ASIAN DISASTER REDUCTION CENTER
Visiting Researcher Program FY2012A

Comparative study of Disaster Management of Japan and Kyrgyz Republic

Final Research Paper

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BACKGROUND

INTRODUCTION

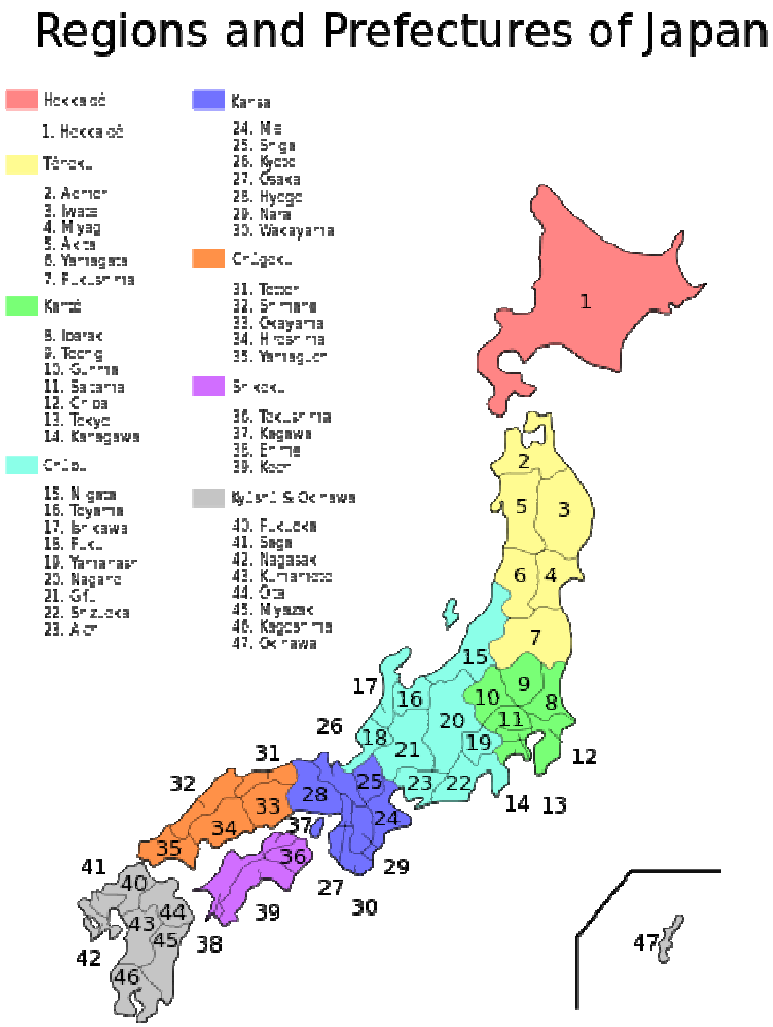
The threat of natural disasters, industrial accidents requires measures to ensure public safety, infrastructure, economy, maintain the stability of ecological systems.

Crises and disasters affect all areas of human existence, society and state. The signs of their origin is often hidden from the modern and surveillance systems, and measures to prevent and eliminate the effects require a coordinated response.

The most effective response to natural and technological disasters and accidents can be achieved earlier action based security timely prediction and eliminate the very possibility of emergency situations, increase security and the environment in the event of their occurrence.

Need to develop and bring together government, research and industrial organizations, local governments to further develop organizational, theoretical, methodological and technological basis for a qualitative improvement in the area of natural and industrial safety. Forecasting of emergency situations requires a comprehensive study of their sources and the analysis of possible causes, often linked to the need to address cross-cutting scientific issues.

Japan - country located on the islands in the western of Pacific Ocean. Square of Japan approximately 372.2 km2 and constitute it the Japanese archipelago, the largest of them - Honshu, Hokkaido, Kyushu and Shikoku. Constructed bridges between islands and underwater tunnels allowed to turn scattered territorial space into one of the country overland formation. Hokkaido and Honshu connects the world's longest traffic tunnel Seikan laid under the Tsugaru Strait. Three bridges over the islands and waters of the Seto naykay (Inland Sea), have joined the islands of Honshu and Shikoku. Honshu and Kyushu connect two tunnels and a bridge. Japan consists of 8 regions and 47 prefectures, each overseen by an elected governor, legislature and administrative bureaucracy. Each prefecture is further divided into cities, towns and villages. The nation is currently undergoing administrative reorganization by merging many of the cities, towns and villages with each other. This process will reduce the number of sub-prefecture administrative regions and is expected to cut administrative costs



Over the past few decades, although the territory of Japan a little bit, but increased by the creation of man-made islands. So, in Tokyo Bay for 10 years, was paved Yumenosima island on which to build a stadium, a museum, a greenhouse, a park. Island Ogisima created specifically to house the steel mill. For the construction of an international airport in Osaka Bay was also poured artificial island.

The coastline is 29.8 thousand km. Coasts are strongly indented and forms many bays and coves. Washing Japan Sea's and ocean have great importance to her as a source of biological products, mineral and energy resources.

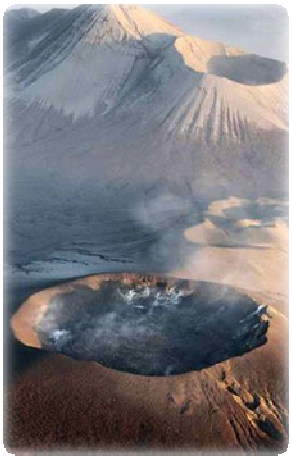
The geographical position of Japanese islands to the east of the continent determined and imaginative name of the country - land of the rising sun.

The capital of Japan - **Tokyo** is located on the same latitude as the southern tip of Turkmenistan.

75% of Japan is covered by mountains up to 3 km. or more above sea level, the plains occupy only a fifth. In plain areas of Japan are the largest cities and major industrial areas of the country: most of the population lives.

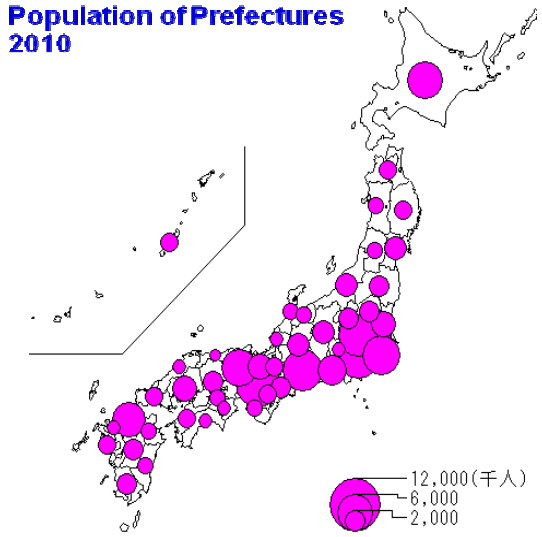
The most famous mountain in Japan – Fuji. It stands on the border of Shizuoka and Yamanashi prefectures. Height of Mount Fuji - 3,776 m, making it the highest mountain in Japan. Over half a million people could climb Mount Fuji.

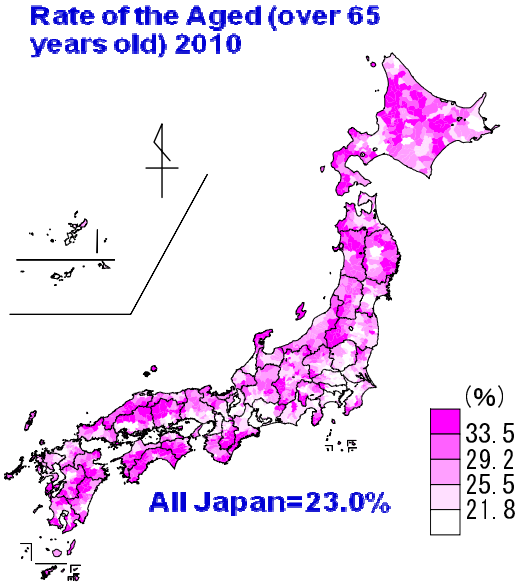
A considerable part of the mountain peaks in Japan - volcanoes, they are here, there are about 200, 67 are considered "live" (active or dormant). Among the particularly active volcano Asama, Miharayama, Asosan and Sakurajima.

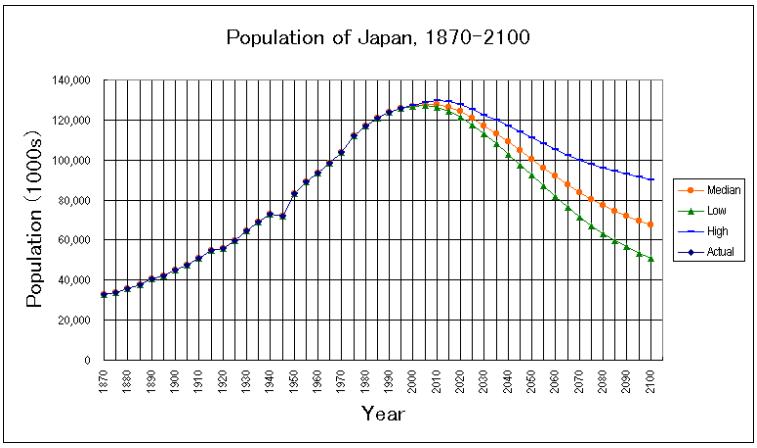


In 2009, Japan had population about 127,470,000 people. According data's of 2007 89.07% of Japanese people living in cities. In Japan, one of the highest life expectancy in 2009, it was 82.12 years, and one of the lowest infant mortality rate. Japanese society is rapidly aging, fertility explosion after World War II changed the birthrate decline in the late XX century. In 2005, about 20.1% of the population is over 65.

These changes in the demographic structure have led to a number of social issues, particularly a potential reduction in the labor force and increase the cost of social benefits such as pensions. Many young Japanese prefer not to marry or have a family. It is expected that by 2050, the Japanese population will drop to 95 million people. Demographers and government participating in the hot debate over how to cope with this problem. As a solution to demographic problems is proposed to encourage the birth rate



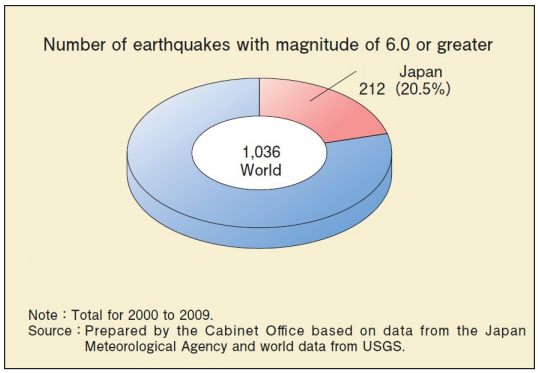


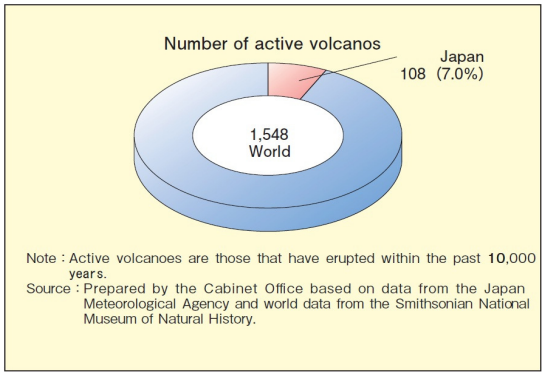


DISASTER PROFILE OF JAPAN.

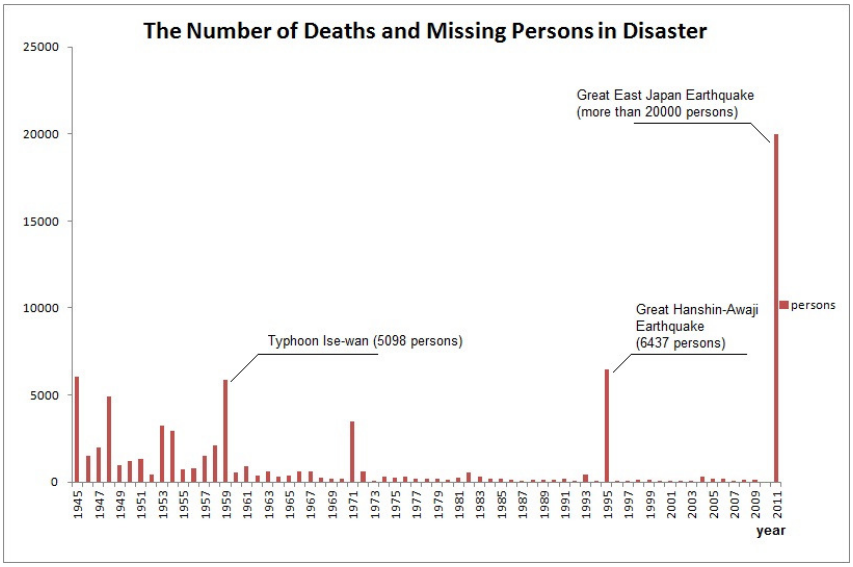
Japan's geographical and climatological conditions make the country vulnerable to frequent natural disasters such as typhoons, torrential rains and heavy snow as well as earthquake, tsunamis and volcanic eruptions.

Japan is located in the circum-Pacific mobile zone where seismic and volcanic activities occur constantly. Although the country covers only 0.25% of the land area on the planet, the number of earthquakes and distribution of active volcanoes is quite high.



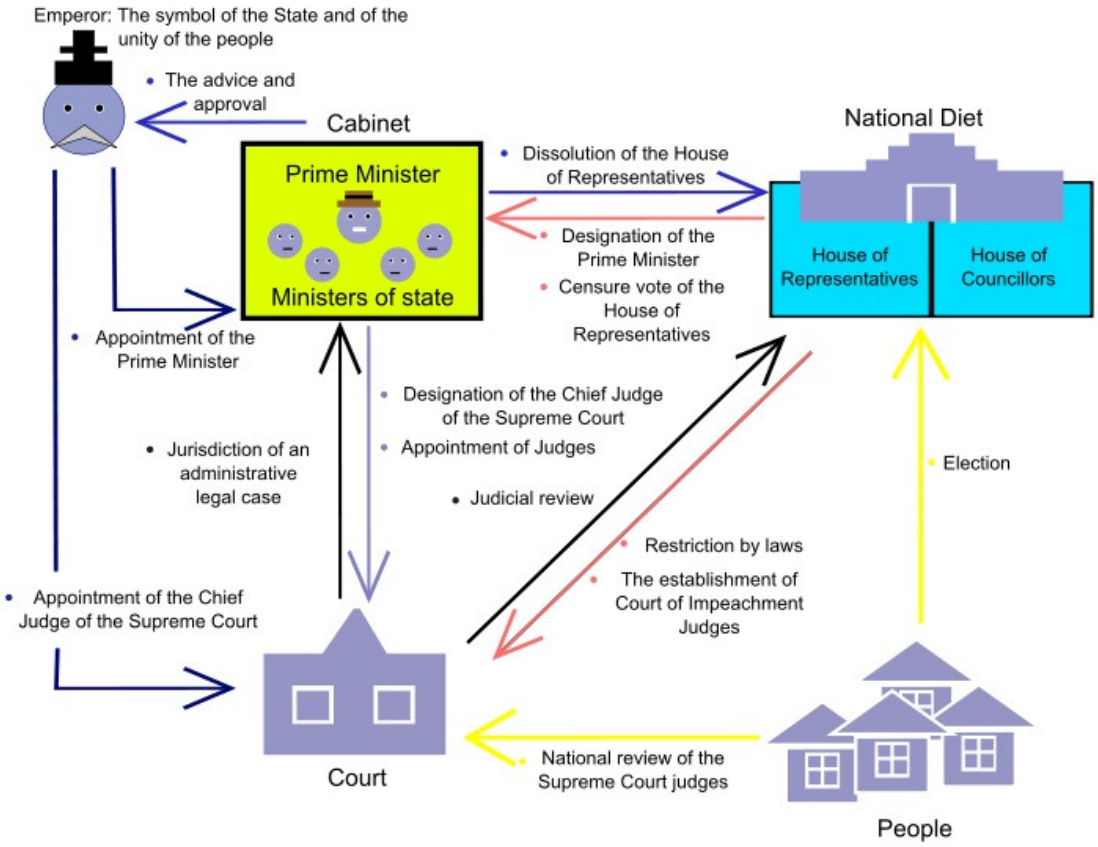


Every year there is a great loss of people's lives and property in Japan due to natural disasters. Up until the 1950s, numerous large-scale typhoons and earthquakes caused extensive damage and thousands of casualties.



