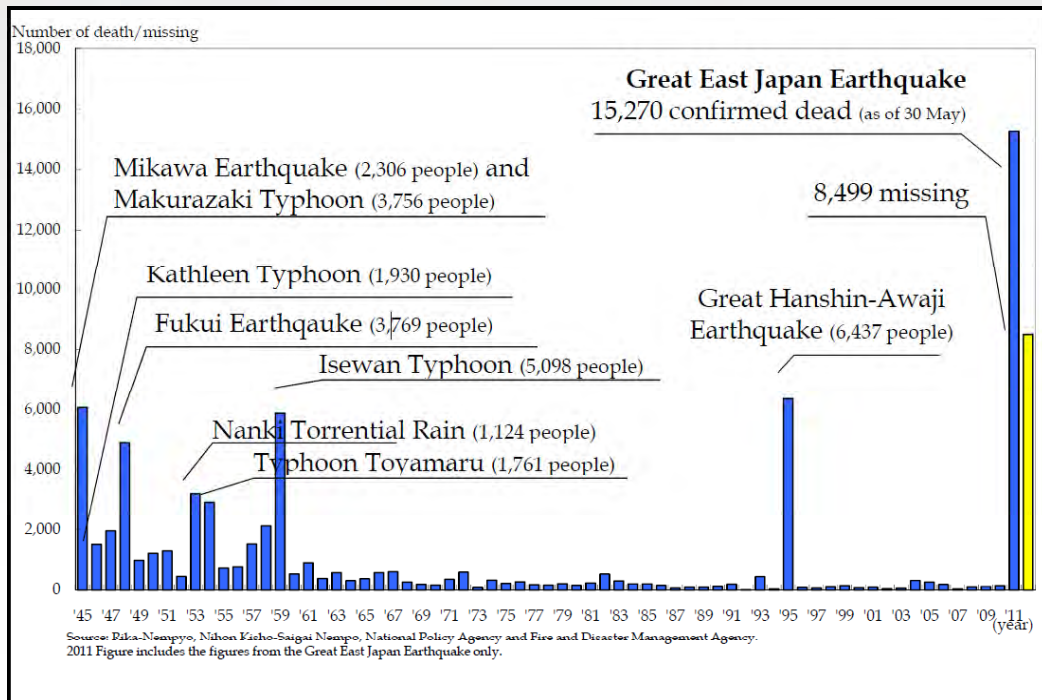


DISASTER PROFILE



Annually, Japan is hit by 10-13 typhoons which bring heavy rains and strong winds

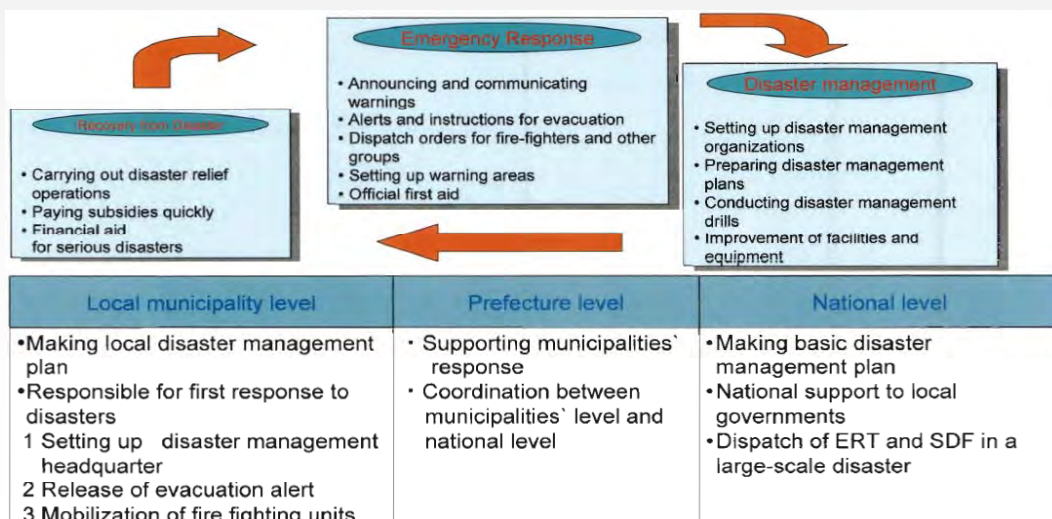
DISASTER PROFILE



OVERVIEW OF THE DISASTER MANAGEMENT SYSTEM

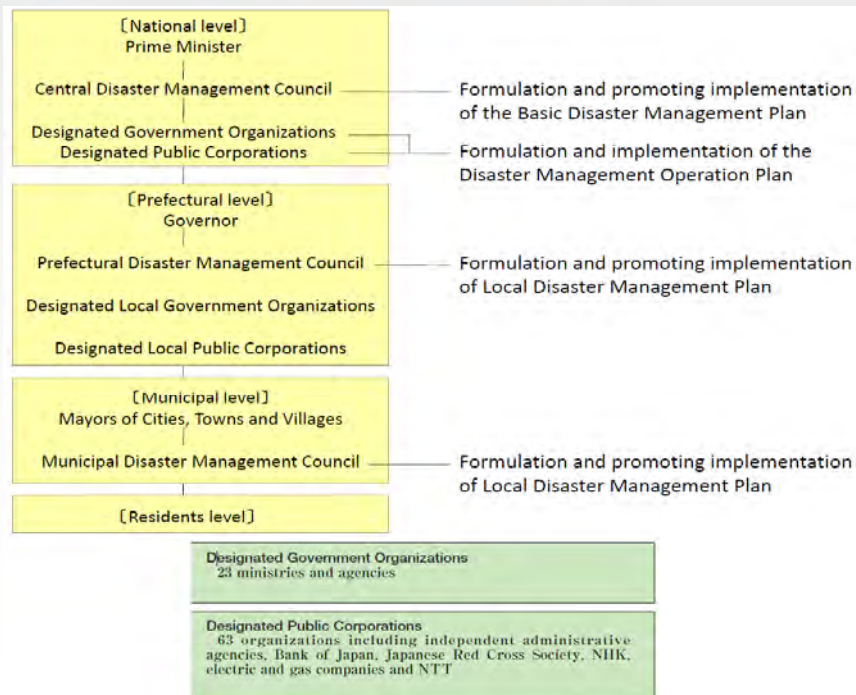
◆ CURRENT DISASTER MANAGEMENT SYSTEM OF JAPAN IS BASED ON DISASTER COUNTERMEASURES BASIC ACT, WHICH WAS ENACTED IN 1961

◆ ACCORDING TO THE DCBA, DISASTER MANAGEMENT IN JAPAN IS IMPLEMENTED AT THREE LEVELS: NATIONAL, PREFECTURAL, AND MUNICIPAL



