ASIAN DISASTER REDUCTION CENTER
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DISASTER EDUCATION AND HUMAN RESOURCE DEVELOPMENT

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ACKNOWLEDGEMENTS

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Finally, I would like to express my gratitude to the ADRC staff who turned my stay in Japan into an unforgettable experience.

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Introduction

Armenia is one of the most disaster prone countries of the world. In Armenia the earthquake disaster is the most harmful for people and property. Recent Major Disaster was Spitak earthquake in 1988. We need to have high level of readiness in case of any disaster. One of the ways of disaster mitigation, is disaster education and human resource development. Armenia is considered a developing country, persistently in need of up-to-date world expertise in any scientific area which is likely to contribute to its sustainable development. So all the knowledge – both theory and experience acquired during the VR program at ADRC will be applied in relevant fields of practice serving as an asset to the millennium development goals.

Research topic: Disaster education and human resource development

Background and Significance: Using up-to-date International and Japanese methods and experience for development of population preparedness to disaster.

Proposed Research Activities: Development of disaster education and human resource awareness as part of disaster risk reduction (DRR).

Specific Aims: The main goal of my research is to investigate and compare the International and Japanese experience in ,,Disaster education and human resource development ,, field.

Abstract: The research is about natural hazards, disaster management, disaster risk reduction and general information of Japan and Armenia. It will include comparative analysis about disaster management policy and disaster mitigation education for different age groups of population as a part of Disaster Risk Reduction.

Required Data and Information and Potential Resources: The required data and information for disaster education and human resource development obtained from relevant institutions and organizations.

Scope and limitation: This research focused on comparative analysis of disaster mitigation education for different age groups of population as a part of Disaster Risk Reduction in Armenia and Japan for finding new, effecive and variety approches in diaster education and human resource development field.

Results: The results of research gave me more new ideas and allowed to learn new methods which will help me to improve my knowledge in the field of public education and stimulate for new approaches. I hope the results of my research as an important component for Seismic Risk reduction will allow me to use new approaches and methodologies in the field of disaster education and human resource development, which is very important for my country, Armenia.

1. GENERAL INFORMATION OF ARMENIA AND JAPAN

1.1 General information of Republic of Armenia

Official name: Republic of Armenia (RA), briefly – Armenia

Name in official language Hayastani Hanrapetutyun, briefly – Hayastan

National flag: 

A tricolor with horizontal lines of red, navy and orange evenly distributed from top to bottom. Red symbolizes Armenian Highlands, Armenians' incessant struggle for survival, Christian faith, liberty and independence. Navy symbolizes the aspiration of the Armenian nation to live under the peaceful sky. Orange symbolizes the talent for creative work and diligence of the Armenian people.

Coat of arms: 

Head of the State: President

Legislative power: one-chamber National Assembly

Official language: Armenian (is part of Indo-European

	family of languages)
Capital:	Yerevan
Administrative and territorial unit:	Marz (11 Marzes in all including Yerevan city)
National currency:	Dram (international currency code - AMD)

Geographical information

Territory:	29.74 thousand square km (is comparable with the territory of Belgium or Albania)
Neighboring countries:	North - Georgia South - Iran East - Azerbaijan South-West - Nakhichevan (Azerbaijan) West - Turkey
Average elevation above sea level:	1800 m
The highest peak:	Aragats mountain - 4090 m
The lowest altitude:	Debed river canyon - 380 m
The greatest extent:	365 km
Time zone:	Greenwich mean time + 4 hours

Climate information

Region:	north latitudes of subtropics
Climate:	dry, continental
Average temperature:	in January - -6.8°C, in July - +20.8°C

Demographic data

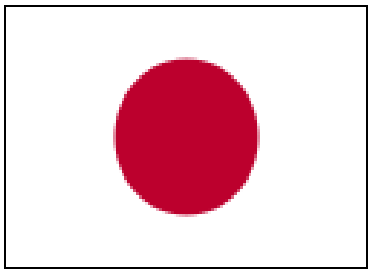
Population:	3.2 Million, population of the capital - 1.1 Million
Ethnic breakdown:	Armenians (98%), Russians, Yezidis, Kurds, Assyrians, Greeks, Ukrainians, Jews and representatives of other nationalities
Religion:	Christianity (Armenian Apostolic Church), professed by the vast majority of the population

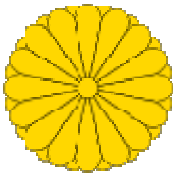
1.2 General information of Japan

Official Name: Japan (Japanese: 日本 Nihon or Nippon; formally 日本国 Nippon-koku or Nihon-koku, literally the State of Japan)

Location: Eastern Asia, island chain between the orth Pacific Ocean and the Sea of Japan, east of the Korean Peninsula

Flag:





ImperialSeal:	
Geographic coordinates:	36 00 N, 138 00 E
Map references:	Asia
Area:	total: 377,835 sq km land: 374,744 sq km water: 3,091 sq km note: includes Bonin Islands (Ogasawara-gunto), Daito-shoto, Minami-jima, Okino-tori-shima, Ryukyu Islands (Nansei-shoto), and Volcano Islands (Kazan-retto)
Area – comparative:	slightly smaller than California
Land boundaries:	0 k
Coastline:	29,751 km
Climate:	varies from tropical in south to cool temperate in north
Terrain:	mostly rugged and mountainous
Elevation extremes:	lowest point: Hachiro-gata -4 m highest point: Mount Fuji 3,776 m
Natural resources:	negligible mineral resources, fish
Natural hazards:	many dormant and some active volcanoes; about 1,500 seismic occurrences (mostly tremors) every year; tsunamis; typhoons
Environment - current issues:	air pollution from power plant emissions results in acid rain; acidification of lakes and reservoirs degrading water quality and threatening aquatic life; Japan is one of

	the largest consumers of fish and tropical timber, contributing to the depletion of these resources in Asia and elsewhere
Environment - international agreements:	party to: Antarctic-Environmental Protocol, Antarctic-Marine Living Resources, Antarctic Seals, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution,Tropical Timber 83,Tropical Timber 94, Wetlands, Whaling
Geography - note:	strategic location in northeast Asia
Time zone:	JST (UTC+9) /Summer (DST) not observed (UTC+9)

2. DISASTER MANAGEMENT POLICY IN ARMENIA

2.1 Natural Hazards in Armenia

Armenia is one of the most disaster prone countries in the world. It is at high risk of natural hazards, owing to high levels of exposure and vulnerability.

Meteorological disasters have become more frequent and intense in the last few decades. Floods, mudslides and debris flows threaten half of the country's territory, mainly in medium-altitude mountainous areas, where they typically occur once every three to ten years.

Risks associated with geophysical hazards are significant. The landslide hazard zone covers one-third of the country, primarily in foothill and mountain areas. As Armenia lies in one of the most seismically active regions of the world, the earthquakes have affected large numbers of people and caused significant economic losses. In Armenia the earthquake disaster is the most harmful for people and property. Armenia is located in a region where seismic activities are active.

Earthquakes	94%
Mudslides	3.15%
Landslides and rockfalls	1.2%
Floods	0.15%
Irradiation	0%

Recent Major Disaster was Spitak Earthquake 1988

Time: December 7, 1988 at 7.41.22.7 GMT (11.41.22.7 local time)

Coordinates of epicenter: latitude 40.92°N, longitude 44.23°E

The depth of the hypocenter: 10-15 km

The magnitude of the earthquake: 7.0

The intensity at the epicenter: 10 (MSK-64 intensity scale)

The earthquake hit 40 % of the territory of northern part of Armenia, densely populated region with 1 ml people. 21 towns and 342 villages were destructed, 514 000 people were left without shelter, 250 000 people were injured and 12 500 people were hospitalized. Number of victims was about 25 000. Particularly in Gyumri (15 000-17 000) and in Spitak (4000) number of victims was more than anywhere else. 17% funds of dwellings were destroyed, the work of 170 industrial companies were halted, the great losses were caused to villages and agro industrial complexes as well as to the architectural, historical and cultural monuments, 917 public buildings were destroyed.