In spite of such efforts, in 1995, more than 6,400 people became casualties of the Great Hanshin-Awaji Earthquake, in 2004, 10 typhoons – the largest number in a single year on record – crossed over Japan, and in 2011, more than 20,000 people dead or missing by Great East Japan Earthquake (GEJE). It was the first disaster ever recorded that included an earthquake, a tsunami, a nuclear power plant accident, a power supply failure, and a large-scale disruption of

Governance of Japan



DISASTER MANAGEMENT SYSTEM OF JAPAN

Legislative Basis

In Japan, the disaster management system has been developed and strengthened following the better experience of large-scale natural disasters and accidents. Disaster countermeasures are taken based on the Disaster Countermeasures Basic Act and various disaster management related laws. Various disaster management related laws adopted since late **40th** has laid down the legal framework for the disaster management system of Japan. These laws cover all phases of disaster management – preparedness, prevention/mitigation, response and recovery/rehabilitation phases. There are **7** Basic Acts: **18** – Disaster Prevention and Preparedness, **3** – Disaster Emergency Response, **23** – Disaster Recovery and Reconstruction, and Financial Measures.

Hokkaido-nansei-oki Earthquake, 1993

Ise-wan Typhoon, 1959
Photo: Gifu Prefecture

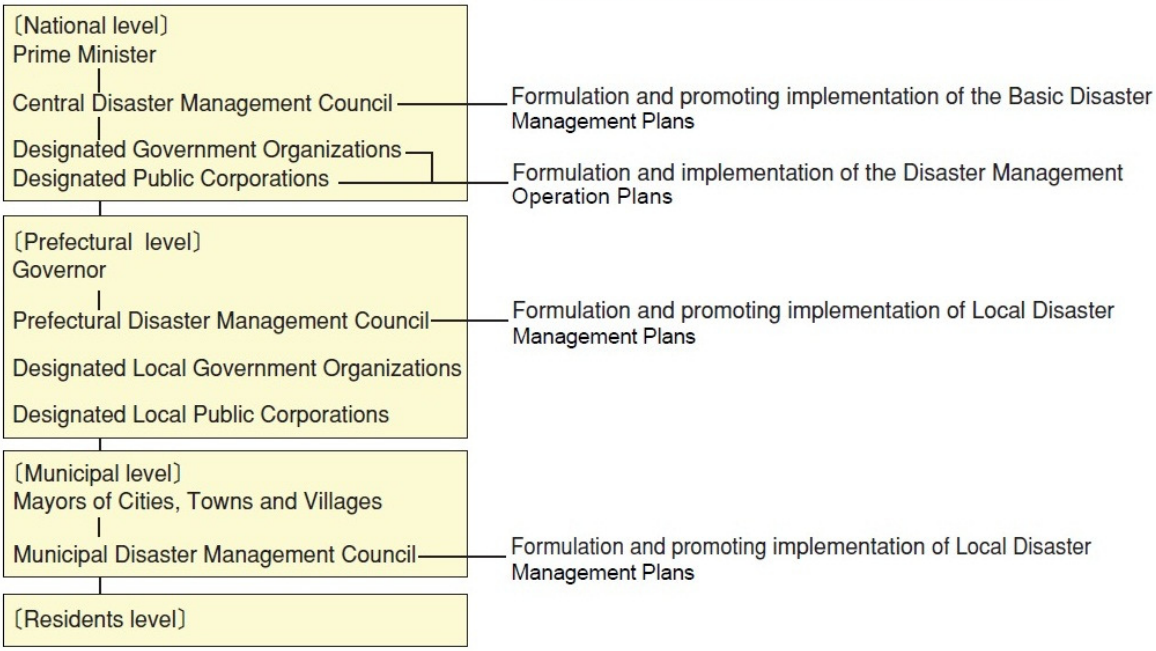
Great Hanshin-Awaji Earthquake, 1995
Photo: The Kobe Shimbun

To protect national land as well as citizens' lives, livelihoods', and property from natural disasters is a national priority.

Japan's disaster management system addresses all of disasters phases of prevention, mitigation and preparedness, emergency response as well as recovery and rehabilitation. With clear roles and responsibilities of the national and local governments, the relevant stakeholders of the public and private sectors cooperate in implementing various disaster countermeasures.

Japan's Disaster Management System is subdividing for 3 stages of management (as Disaster Management System of Kyrgyzstan).

Outline of the Disaster Management System



In every stage there is Disaster Management Council, which one of the objectives is to formulate and promote implementation of the Disaster Management Plans.

The main council is the Central Disaster Management Council – it is one of the councils that deal with crucial policies of the Cabinet, and established in the Cabinet Office based on the Disaster Countermeasures Basic Act. The council consists of the Prime Minister, who is the chairperson, Minister of State for Disaster Management, all ministries, 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.

Central Disaster Management Council			
Chair	**Prime Minister**		
Members	Minister of State for Disaster and all Cabinet Ministers (less than 17 persons)	Head of Designated Public Corporations Governor of the Bank of Japan President of Japanese Red Cross Society President of Nippon-Hoso Kyokai (Japan Broadcasting Corporation) – **NHK** President of Nippon Telegraph and Telephone Corporation – **NTT**	Experts

Ingury

Report

Offer Opinion

Prime Minister, Minister of State for Disaster Management

Committee for technical investigation

- **On countermeasures for the Tonankai and Nankai Earthquake (formed October, 2001)**
- **On lessons learned from past disaster (formed July, 2003)**
- **On the promotion of Nationwide Movement of Disaster Management (formed December, 2005)**
- **On evacuation measures for the Tokyo Inland Earthquake (formed August, 2006)**
- **On large-scale flood countermeasures (formed August, 2006)**

- **On countermeasures for the Tokai Earthquake (March 2002-May 2003)**
- **On information sharing for disaster management (October 2002-July 2003)**
- **On the promotion of disaster activities by the private sector (September 2003-October 2005)**
- **On countermeasures for the Tokyo Inland Earthquake (September 2003-July 2005)**
- **On countermeasures for the Trench-type Earthquake in the Vicinity of the Japan and Chishima Trenches (October 2003-January 2006)**

Secretary Organization

Chair : Deputy Chief Cabinet Secretary for Crisis Management

Advisor : Deputy Chief Cabinet Secretary for Crisis Management

Vise-Chair : Director-General for Disaster Management, Cabinet Office

Deputy Manager of Fire and Disaster Management Agency

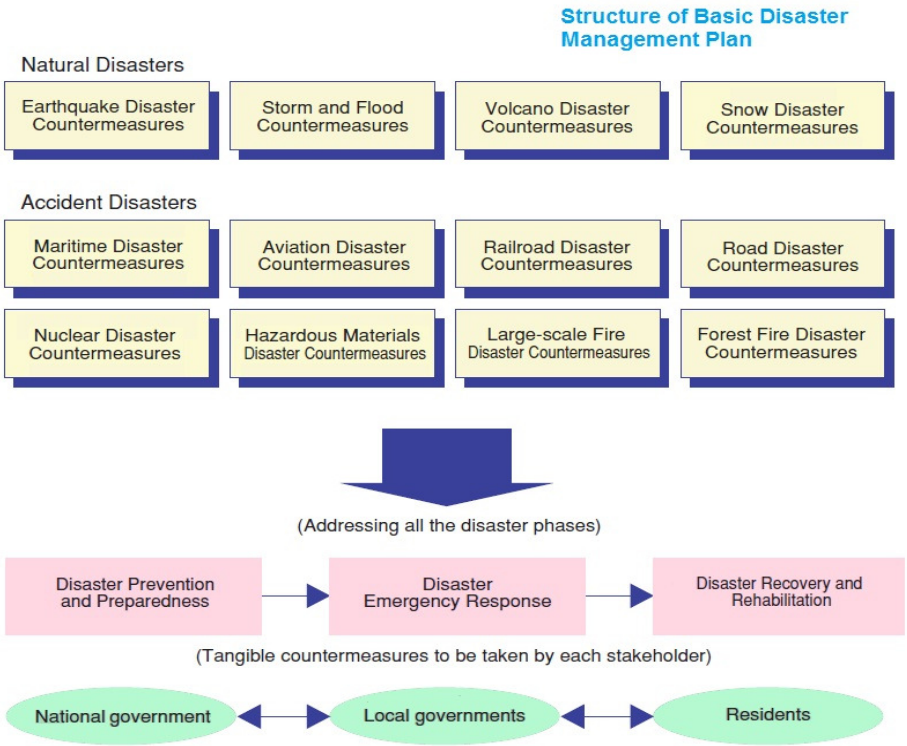
Secretary : Relevant director-generals of each ministry and agency

Disaster Management Planning System

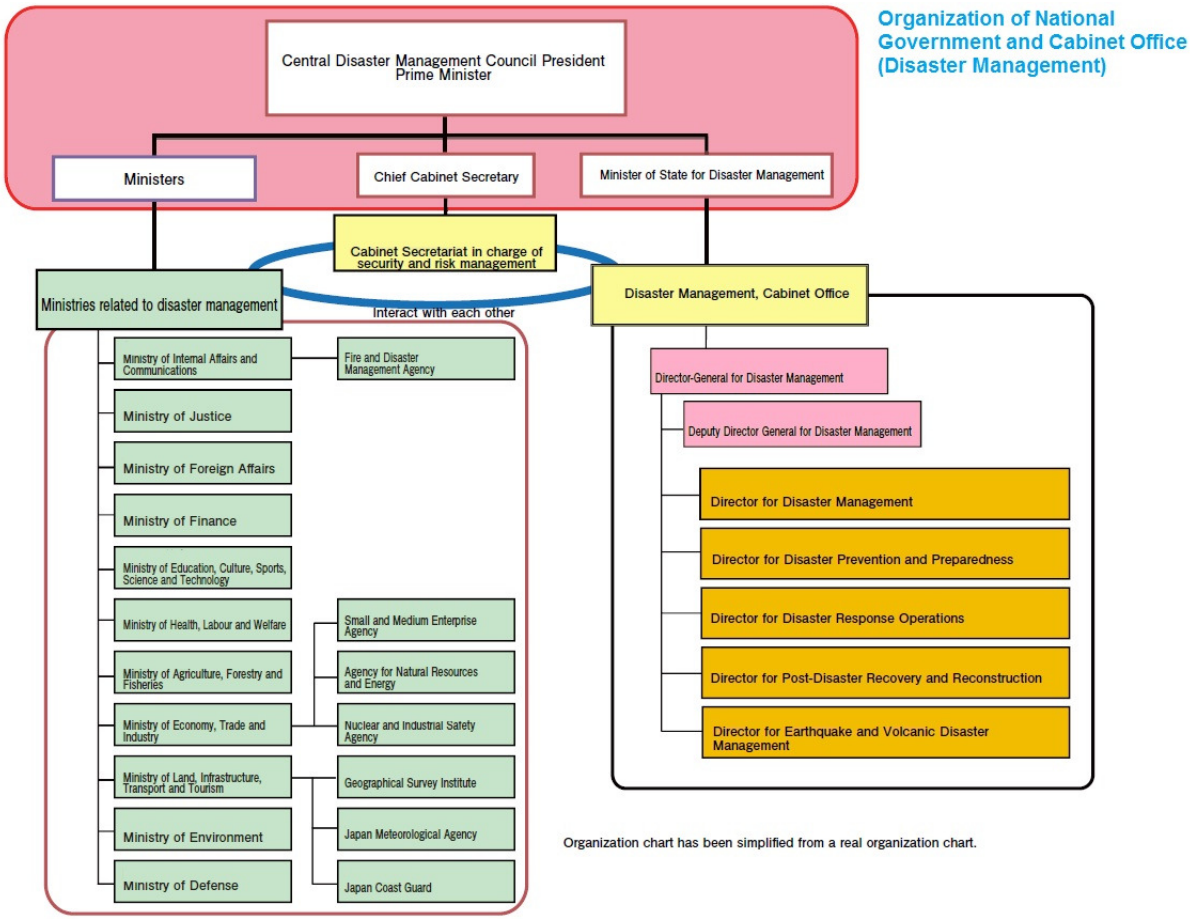
- Basic Disaster Management Plan: This plan is a basis for disaster reduction activities and is prepared by the Central Disaster Management Council based on the Disaster Countermeasures Basic Act.
- Disaster Management Operation Plan: This is a plan made by each designated government organization and designated public corporation based on the Basic Disaster Management Plan.
- Local Disaster Management Plan: This is a plan made by each prefectural and municipal disaster management council, subject to local circumstances and based on the Basic Disaster Management Plan.

The Basic Disaster Management Plan states comprehensive and long-term disaster reduction issues such as disaster management related systems, disaster reduction projects, early and appropriate disaster recovery and rehabilitation, as well as scientific and technical research.

The plan was revised entirely in 1995 based on the experience of the Great Hanshin-Awaji Earthquake. It now consists of various plans for each type of disaster, where tangible countermeasures to be taken by each stakeholder such as the national and local governments, public corporations and other entities are described for easy reference according to the disaster phases, as well as recovery and rehabilitation.



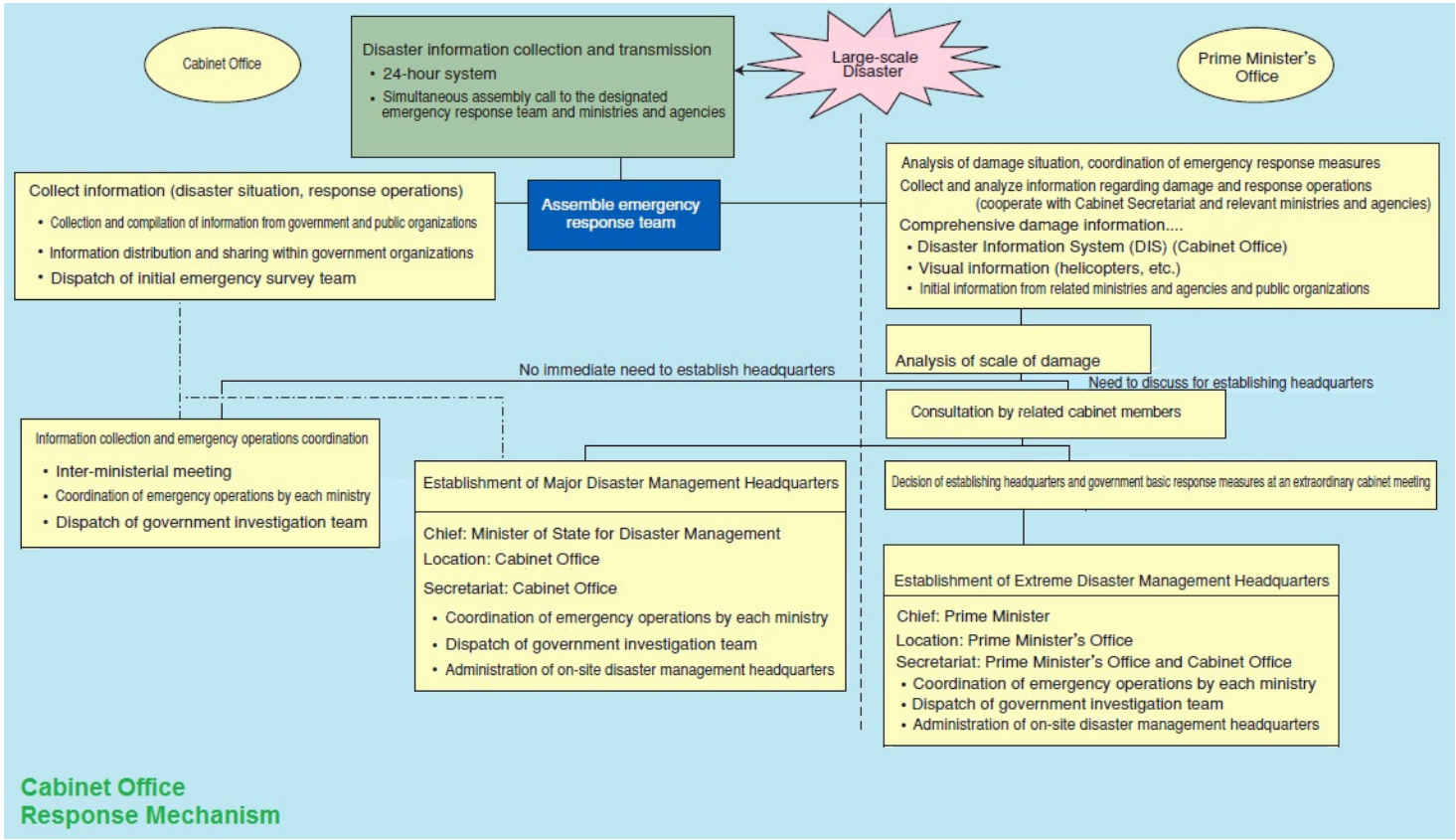
Along with a series of reforms of the central government system in 2001, the post of Minister of State for Disaster Management was newly established to integrate and coordinate disaster reduction policies and measures of ministries for securing cooperation and collaboration among related government organizations in wide-ranging issues, the Director-General for Disaster Management is mandated to undertake the planning of basic disaster management policies and response to large-scale disasters, as well as conduct overall coordination.