OVERVIEW OF THE DISASTER MANAGEMENT SYSTEM

OUTLINE



OVERVIEW OF THE DISASTER MANAGEMENT SYSTEM

CENTRAL DISASTER MANAGEMENT COUNCIL

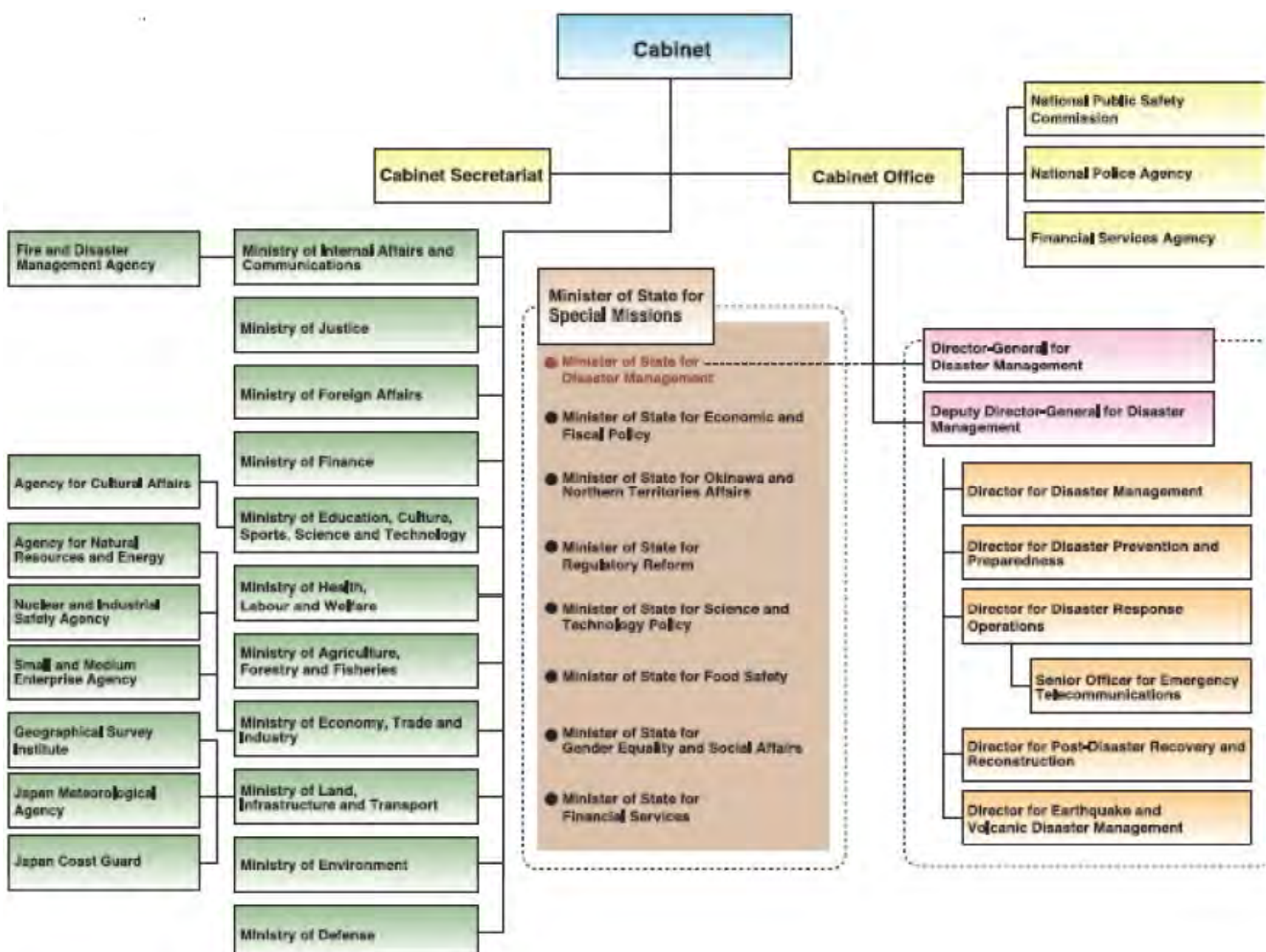
Central Disaster Management Council consists of the prime minister, who is the chairperson, Minister of State for Disaster Management, all ministers, heads of major public institutions and experts. The council promotes comprehensive disaster countermeasures including deliberating important issues on disaster reduction according to requests from the Prime Minister or Minister of State for Disaster Management.



OVERVIEW OF THE DISASTER MANAGEMENT SYSTEM

Along with a series of reforms of the central government system in 2001, the posts of Minister of State for Disaster Management - to integrate and coordinate disaster reduction policies and measures of ministries and agencies - and Director-General for Disaster Management -to undertake basic disaster management policies and response to large-scale disasters, as well as conduct overall coordination - were established.

Additionally, taking into account lessons learned from the Great Hanshin-Awaji Earthquake, the Cabinet Secretariat System was strengthened, including the appointment of the Deputy Chief Cabinet Secretary for Crisis Management and the establishment of the Cabinet Information Collection Center, to strengthen risk management functions to address emergencies such as large-scale disasters and serious accidents. Thereby, the Cabinet Office has a role in supporting the Cabinet Secretariat regarding disaster management matters.



LEGAL BASIS FOR EMERGENCY RESPONSE

Major laws for emergency response are 3:

FIRE SERVICE ACT - enacted in July 24, 1948, the purpose of the law is to regulate fire service within the entire territory of the country as well as functioning of fire service related state agencies.

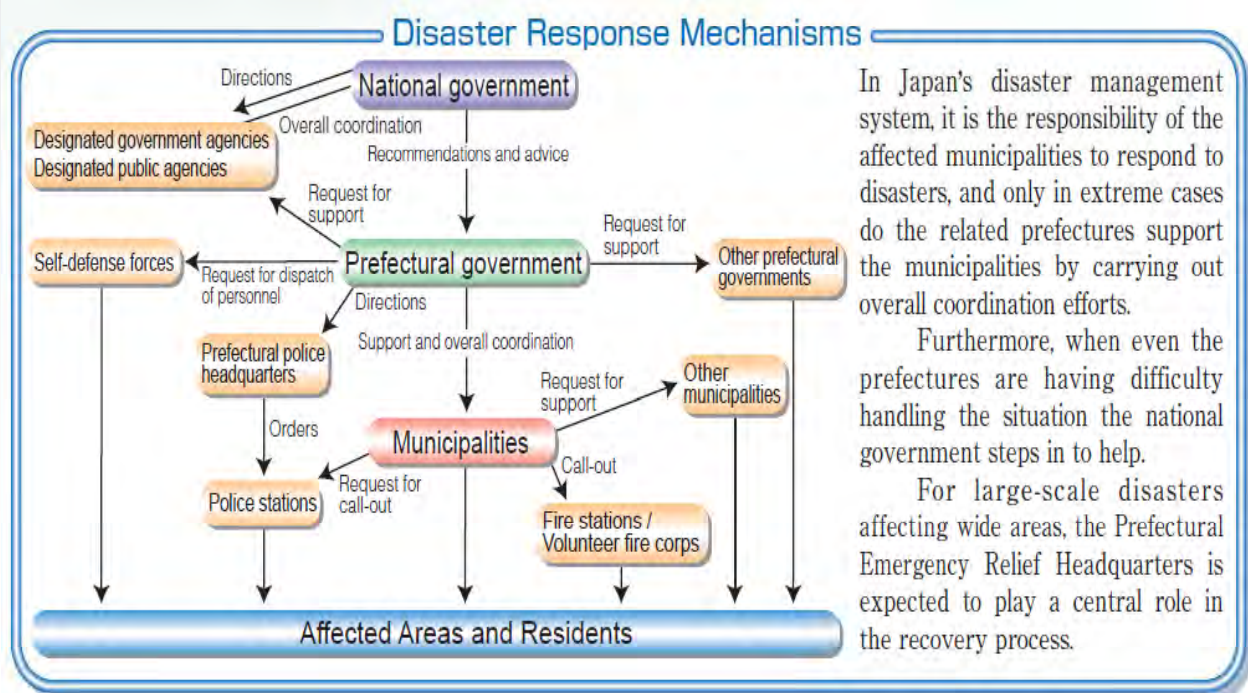
The organization of the fire defense system in the country is based on the **Fire Defense Organization Law** (December 23, 1947)

DISASTER RELIEF ACT the purpose of the law is to provide essential emergency relief in the event of a disaster through the cooperation of local governments, non-governmental organizations, such as the Japanese Red Cross Society, and the general public, so as to protect the disaster victims and maintain social order.