The rescue activities were systemized only two or three days later. From the first second the earthquake strike, the population carried out restless rescuing works. Anyhow the absence of their experience and sometimes the lack of basic knowledge on actions in emergency caused real difficulties for the efficiency of rescue operations. Even there were cases when the public unawareness brought to life losses. Also there was a need of rescue equipment.

2.2 Survey for Seismic Protection (Armenian SSP) at the Ministry of Emergency Situations of the Republic of Armenia (MES of RA)

MES of RA is a republican body of executive authority, which in line with such competences as are vested in it by laws and other legal acts, develops, implements and coordinates RA government's policy in the area of civil defense and protection of the population in emergency situations.

MINISTRY OF EMERGENCY SITUATIONS OF ARMENIA					
Rescue Service (including Crisis Management Center- the main body for planning, co-coordinating and implementing measures related to natural and other forms of disasters)	**Survey for Seismic Protection (Armenian SSP)**	**Hydro-meteoroloy and Monitoring State Service**	**National Technical Safety Center**	**Atmospheric Phenomena In Active Service Impact**	**State of Emergency Crisis Management Academy**

2.3.4 SSP AGENCY
"Northern Survey For Seismic Protection" State Non-Commercial Organization
"Southern Survey For Seismic Protection" State Non-Commercial Organization
"Western Survey For Seismic Protection" State Non-Commercial Organization
"Eastern Survey For Seismic Protection" State Non-Commercial Organization

The 1988 Spitak Destructive Earthquake reveals that there is no seismic protection system at all and the Government RA and people were helpless to withstand the disaster.

First, Armenian SSP was founded in 1991 with the aim to organize population as well as buildings and structures seismic protection. It takes various measures for earthquake disaster management.

SSP's main goal is seismic risk reduction in Armenia, the population residence hazard mitigation and the state economic and social loss reduction results from earthquake. It has developed two long-term Strategic National Programs on seismic risk reduction in Armenia and in Yerevan city. Today SSP is not only a national but also a keystone international center.

The Armenian SSP is monitoring about 40 geophysical, geochemical, hydrochemical, electromagnetic etc. parameters through National Observation Network incorporating about 150 stations. The monitoring systems involve in the global IRIS, Vayq network, Guralp network READINESS, CTBTO and COSMOS networks which enable to change and disseminate data on seismic hazard.

The main objectives and the aims of Armenian SSP are as follows:

- ✓ provision of seismic hazard monitoring in the territory of Armenia
- ✓ assessment of the seismic hazard and seismic risk of the territories
- ✓ seismic risk reduction
- ✓ assessment of the levels of caused seismicity
- ✓ assessment of other secondary hazards connected with the seismic hazard.

The Legal Authority in Seismic Risk Reduction

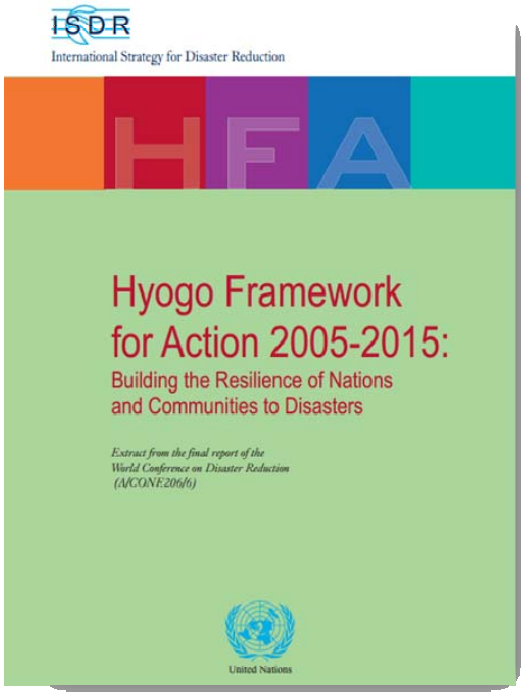
Seismic Protection activities are regulated by a number of laws and legislative acts and national

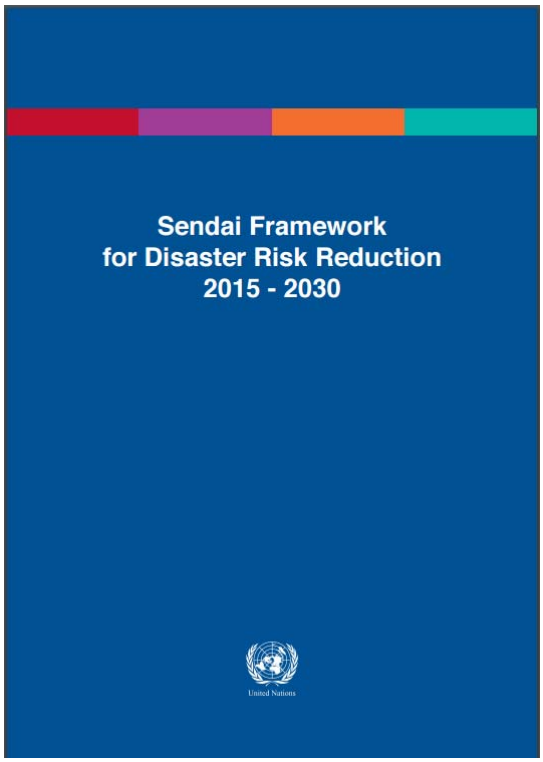
programs of the Republic of Armenia:

Law of RA	The Law of the Republic of Armenia on Seismic Protection (2002)
Resolutions of Government	The Complex Program of Seismic Risk Reduction in the RA Territory (1999)
	The Complex Program of Seismic Risk Reduction in Yerevan city (1999)
	The Resolution of the Government of RA on establishment of the list of critical important and general facilities in the field of seismic protection (2003)

Regulation	“National Survey for Seismic Protection” Agency (2008)

2.3 Disaster Management Strategy based on the Hyogo Framework of Action (HFA) and Sendai Framework for DRR



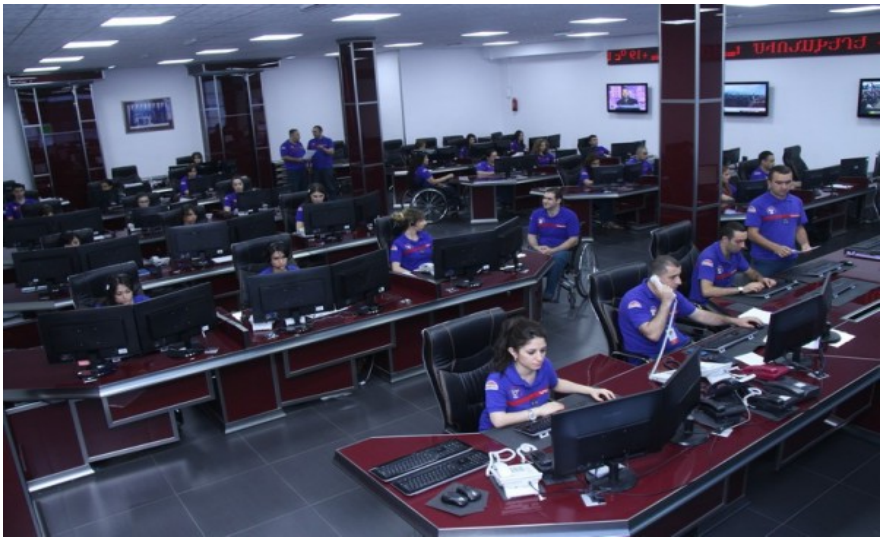


Armenia as a country which has a lot of natural hazards need of development and strengthening of DRR system in Armenia. This process implies involvement of all the potential of the country, which can be achieved through elaboration of Disaster Risk Reduction National Platform (DRR NP). DRR system is a framework of functions and processes with the aim to reduce population’s vulnerability to disaster risks. It is aimed at prevention or reduction of negative impacts of hazards and contributes to sustainable development of the society. Fund

for DRR NP was established in 2010. The Head of the Board is Ministry of Emergency Situation of Republic of Armenia (MES of RA). The goal of the DRR NP is to establish a multi-spectral mechanism with involvement of all stakeholders.