Organization chart has been simplified from a real organization chart.

Additionally, taking into account the lessons learned from the Great Hanshin-Awaji Earthquake, the Cabinet Secretariat system was also 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.

The national and local governments need to quickly collect and share disaster and damage information, and secure communications so that they can carry out effective emergency activities such as search and rescue and medical operations. Based on such information, local governments set up a disaster management headquarters and related organizations establish their own operations mechanism. The national government collects disaster information at the Cabinet Information Collection Center 24 hours a day. When a large-scale disaster strikes, an emergency team composed of the director generals of the respective ministries and agencies gathers immediately at the Crisis Management Center in the Prime Minister's Office to grasp and analyze the disaster situation, and report the results to the Prime Minister.



Inter-ministerial meetings at the ministerial or high-ranking senior-official level are held to decide basic response policies if necessary. According to the level of damage, the government may establish a Headquarters for Major Disaster Management (headed by the Minister of State for Disaster Management) or a Headquarters for Extreme Disaster Management (headed by the Prime Minister).

Additionally, a government investigation team headed by the Minister of State for Disaster Management may be dispatched, or an onsite response headquarters may be established.

Wide-area Support System

In the case of large-scale disasters that exceed the response capabilities of the affected local government, various wide-area support mechanisms are mobilized by the National Police Agency (Inter-prefectural Emergency Rescue Unit), Fire and Disaster Management Agency (Emergency Fire Rescue Team), and Japan Coast Guard. Furthermore, the Self-Defense Forces can be dispatched for emergency response activities upon request from the governor of the affected prefectural government. Also, the disaster medical assistance teams (DMATs) will be dispatched to provide wide-area medical-transport services. These teams transport severely injured persons via Self-Defense Forces vehicles to hospitals outside the stricken zone.

DISASTER RISK REDUCTION IN JAPAN

Research and Development

With the progress of society's capabilities to address disasters and the mitigation of vulnerabilities to disasters by developing disaster management systems, promoting national land conversation, improving weather information communications, systems, disaster damage has shown a declining tendency.

The "Basic Science and Technology Plan – Third Term" (2006), which describes Japan's basic scientific technology policies, sets a major goal of making Japan a country that can take pride in being the safest in the world, and an intermediate goal of ensuring the security of national land, society and people's

Important Research and Development Issues in Disaster Reduction

(1) Earthquake observation, monitoring and prediction
(2) Geological research
(3) Damage reduction technologies such as earthquake-proofing and development of disaster response, reovery and rehabilition plans
(4) Volcanic eruption prediction technologies
(5) Stom, tlood, landside and snow disaster, observation, prediction and damage reduction technologies
(6) Satellite-based natural hazard observation and monitoring technologies
(7) Monitoring, waming, infomation transmission and damage prediction technologies to be used in the event of a disaster
(8) Search and rescue and other emergency response operation technologies
(9) Development of adisaster-resilient society
(10) Facility security assurance and acclident reduction technologies

livelihoods. Based on this, the implementation strategy for the plan sets 10 important issues on disaster reduction.

Development of Disaster Management Bases.

In order to secure wide-area collaboration for quick and smooth response, and recovery and rehabilitation activities at the time of large-scale disaster, disaster management, bases with such functions as information management, operations coordination and logistics need to be developed and networks formed.

Additionally, subsidies are provided to local governments to promote qualitative anmd quantitative improvements of local disaster management bases.

DISASTER PREVENTION AND PREPAREDNESS

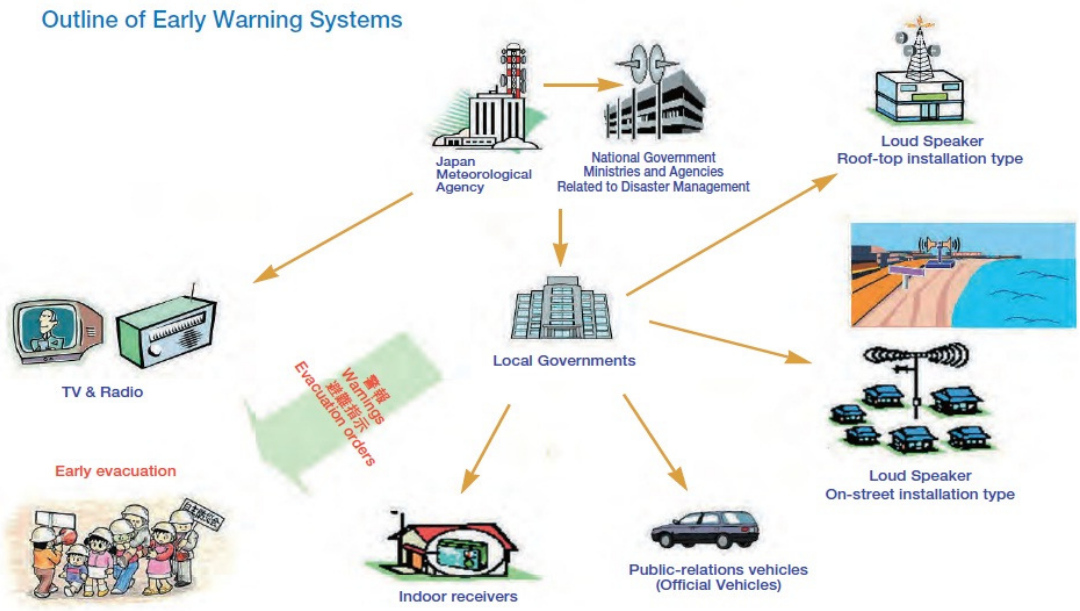
National Land Conservation

National land conservation projects such as river improvement, soil oersion control (sabo), and soil and coastline conservation are carried out strategically for protecting national land, citizens' lives and property from various disasters. Although long-term plans by field had been formulated in the past, the "Selective Infrastructure Improvement Plan" was set forth in 2002 to promote prioritized, effective and efficient infrastructure improvement projects. Additionally, the "Forest Improvement and Conservation Works Master Plan" was formulated in 2003 to promote comprehensive and effective forestry improvement and soil conservation projects.

Observing, Forecasting and Warning of Disaster Risks

Observation systems that can accurately detect disaster risks in real-time have been progressively improved for establishing early warning systems, supporting the early evaluation of residents and response activities of disaster management organizations, and thereby reducing disaster damage. Organizations involved in disaster reduction, especially the Japan Meteorological Agency (JMA, use 24-hours system to carefully monitor various natural phenomena and weather conditions.

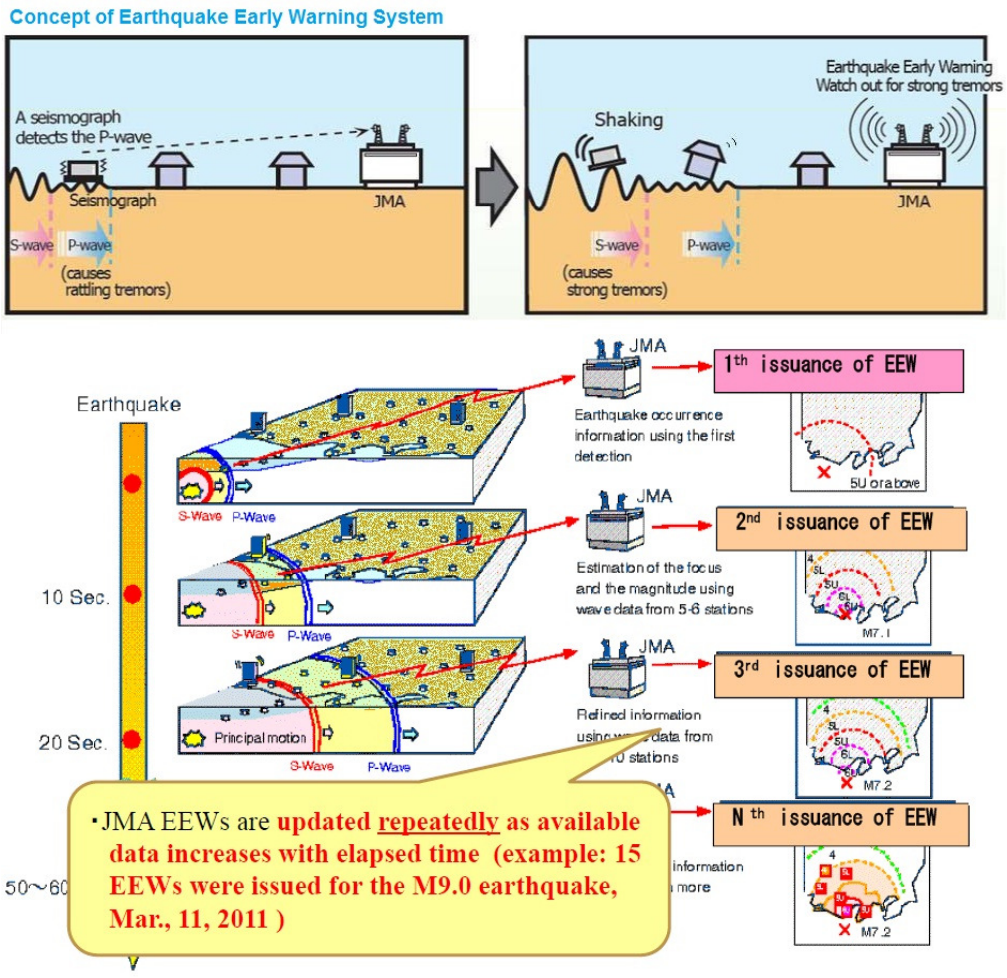
In addition to announcing observed information related to natural phenomena, the JMA issues a wide range of forecasting, warnings and advisories regarding earthquake-generated tsunamis and severe weather events such as heavy rain.



Earthquake Early Warning

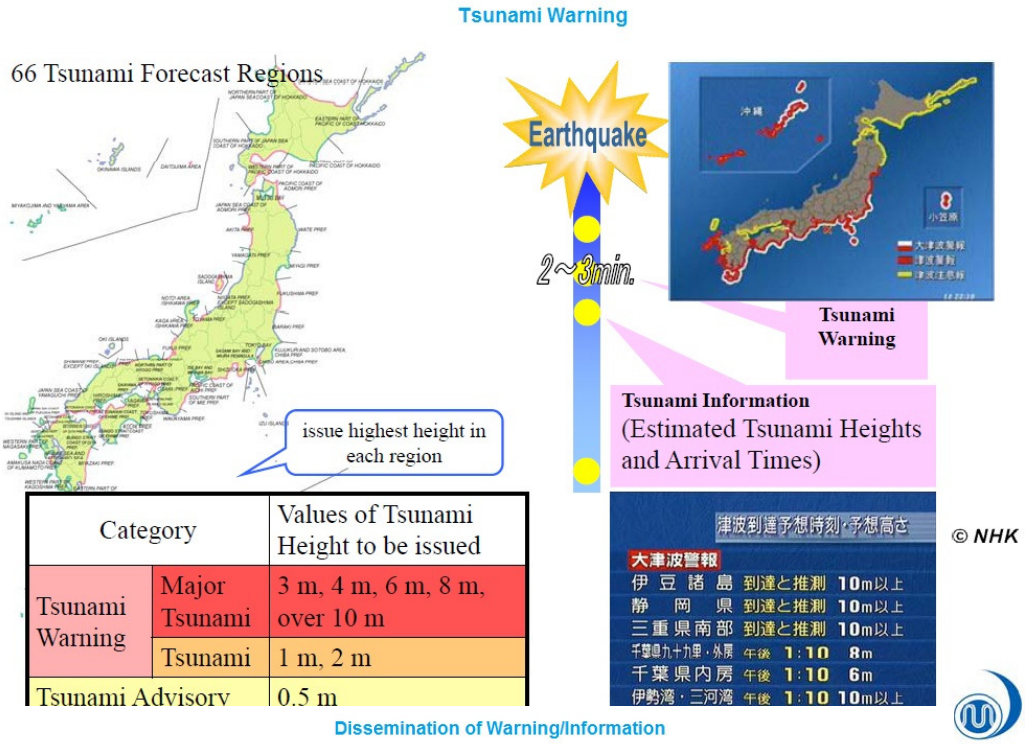
The Earthquake Early Warning system provides advance announcement of the estimated seismic intensity and expected arrival time of principal motion when an earthquake occurs. These estimations are based on prompt analysis if the quake's focus and magnitude using waveform data obtained from seismographs near the epicenter.

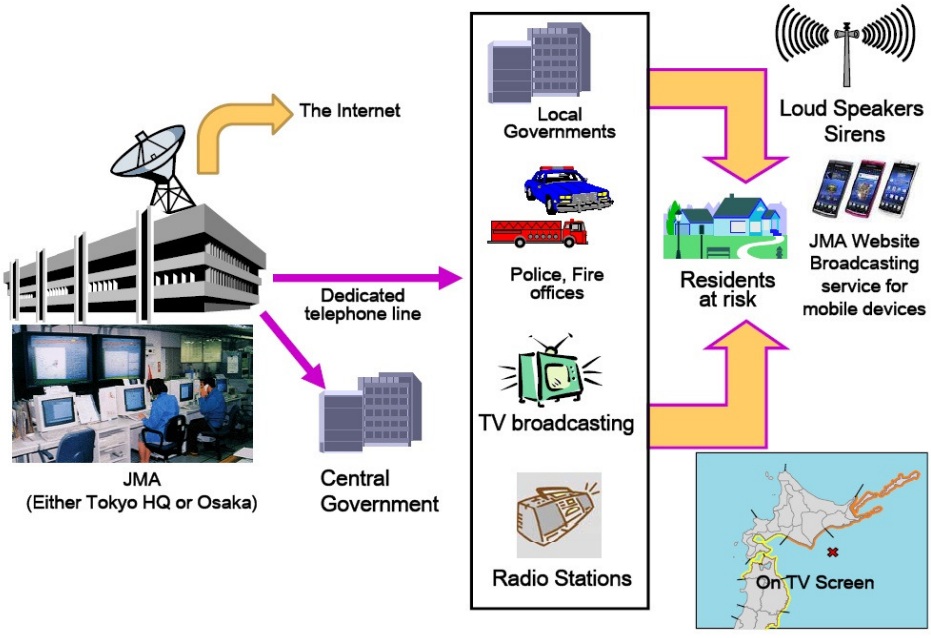
The Earthquake Early Warning system is aimed at mitigating earthquake-related damage by allowing countermeasures such as promptly slowing down trains, controlling elevators to avoid danger are enabling people to quickly protect themselves in various environments such as factories, offices, houses and near cliffs.



Tsunami Warnings.