FLOOD CONTROL ACT the purpose of the law is to watch for and guard against water-related disasters caused by floods or storm surges and mitigate damage in order to maintain public safety.

The River Act is the major law for river management. Besides, the law lays down basic flood prevention measures.

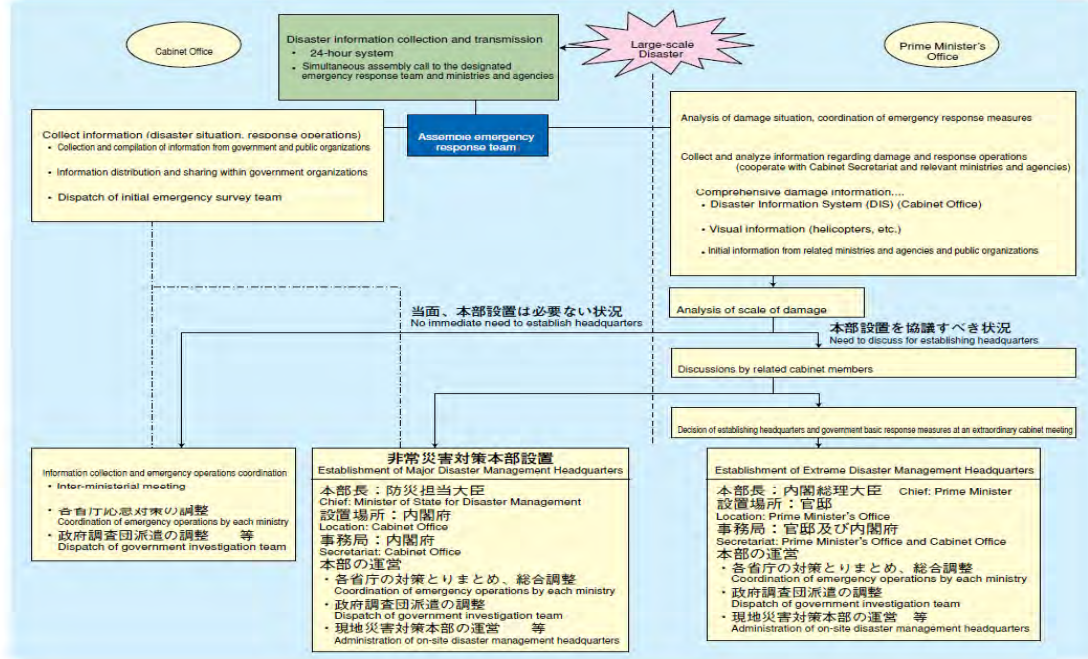
OUTLINE OF THE EMERGENCY RESPONSE MECHANISM



EMERGENCY RESPONSE AT NATIONAL LEVEL

CABINET OF LARGE-SCALE EMERGENCY RESPONSE MECHANISM

Cabinet Office Disaster Response Mechanism



EMERGENCY RESPONSE AT NATIONAL LEVEL

FIRE AND DISASTER MANAGEMENT AGENCY

The Fire Defense Organization Law prescribes that the FDMA conducts research, formulates plans, etc, concerning fire service systems in order to strengthen the fire defense capabilities of municipalities. To this end it provides, it provides municipalities with advice, guidance and recommendations concerning their fire service organizations and activities. It however does not have the power to control such organizations and activities.

Regarding emergency response, the FDMA also functions as a contact center between local fire-defense related organizations and government and coordination body during the large scale disasters and accidents



EMERGENCY RESPONSE AT NATIONAL LEVEL

FDMA EMERGENCY FIRE RESPONSE TEAMS

In the case of large-scale disasters when fire fighting organizations cannot cope alone, elite emergency rescue teams of the FDMA, known as, Emergency Fire Response Teams assist them.

Emergency Fire Response Teams was founded in 1995, after the Great Hanshin-Awaji Earthquake and institutionalized by the Fire Defense Organization Law as amended in 2003. Officially, EFRT founded in 2004.

EMERGENCY FIRE RESPONSE TEAMS consist of:

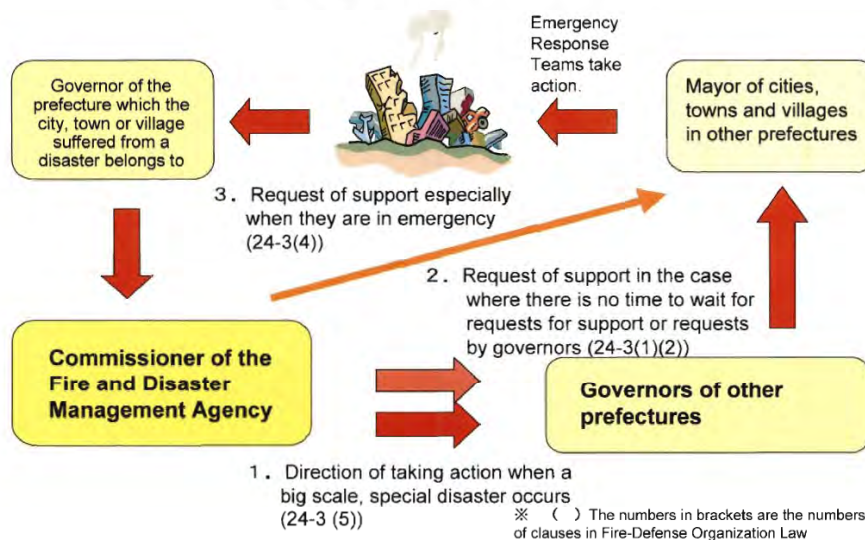
| | |
|------------------------|--------------------------|
| Firefighting Teams | Rescue Teams |
| Emergency Teams | Logistical Support Teams |
| Special Disaster Teams | Special Equipment Teams |
| Air Squadrons | Marine Squadrons |

As of 2004, 2800 Emergency Fire Response Teams has been registered across the country covering about 15 % all fire brigades in Japan.

EMERGENCY RESPONSE AT NATIONAL LEVEL

FDMA EMERGENCY FIRE RESPONSE TEAMS

Action Scheme of Emergency Response Team



EMERGENCY RESPONSE AT NATIONAL LEVEL

MINISTRY OF HEALTH, LABOUR AND WELFARE

Under Disaster Relief Act, MHLW, in cooperation with prefecture governments, is the key organization to conduct disaster relief and assistance policy during large-scale disasters.

Disaster relief and assistance policy including the urgent rescue and evacuation activities of the Ministry are managed by the Social Welfare and War Victims' Relief Bureau through the permanent Disaster Relief Contact-Coordination Council established under the authority of the Ministry.