MES of RA has established a Crisis Management Center as the main body for planning, co-coordinating and implementing measures related to natural and other forms of disasters (complementary to a National Platform on Disaster developed in cooperation with UNDP).

Crisis Management Centers in Yerevan



Coping with disasters globally is possible only with joint efforts and partnerships. Armenia is considered as a high-risk country, prone to disasters such as earthquakes, landslides, hailstorms, droughts, floods, etc.

The Government of RA recognizes the threats to country development posed by natural hazards. Since 1991 it has worked to address DRR and to increase disaster response and recovery capacities for the sustainable development of the country.

Armenia is committed to achieving the strategic goals of the HFA 2005-2015 “Building the Resilience of Nations and Communities to Disasters” and has taken a number of significant initiatives in this regard.

The cooperation of MES of RA with international organizations and local partners proved to be successful and productive over the years. Their efforts in DRR has become a priority in Armenia, thus contributing to the sustainable development of the country. It will be needed to mention the cooperation with JICA, ADRC, UNDP, UNISDR, BCPR, UNICEF, World Bank, Red Cross Movement and a number of partner countries such as Japan, Sweden, Switzerland, USA, Russia, etc.

As a result of the mentioned activities, the Government of RA set DRR as a priority and the first steps to form the DRR culture are already established in the country. The best evidence of it is the fact that thanks to UNDP, Armenia became the first country in the region where by the Government’s decision the “ARNAP’ national DRR platform was established.

Ministry of Emergency Situation develops National DRR Strategy, Crisis Management

Centers and National Disaster Observatory. Armenia has also registered a progress in the implementation of HFA, and among the key developments towards establishment of decentralized DRR system has been decree of the MES on appointment of Heads of MES Regional Representations as HFA implementation focal points at the country regional (marz) level.

Crisis Management Centers in Marzes

Based on Japanese earthquake experiences, JICA has been supporting Armenian earthquake disaster prevention through "Seismic Risk Assessment and Risk Management Planning Project" by utilizing Japanese technology.

The main goal of "Seismic Risk Assessment and Risk Management Planning Project" is to reduce vulnerability to large-scale earthquakes in the capital city of Yerevan, where a third of the country's population is concentrated, by providing assistance in preparing risk management plans which cover all viewpoints surrounding disaster management cycle from prevention, emergency response to recovery/reconstruction. Real Time Information System on Seismic Intensity was installed at the Crisis Management Center of MES which aims: to promote disaster prevention actions of the citizens through publicity of disaster information and to raise public awareness towards disaster prevention. The project also focuses on awareness raising activities for citizens.

Sendai Framework for Disaster Risk Reduction

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. The HFA was conceived to give further impetus to the global work under the International Framework for Action for the International Decade for Natural Disaster Reduction of 1989, and the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation and its Plan of Action, adopted in 1994 and the International Strategy for Disaster Reduction of 1999. The Sendai Framework is built on elements which ensure continuity with the work done by States and other stakeholders under the HFA and introduces a number of innovations as called for during the consultations and negotiations. Many commentators have identified the most significant shifts as a strong emphasis on disaster risk management as opposed to disaster management, the definition of seven global targets, the reduction of disaster risk as an expected outcome, a goal focused on preventing new risk, reducing existing risk and strengthening resilience, as well as a set of guiding principles, including primary responsibility of states to prevent and reduce disaster risk, all-of-society and all-of-State institutions engagement. In addition, the scope of disaster risk reduction has been broadened significantly to focus on both natural and man-made hazards and related environmental, technological and biological hazards and risks. Health resilience is strongly promoted throughout.

Expected outcome and goal of Sendai Framework for DRR

While some progress in building resilience and reducing losses and damages has been achieved, a substantial reduction of disaster risk requires perseverance and persistence, with a more explicit focus on people and their health and livelihoods, and regular follow-up. Building on the Hyogo Framework for Action, the present Framework aims to achieve the following outcome over the next 15 years: The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries. The realization of this outcome requires the strong commitment and involvement of political leadership in every country at all levels in the implementation and follow-up of the present Framework and in the creation of the necessary conducive and enabling environment.

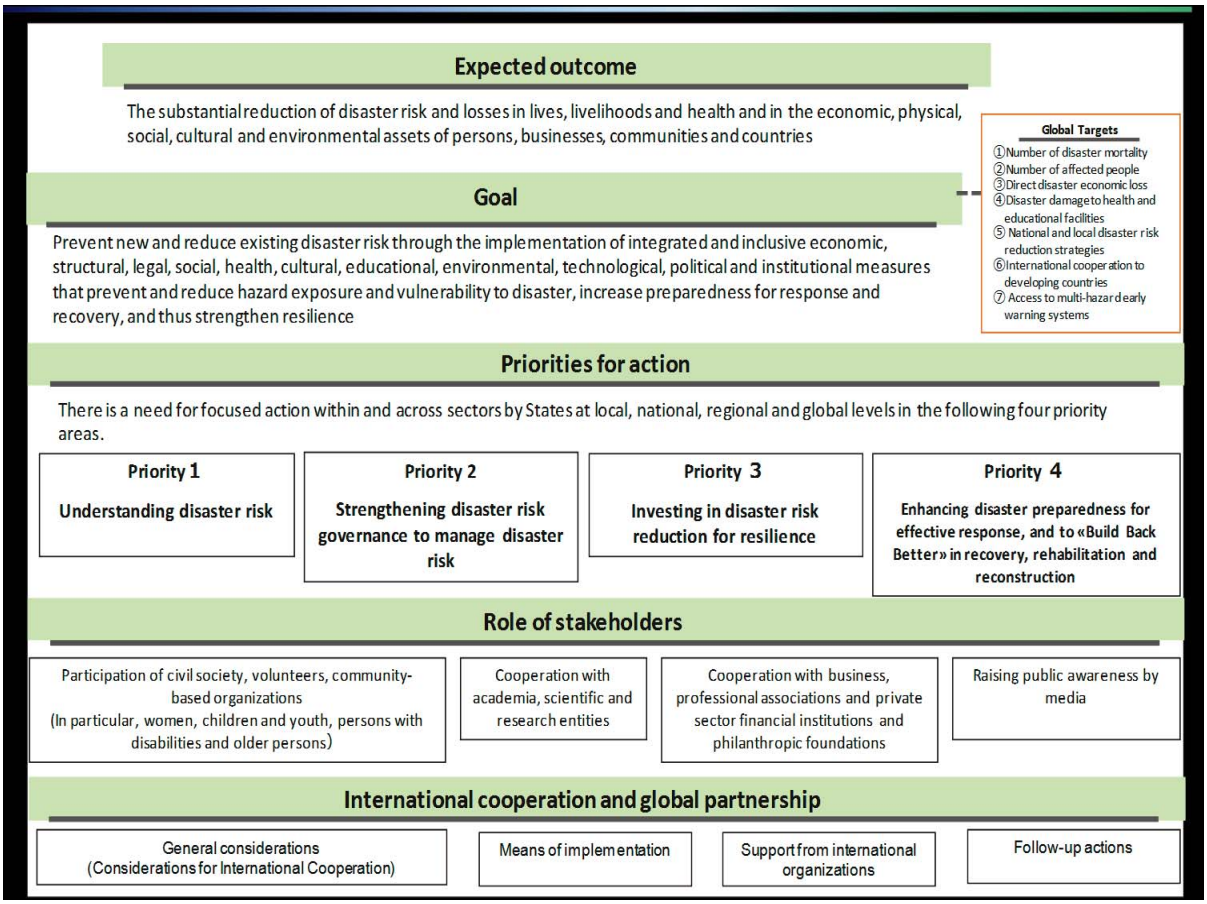
To attain the expected outcome, the following goal must be pursued: Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience. The pursuance of this goal requires the enhancement of the implementation capacity and

capability of developing countries, in particular the least developed countries, small island developing States, landlocked developing countries and African countries, as well as middle income countries facing specific challenges, including the mobilization of support through international cooperation for the provision of means of implementation in accordance with their national priorities.