To reduce and mitigate catastrophic losses caused by tsunami, immediate provision of tsunami information for coastal regions is essential. When an earthquake occurs, JMA estimates the possibility of tsunami generation from seismic observation data. If a damaging tsunami is expected is coastal regions, JMA issues a Tsunami Warning/advisory for each region within around two to three minutes of the quake. If tsunami are generated by seismic events far from Japan, the Agency engages is coordinated action with the Pacific Tsunami Warning Center (PTWC) in Hawaii and issues warnings for long-propagating tsunamis.





Information and Communication Systems

The development of a quick and accurate communications system is essential for the effective use of disaster early warning information. For this purpose an online, system has been built, linking the JMA with disaster management organizations of the national and local governments and media organizations.

Disaster management organizations have also been developing radio communications networks exclusively for disasters: the Central Disaster Management Radio Communications System, which connects national organizations; the Fire Disaster Management Radio Communications System, which connects firefighting organizations across the country; and prefectural and municipal disaster management radio communications systems, which connect local disaster management organizations and residents. The Cabinet Office has established the Central Disaster Management Radio Communications System to link with designated government organizations, designated public corporations and local disaster management organizations, providing communications by telephone, fax, data transmission, TV conferencing and transmission of pictures of disaster situations from helicopters. Furthermore, to provide backup for terrestrial communications, services such as a satellite mobile telephone communications system for municipal governments have been launched in 2011.

Simultaneous wireless communications systems using outdoor loudspeakers and indoor radio receivers are used to disseminate disaster information to residents. Tsunami and severe weather warnings are widely provided to citizens via TV and radio broadcasts.

Integrated Disaster Management Information System

Based on the experiences of the Great Hanshin-Awaji Earthquake, the Cabinet Office has been developing an integrated disaster management information system that helps to grasp the situation of the disaster early on and promotes information sharing among relevant organizations, thereby enabling quick and appropriate decision-making for emergency response operations. The main features of the Integrated Disaster Management Information System are as follows.

① Function for early assessment of damage from earthquakes The System receives information on earthquake intensity as observed by the JMA and automatically activated by an earthquake intensity level of 4 or greater. It has a feature that estimates the distribution of seismic intensity and scale of damage (human suffering and building damage) within 10 minutes.

② Early damage assessment function using artificial satellites When large-scale disasters occur, this feature uses images from artificial satellites capable of wide-area observation to provide early assessment of damage.

③ Information sharing function. This feature plots disaster information provided by disaster-management agencies to a map using GIS, so it can be freely accessed by all.

Disaster Reduction Drills and Exercises.

Disaster reduction drills and exercises are food opportunities to review effectiveness of the disaster management system in view of quick public awareness through wide participation. The Disaster Countermeasures Basic Act stipulates the obligations of disaster reduction drills. On order to promote various drills and exercises nationwide, the Central Disaster Management Council sets forth an annual “Comprehensive Disaster Reduction Drills Plan,” which stipulates the basic principles for executing the drills and outlines the comprehensive disaster reduction drills carried out by the national government in cooperation with local governments and relevant organizations.

On September 1st, Disaster Reduction Day, wide-area, large-scale disaster reduction drills are conducted in every region across the country in collaboration with disaster related organizations. Additionally, drills based on the experiences of past disaster are conducted in every region throughout the year. In recent years, practical simulation system have been introduced, in which participants are not given any information beforehand and are required to make decisions and respond to the situation based upon the information provided after the drill starts.

Issuing of Evacuation Order and Instruction.

When a disaster occurs or is imminent, residents may start evacuating on their own, and the mayor of the municipality may also issue an evacuation order or instruction.

It is effective for municipalities to prepare a manual explaining the criteria regarding disaster situations that require the issuance of evacuation orders or instructions, thereby helping the mayor’s quick decision. The Cabinet Office, in cooperation with relevant ministries, published the “Guidelines for Producing a Decision and Dissemination Manual for Evacuation Orders and Instructions” in 2005, and is promoting its implementation.

Disaster Education and Human Resource Development

The importance of disaster-prevention education was particularly recognized upon the Great Hanshin-Awaji Earthquake disaster. Since then, disaster-prevention programs have been actively implemented, such as education to raise awareness of local residents, training to foster disaster management leaders and disaster-prevention expert training at education institutions. More recently, as to training for local residents and disaster management leaders, various entities are organizing and implementing programs involving a whole community, in view of designing sustainable programs and developing a local disaster-prevention network. Education and training for administrative officers, with an emphasis placed on operational and effective skills, are also promoted. Some private corporations have started their own disaster-prevention activities in cooperation with a local community. They also provide their employees with disaster-related education. This report introduces some successful disaster-prevention education programs for local residents and to foster experts, as well as those implemented at companies and administrative offices, drawing much upon the information posted on the Internet.

Recent disaster drills incorporate patrols, puppet plays, and bucket brigades, in addition to conventional evacuation and fire-fighting drills. To promote such activities by local residents and disaster-prevention activities at schools, the Cabinet Office and the Fire and Disaster Management

Agency of the Ministry of Internal Affairs and Communications commend outstanding disaster-prevention activities by local residents and schools every year and make public the activities on the Internet websites. In recent years, the importance of disaster prevention education at younger ages has been recognized. Last year, a Disaster-Prevention Education Handbook for kindergartens and nursery schools was published by the Japan Society of Civil Engineers. Some programs in kindergartens and nursery and elementary schools have started. This section introduces some successful disaster-prevention education programs for local residents. It also showcases outstanding cases of disaster-prevention education mainly for elementary schools and local communities.

Teaching materials and teacher training program

Objective: To pass down lessons from the Great Hanshin-Awaji Earthquake Disaster and learn about Disaster

Main Target: students of elementary school, junior and senior high school

Main Activities:

- Disaster education in school
  Development of educational material Learning Disaster
- teachers' training
- Development of manual for emergency management

Organizers: Hyogo Prefecture Board of Education

Reading materials about natural disaster and disaster management in elementally school

Many of previous disaster-prevention education programs placed a primary emphasis on acquirement of basic knowledge. However, in recent years, drills, training and forums are organized with their purposes clearly defined. For each drill and training, specific objectives are established. Drills and training are promoted through cooperation between local governments and communities to take advantage of local characteristics. Especially, for disaster management leader training programs, practical programs have been conducted. Job descriptions of the leaders are articulated and program goals are established. Also arrangements are made for program participants who completed such training to be assured to play a role in a local community. This section introduces some successful disaster-prevention education programs for general public. Many lecture meetings and seminars for the general public, local voluntary disaster management organizations and disaster management leaders have been held by local governments, department of fire management, academic institutions and NPOs.

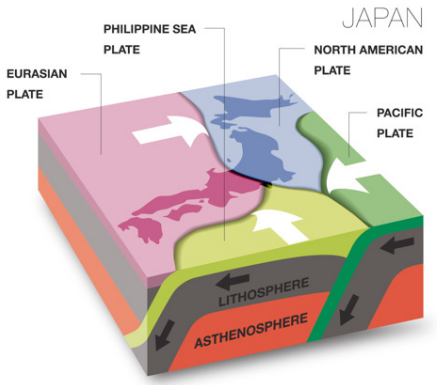
DISASTER COUNTERMEASURES

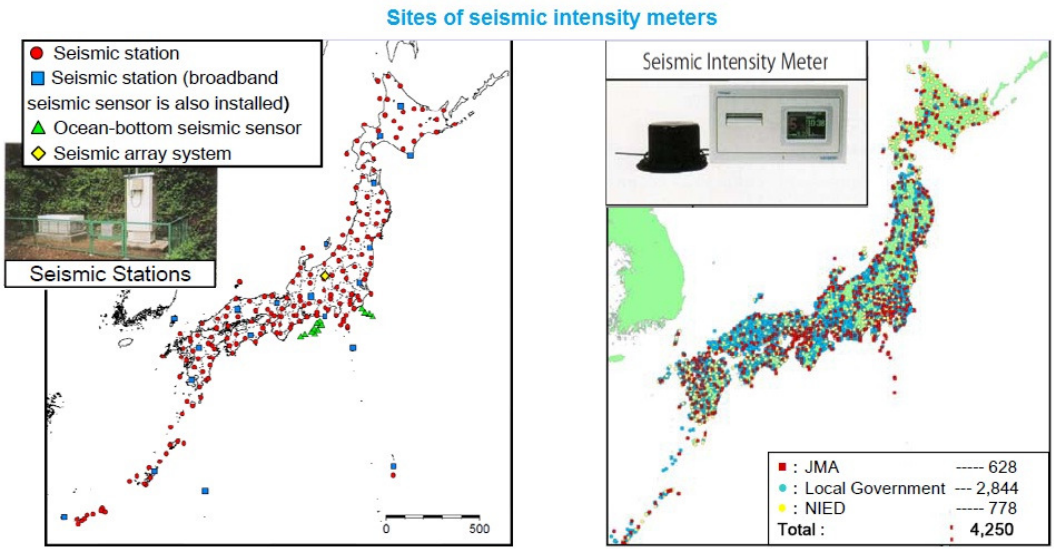
Earthquake Disaster Countermeasures

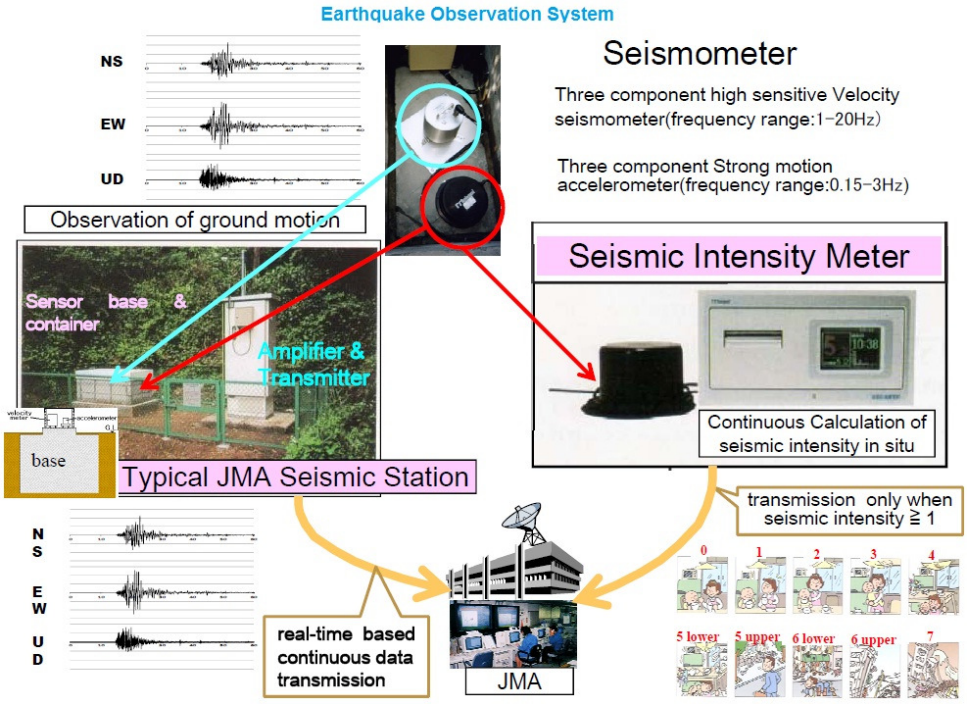
Japan is located at a point on the earth's surface where four of more than 10 tectonic plates covering the globe are crushed against each other, making it earthquakeprone. More than 20% of the world's earthquakes (magnitude 6 or greater) have occurred in or around Japan.

Japan is well acquainted with the massive inter-plate earthquakes produced by plate subduction (such as the Great Kanto Earthquake of 1923) and the inland crustal earthquakes caused by plate movements (such as the Great Hanshin-Awaji Earthquake of 1995).

In order to constantly monitor seismic activity, the Japan Meteorological Agency (JMA) and other relevant organizations install and maintain seismometers that are used for estimating the location of the epicenter and magnitude of an earthquake as well as for tsunami warnings, and seismic intensity meters that measure the intensity of ground motion, in numerous places nationwide. As soon as an earthquake occurs in or around Japan, the JMA analyzes P-wave at seismometers placed close to the hypocenter. If an earthquake of intensity 5 －or greater is forecasted, Earthquake Early Warning (EEW) information is issued. Within about two minutes, it issues a seismic intensity information report for earthquakes of intensity 3 or greater, and within about five minutes issues an earthquake information report indicating the epicenter and magnitude of the earthquake and the seismic intensity in the municipalities where strong shaking was observed.







Also countermeasures has been pointed out with a great sense of urgency that Japan can be struck by large-scale earthquakes in the next few decades, in areas such as Tokai, Tonankai, Nankai, the Japan and Chishima Trenches, and directly below Tokyo and the Chubu and Kinki regions. Regarding trench-type earthquakes, based on the related laws and regulations, appropriate actions are being taken, including the designation of areas where various countermeasures need to be strengthened, the reinforcement of observation systems, and the formulation of a plan of action by relevant government organizations and private corporations. In addition, preparations such as improvements in evacuation sites and firefighting facilities are being promoted based on laws specifying special financial measures. With regard to each large-scale earthquake, including the Tokyo Inland Earthquake, the Central Disaster

Management Council has conducted examinations to clarify the characteristics of the earthquake, estimate the damage and identify necessary countermeasures. The following set of plans and strategies for each large-scale earthquake are now being developed: the“Policy Framework,”a master plan that includes a range of activities from preventive measures to post-disaster response and recovery ; the“Earthquake Disaster Reduction Strategy,”to determine an overarching goal of damage mitigation and strategic targets based on the damage estimation; and the“Guidelines for Emergency Response Activities,”which describes the actions to be taken by related organizations. It is necessary to keep working on countermeasures nationwide, as has been witnessed by the examples of the major earthquakes of Hanshin-Awaji and Niigata-ken-Chuetsu, because such a disaster can occur anywhere in Japan. Committee on Earthquake Disaster Reduction in Local Cities is examining possible countermeasures.

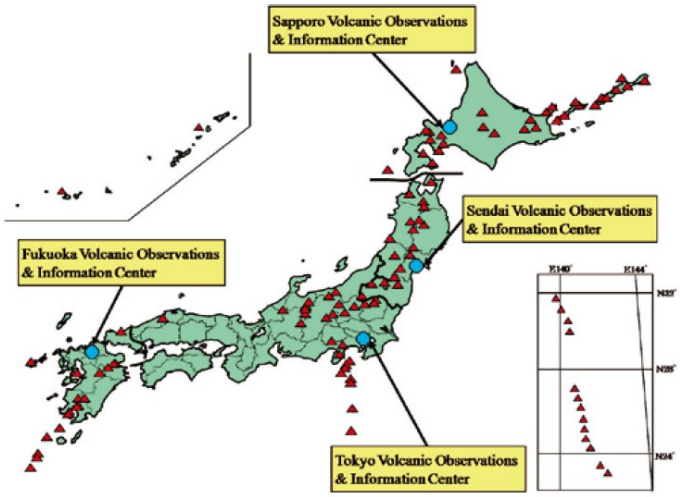
Volcano Disaster Countermeasures

Japan is a highly volcanic country. Poised on the Circum-Pacific Volcanic Belt or “Ring of Fire,” the Japanese islands are home to 108 active volcanoes—10% of the Earth’s total. In the past, eruptions and other volcanic activity have caused heavy damage. In three recent examples, the eruptions of Usuzan and Miyakejima in 2000 and Kirishimayama (Shinmoedake) in 2011 caused thousands of residents to fl ee their homes. The phenomena associated with volcanic eruptions are extremely varied, and once a volcano begins to erupt there is often little time to evacuate. Naturally, authorities place the greatest emphasis on protecting against the most life-threatening situations, such as volcanic cinders, pyroclastic flows, snowmelt and volcanic mudflows. The most important approaches to protecting residents’ lives against volcanic disasters are the accurate reading of the precursors to volcanic eruptions, broadcasting of appropriate information, and wide-area networks to ensure rapid and orderly evacuation in the event of an eruption.