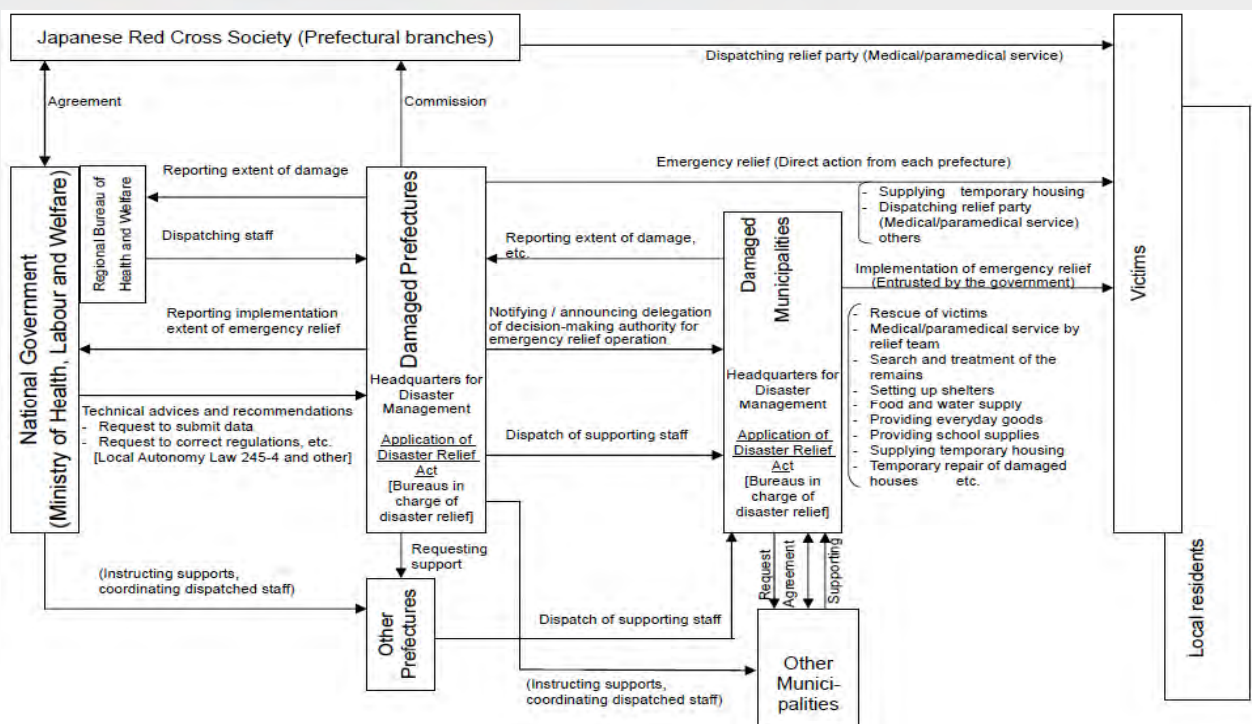
The Disaster Response Headquarters are set up only during the big emergencies which perform the following functions:

- summarize the information on disaster compiled by relevant bodies of the Ministry
- control and coordinate disaster response measures, share of the information among the structural bodies of the Ministry and with other relevant bodies and organizations
- constantly contact with high ranking officials of the Ministry
- control over the regular compilation of awareness and informational materials regarding the situation with the damage and disaster response activities and measures

In addition, the Ministry dispatches its employees to damaged regions and establishes local disaster response headquarters within the Regional Bureau of Health, Labor and Welfare if needed.

EMERGENCY RESPONSE AT NATIONAL LEVEL

BASIC DISASTER RELIEF MECHANISM UNDER DISASTER RELIEF ACT



EMERGENCY RESPONSE AT NATIONAL LEVEL

MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORTATION AND TOURISM

The MLIT conducts disaster management policy at national level in relation to flood and sediment disasters. Alongside with other phases of emergency management the ministry also actively involved in response phase and to this end Disaster Prevention Centre was established.

Disaster Prevention Centre established in the MLIT performs the following functions:

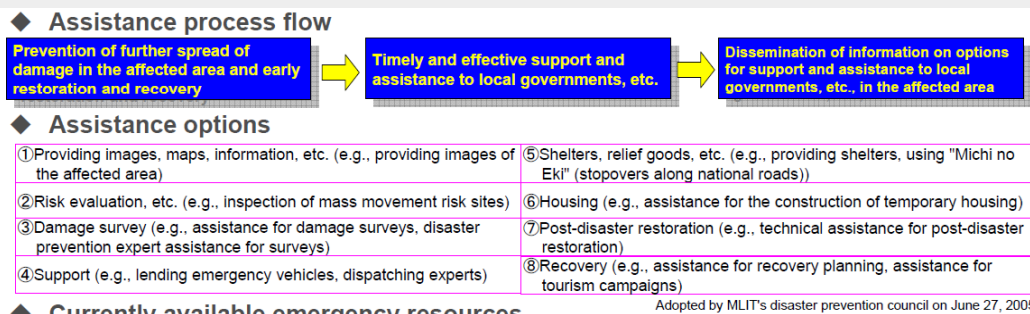
- ◆ Mobilizing leaders, staff members and related department members
- ◆ Observing and distributing meteorological information, site images, etc.
- ◆ Collecting and sharing information (integrating damage information)
- ◆ Sharing information with ministers' offices, other ministries and agencies, local departments, etc.
- ◆ Providing information to the public
- ◆ Regional assistance, assistance to local governments



EMERGENCY RESPONSE AT NATIONAL LEVEL

MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORTATION AND TOURISM

In case of the large-scale disasters MLIT renders assistance to local governments:



◆ Currently available emergency resources

Mobile command vehicle



57 vehicles

Emergency helicopter



8 helicopters

Satellite communications vehicle



53 vehicles

Mobile lighting system



211 units

Portable image transmission system: Ku-sat

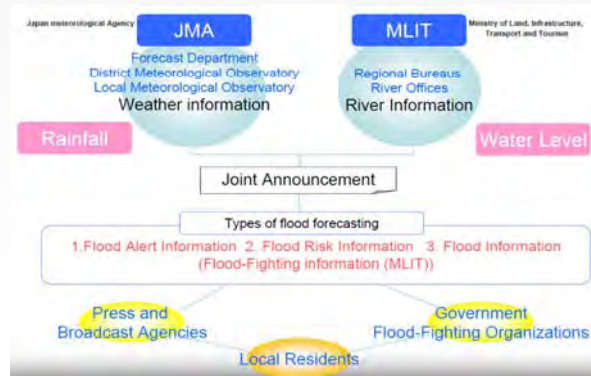
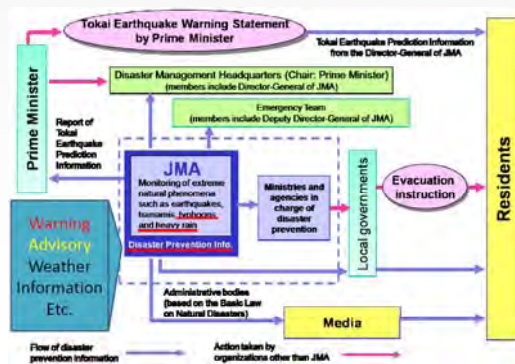


327 sets

EMERGENCY RESPONSE AT NATIONAL LEVEL

JAPAN METEOROLOGICAL AGENCY

JMA is semi-autonomous agency of the MLIT. Besides, functioning as the central weather service agency of Japan, the agency has established comprehensive surveillance and awareness providing mechanism with regard to earthquake, typhoon and volcano hazards. Regarding flood forecast Director-General of Japan Meteorological Agency (JMA) In the event of the imminence of a flood or storm surge, the Director-General of JMA informs the Minister of Land, Infrastructure, Transport and Tourism and the prefectural governors concerned of the present state.



EMERGENCY RESPONSE AT NATIONAL LEVEL

JAPAN COAST GUARD

Disaster preparedness and marine search and rescue is one of the main activity direction of the JCG. It is the responsibility of JCG to conduct search and rescue operation once accident such as boat/vessel involved accidents occur.

Reports of incidents and accidents and requests for help can also quickly be made to the JCG when the need arises by dialling 118 on a mobile or onboard phone. Calls from landline are received by the respective regional centers, whereas, the calls from onboard phones are directed to headquarters.