To support the assessment of global progress in achieving the outcome and goal of the present Framework, seven global targets have been agreed. These targets will be measured at the global level and will be complemented by work to develop appropriate indicators. National targets and indicators will contribute to the achievement of the outcome and goal of the present Framework.

The seven global targets are:

1. Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020–2030 compared to the period 2005–2015
2. Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015
3. Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030
4. Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030
5. Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020
6. Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030
7. Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.



In base of this collaboration the Government of RA approved the methodology for assessing the economic development potential in the regions, and the 2015-2030 program of improved seismic safety in the state secondary schools of the RA. The purpose of the methodology is to identify those territorial units, resource potential of which, are higher than the level of economic development, to make the implemented in the country programs targeted, to ensure the mitigation of differences of socio-economic development of regions, more effectively using the economic development potential.

Armenia has recorded a number of achievements in DRR policy development and implementation, which became possible thanks to the effective cooperation with partner organizations. The Hyogo Framework for Action has fulfilled its mission, by creating basis for DRR system and effective development of a culture of sustainability. Based on these achievements, Armenia need to more constructively implement the priorities of the Sendai Framework for Action 2015-2030.

3. DISASTER MANAGEMENT POLICY IN JAPAN

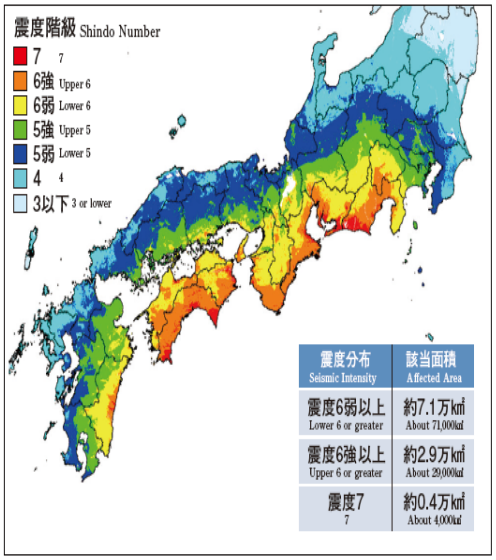
3.1 Natural Hazards

Japan is located in the Circum-Pacific Mobile Belt 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 active volcanoes is quite high. In addition, because of geographical, topographical and meteorological conditions, the country is subject to frequent natural disasters such as typhoons, torrential rains and heavy snowfalls, as well as earthquakes and tsunamis.

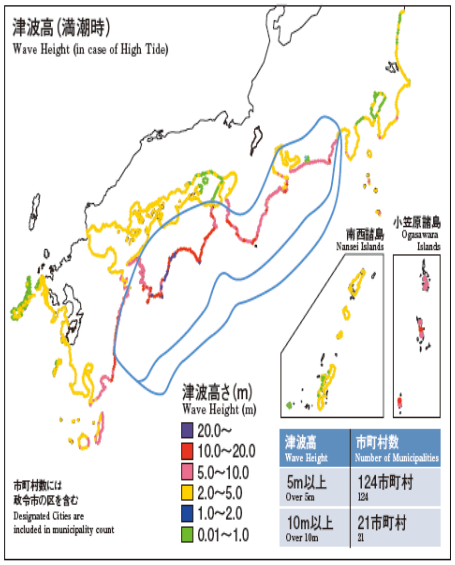
Every year there is a great loss of people's lives and properties in Japan due to natural disasters. Until the second half of 1950s, largescale typhoons with earthquakes caused extensive damage and

thousands of casualties. Thereafter, with the progress of society's capabilities to respond to disasters and mitigate vulnerabilities to disasters by developing disaster management systems, promoting national land conservation, improving weather forecasting technologies, and upgrading disaster information communications systems.

最大クラスの地震における震度の最大値の分布図
Distribution of Maximum Seismic Intensity (Shindo) in the event of maximum possible earthquake



最大クラスの地震における津波高分布
Distribution of Tsunami Wave Height in the event of maximum possible earthquake



The event that changed the course of local history

Japan is one of the countries most affected by natural disasters.Two out of the five most expensive natural disasters in recent history have occurred in Japan, costing $181 billion in the years 2011 and 1995 only.

Japan has also been the site of some of the 10 worst natural disasters of the 21st century. The types of natural disasters in Japan include tsunamis, floods, typhoons, earthquakes and volcanic eruptions.The country has gone through many years of natural disasters, affecting its economy, development, and social life.The Great Hanshin earthquake or Kobe earthquake, occurred on January 17, 1995, Kobe, Osaka and the surrounding area were rocked by a massive earthquake. Sitting directly over the epicenter, the area, home to some 3.5 million people and one of Japan's economic powerhouses, was devastated. Electricity, water, gas, and public transport. All lifeline services were knocked out, and innumerable homes were destroyed, either by the quake or, because they were mostly old wooden structures, in the resulting fire. Huge numbers of people faced a long cold winter in temporary shelters.

6,434 people dead, 43,792 injured, 249,180 homes completely or partially destroyed.

This was Japan's worst earthquake in the 20th century after the Great Kantō earthquake in 1923, which claimed more than 105,000 lives.

2011 earthquake off the Pacific coast of Tōhoku was a magnitude 9.0 (Mw) under sea megathrust earthquake off the coast of Japan that occurred at 14:46 JST (05:46UTC) on Friday 11 March 2011, with the epicentre approximately 70 kilometres (43 mi) east of the Oshika Peninsula of Tōhoku and the hypocenter at an underwater depth of approximately 30 km (19 mi).

The earthquake is also often referred to in Japan as the Great East Japan earthquake and also known as the 2011 Tohoku earthquake. It was the most powerful earthquake ever recorded to have hit Japan, and the fourth most powerful earthquake in the world since modern record-keeping began in 1900. The earthquake triggered powerful tsunami waves that reached heights of up to 40.5 metres (133 ft) in Miyako in Tōhoku's Iwate Prefecture, and which, in the Sendai area, traveled up to 10 km (6 mi) inland. The earthquake moved Honshu (the main island of Japan) 2.4 m (8 ft) east, shifted the Earth on its axis by estimates of between 10 cm (4 in) and 25 cm (10 in), and generated infrasound waves detected in perturbations of the low-orbiting GOCE satellite.

On 10 March 2015, a Japanese National Police Agency report confirmed **15,894 deaths, 6,152** injured, and **2,562** people missing across twenty prefectures, as well as **228,863** people living away from their home in either temporary housing or due to permanent relocation.

A 10 February 2014 agency report listed 127,290 buildings totally collapsed, with a further 272,788 buildings "half collapsed", and another 747,989 buildings partially damaged. The earthquake and tsunami also caused extensive and severe structural damage in north-eastern Japan, including heavy damage to roads and railways as well as fires in many areas, and a dam collapse. Japanese Prime Minister Naoto Kan said, "In the 65 years after the end of World War II, this is the toughest and the most difficult crisis for Japan."