JMA deploys a network of seismometers, telephoto cameras and angle meters ranged around 47 volcanoes throughout Japan (selected by the Coordinating Committee for Prediction of Volcanic Eruptions, an organization of academics and related government agencies), and monitors the volcanoes continuously,

24 hours a day. If an eruption affecting the caldera periphery or populated areas is predicted, an eruption warning is issued. For a group of 29 of these volcanoes (as of February 2011) that are especially close to populated areas, five

Active Volcanoes in Japan



volcano alert levels are assigned according to the status of volcano activity, each clearly connected to a specific set of disaster countermeasures: Evacuate; Prepare to Evacuate; Entry Restricted, and so on.

In areas that are, or have the potential to be, especially hard-hit by volcanic phenomena, special measures are implemented under the Act on Special Measures for Active Volcanoes. These measures include the provision of facilities based on designation of areas requiring emergency provision of refuge facilities and areas requiring removal of volcanic ash. As of February 2011, measures based on this law have been implemented in the areas around Sakurajima, Asosan, Usuzan, Izuooshima, Tokachidake, Unzendake, Miyakejima and Kirishimayama.

Tsunami Countermeasures.

Surrounded by water on all sides with long and complex coastlines, Japan is highly vulnerable to earthquake-generated tsunamis. In addition to local tsunamis generated by earthquakes near the coast, Japan has also suffered major damage from the onslaught of distant tsunamis generated by open-sea earthquakes.

Example of Tsunami Hazard Map (Kushiro City, Hokkaido)

When a tsunami is expected to cause coastal damage, the Japan Meteorological Agency issues a tsunami warning or advisory within 2-3 minutes after the earthquake and then follows up with announcements about the estimated height and arrival time of the tsunami. The information is transmitted immediately to disaster management organizations and media outlets, and further forwarded to residents and maritime vessels.

Tsunami countermeasures, such as expediting the announcement/transmission of tsunami forecasts and improving coastal embankments (tidal embankments) and tide prevention gates, have been carried out. The Cabinet Office, in cooperation with relevant ministries has prepared guidelines for the creation of a tsunami hazard map and the designation/development of tsunami evacuation buildings by local governments, and is working on disseminating the guidelines.

Storm and Countermeasures

Japan is prone to a variety of water and wind-related disasters including flooding, landslides, tidal waves and storm hazards, owing to meteorological conditions such as typhoons and active weather-front systems and geographical conditions such as precipitous terrains and steep rivers,

as well as settlement conditions in which many of the cities are built on river plains. One-half of the population is concentrated in possible inundation areas, which account for about 10% of the national land. Although there has been a large reduction in the area inundated by floods owing to soil conservation and flood control projects over many years, the amount of general assets damaged in flooded areas has increased in recent years. Additionally, as a long-term trend, there is an increasing tendency of downpours throughout the country.

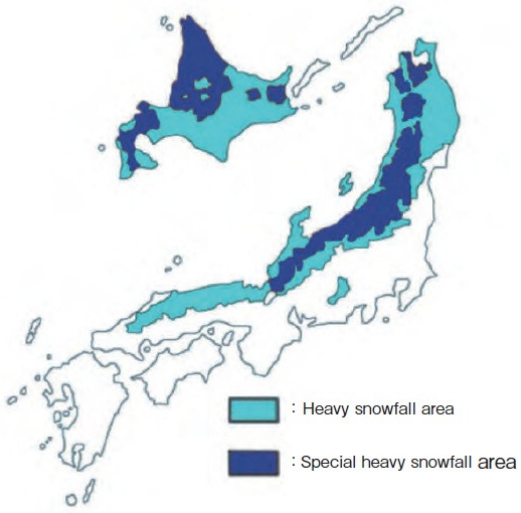
The Japan Meteorological Agency observes meteorological phenomena that cause storm and flood disasters using the Automated Meteorological Data Acquisition System (AMeDAS), which automatically measures rainfall, air temperature and wind direction/speed, weather radar, and geostationary meteorological satellites. These are used to announce forecasts and warnings to prepare against disasters (weather warnings and advisories for individual municipalities began in May 2010). The rainfall and the water levels in rivers are observed by the Ministry of Land, Infrastructure, Transport and Tourism and prefectural governments utilizing visual observation methods, mechanical observation equipment, and a wireless telemeter system that transmits automatically observed data from remote locations. Flood forecasts and water level information are provided utilizing the Internet and mobile phones.

In order to reduce damage caused by severe weather disasters, structural measures such as improving rivers, dams and sewage systems, and non-structural measures such as preparing hazard maps and providing disaster information, must be promoted in an integral manner.

As non-structural countermeasures, the warning and evacuation systems of the possible inundation areas and landslide prone areas have been developed in accordance with the Flood Control Act and the Act on Promotion of Sediment Disaster Countermeasures for Sediment Disaster Prone Areas. Both laws were amended in 2005 to intensify measures including the familiarization of hazard maps and the identification of a method to disseminate disaster information to facilities caring for those who require assistance at the time of a disaster like elderly people in the municipal disaster management plans.

Based on the Flood Control Act, some 368 rivers subject to flood warning and 1,488 rivers subject to water level notifications are designated. Of these, inundation risk areas are currently designated and published for 1,768 rivers and streams (as of February 2010). Moreover, municipalities that include such areas are encouraged to prepare and disseminate flood hazard maps. Currently some 1,137 municipalities are doing so (as of February 2010).

Designated Areas of Heavy Snowfall and Special



Snow Disaster Countermeasures

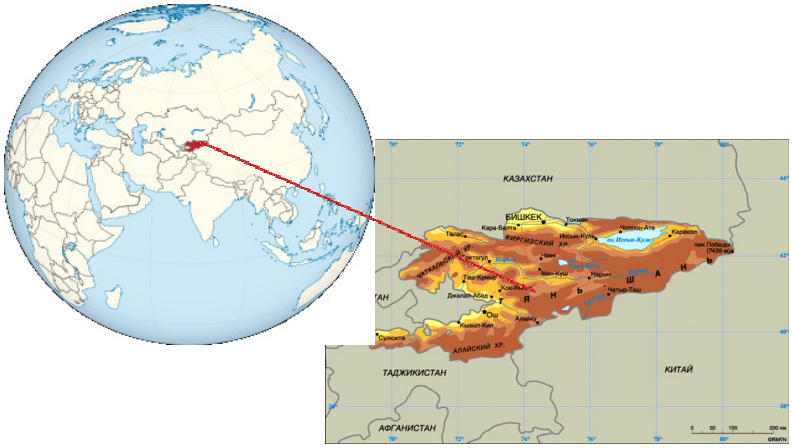
Japan is a bow-shaped archipelago filled with steep mountain ranges. When cold winds blow in from Siberia in winter, the warm current fl owing up the eastern coast from the south brings heavy snowfalls to the Sea of Japan side of the country. Among the seasonal problems that result every year are falls by people removing snow from their roofs, avalanches, and obstruction of traffic and city functions due to snow accumulation. Heavy snowfalls can have a significant influence on people's daily life and socioeconomic activities, such as isolating towns and residents due to closed roads, disturbance of traffic facilities and lifelines, and damage to agricultural facilities and crops.

Measures are being taken to prevent accidents that result in injury, improve the avalanche warning system, and remove snow for securing road traffic networks at the time of heavy snowfall.

Against avalanches, comprehensive measures including avalanche prevention projects for protecting communities, risk communication efforts about dangerous locations among residents, and improvement of the warning and evacuation system, are taken.

Furthermore, as heavy snowfall areas account for approximately half of the national land, based on the Act of Special Measures for Heavy Snowfall Areas, measures have been introduced to secure traffic and communications, protect agricultural and forestry industries, and improve living environmental facilities and national land conservation facilities.

In recent years deaths from snow removal operations, especially removal of snow from roofs, have grown numerous, and a disproportionate number of the fatalities have been people 65 years and over. The Cabinet Office has responded by advising on how to avoid accidents while clearing snow, and conducting public-awareness campaigns through various related organizations and agencies, particularly municipal governments.



Kyrgyz Republic - a country on the eastern part of Central Asia, located in the western and central part of the Tien Shan and the northern part of the Pamirs. The territory is 199.9 kilometers, of which 5.5% of the area is forested, 4.4% - water 53.5% - farmland.

There are 7 regions, 40 administrative districts, 22 cities, 429 village administrations (ail okmotu – the same of Japan municipalities).

- Chui region
- Issyk-Kul region
- Narin region
- Osh region
- Dgalal-Abad region
- Batken region
- Talas region

The territory of Kyrgyzstan is located within the two mountain ranges. North-eastern part, the larger the area lies within the *Tian Shan*, southwest - in the *Pamir-Alai*. The state borders of Kyrgyzstan are mostly along the crests of mountain ranges.

The entire territory of the republic lies above 401 meters above sea level, more than half of its located at altitudes of 1,000 to 3,000 m and about a third - altitudes of 3,000 to 4,000 m. Mountain ranges occupy about a quarter of the territory and extend parallel chains mainly in the attitudinal direction.

The climate of the Kyrgyz Republic, as well as any other area determined by its geographical position and is formed by the interaction of three main factors: solar radiation, atmospheric circulation and the underlying surface.

Location of Kyrgyzstan in the center of the largest continent of Eurasia, distance from large bodies of water, the neighborhood determines the continental arid desert climate nature, somewhat smoothed high hypsometric position of the country, causes an increase of clouds and precipitation, and reduction in the amplitude of the annual variation in temperature air than adjacent lowland areas.

Most of the territory of Kyrgyzstan is located in the *belt of temperate climate*, the southern regions - in the *subtropical climate zone*.

Population of the Kyrgyz Republic - **5.5 million** (1 January 2011). This is much more than living in the country in 1959 (2,065 million), 1970 (2935000) 1979 (3523000) 1989 (4258000), 1999 (4,823,000). Until the 1960's, the republic's population grew rapidly due to migration and natural increase, which was particularly significant in rural Kyrgyz, Uzbek and other Central Asian peoples.

Most of the population is concentrated in the foothill valleys - Chu on the border with Kazakhstan and the Ferghana on the border with Uzbekistan, Naryn and Talas valleys, and in the Issyk-Kul basin.

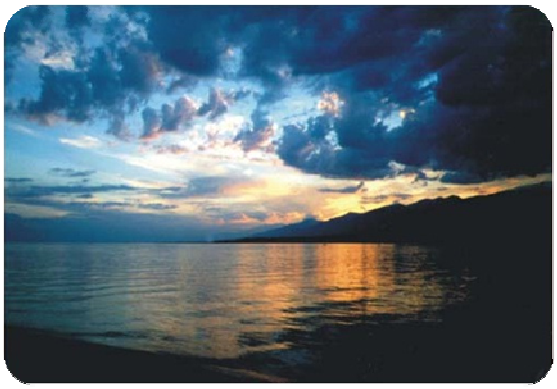
The vast majority of believers in Kyrgyzstan - *Sunni Muslims*. There are 75% of Muslims, 25% of Christians and 5% of Orthodox, Catholic etc.

Nature of Kyrgyzstan is unique, and largely thanks to its geographical location. The country is located in the mainland, away from oceans and seas and the hidden breath of the dry deserts of

the south and north of the icy winds by high mountains. Complex terrain, many climates and unique environmental conditions contributed to a huge variety of flora and fauna of the country.

In the mountains, you can find many rare and endangered species listed in the Red Book. Among them, *wild rams* the Central Asian otter, *gray lizards, red wolves*, and the true ruler of the Kyrgyz Mountains, *magnificent snow leopard*.

Kyrgyzstan has huge water resources, the bulk of whom are mountain streams, lakes and reservoirs. In total there are over 28,000 rivers and sources. , And the length of all the channels is at least 10 kilometers. The largest lake in Kyrgyzstan - is ***Issyk-Kul***.



Here its proudly called "The Pearl," and for good reason. It lies at an altitude of 1600 meters above sea level, on all sides by the mighty mountain ranges. Issyk-Kul is incredibly beautiful - sandy bottom, amazingly clear water and bright sun, piercing him through and changing the water color from pale blue to blue-black. "Issyk-Kul" in Kyrgyz means "hot lake" - its water does not freeze even in winter, and in summer the upper layers are heated to 25 degrees.

DISASTER PROFILE OF KYRGYZSTAN

The Kyrgyz Republic is located in most of the mountain range of the Tien Shan and northern regions of the Pamirs. The territory is characterized by high *seismicity, geological complexity, large broken relief with alternating ridges and troughs*. Hazardous natural processes and phenomena are widespread and often lead to emergency situations. Often one dangerous natural process leads to a number of other causes emergencies, including *technological and environmental*.

Seismically active the whole territory of Kyrgyzstan, where each year is about 3,000 *earthquakes*, with 10-20 earthquakes with a magnitude greater than 5 logs as emergencies. During the period of 2000-2011 years the largest number of earthquakes occurred in Osh

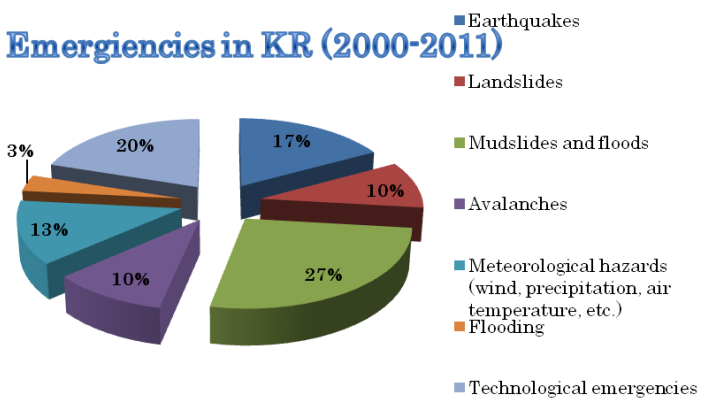
(41.9%) and Jalalabad (19.5%) regions. There, and in the territory of Batken, Issyk-Kul and Naryn regions, been the most violent earthquakes.

Emergencies due to the activation of *landslides* constitute 9.7% of the total number of registered emergency. The greatest number of emergencies by landslides observed in Osh (47.7%) and Jalalabad (32%) regions. In Chui, Batken and Naryn regions are between 7.1% to 5.3%, which is consistent with their areal extent and degree of landslide hazard areas.

Mudslides and floods associated flooding and coastal erosion caused 26.5% of all registered emergency. The greatest number of them noted in Jalalabad (34.9%), Osh (22.5%), Batken (22.2%) regions. In Chui, Talas, Issyk-Kul regions they range from 6.0% to 5.3%.

To *avalanches* have 10.3% of all emergency situations with the greatest number of them in the Jalal-Abad (38.0%), Osh (20.1%) regions. The Issyk-Kul, Naryn, Chui of avalanches of total 14.2% -11.1%. The smallest number of avalanches observed in Talas (1.4%) and Batken (0.3%) regions.

Meteorological hazards (wind, precipitation, air temperature, etc.) make up 13.0% of all emergency situations, but they often lead to the appearance of other dangerous processes. Activation of landslides, rock falls, the occurrence of landslides, floods, raising the water table depends on the number, nature of the distribution of liquid precipitation, accumulation and melting of snow and glaciers.



Flooding (3.4%) as a source of emergency reported at their primary occurrence or a sharp rise in the water table to the previously flooded areas. The greatest number of emergency situations mentioned in Chu (33.0%) and Talas (20.2%) regions.

Technological emergencies, which include as large fires and accidents, were 20.0% of the total number of emergency situations, but the number of victims in them is about 70%. In Bishkek in the nature of emergencies they predominate, accounting for about 65%, in the Chui region 36.6%, in other areas from 10.9% to 19.9%.

The average number of emergencies 1990-2011 amounted to 179, for the period 2000-2011. 229 - there is a tendency to increase the average number of emergency for year.

In 2011, registered 255 emergencies, which was close to the predicted number (up to 240).