To respond to such maritime disasters as large-scale oil spills, the discharge of hazardous and noxious substances, and shipboard fires, the JCG has stationed fire-fighting ships and disaster mitigation equipment around the country.



| Fleet Strength | | |
|-----------------------------|--|-------------------|
| (as of April 1, 2011) | | |
| Vessels and Craft | Patrol vessels | 121 |
| | Patrol craft | 297 |
| | Special guard and rescue craft | 63 |
| | Hydrographic survey vessels | 13 |
| | Aids to navigation evaluation vessels | 1 |
| | Buoy tenders | 1 |
| | Aids to navigation tenders | 13 |
| | Training boats | 3 |
| | | Total: 452 |
| | Aircrafts | Airplanes |
| Helicopters | | 45 |
| | Total: 72 | |
| Aids to Navigation | Visual aids to navigation | 5,266 |
| | Radio aids to navigation | 58 |
| | Other aids to navigation | 45 |
| | Total: 5,369 | |
| Budget and Personnel | | |
| Budget | 175,432 million yen (start of fiscal year ending March 31, 2012) | |
| Personnel | 12,836 persons (as of March 31, 2011) | |

EMERGENCY RESPONSE AT NATIONAL LEVEL

SELF DEFENSE FORCES

The SDF disaster relief role is defined in Article 83 of the Self-Defense Forces Law of 1954, requiring units to respond to calls for assistance from prefectural governors to aid in fire fighting, earthquake disasters, searches for missing persons, rescues, and reinforcement of embankments and levees in the event of flooding.

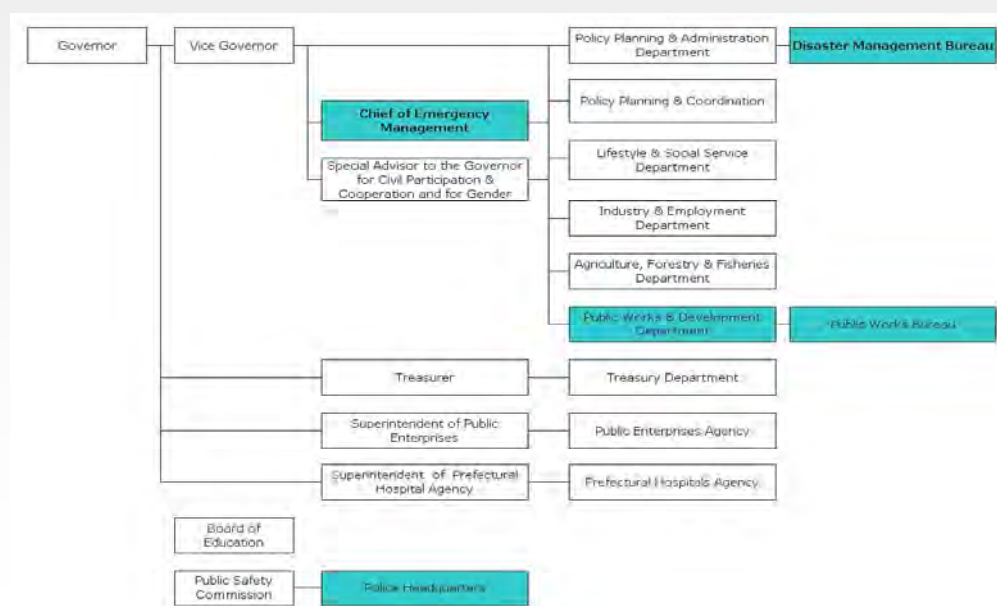
The SDF conducts a variety of disaster relief operations in collaboration with municipal governments when disasters such as natural disasters occur in any part of the country, by engaging in the search and rescue of disaster victims or missing ships or aircraft, controlling floods, offering medical treatment, preventing epidemics, supplying water, and transporting personnel and goods.

SDF are deployed only upon the request of prefectural governor. Municipal mayors can ask prefectural governors to request a disaster relief dispatch by the SDF.

Over 100,000 SDF personnel were dispatched at a peak time for relief operations for the large-scale earthquake and nuclear disaster based on the Great East Japan Earthquake in March 2011.

EMERGENCY RESPONSE AT PREFECTURE LEVEL

To carry out its disaster management responsibilities relevant departments and divisions is established within each prefecture.



EMERGENCY RESPONSE AT PREFECTURE LEVEL

The following responsibilities fall under the jurisdiction of prefectures:

- Liaison and coordination among municipal fire services
- Advice, guidance and recommendations regarding municipal fire services
- Direction regarding disaster prevention measures and requests for assistance measures during an emergency
- Education and training for fire service personnel and volunteers (at prefectural fire academies)
- Formulation of prefectural disaster prevention plans and implementation of comprehensive disaster countermeasures.

In the event of large-scale disasters, disaster relief headquarter is established in the prefecture government.

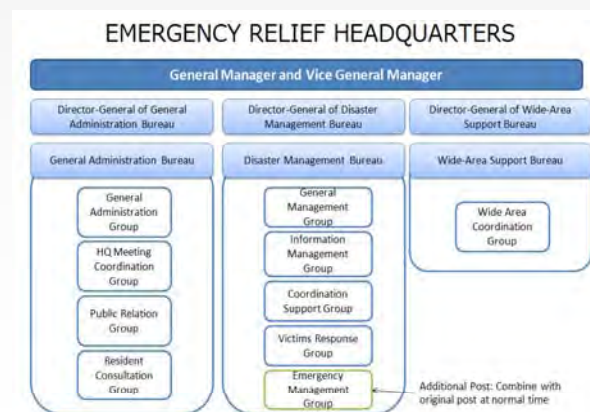
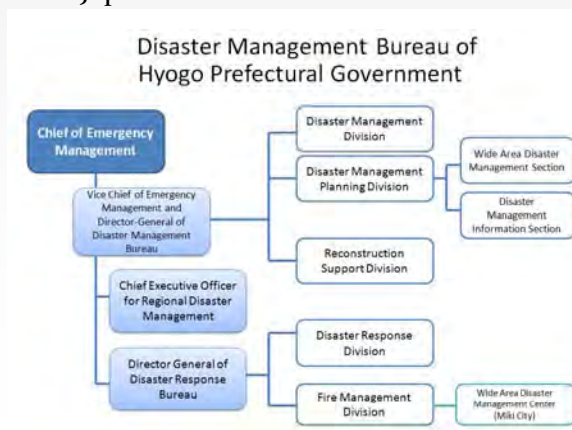
Police staffs which engage in search-rescue operations during disasters join emergency response upon the request of prefectural government which in turn usually acts so upon the request of mayor of affected municipality.

EMERGENCY RESPONSE AT PREFECTURE LEVEL

HYOGO PREFECTURE DM AND ER SYSTEM

Location: Honshu Island, Kansai region
 Area: 8,393.34 km²
 Population: 5,58 million
 Capital and the largest city: Kobe
 Hyogo is the 12th largest prefecture of Japan. The prefecture consists of 41 municipalities and 8 districts.

Disaster Management Center of Hyogo Prefecture Government was established in August, 2000. It was the first local government office dedicated to disaster management in Japan.



EMERGENCY RESPONSE AT PREFECTURE LEVEL

HYOGO PREFECTURE DM AND ER SYSTEM

Phoenix Disaster Management System collects disaster information from 334 terminals installed in such disaster management agencies as prefectural governments offices, district administration offices, local administrative organs, municipalities, fire headquarters, police headquarters, police stations, self-defense forces, national government (Fire and Disaster Management Agency, etc.), lifeline providers, etc.

Main function of the system are: collection of observation data, prediction of earthquake damage, collection of damage information, geographic information, image information, estimation of demand and supply of people.

Hyogo Satellite Communication Network – 166 satellite-based stations across the prefecture has been installed to collect and transmit emergency contacts, meteorological, disaster and other information (transmission of voice, video, facsimiles and other data) via disaster administration wireless system that connects the prefectural office, district administration offices, municipalities, fire headquarters, and other points using satellite communications and goods, etc.

Video Phone System has been set up for information exchange between prefectural and municipal disaster management headquarters during disasters.