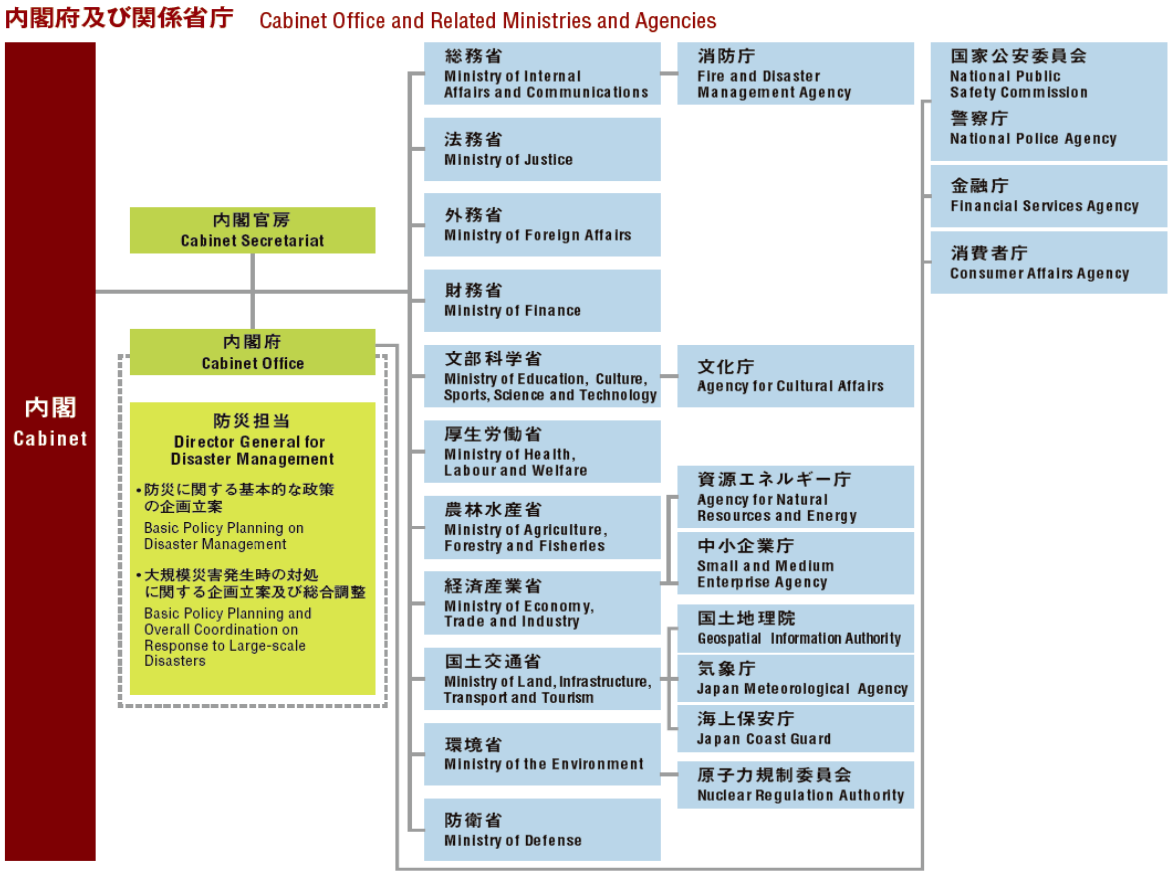
The tsunami caused nuclear accidents, primarily the level 7 meltdowns at three reactors in the Fukushima Daiichi Nuclear Power Plant complex, and the associated evacuation zones affecting hundreds of thousands of residents. Many electrical generators were taken down, and at least three nuclear reactors suffered explosionsdue to hydrogen gas that had built up within their outer containment buildings after cooling system failure resulting from the loss of electrical power. Residents within a 20 km (12 mi) radius of the Fukushima Daiichi Nuclear Power Plant and a 10 km (6.2 mi) radius of the Fukushima Daini Nuclear Power Plant were evacuated.

3.2 Disaster management

Mission of the Cabinet Office

Japan's legislation for disaster management system, including the Disaster Countermeasures Basic Act, addresses all of the disaster phases of prevention, mitigation and preparedness, emergency response as well as recovery and reconstruction with roles and responsibilities among the national and local governments clearly defined, it is stipulated that the relevant entities of the public and private sectors are to cooperate in implementing various disaster countermeasures.

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 risk management policies and measures of ministries and agencies. In the Cabinet Office, which is responsible 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.

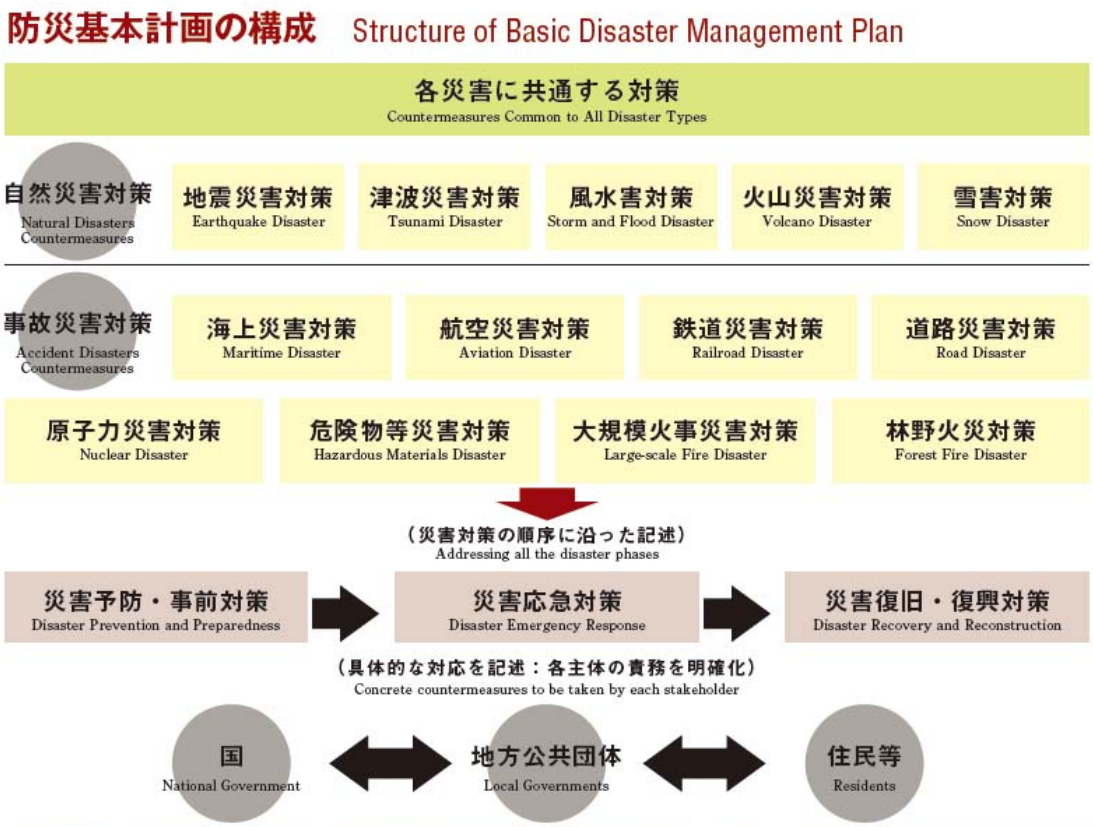


Basic Disaster Management Plan

The Basic Disaster Management Plan is a comprehensive and longterm disaster management plan forming a foundation for the Disaster Management Operations Plan and Local Disaster Management Plan. It stipulates provisions for the establishment of the disaster

management system, promotion of disaster management measures, acceleration of post disaster recovery and reconstruction measures, and promotion of scientific and technological research on disaster management. The plan was revised entirely in 1995 based on the experiences of the Great Hanshin-Awaji Earthquake. It defines responsibilities of each entity such as the national and local governments, public corporations and other

entities. It consists of various plans for each type of disaster, where specific countermeasures to be taken by each entity are described according to the disaster management phases of prevention and preparedness, emergency response, as well as recovery and reconstruction.