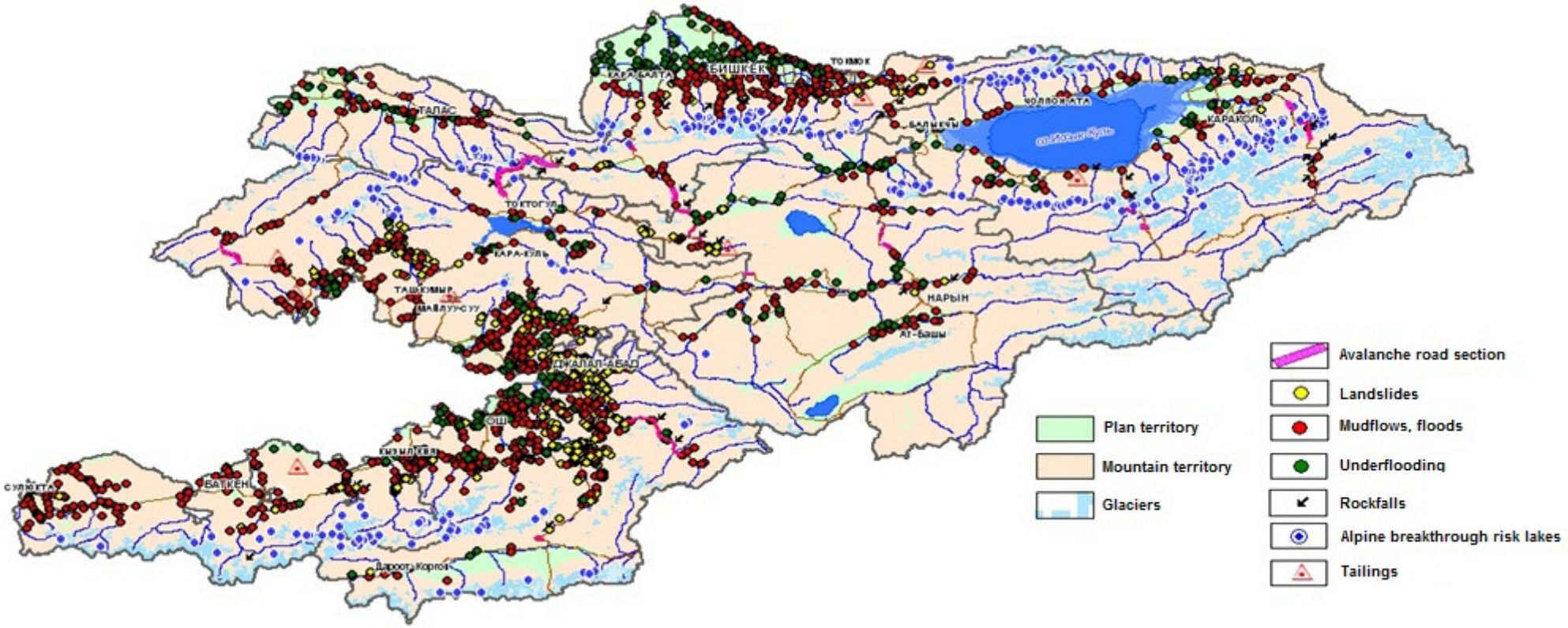
Reported cases of avalanches, mudslides, floods, heavy snowfall match averages. Mean values were exceeded for emergencies caused by high winds and earthquakes. 3 earthquakes in Batken, Osh, Naryn led to the destruction or material damage.

Active landslide, mudflow, flood processes, avalanches will be largely determined modes of distribution, deposition, accumulation of rainfall, melting snow and glaciers.

Given the dynamics of disasters and projected natural conditions in 2012 - increased rainfall, groundwater level rise, increased seismic activity of possible emergencies in the Kyrgyz Republic will be 300-320 cases per year. Number of emergency survey of the activation of hazardous processes and phenomena of 300-400, and in view of the planned monitoring surveys dangerous areas - during the year 1200-1500

Monitoring system of tracking of development of technogenic and natural processes on the territory of the Kyrgyz Republic - Ministry of Emergency Situations

Schematic map of distribution of dangerous processes and events in the Kyrgyz Republic



DISASTER MANAGEMENT OF THE KYRGYZ REPUBLIC

Administrative system

Action plan for civil protection established by the Government of the Kyrgyz Republic on the basis of the principle of reasonable sufficiency and use of available forces and means.

Activities carried out by the Civil Protection forces and resources of state agencies, local administrations, local authorities and organizations on whose territory an emergency.

Ministry of Emergency Situations, as the single authorized state body in the field of civil protection:

- performs state management and coordination of the activities of state authorities at all - levels in the field of civil protection;

- carries out when the collection and processing of information in the field of civil protection, and exchange;

- organizes and coordinates the preparation of government, civil defense forces and the public in the field of civil protection.

To reduce the risk of emergency situations MES improves the following activities:

- monitoring and forecasting of emergency situations;

- carrying out preventive and protective measures;

- rapid response to emergency situations.

The Ministry of Emergency Situations of the Kyrgyz Republic entrusted the implementation of unified state policy in the field of civil protection, fire protection, nuclear and radiation safety and hydrometeorology

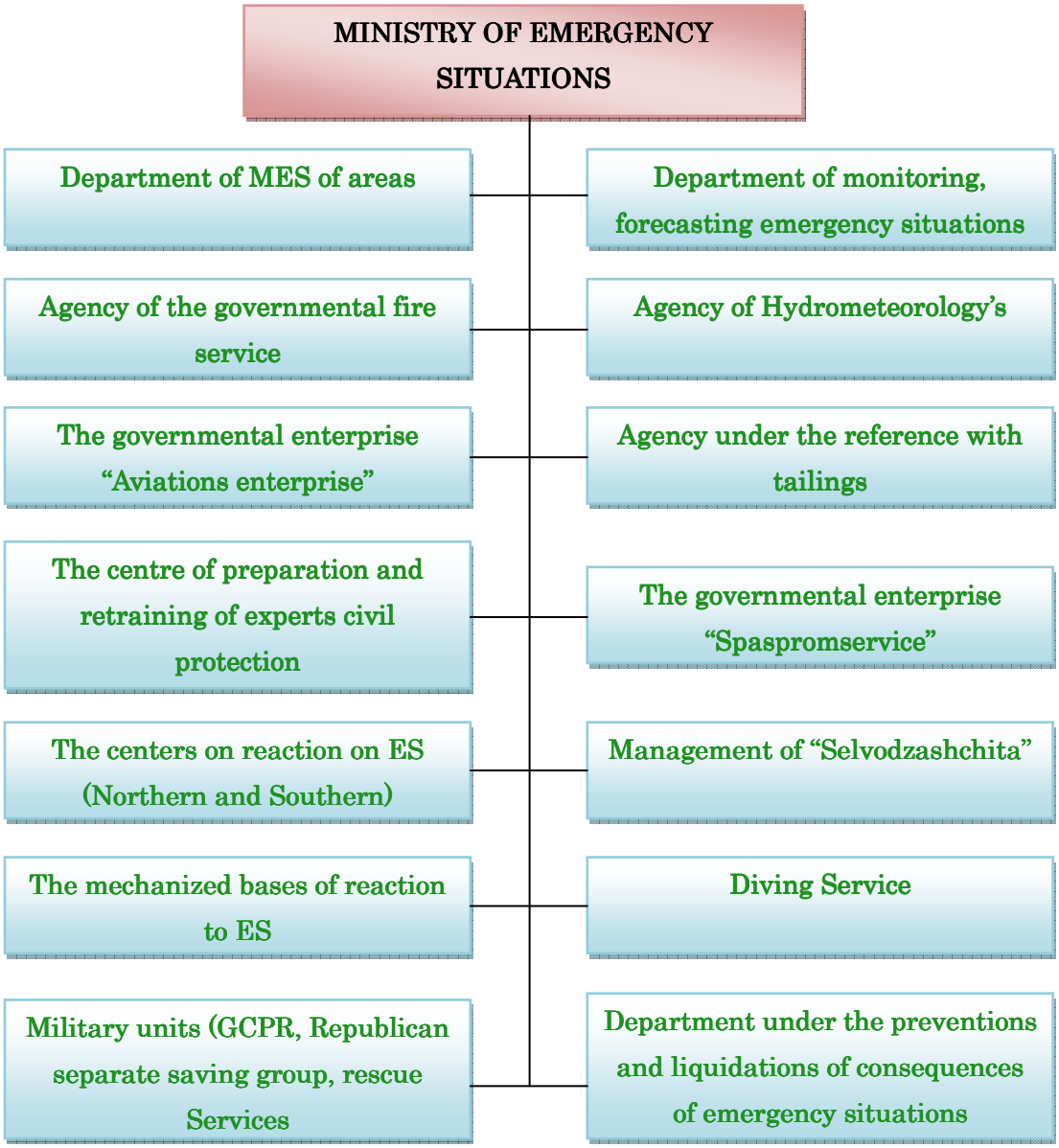
Legislative Basis

Ministry of Emergency situations (MES) is a government body of the executive authorities of the Kyrgyz Republic in the field of civil protection, fire protection, nuclear and radiation safety and meteorology. Activities of the Ministry as a whole supports the implementation of forecasting natural hazards, technological processes and events, event planning Civil Protection, prevention, preventative countermeasures emergency conditions in peace and war time, organization, and search and rescue, disaster recovery and other urgent work, emergency response.

Legislation of Ministry of Emergency situations has few documents for disaster management in the Kyrgyz Republic. There are:

- Law of the Kyrgyz Republic on "Civil Protection" from 20 July 2009.
- Law of the Kyrgyz Republic "On Fire Safety" from December 30, 2009.
- Law of the Kyrgyz Republic "On Radiation Safety" from February 28, 2003
- Law of the Kyrgyz Republic "On the emergency rescue services and status"
- from December 30, 2009

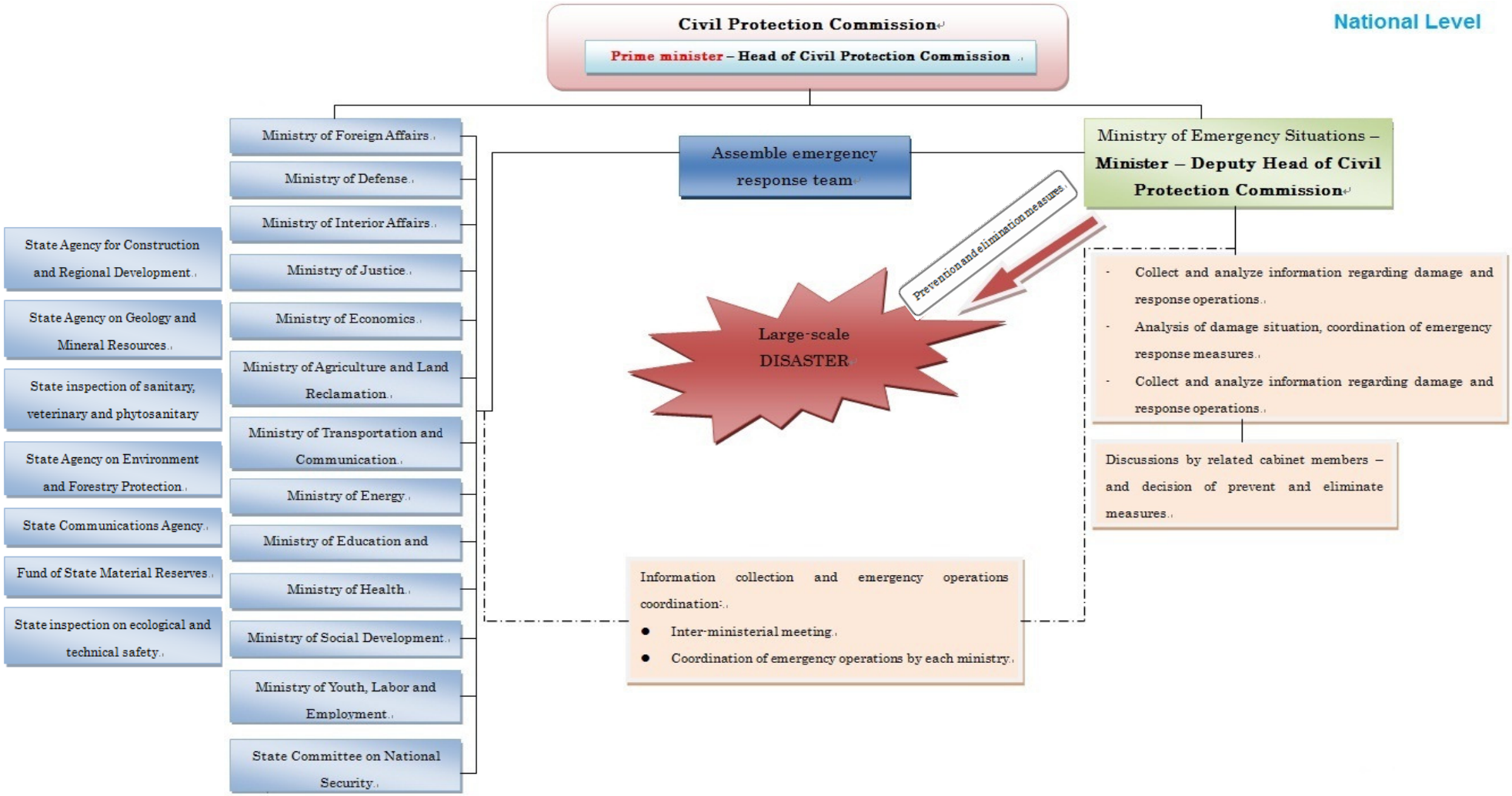
- Law of the Kyrgyz Republic "On the tailings and waste dumps" from April 17, 2009
-



Structure of Disaster Management

Activities for Civil Protection Ministry performs in concert with other executive bodies and local authorities, associations, international and non-governmental organizations directly and through its subordinate agencies.

The aim of the Ministry is to implement a unified state policy in the field of civil protection, fire protection, nuclear and radiation safety and meteorology



In order to ensure the functioning of the State System of Civil Protection, increasing efficiency in decision-making on issues population and territories protection from emergency situations, as well as in accordance with Article 13 of the Law "On the Protection of Civilian" The Government of the Kyrgyz Republic has established inter-ministerial Civil Protection Commission. This Commission is the coordinating body of the national level State Civil Protection. Main objectives of this commission:

- Guide the development and implementation of a unified state policy in the field of civil protection;
- Organization of national activities in the field of civil protection;
- Coordination of ministries, state committees, administrative agencies, local administrations, local authorities, international organizations and NGOs to organize and conduct of Civil Protection in the Kyrgyz Republic

On the regional and local level the local governments are head of Civil Protection Commission

Disaster Countermeasures, Prevention and Preparedness.

Earthquake Disaster

Destructive effects of the earthquake on a special place among the natural hazards as they occur suddenly, often accompanied by secondary effects (such as landslides, avalanches, fires, etc.).

Kyrgyzstan is a large part of the Tien Shan and the Pamirs and northern areas is one of the earthquake-prone regions of Central Asia. Tien Shan is bordered on the north and west with the Kazakh shield and Turan plate, in the south - the Tarim platform and had a strong north-south compression, which is one of the causes of the numerous earthquakes. Two major seismically active zones - North Tien Shan and the Southern Tien Shan, within which there is a strong earthquake - is located in the northern and southern border areas of the Republic.

Based on the agreement between the MES and the Institute of Seismology NAS KR № 1 for 2011 by the Institute of Seismology, National Academy of Sciences of the project "Preparation of a new seismic hazard map of Kyrgyzstan 1:1 000 000 and the development of practical recommendations to reduce the economic impact of the expected “seismodisaster” is made new seismic zoning map and an updated forecast of seismic hazard in Kyrgyzstan for the next 3-5 years.

The map reflects the extent of the recent seismic hazard in the country. By contour

selected original lines 8 and 9-point intensity shocks and return periods of tremors. According to this map almost all the territory of Kyrgyzstan may be exposed to strong earthquakes 8 - 9-point intensity.