Helicopter Video Transmission system – Besides the prefectural police helicopter system, prefectural fire and disaster-prevention helicopters are utilized to transmit video images to the Disaster Management Center. As of 2006, there were 260 designated helipads across the prefecture.

24-hour monitoring – 24-hour monitoring and quick-response system is maintained in anticipation of the occurrence of a disaster or other emergency.

EMERGENCY RESPONSE AT PREFECTURE LEVEL

HYOGO PREFECTURE DM AND ER SYSTEM

REGIONAL EMERGENCY MANAGEMENT BASES

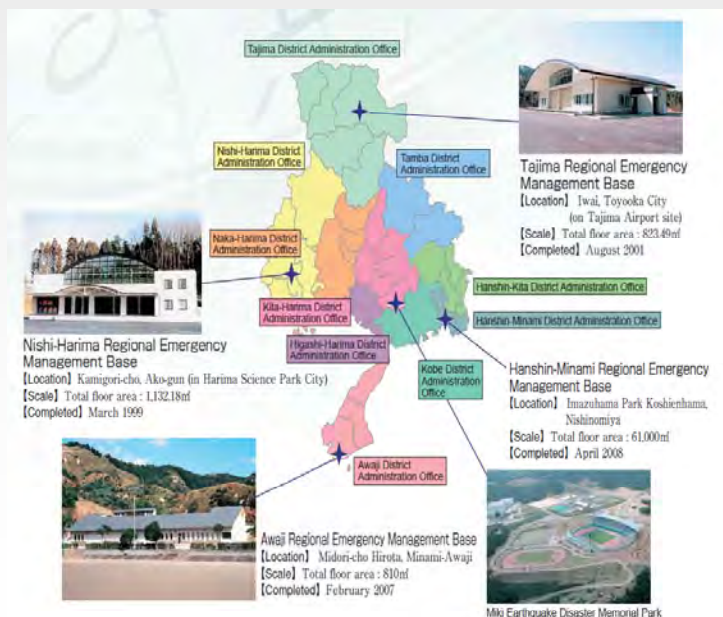
Regional emergency management bases store rescue equipment and relief supplies for victims, collect and distribute relief supplies, and assemble and mobilize emergency relief workers. Currently, 4 regional emergency management bases are at the disposal Hyogo Prefecture government, while one more base is under construction and the construction of another is planned. The area of the largest base – Miki Earthquake Disaster Memorial Park is about 220

[Stored items (including planned items)]

As of May 2006

| Name of base | Food (dried rice) | Blankets | Lifesaving systems | Plastic sheets |
|--|-------------------|---------------|--------------------|----------------|
| Miki Earthquake Disaster Memorial Park | 77,000 | 50,820 | 29 | 5,133 |
| Nishi-Harima | 16,000 | 10,560 | 7 | 1,066 |
| Tajima | 4,000 | 2,640 | 2 | 267 |
| Awaji | 3,000 | 1,980 | 2 | 200 |
| Hanshin-Minami | 18,000 | 11,880 | 7 | 1,200 |
| Total | 118,000 | 77,880 | 47 | 7,866 |

*Also stored are temporary toilets, tents, floodlights and generators.



EMERGENCY RESPONSE AT MUNICIPAL LEVEL

In Japan, the municipalities are obliged to fully carry out the fire services in their areas. They implement the actual fire service affairs such as fire fighting and rescue and ambulance services.

The organizations for handling the fire services consist of fire departments, fire stations and volunteer fire corps. The municipalities are required to organize some or all of these organizations. Main affairs handled by the municipalities are:

- Establishment, management and operation of fire service organizations.
- Fire prevention, fire fighting, rescue and ambulance services, and response to earthquake, storm and flood damage
- Formulation of municipal disaster prevention plans and implementation of comprehensive disaster countermeasures.

“119 hot line” centers are managed by municipal fire departments.

The 23 wards of Tokyo are exceptions. Fire services of these municipalities are handled by the Tokyo prefecture.

EMERGENCY RESPONSE AT MUNICIPAL LEVEL

KOBE CITY MUNICIPALITY ER SYSTEM

Outline of Kobe City

Surface area: 552.83 km²
Population: 1,542,458 people
The number of households: 685,639 households
Status of Kobe Fire Department

Organization

Fire Department Head Quarters (1), Fire Stations (10), Fire Station Division (1), Fire Station Branches (18), First Aid Station (1)
Number of employees: 1,396 people (quorum)
Number of resources, such as fire engines (total: 232 units)
Number of fire engines: 133 units (Pumpers, Pumpers with foam, Aerial ladders, Rescue tracks, Special disaster response vehicle, etc.)
Number of ambulance: 36 units
Number of other vehicles: 63 units (vehicles for inspection and public relations, transportation vehicles, etc.)
Fireboat: 1 unit
Aircraft (Helicopter): 2 units

Fire Fighting Water Source Facilities

(Total: 33,521 units)
Number of hydrants: 29,936 units
Number of tank for firefighting: 2,257 units (of the number of earthquake-proof tank: 259)
Number of other water source facilities: 1,328 (pools, ponds, rivers, etc.)



EMERGENCY RESPONSE AT MUNICIPAL LEVEL

KOBE CITY MUNICIPALITY ER SYSTEM

KOBE FIRE DEPARTMENT EMERGENCY OPERATIONS ROOM

Operation room of the Kobe Fire Department serves as a coordination and emergency hotline center. Once a call received automated system identifies and displays caller's data and exact location at the digital map.

In order to ensure that all incoming calls are received 126 telephones lines are being utilized. In addition, 5 surveillance cameras to ensure safety situation at strategic places are managed by the Operation Room, meteorological situation in Kobe City area, National Broadcasting Channel – NHK are observed.

For the purpose of coordination of emergency medical service daily information on medical staff shifts, vacant rooms, etc are received from designated hospitals.

The department has taken some measures in order disabled and aging persons to be able to call 119 hot line easily. To this end special fax sheets, landline telephones which enable one to call 119 hot line with the click of just a button has been elaborated - or ordinary landline telephones reconfigured to support the same function - and distributed to registered persons. Once such a call received all the personal and health data are displayed automatically.



EMERGENCY RESPONSE BY OTHER BODIES/AGENCIES

DISASTER MEDICAL ASSISTANCE TEAMS

Disaster Medical Assistance Teams are specialized and trained medical aid teams which operate during large-scale disasters. DMAT system was established in 2005 based on the lessons of Great Hanshin Awaji Earthquake.

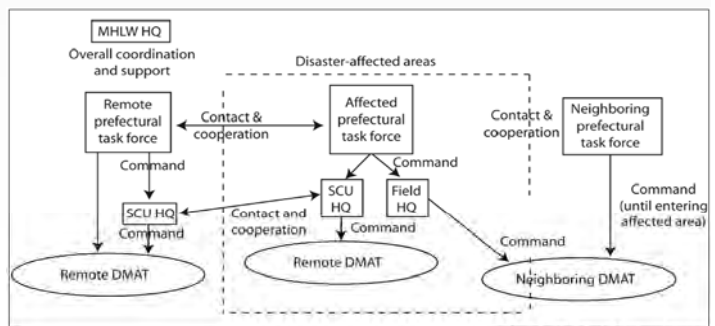
In guidelines for deployment prepared by MHLW, DMATs are defined as “mobile, trained medical teams that can be rapidly deployed during the acute phase of a disaster within 48 hours.

MHLW ensures overall coordination of relief activities, collect and share information and assist local government in decision-making.

As of March 2008, 305 medical facilities, 442 teams, and 2,609 individuals had been trained.