Disaster Law in Japan

Issues of Disaster Law

1. Private Law

Typical disputes after disasters: debt,lease, inheritance, tort claim

Disaster special civil law: Japan's Law on Lease in Stricken Cities

2. Public Law
    - Law on Emegency Response

    Governance of governmental response

    Civil control (police, fire-fighters, civil defense)
    - Law on Disaster Relife

    Role of Government

Role of International Donors

- Law on disaster Recovery

Reconstruction of towns and infrastructure

Participation in decision-making

Law Development after Mega-Disasters	
Disaster	**Law**
1923 Kanto Eartquake () 105,385 lost: 90% by fire	1923 Special Law on Urban Planning
1946 Nankai Eartyhquake, 1,330 lost	1947 Disaster Relife Law
1956 Isewan Typhoobn (5,098 lost, 38, 921 injuried)	1961 Basic Law on Disaster Contermeasures
1995 Hanshin Awaji Earthquake (6434 lost, 43,792 injured)	1998 Law on Support for Life Reconstruction
2011 East Japan Earthquake (15,894 lost, 6152 injured)	2013 Law on Recovery from Mega-Disasters

3.3 Disaster risk reduction

Japan is located at a point on the earths surface where four of more than 10 tectonic plates covering the globe are crushed against each other, making it an archipelago susceptible to earthquake disasters. Nearly 20% of the world ’ s earthquakes（of magnitude 6 or greater） have occurred in or around Japan.

Japan has suffered great damages from the massive inter-plate earthquakes produced by plate subduction (such as the Great East Japan Earthquake of 2011) and the inland crustal earthquakes caused by plate movements (such as the Great Hanshin-Awaji Earthquake of 1995).

It has been pointed out with a great sense of urgency that Japan can be struck by large-scale earthquakes in the near future, in areas such as Nankai Trough, the Japan and Chishima Trenches, and directly below Tokyo and the Chubu and Kinki regions.

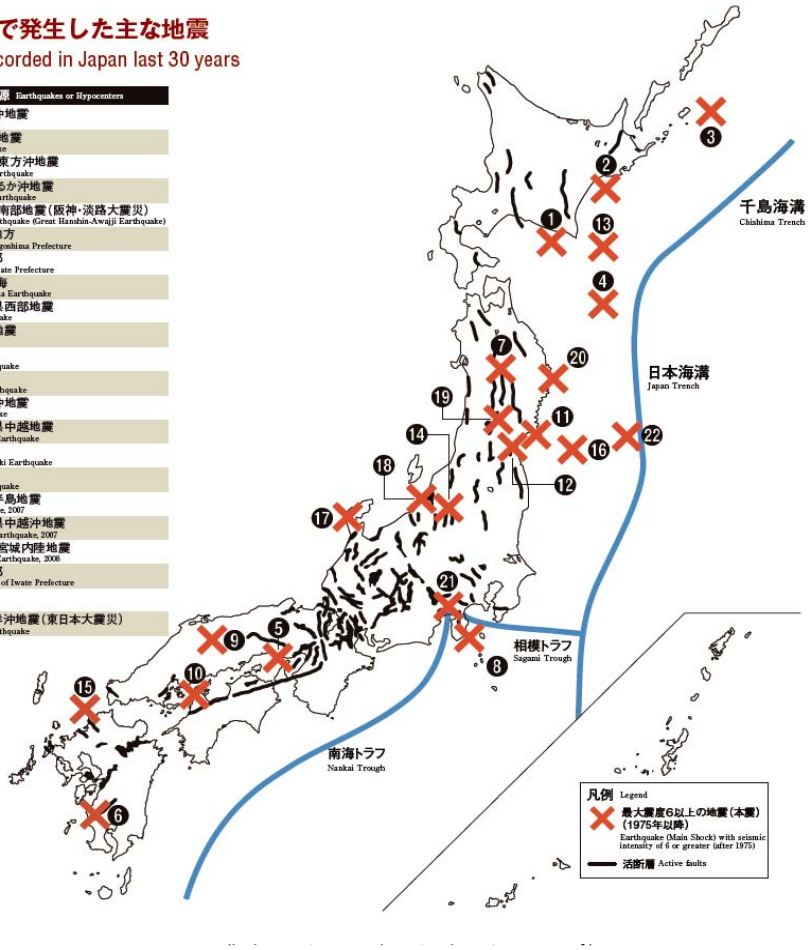
With regard to the Nankai Trough Earthquake, earthquakes around the ocean trench such as Japan Trench and Chishima Trench, and Tokyo Inland Earthquake, the government designated the areas where disaster reduction measures are to be taken in accordance with relevant laws and regulations. Also, the government is developing a plan concerning how to accelerate disaster reduction measures by administrative entities and private businesses.

The Central Disaster Management Council has developed the “ Policy Framework for Large-scale Earthquake Disaster Prevention and Reduction ” a master plan of the countermeasures for the large scale earthquake, 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 specific actions to be taken by related organizations.

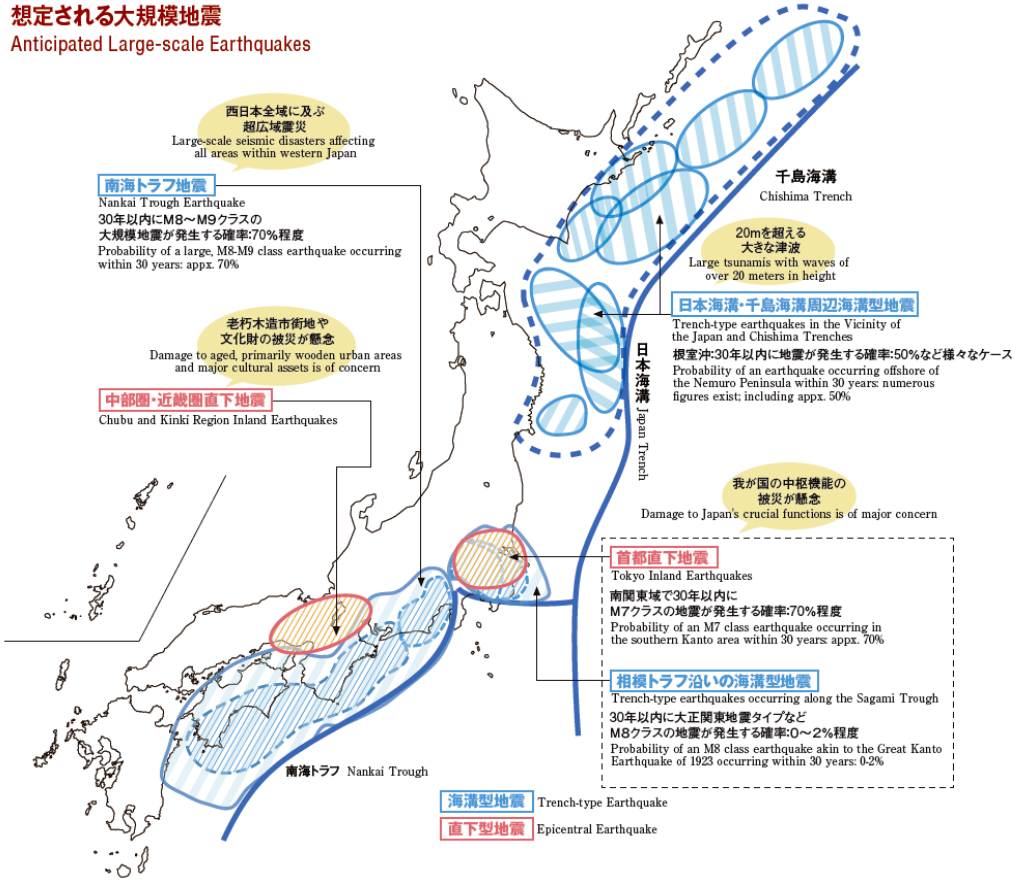
It is possible that an earthquake other than these large scale ones can hit any place in Japan as with the cases in the past 30 years. A guideline for the countermeasures against earthquakes by local municipalities has been compiled covering every step of the disaster response levels (preparation, initial response, response, and recovery).