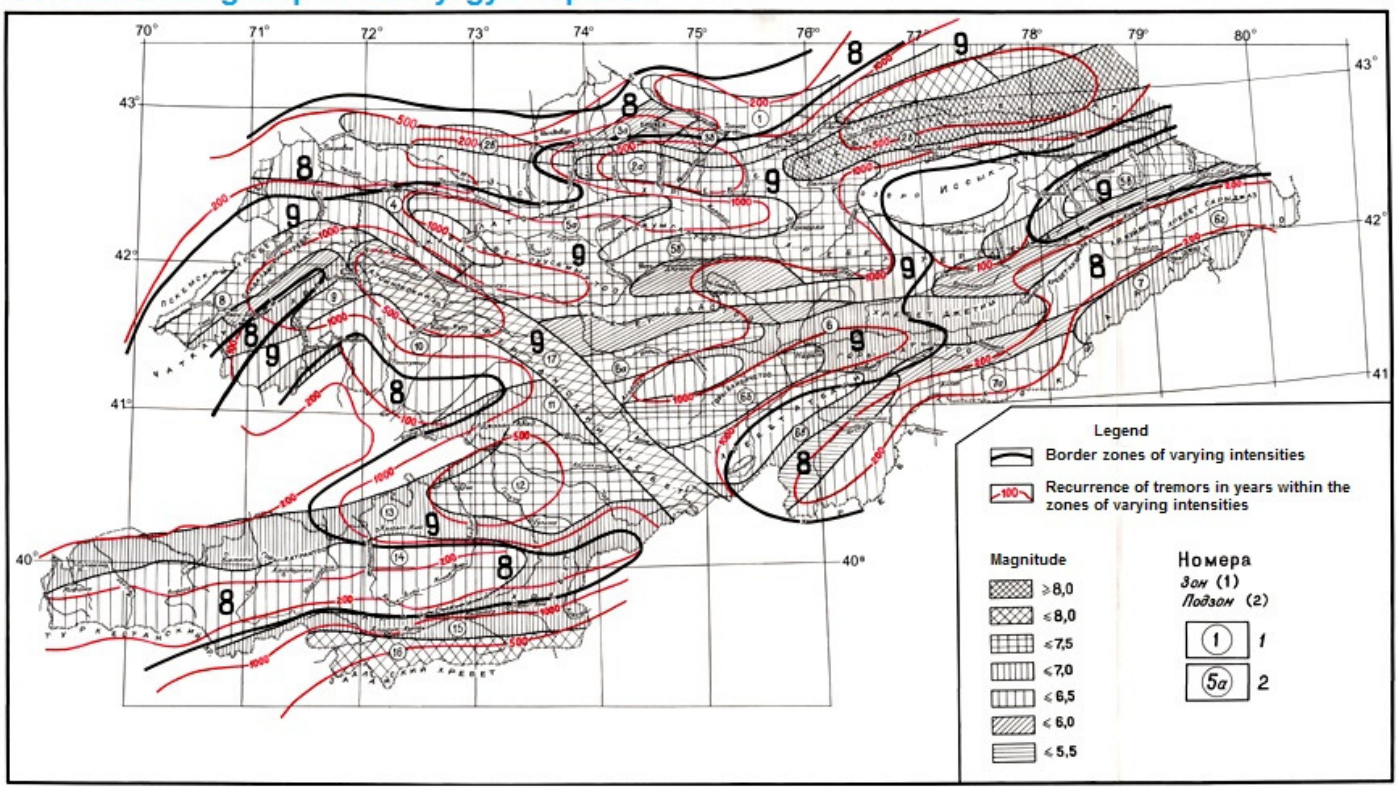
For seismic risk reduction and socio-economic impact of the devastating earthquake advisable that the following main activities:

1. Reverse engineering of existing building survey of buildings of educational institutions in order to obtain information about the actual condition.

2. According to surveys, predict the state of the buildings after the earthquakes of varying intensity possible to estimate the expected economic and social damage to respond rapidly and the epicenter of the works and studies to assess the extent of disasters and to identify buildings for Priority strengthening.

3.Development directory of technical measures aimed at restoring buildings.

Seismic Zoning Map of the Kyrgyz Republic



Landslide Disaster

In the Kyrgyz Republic there are currently about 5,000 landslides (from the ancient to the modern age). Landslides occur mainly in low-and middle zones coinciding with the area of spreading Meso-Cenozoic presented interblended variegated shale's, sandstone, limestone, marl, gypsum numerous aquifers and loess-like loams number of landslides is increasing every year due to the enhanced interaction of modern geodynamic movements seismicity, the rise of the water table, abnormal amount of atmospheric precipitation, as well as engineering and human activities, and keeping the balance of slope stability in mountainous areas.

Total land area affected by landslide processes is about 7.5% of the country. The greatest number of landslides located in Osh and Jalal-Abad. Just landslide areas are about 600 settlements, the danger to which will exist in the future.

The challenge is to create a study of landslides in each potentially dangerous sloping site tooling observation network remotely obtain information about the current changes in the deformation and dangerous shift.

Area of possible activation and the formation of new landslides identified by years of research. The process of landslide in the future will continue on the new system and in the body of an ancient landslide, depending on climatic and hydrological conditions.

Due to forecasting of activation of landslides in these areas of their distribution, to conduct preventive action as a system of regulations for the training of specialists and the correct behavior of the population developed the "Rules predict activation of landslides and earthquake affected areas in the Kyrgyz Republic".

Flood and Mudflow Disaster

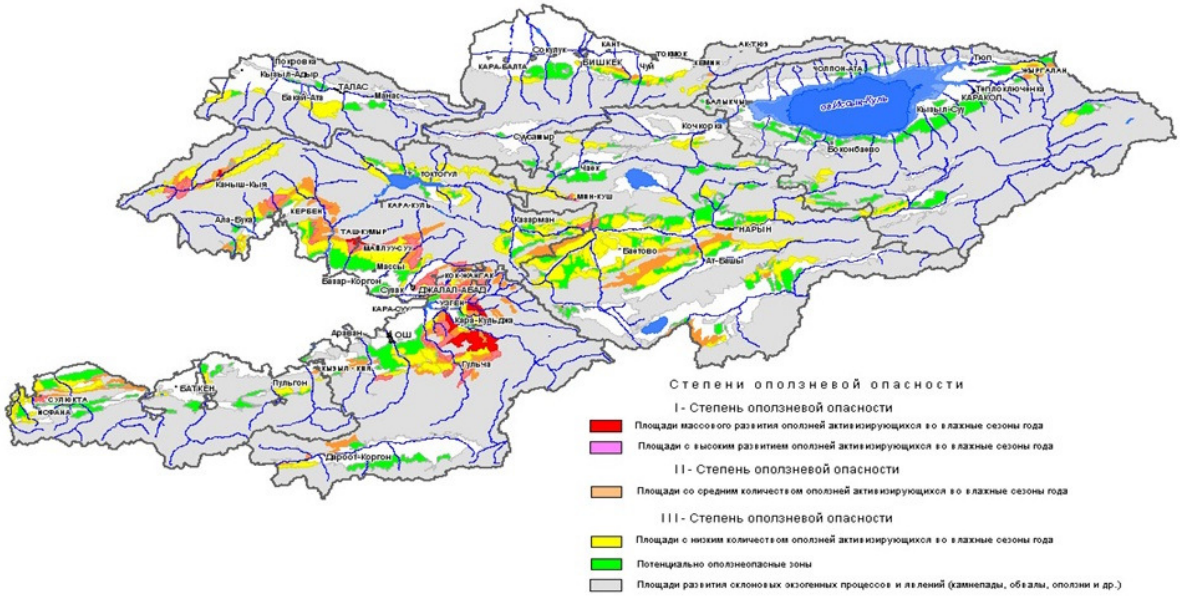
The territory of the Kyrgyz Republic is largely exposed to mud and flood processes. On average, each year in the country is about 60 emergencies related to floods and mudslides, which makes up 26-27% of all emergencies. Flood-village settlements are lesions (95% of all settlements on the banks of the Republic are cones or rivers or ephemeral streams), transport communications, agricultural, hydraulic, irrigation and other facilities.

In order to predict the mudflow and flood processes and breakthrough high-mountain lakes developed, published and implemented in practice professionals to teach people how to behave and competence in higher education and graduate school: "Procedure for determining the areas of flood and mudslide damage in breaking mountain lakes in the Kyrgyz Republic " guidelines" Engineering geology disaster prevention "," Geodynamics and Disaster study of mountain regions".

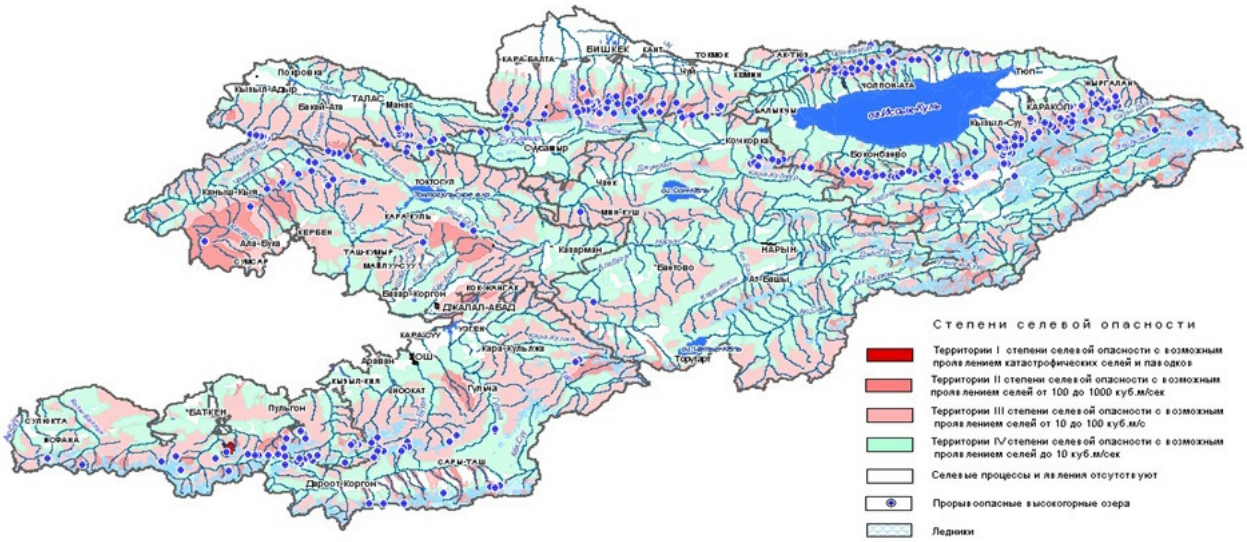
Forecast landslide and flood risk is the basis for the adoption of preventive measures, including the construction of protective engineering structures, rational construction and planning

of settlements, agroforestry, cleaning riverbeds, drainage and irrigation systems, coordination of monitoring and warning.

Hazard map of landslides disaster in Kyrgyz Republic



Hazard Map of Flood Disaster in Kyrgyz Republic



Avalanche Disaster

Avalanches are particularly dangerous hydro meteorological natural phenomena that could be dangerous to humans, buildings, transport, communications, energy, bridges and communication lines. There are cases of mass death in avalanches cattle destruction of forests.

105,000 square kilometers, accounting for 53% of the territory of the Kyrgyz Republic, the avalanche prone to attack. Within 779 avalanche areas contributed more than 30,000 avalanche centers, about a thousand of them threatening.

Avalanches occur almost everywhere where there are steep slopes and snow of sufficient capacity. Avalanche education determined by the interaction of weather conditions, the size of snow accumulation and physical condition of the snow layer, from which they arise

To protect the area and facilities used by avalanches avalanche events and engineering facilities.

For preventative measures include:

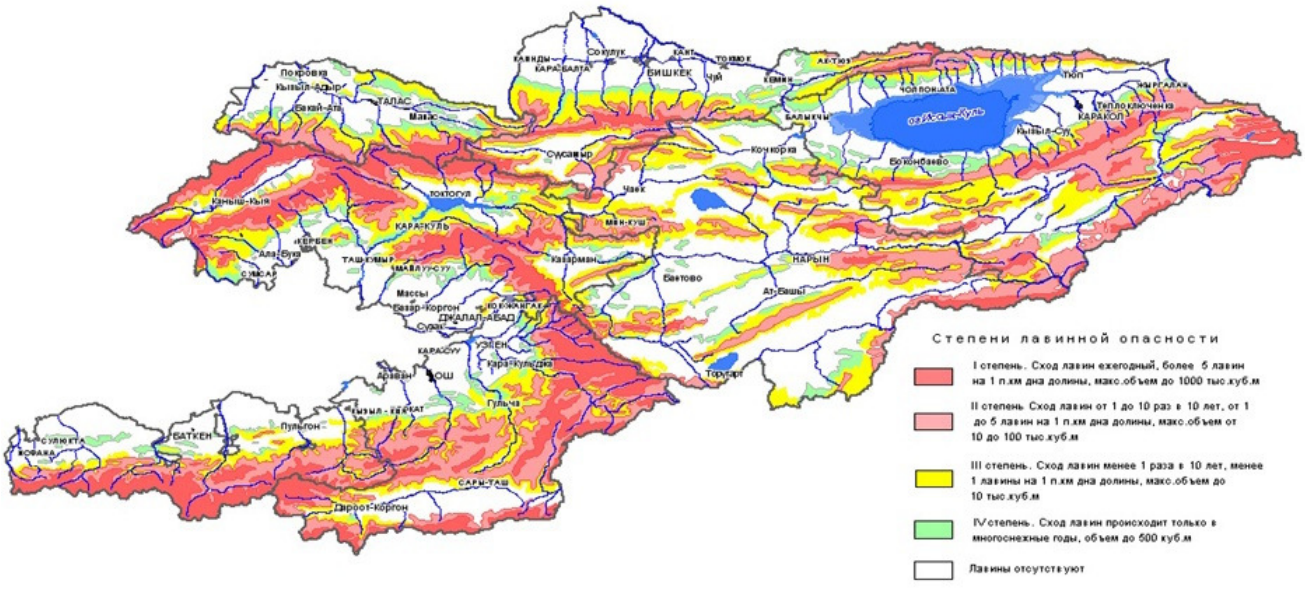
- The organization of monitoring, forecasting and warning systems. Practice of limiting access, the closure of roads, installation of warning signs, road services and alert the public through the media.

- Adjustable trigger avalanches, which is produced by explosions, shelling from artillery.

Engineering structures on the appointment and conditions of use are preventing or avalanches Avalanche. Avalanche prevent include snow-hold boards, walls, barriers, etc. Avalanche - walls, channels, galleries, awnings, etc.

Preventive actions are carried out through a system of regulations "Order of the short-and medium-term forecasts of avalanche danger on the territory of the Kyrgyz Republic"

Hazard Map of Avalanche Disaster in Kyrgyz Republic



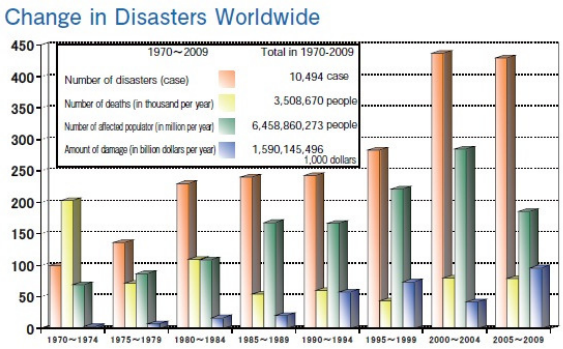
INTERNATIONAL COOPERATION IN FIELD OF DISASTER RISK REDUCTION.

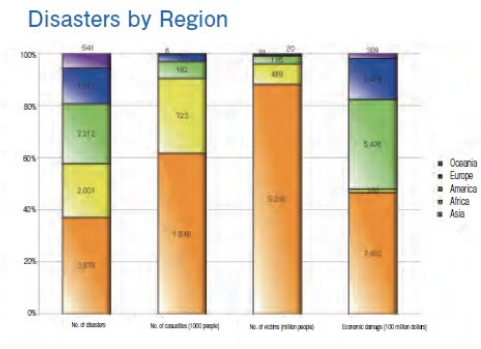
The number of disasters around the world is increasing, and disasters remain a major drawback to sustainable development. Reducing vulnerabilities to natural hazards and damage caused by them is an inevitable challenge in the international community.

Every year, disasters worldwide are experienced by 160 million people, kill 100,000 people, and cause more than 40 billion US dollars in damage (annual average from 1970-2009). Compared to the 1970s, the number of disasters and the number of people affected have both tripled in the last decade.

Asia in particular is a region where many disasters occur, as exemplified by the Indian Ocean tsunami disaster in late 2004, killing approximately 230,000 people, and the Sichuan earthquake in 2008 which took the lives of approximately 90,000 people. Looking at disasters worldwide in the most recent three decades (1979-2008), approximately 40% occurred in Asia, accounting for more than 90% of the people killed and affected and as much as 50% of the economic damage.