Functioning of DMAT are based on the agreements between prefectural governments and medical establishments and DMATs are deployed only upon the request of government of disaster affected prefecture unless the one following conditions is not the case:

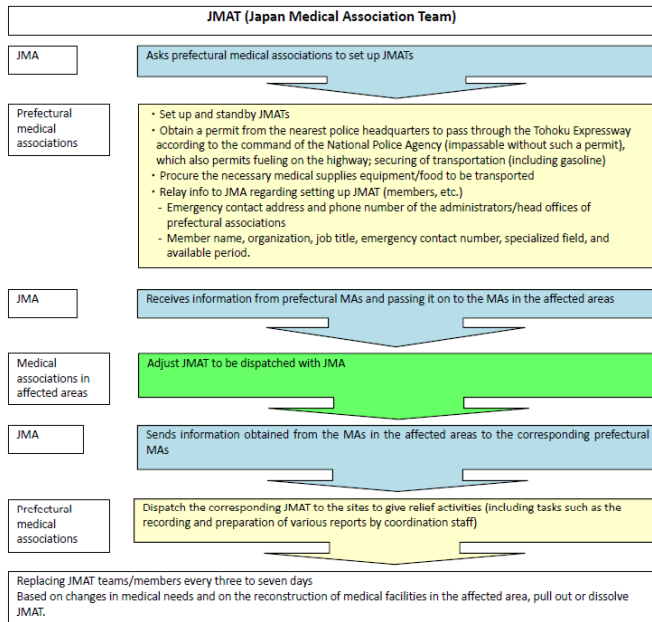
- ◆ an earthquake of Japanese seismic intensity 5 occurring within any of the 23 wards of Tokyo;
- ◆ an earthquake of Japanese seismic intensity of nearly 6 or greater occurring in any other area (outside of the 23 wards of Tokyo);
- ◆ a tsunami alert is issued; an earthquake alert is issued for the Tokai region; or large-scale aircraft crash occurs.



EMERGENCY RESPONSE BY OTHER BODIES/AGENCIES

JAPAN MEDICAL ASSOCIATION TEAM

The concept of JMAT had been building up since 2009 by a subcommittee of the Japan Medical Association's Committee on Emergency and Disaster Medicine. For the first time, JMAT came into action in March 2011, when the Great East Japan Earthquake occurred.



Overview of Japan Medical Association Team (JMAT)

- Purpose**
 - To provide healthcare at evacuation sites and first-aid centers
 - To provide medical assistance at hospitals and clinics in the disaster-affected areas (and to provide the ongoing healthcare that needed to be continued even before the disaster occurred)
- Supporting site, supporting medical association (general rule)**
Iwate: Hokkaido, Tohoku (Akita), Tokyo, Kanto-Koshinetsu and Kinki blocks (Osaka, Wakayama)
Miyagi: Tokyo, Kanto-Koshinetsu, Kinki (Hyogo, Nara), and Chugoku/Shikoku blocks
Fukushima: Tokyo, Chubu, Kinki (Kyoto, Shiga) blocks
Ibaraki: Kyushu block
- Team composition (example)**
1 Physician, 2 nurses, 1 coordination staff (driver)
- Necessary medical supplies and equipment**
Corresponding to the above tasks, including food and others
- Dispatching duration of the team**
Approximately three to seven days (depending on discussion with supported sites and supporting associations)
- Communication method with JMA: Mobile phone**
- Payment of expenses**
JMA and the prefectural medical associations shall bear the costs and expenses.
 - The Disaster Relief Act will be invoked.
 - One million yen from JMA (immediate)
- Compensation for secondary disasters: Handled by JMA**

EMERGENCY RESPONSE BY OTHER BODIES/AGENCIES

JAPAN RED CROSS SOCIETY

The JRCS is designated as a "Designated Public Corporation" by the Disaster Countermeasures Basic Act and the Disaster Relief Act, and is required to co-operate with the Government to offer relief assistance in times of disaster.

There are 488 response teams – 6844 medical relief personnel across. Each team consists of six personnel: a doctor, a head nurse, two nurses, and two administrators.

The domestic disaster relief activities of the JRCS are as follows:

- *Medical relief and psychological care*
- *Storage and distribution of relief goods*
- *Provision of blood products*
- *Collection and distribution of voluntary donations*

The Society has undertaken a number of disaster relief activities at home since 1888, when it sent its first medical relief team to assist the victims of the Mt. Bandai eruption.

Numbers of relief goods provided

| | |
|--|--------|
| Blankets | 21,418 |
| Sets of articles for daily use | 2,925 |
| Sets of food | 4,215 |
| Sets of mattresses, pillows, and other sleeping items, excluding blankets. | 328 |

EMERGENCY RESPONSE BY OTHER BODIES/AGENCIES

BUILDING RESEARCH INSTITUTE

The BRI is actively involved in response measures taken in immediate aftermath of earthquakes, as well as in long term measures. It conducts preliminary damage assessments of buildings just after an earthquake hit the area thereby defining which buildings is still can be exploited which are not. Having completed assessment of each building BRI specialist attach an special sticker on what enables one to define vulnerability level of a building.



EMERGENCY RESPONSE BY OTHER BODIES/AGENCIES

JAPAN BROADCASTING COMPANY - NHK

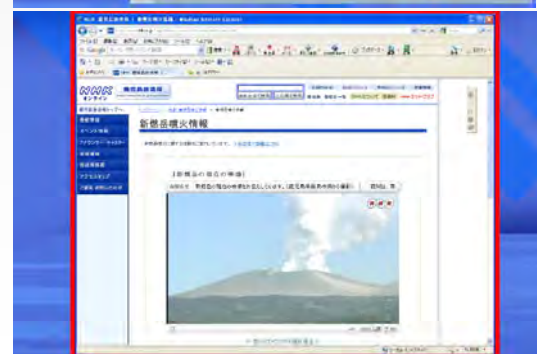
◆ VAST RESOURCES DEDICATED TO DISASTER RESPONSE

14 HELICOPTERS AT 12 LOCATIONS AND 460 REMOTE CONTROLLED CAMERAS COUNTRYWIDE

◆ COMPREHENSIVE COORDINATION ESTABLISHED WITH JMA

Small quakes detected the JMA before strong earthquake occurs, automatically redirected to NHK within a few seconds, (moreover, NHK has installed seismic intensity meters at 73 locations countrywide) what enables it to issue public alert promptly and provide necessary information regarding the magnitude and precise location of the earthquake as well as tsunami information nationwide.

Emergency Warning System (EWS) utilized in collaboration the JMA is carried out only in special emergency cases such as large-scale tsunami and earthquake warnings or based on the request of governors and mayors - the system switches on tv sets and radios - 4 tv channels and 3 radio channels belong to NHK - automatically.



Live motion picture of Mt. Shin-Moedake in Miyazaki

EMERGENCY RESPONSE BY OTHER BODIES/AGENCIES

LIFELINE CRISIS MANAGEMENT CASE STUDY

OSAKA GAS ENGINEERING CO. – CRISIS MANAGEMENT SYSTEM

In order to determine whether damage has been caused by earthquakes or not and quickly estimate the extent of that damage, gas companies in Japan use seismometers that can measure SI as an indicator of gas pipeline and structural damage. The seismometers are tied into an automatic shutoff system.

In order to smoothly produce and supply city gas, Osaka Gas remotely monitors and controls city gas supply 24-hours a day.

Safety is ensured in areas heavily damaged by earthquakes by stopping city gas supply. The intelligent gas meters installed at each customer's location automatically shut off at 200 (gal). Furthermore, low pressure gas supply is automatically shut off in earthquakes capable of damaging pipelines and structures by an automatic shut-off system installed at medium pressure. Moreover, in extreme cases (widespread damage), city gas supply can be shut off remotely from the Central Control Center and Back-Up Center.