過去30年に日本で発生した主な地震
Major Earthquakes recorded in Japan last 30 years

	日付 Date	地震名または震源 Earthquakes or Hypocenters
❶	1982.3.21	昭和57年浦河沖地震 Urago-oki Earthquake
❷	1993.1.15	平成5年釧路沖地震 Kushiro-oki Earthquake
❸	1994.10.4	平成6年北海道東方沖地震 Hokkaido-Toho-oki Earthquake
❹	1994.12.28	平成6年三陸はるか沖地震 Sanriku-Haruka-oki Earthquake
❺	1995.1.17	平成7年兵庫県南部地震（阪神・淡路大震災） Hyogo-ken-Nanbo Earthquake (Great Hanshin-Awaji Earthquake)
❻	1997.5.13	鹿児島県薩摩地方 Satsuma region in Kagoshima Prefecture
❼	1998.9.3	岩手県内陸北部 Northern region in Iwate Prefecture
❽	2000.7.1	新島・神津島近海 Niijima and Kozushima Earthquake
❾	2000.10.6	平成12年鳥取県西部地震 Tottori-seibu Earthquake
❿	2001.3.24	平成13年芸予地震 Geiyo Earthquake
⓫	2003.5.26	宮城県沖 Miyagi-ken-oki Earthquake
⓬	2003.7.26	宮城県北部 Northern Miyagi Earthquake
⓭	2003.9.26	平成15年十勝沖地震 Tokachi-oki Earthquake
⓮	2004.10.23	平成16年新潟県中越地震 Niigata-ken-Chuetsu Earthquake
⓯	2005.3.20	福岡県西方沖 Fukuoka-ken-Seihou-oki Earthquake
⓰	2005.8.16	宮城県沖 Miyagi-ken-oki Earthquake
⓱	2007.3.25	平成19年能登半島地震 Noto-hanto Earthquake, 2007
⓲	2007.7.16	平成19年新潟県中越沖地震 Niigata-Chuetsu-oki Earthquake, 2007
⓳	2008.6.14	平成20年岩手・宮城内陸地震 Iwate-Miyagi Inland Earthquake, 2008
⓴	2008.7.24	岩手県沿岸北部 Northern coastal area of Iwate Prefecture
㉑	2009.8.11	駿河湾 Suruga Bay
㉒	2011.3.11	東北地方太平洋沖地震（東日本大震災） Great East Japan Earthquake



想定される大規模地震
Anticipated Large-scale Earthquakes



4.DISASTER EDUCATION AND HUMAN RESOURCE DEVELOPMENT

4.1 Disaster mitigation education for different age groups of population as a part of Disaster Risk Reduction in Armenia.

Earthquake and other natural hazards threatening Armenia urge the need of development and strengthening of DRR system in Armenia. This process implies involvement of all the potential of the country, which can be achieved through elaboration of Disaster Risk Reduction National Platform (DRR NP). DRR system is a framework of functions and processes with the aim to reduce population's vulnerability to disaster risks. It is aimed at prevention or reduction of negative impacts of hazards and contributes to sustainable development of the society. Fund for DRR NP was established in 2010. The Head of the Board is Ministry of Emergency Situation of RA. The goal of the DRR NP is to establish a multi-spectral mechanism with involvement of all stakeholders.

Current Situation of the Training and Disaster Education in Armenia

In Armenia various governmental and other organizations have been involved in DRM Education, within the framework of the HFA. MES of RA is an executive authority, which in line with competences vested by laws and other legal acts, develops, implements and coordinates RA government's policy in the area of civil defense and protection of the population in emergency situations.

The ARNAP Foundation (Disaster Risk Reduction National Platform), Crisis Management Center (CMC) and Crisis Management State Academy (CMSA) have been established for dealing with various aspects of Disaster Risk Reduction.

Survey for Seismic Protection of MES RA (Armenian SSP) develops various means for earthquake disaster management:

- ✓ Develops the basic directions of state policy in the field of seismic protection
- ✓ Provides seismic risk assessment
- ✓ Coordinates activities performed in the field of seismic risk reduction in the territory of the RA
- ✓ Organizes preparedness and training of the population to cope with strong earthquakes
- ✓ Coordinates and controls the execution of the state programs in the field of seismic risk.

Basic tasks of seismic risk reduction are:

- ✓ reduction of territories vulnerability
- ✓ raising population knowledge and preparedness
- ✓ training of trainers in government bodies and local authorities
- ✓ creation of earthquake early warning system

- ✓ ensuring medical preparedness
- ✓ organization of relief and rehabilitation of population and sustainable recovery

The raise of knowledge and preparedness of population is provided by means of state training system.

The state training system includes the following subsystems, which are done regularly:

- ✓ training of target groups beginning from kindergartens and schools
- ✓ educational programs, methodical manuals, relevant interactive materials
- ✓ TV and radio programs, publications in mass media
- ✓ social-psychological preparedness.

The state training system ensures the reliability and availability of the given information.

The stage of recovery of a zone suffered from strong earthquake is the intermediate between the stages of an emergency seismic situation and reconstruction. The duration and the strategy of recovery stage defined by the Government RA.

The one of the main principles of the accomplishment of recovery works is based on the creation of the conditions for population active participation in recovery works in the disaster zone.

The purpose of aid rendering to the population and its rehabilitation is the reduction of material and psychological losses of the state after an earthquake.

Rendering of aid to the population and its rehabilitation is a multi-stage process:
Operative (first few days)
Short-term (first month)
Mid-term (first year)
Long-term (more than one year)

Rendering of aid to the population and its rehabilitation are based on the following principles:

- ✓ Preliminary planning of works amount on rendering aid and rehabilitation before the catastrophe and their adjustment right after the catastrophe
- ✓ Active participation of government bodies and local authorities and society.




The Government of RA established National Strategy of DRR in RA in March 2012, which will be implemented by the mutual efforts of the following organizations: Armenian Red Cross, Oxfam, UNICEF and Save the Children.




The Ministries of Emergency Situations and the Ministries of Education and Science, ARNAP Foundation and CMSA launched the "School Disaster Preparedness Plan" competition for secondary schools in RA since 2012.

On International Civil Protection Day of March 1, events accomplished in the capital city of Yerevan and regions including lecturing, training and drills. Armenia collaborating with ADRC (since 2000) and JICA (since 2007) in the frame of various projects and programs implements the research, education and training for the DRR specialists who acquired and shared valuable Japanese experience.

The Ministry of Science and Education together with the Ministry of Emergency Situations in the frame disaster risk reduction program submit to National Assembly proposals and additions for the Law “On Public Education” aiming at inclusion disaster risk reduction elements in the school curricula.

The Centre of Activities with Population (CAP) of SSP:

The Centre of Activities with Population of Survey for Seismic Protection (CAP SSP) consists of Departments of Education, Methodology, as well as of Sociology and Psychology.

Department of Education of CAP

The Department of Education implements trainings on code of conduct of seismic protection in schools of Yerevan and regions of Armenia according to an established schedule. It carries out instructional warning/alarm drills and exercises for schoolchildren of different age groups. It also conducts lectures for the regional areas officials of SSP.