Most of the casualties are concentrated in low- to middle-income countries, making the vicious cycle of disasters and poverty another challenge.





In January 2005, the United Nations World Conference on Disaster Reduction convened over 4,000 participants from 168 countries and 78 international organizations, including UN agencies as well as NGOs in Kobe City, Hyogo Prefecture. The conference was chaired by Japan's Minister of State for Disaster Management, with the theme of "Building the Resilience of Nations and Communities to Disasters". The conference culminated in the drafting of the "Hyogo Framework for Action"and the "Hyogo Declaration".

Japan

Utilizing knowledge and technologies for disaster reduction acquired from numerous disaster experiences and lessons learned, Japan has been actively advancing international cooperation in disaster reduction. This field is an important part of international interaction, where Japan can substantially contribute.

At the WCDR, the Japanese Prime Minister started that through a) taking an “Initiative for Disaster Reduction through Official Development Assistance (ODA),” b) strengthening regional cooperation in collaboration with the Asian Disaster Reduction Center (ADRC) , and c) promoting international cooperative projects, Japan will support the promotion of the HFA in cooperation with the UN/ISDR.

At the WCDR, Japan launched an *Initiative for Disaster Reduction through ODA* with an aim to incorporate a disaster reduction perspective into development assistance. Based on this, Japan has been supporting developing countries through ODA in promoting their efforts with a sense of ownership including human resources development. ODA is used in three categories: a) technical cooperation such as hosting of trainees, dispatching of experts and international emergency assistance, b) grant aid, and c) loan aid.

In the case of large-scale disaster overseas, international emergency assistance such as the dispatch of ***Japan Disaster Relief (JDR) teams*** and the provision of emergency relief supplies will be granted upon request from disaster-stricken countries. The JDR consists of a from rescue team, medical team, expert team and units from the Self –Defense Forces. In response to the Indian Ocean tsunami, an unprecedented number of JDR members were dispatched to Indonesia, Sri Lanka, the Maldives and Thailand.-

The World Meteorological Organization (WMO) facilitates international cooperation in the meteorological field to coordinate, standardize and improve world meteorological activities. Japan is an active member of the organization, and successive Permanent Representatives of Japan with WMO (a role to which the Director-General is designated) have long served as members of the Executive Council by election of the Congress. ***JMA*** is a core member in the implementation of a number of scientific and technical WMO programs, with many experts contributing to Technical Commissions and associated working bodies of the organization. The Agency also operates a number of WMO regional and global centers for the WWW (World Weather Watch) Programme and others. JMA is also actively involved in international programs organized by the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Civil Aviation Organization (ICAO) and others.

JMA has played a key role in the development and implementation of the WMO information System (WIS) and initiative to establish a common information infrastructure encompassing all WMO programmes and related international programmes.

The WIS is implemented in two parallel parts. One is the continued evolution of the Global Telecommunication System (GTS), and the other involves the extension of WMO services through DAR (discovery, access and retrieval).

The WIS has three types of centers: Global Information System Centers (GISCs) guaranteeing the regional and global connectivity of the WIS structure and providing DAR functions; Data Collection or Production Centers (DCPCs) taking care of programme-specific activities; and National Centers (NCs) in charge of national responsibilities.

JMA contributes by running a GISC and eight DCPCs following designation by WMO in 2011.

List of DCPCs operated by JMA:

1. *RSMC Tokyo – Geographical*
2. *RSMC Tokyo – Typhoon Center*
3. *RSMC Tokyo – ATM/EER Center*
4. *Satellite Center*
5. *Tokyo Climate Center*
6. *Global Producing Center for Long-range Forecast*
7. *The World Data Center for Greenhouse Gases*
8. *Regional Telecommunication Hub Tokyo.*

Technology transfer to developing countries in the field of meteorology is essential not only for the modernization of meteorological services in those countries but also for the promotion of international meteorological activities. JMA has been providing expert services and training programs to developing countries for decades. In particular, the series of Japan International Cooperation Agency (JICA) training courses in meteorology has received more than 270 meteorologists from National Meteorological Services in developing countries since 1973. Toward the implementation of Japanese government aid programs in the meteorological field, JMA provides a variety of technical support in cooperation with JICA and other national authorities.

Kyrgyz Republic.

Modern conditions, accompanied by a large number of emergencies lead to property damage, are a direct threat to the health and welfare of people and the sustainable human development, which requires improving existing forms of cooperation, as well as new approaches and actions in addressing related to the prevention and elimination of emergency situations of natural and man-made.

Gaining in 1991 of the Central Asian countries provided an opportunity for national independence and the formation of an independent environmental policy, as well as regional cooperation in the field of environmental protection. Overall environmental and economic problems common natural region contribute to the adoption of joint and concerted action by all countries of Central Asia.

Kyrgyz Republic through the Ministry of Emergency Situation attaches great importance to international cooperation in solving problems related to the prevention and elimination of emergency situations.

Cooperation with the Central Asian region is also carried out in the framework of the Agreement between neighbor countries: Kazakhstan, Tajikistan, Azerbaijan ant etc.

The main strategic objectives of international cooperation are:

1. Raising of MES activities in accordance with modern international standards.

2. Professional development of employees MES through international cooperation.

3. Strengthening the authority of MES at the regional and international level.

4. Development of relations with countries with traditionally strong civil protection, prevention, rescue

and fire fighting.

Also Kyrgyz Republic on a regular basis cooperates with international organizations: World Bank (WB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), UN Environment Programme (UNEP), Organization for Economic Cooperation and Development (OECD), Organization for Security and Cooperation in Europe (OSCE), United Nation Development Program (UNDP) and etc.

Concerning cooperation with UNDP it should be noted, that at present time MES in cooperation with UNDP office in Kyrgyz Republic jointly planning to implement project in field of early warning system of disasters, which donors is Government of Japan.

This project was agreed with Embassy of Japan in Kyrgyz Republic and directed for further consideration to Government of Japan.

LESSONS LEARNED AND RECOMMENDATIONS

"One of the great learning's from the Great East Japan Earthquake and Tsunami which can be applied in many other disaster-prone countries is the absolute importance of preparing populations at risk for the worst-case scenario. Mental preparation is just as important as physical protection. It is also vital to keep alive the historical memory of past events.

"Japan excels when it comes to public awareness of risks, evacuation drills and mobilizing the population in a way that few other countries can emulate. We are aware of examples of where school children seized the initiative and escaped the tsunami while also helping younger children to flee.

"There can be no doubt that the toll of 15,854 killed and 3,203 missing would have been much higher among the 600,000 or more people at immediate risk in the affected areas if people had not responded to the early warnings. Let us not forget this great achievement when discussing all the other things that could have been done better", - ***The UN Secretary-General's Special Representative for Disaster Risk Reduction, Margareta Wahlström - GENEVA, 9 March 2012.***

Japan has many experiences about natural disasters. It has gained the knowledge and developed the skills of responding and preparing for disasters through its past experiences.

Taking into account some similarity of geographical scopes between two countries and presence of common features of certain natural disasters, it is necessary to note high level of Disaster Management System of Japan, which in this case is a shining example for others to follow, not only to Kyrgystan, and the world.

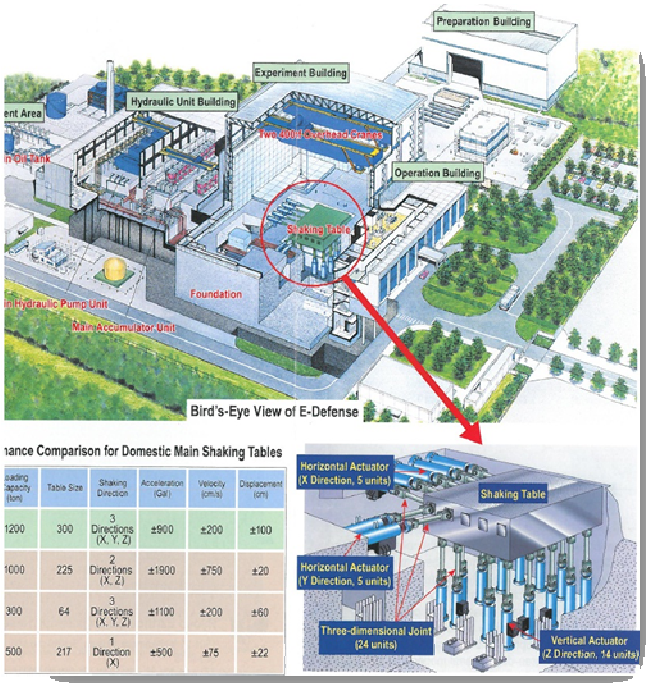
During research period by the leadership of ADRC was organized not a small number of outreach activities in various organizations in DRR. I want to mention a few, but important to the personal experience of them.

At the beginning of October, our VR's group visited *Miki Earthquake Disaster Memorial Park.* The park is ordinarily used for sports and recreation as well as for disaster prevention education and training of personnel. In the event of a

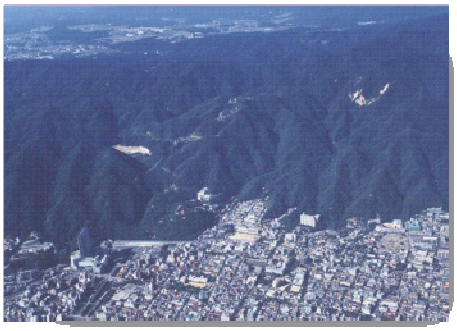
major disaster, it will support afflicted areas in the prefecture as a core facility of the regional emergency management base network for the entire prefecture. In the event of a disaster, this will become a base for collecting relief supplies. The approximately 5,000 square meters of space below the stands are used for storage.

Also on the territory of park located unique in own way T*hree-Dimension Full-Scale Earthquake Testing Facility* – ***E-Defense***. Using the world, s largest shaking table, an actualize building is shaken to the same degree as it would be during a high-intensity earthquake to study the destruction process.

Experiments are performed by shaking a real-size 6-story structure and simulating the tremors that occurred in the Great Hanshin-Awaji Earthquake.



On July 5 in 1938, a heavy rain causing innumerable landslides and debris flows seriously damaged the Hanshin area. In the wake of this, the Rokko Sabo Office was established in September 1938, and strated Sabo works in the Rokko mountain area from May 1939.



Rokko Sabo Office is responsible agency from

Ministry of Land, Infrastructure, Transport and Tourism for the risk of collapse and debris flow at the time of heavy rain.

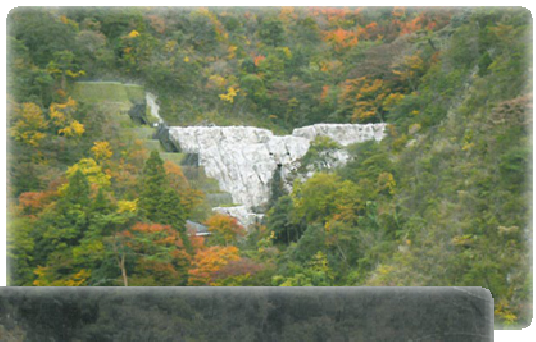
One of the part of Sabo works is constructing of Sabo dam, which stops the flow of a lot of mud and rocks that may cause a disaster, and then carries them downstream slowly and safety.. In addition, a Sabo dam also reduces the occurrence of debris flow by accumulating sediment to reduce the gradient of river bed and slow the flow of water. Thus, Sabo dam has a function of sediment discharge continuously even after full accumulation.

For the area such as slopes after the landslides and steep slopes, where the development of forest is not enough to prevent sediment-related disasters, it takes measures using civil engineering structures following “(Proposed) Manual for Selecting Method applied to Mountain Slope”.

We had a chance to visit some of Sabo dam points in Kobe area, where staff of Rokko Sabo office clearly showed and told us about disaster reduction system working.

Exactly this experience I would like **to include** for my research recommendation paper for further using of this activity in disaster risk reduction system in mountain area in Kyrgyz Republic. I think and believe that mentioned information about Sabo works in my back report will become a starting point of cooperation between our countries in field of disaster reduction activities in mountain area exposed to landslide and slope disaster. Considering large similarity of geo and topographical date mountain area, I’m sure experience and knowledge of Japan will very useful for experts from Ministry of Emergency Situation KR

Grating crib works preserving existing vegetation (slope stabilization)



Completed reinforced dams

Also during stay in ADRC we had a lot of visiting and participating in different museums, study stations, drills and government offices. Their main objective is transfer of experience and knowledge from past disaster, teaching of population and dangerous zone resident to basic skill of conducting during disasters, making of information about main disasters which can occur in their living area and evacuation zones.

A second point of my recommendation is <u>efficient utilization of study source of Japan Government.</u>

Human education to basic knowledge is one of the main objectives in disaster reduction system. Appropriate knowledge and skills are necessary to implement disaster management individually. Hence chances of disaster education should be given for community members. Each community has schools and most children can go to schools. Thus, improving school disaster education is effective to spread the appropriate knowledge of disaster management.

Availability and efficient using of hazard maps in government office increase capability of resident area for sustainable to disasters.

"…if you knows your enemy and yourself, you will not be in danger even in 100 combats", - ***Su Wu, a famous Chinese strategist.***

The functions of a hazard map are to know the phenomenon and to make it known to residents. The hazard maps cannot stop a disastrous phenomenon. But the effective use of hazard maps can decrease the magnitude of disasters.

Third point in my recommendation list is improving of quality of disaster drills in the example of Japan.

Preparation for a disaster is not always enough. Only practice makes perfect. If you make the effort to use Mother Nature's little disasters and test your readiness with dry-runs and rehearsals, you will learn a thousand little things that will make a big difference.

In Japan on September 1st, Disaster Reduction Day, wide-area, large-scale disaster reduction drills are conducted in every region across the country in collaboration with disaster related organizations. Additionally, drills based on the experiences of past disaster are conducted in every region throughout the year. In recent years, practical simulation system have been

introduced, in which participants are not given any information beforehand and are required to make decisions and respond to the situation based upon the information provided after the drill starts.

Repetition is the Mother of Learning – proverb. Proverb draws attention that a repetition of the material under study is very important when training

If you want to survive a disaster comfortably, be more than prepared. Be capable and competent in your ability to execute your plan. Think, plan and practice. Don't neglect short-term tactics by focusing on long-term strategy. Think home survival and offsite survival; the odds are pretty good you'll be faced with a crisis away from home or need to evacuate your primary residence.

CONCLUSION

Historically, destructive natural disasters have posed greatest challenge for Japanese society. Unfavorable geographical, topographical and meteorological conditions of the country have made it one of the most disaster prone countries in the world.

Notwithstanding, Disaster Management System of Japan is now one of the leaders in the world. Convenient and favorable economic recovery after the war allowed Japan to the creation of an extensive scientific institute to study and create measures to reducing the risk of damage to the public.

Using high-tech tools, the availability of professional staff a wide range of scientists, solid position in the international community makes Japan the most developed, in particular in the field of management.

Based on 3-layered national government system and administrative delimitation of the country, formation and evolution of the disaster management system in Japan has been heavily influenced by unfavorable geographical position, as well as, meteorological, and topographical conditions and various large-scale disasters have been driving force of new changes and enhancements to it. Activities at national, prefectural and municipal are taken in concerted and coordinated manner and supervised by the higher level.

JMA is the key body in prediction major natural hazards such as earthquakes, tsunamis, typhoons and volcano eruptions and it should be noted must be noted that application of latest technologies for disaster warning and communication by JMA had greatly improved disaster response system in Japan.

Some common factors of influence of nature on man between Kyrgyzstan and Japan can be a successful step forward in the advancement and improvement of CRP in our country, as is currently in the Kyrgyz Republic in the framework of international projects, some of the partners which is Japan developed recommendations for the implementation of activities to reduce risk and vulnerability to natural disasters in the community (ail districts). Program foresees to create and implement action plans and preparedness in view of the real dangers, assess their own capabilities to prevent emergencies, training and public awareness, capacity warning systems, interaction with the MES inclusion of measures to reduce risks in the long and medium term development plans ail districts.

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