Back-Up Center serves as an alternative to Central Control Center – if, in the event earthquake Central Control Center is damaged and is no more capable of remotely monitor and control city gas supply Back-Up Center built with aseismic systems and other state-of-the-art technology for 24-hour operation can take over control.



VOLUNTARY EMERGENCY RESPONSE TEAMS

VOLUNTARY FIREFIGHTING CORPS

ORGANIZED BY MUNICIPALITIES

NOT PROFESSIONALS – ENGAGED AT FIREFIGHTING AS SECONDARY OCCUPATION

INDEPENDENT FROM FIRE DEPARTMENTS AND FIRES STATIONS BUT DURING EMERGENCIES

MUST FOLLOW THEIR INSTRUCTIONS.

ONE MUNICIPALITY – ONE CORPS PRINCIPLE

SUIBO-DAN – VOLUNTARY FLOOD FIGHTING TEAMS

NOT PROFESSIONALS – ENGAGED AT FLOOD FIGHTING AS SECONDARY OCCUPATION

DURING PERIODS WITHOUT FLOODING CONDUCT PATROLS AND INSPECTION OF LEVEES

ABOUT 900 000 FLOOD FIGHTERS NATIONWIDE – AS OF 2009.

BOKOMI – COMMUNITY BASED DISASTER RESPONSE IN KOBE CITY

ELEMENTARY SCHOOL DISTRICT BASED ORGANIZATIONS

ESTABLISHED BY ALL 191 DISTRICTS OF KOBE CITY

EQUIPMENTS AND MATERIALS PROVIDED BY LOCAL GOVERNMENT

STOREHOUSES INSTALLED IN LOCAL PARKS

CONDUCT VARIOUS EMERGENCY RESPONSE RELATED DRILL (EQUIPMENT USE, RESCUE, EVACUATION)

ALSO CONDUCT WELFARE ACTIVITIES (FOR EX. HOLDING LUNCH GATHERING WITH ELDERLY PEOPLE WHO LIVE ALONE)

SCHOOLS SERVE ALSO AS EVACUATIONS SITE DURING EMERGENCIES

INTERNATIONAL EMERGENCY RESPONSE

JAPAN DISASTER RELIEF TEAMS

◆ DISPATCHED IN THE CASE OF LARGE-SCALE DISASTERS UPON THE REQUEST OF THE AFFECTED COUNTRY

◆ DISPATCH IS CARRIED OUT BY JICA FOLLOWING THE ORDER BY MINISTRY OF FOREIGN AFFAIRS OF JAPAN





◆ FOUR WAREHOUSES WORLDWIDE:

- ✓ GERMANY – FRANKFURT
- ✓ USA – MIAMI
- ✓ SOUTH AFRICA – JOHANNESBURG
- ✓ SINGAPUR

◆ 8 PRIORITY GOODS AT WAREHOUSES:

✓ tents, sleeping pads, plastic sheeting (tarpaulins), blankets, portable water containers (plastic jerry cans), water tanks, water purifiers and electric generators.

FOUR TYPES OF JDR TEAMS

| Dispatch Team | Composition | Activity | Duration |
|---|---|--|----------------------------|
|  <p>Search and Rescue Team</p> | National Police, Fire and Disaster Management, Coast Guard, MOFA, JICA, | Search and rescue victims trapped in collapsed structures | Approx 7 to 10 days |
|  <p>Medical Team</p> | Doctors, nurses, pharmacists Team head (MOFA) Team Coordinator (JICA) | Urgent medical assistance including patient treatment | Approx 2 weeks |
|  <p>Expert Team</p> | Experts provided from 14 related Ministries of Japan | Technical advice or guidance on disaster prevention and damage mitigation based on an assessment of the situation. | Approx 2 weeks |
|  <p>Self-Defense Force Unit</p> | Ground, Maritime, Air Self-Defense forces 50-1000 persons depends on number of dispatched team | Search and rescue, medical assistance (including disease control) Air and sea transport and water supply | Approx 2 weeks to 2 months |

CONCLUSION

MAIN FEATURES

CHANGES AND ADVANCEMENTS DRIVEN BY PREVIOUS LARGE-SCALE DISASTERS – BASED ON THE LESSONS OF PREVIOUS NATURAL DISASTERS SYSTEM HAS UNDERGONE BOTH ORGANIZATIONAL CHANGES AND ENHANCEMENTS.

DECENTRALIZED – CENTRAL ROLE PLAYED BY MUNICIPALITIES, EACH RESPONSIBLE FOR EMERGENCY RESPONSE WITHIN ITS TERRITORY. THE GROWING TREND OF DECENTRALIZATION IS OBSERVED.

MULTILEVEL EMERGENCY RESPONSE – DEPENDING ON THE SCALE OF DISASTER EMERGENCY RESPONSE IS CONDUCTED ON LOCAL, PREFECTURAL AND NATIONAL LEVELS.

AD HOC RESPONSE PREPAREDNESS – AT EACH LEVEL NECESSARY FACILITIES AND CONDITIONS HAS BEEN CREATED AND COORDINATION MECHANISM PUT IN PLACE FOR INSTANT ESTABLISHMENT OF RESPONSE HEADQUARTERS.

CRUCIAL COLLABORATION WITH JMA AND MLIT – JMA AND MLIT ARE KEY BODIES FOR DISASTER PREDICTION AND GOOD CO-OPERATION MECHANISM BETWEEN THEM ENABLES RESPONDING DISASTER TIMELY AND IN CO-ORDINATED MANNER.

CONCLUSION

GOOD PRACTICES – LESSONS TO LEARN

SUCCESSFUL PROMOTION OF VOLUNTARY EMERGENCY RESPONSE AND DISASTER AWARENESS AMONG PUBLIC – BIG NUMBER OF VOLUNTARY AND EMERGENCY RESPONSE TEAMS AND HIGH LEVEL OF PREPAREDNESS.

SUCCESSFUL PROMOTION OF SPECIALIZED EMERGENCY RESPONSE TEAMS – EMERGENCY MEDICAL TEAMS SUCH AS, DMAT AND JMAT HAS ESTABLISHED NATIONWIDE NETWORK.

COMPREHENSIVE COORDINATION MECHANISM AMONG MUNICIPALITIES AND HOSPITALS FOR EMERGENCY MEDICAL RESPONSE – CONSTANT INFORMATION SHARING IS ENSURED BETWEEN MUNICIPAL FIRE DEPARTMENTS AND DESIGNATED HOSPITALS.

INTEGRATED MEASURES ENABLING DISABLED AND AGED PEOPLE EASILY TO MAKE EMERGENCY CALLS – DATABASE OF AGED PEOPLE AND SICKNESS HISTORY OF THEM AT CALL CENTERS, SPECIAL DEVICES FOR ONE-BUTTON EMERGENCY CALL AND ETC.

COMPREHENSIVE MECHANISM OF EMERGENCY BROADCASTING BY NATIONAL TELEVISION – THANKS TO CLOSE COLLABORATION WITH JMA AND ESTABLISHED AUTOMATED EMERGENCY WARNING, HUGE FACILITIES AND EQUIPMENTS IN ITS DISPOSAL NHK PLAYS CENTRAL ROLE IN DISASTER BROADCASTING AND EMERGENCY WARNING.

EFFECTIVE LIFELINE CRISIS MANAGEMENT SYSTEM – RECENT DISASTERS PROVED HIGH LEVEL OF EMERGENCY RESPONSE PREPAREDNESS AND CAPABILITIES BY LIFELINE – ELECTRICITY AND GAS – PROVIDERS. INTEGRATION OF ADVANCED TECHNOLOGIES FOR DISASTER PREDICTION, CONTROL AND RESILIENCE AND COMPREHENSIVE COLLABORATION WITH OTHER RELEVANT BODIES ARE THE KEY REASONS.

THANK YOU !