Within the frameworks of its main activities the Department of Education implements trainings on code of conduct of seismic protection, game-quizzes.

Game-Quiz

The game-quiz is held in schools, especially for pupils of middle classes. It consists of 3 rounds.

- **First round**

TICKET N 1

1. When does the natural phenomenon turn into a disaster? Define the disaster.
2. Of how many types are the seismic waves?
3. How will you behave, if you are in the lower floors of the building during an earthquake?

- **Second round**

TICKET N 1

1. List your activities, if after an earthquake you are in the ruins.
2. Why is it recommended that the entrance doors of the building and the apartment are wooden and what should be done, when the door is made of iron?
3. In which part of the bedroom is it preferable to place the bed?

- **Round of tasks' assignment**

Task 1

You are on the 5th floor of a high-rise building.

You are doing your homework. There is nobody but you in the apartment. Suddenly an earthquake starts. The glass tableware starts to fall and break from the shakes. Not very big cracks start to emerge on the walls and ceiling. Describe what actions you will take in the given situation.

Answer ----------

Task 2

While sitting in the classroom during a lesson you feel that the windows are shaking, the desks are moving. You are on the 1st floor. Describe your actions in the given situation.

Answer ----------

Pupils are drawn into 2 groups, and start to compete with their knowledge, which are taught to them beforehand by the experts of **CAP**. The winner group is awarded with small gifts and certificates. The advantage is that the process ensures also indirect learning for the pupils who are in the audience.

The instructional alarm drills are conducted to turn the acquired knowledge into behavioral skills.

Before making of evacuation the following activities are implemented:

The structural features of the school building are studied. It is found out whether the school has Civil Defense (CD) and Emergency Situations (ES) evacuation plan, which is agreed with the local body of the Ministry of Emergency Situations (MES) and is approved by the school principal. The evacuation plan must include the safe routes necessary for evacuation. Those routes must be marked with arrows. Before the evacuation a training on code of conduct of seismic protection must be held with pupils and teaching staff of the school.

It is necessary to have the short description of the school in the following format:

School N_____ is located in address _____

__in a _____ storey stone (concrete) building.

In general _____ persons study and work at the school, of which pupils are`_____persons, of whom

I-IV grade pupils`_____,

V – IX grade pupils` _____,

X-XII grade pupils` _____, and permanent staff members are _____ persons.

A 5-member committee is established, where representatives of MES, of regional administration office, from department of education and from the school are included. Each member of the committee must fill in the evaluation sheet, based on which the implemented activities are assessed.

Hazard assessment sheet

Necessary conditions	Complies		
	fully	partly	does not comply
1	2	3	4
The school has a telephone connection and alarm signaling device.			
The school has a two-way radio communication (radio).			
The radio net of the school is connected to the local area telecommunications network.			
The school is renovated and protected from humidity.			
No flammable materials have been used during repairing works of the school.			
The constructive (part of the building) dangers of the school have been eliminated: • Stairs of the building have been fixed. • One-sided entrance doors have been replaced with split (wooden) doors. • Fire taps have been installed.			
The non-constructive dangers of the school have been eliminated: • Furniture, air-conditioners, water heaters, paintings, boards, bookshelves, torches, other lighting equipment (fluorescent light bulbs) are firmly fastened to the floor, wall or ceiling. • Computers and televisions are fixed in their places. • Piano and other heavy objects moving with the help of wheels are attached to the floor. • Flowerpots, paintings and decorative items are removed from windowsills and open shelves.			
The school is provided with fire extinguishers.			
The fire extinguishers are installed in corresponding places and are recharged once annually.			
The staff and pupils of high school are proficient			

in the proper use of the fire extinguishers.			
The school has an evacuation plan for the pupils and the staff.			
Plans, orders and directives on actions during fire, earthquake and other emergency situations are attached to the evacuation plan.			
Evacuation plan-scheme for the school, floors and classrooms is posted in the lobby, all the floors and classrooms of the school.			
In the evacuation plans the main routes of evacuation are marked with green dense arrows and the secondary routes are denoted with dotted lines. Marked are also the installation places of fire extinguishers, of fire automation, communication, alarm and other security systems.			
The conventional keys of evacuation are posted in the direction of evacuation (green squares or rectangles).			
The evacuation plan of the school is tested (instructional evacuation) twice or more annually. The results of the test are recorded in the corresponding register.			
The main and reserve doors of evacuation open outwards.			
The reserve exits of evacuation are not blocked with heavy items.			
The applicability of reserve doors is checked regularly.			
The evacuation routes are free of unnecessary items.			
The walls of the school (classrooms) are not decorated with flammable materials.			
The roof of the school building is made of fireproof materials.			
The quantity of benches and the distance between their rows in the classrooms correspond to the quantity and distance defined in the design norms.			
The chairs of the hall are pinned to the floor.			

The pupils and staff of the school are aware of the places of electrical panel, fire directory, fire tap, means of communications, fire extinguishers and other safety equipment available at school.			
The floor of the school corridors is not slippery.			
The carpets, doormats and other floor coverings are reliably attached to the floor.			
The windows of lower floors have no metal grilles or they are portable.			
The building of the school is adapted to the conditions for free movement of children and people with special needs via: • ramps, • wide doors, • elevators (with wide doors).			
Fire safes are equipped with fire sleeves, trumpets and are sealed.			
Internal fire taps are subjected to technical examination not less than twice a year (spring-summer, fall-winter) via water release.			
Near-school paths (as well as roads near the reservoirs and fixed fire ladders) are kept open for approaching of emergency vehicles (fire, rescue, ambulance) during emergency situations.			
The quantity of flammable and combustible materials in laboratories and other rooms is intended for one shift.			
The flammable materials are stored in special containers and taken out of the laboratory at the end of a working day. These are not poured into sewage.			
The area of the school is clean. The waste from flammable materials and the garbage are regularly collected in special trash bins and are taken out of the school property.			
The school corridors do not impede the free movement.			

Further, evaluation of the process is implemented with the following assessment sheet.

---------- **ASSESSMENT SHEET** ----------

(date) (INSTRUCTIONA LEVACUATION)

(class)

(school name, number)

1. WORK OF THE ALARM SYSTEM ----------

(existence of failures)

---,

---;

(Excellent, good, satisfactory, non-satisfactory)

2. FLOW OF THE EVENTS

- Accessibility of the sound alarm

(Fully, partially, defective, non-accessible)

- The pupils' withdrawal from the buildings ----------

(organized, non-organized, panic was observed)

- Cooperation of the school Civil Defense (CD) staff with the CAPofficers

---

3. WORKING STYLE OF THE TEACHERS

(Excellent, good, satisfactory, non-satisfactory)

(Preparedness of the pupils during evacuation)

(Evacuation was implemented according to the confirmed scheme)

(Is able/not able to keep the class organized and lead out of the building in an organized manner)

(Has taken/not taken the class journal with him/her)

(The windows and doors of the classroom have been/have not been closed, the light has/has not been switched off)

(Reckoning of the pupils has been/has not been implemented at point of evacuation)

(Reporting on unjustified absent persons has been/has not been implemented)

(Management of personnel actions in case of occurrence of obstacles in exits and entrances)

4. **BEHAVIOR OF THE PUPILS (IN OBSTACLE PLACES)**

(satisfactory, unsatisfactory)

(behavior of the pupils during evacuation events)

(behavior of the pupils during movement on the ladders)

(use of safer evacuation routes)

5. OUTREACH OF ELEMENTARY SCHOOL PUPILS' PARENTS

(satisfactory, unsatisfactory)

6. BEHAVIOR OF THE PUPILS (IN OBSTACLE PLACES)

(satisfactory, unsatisfactory)

7. **OVERALL ASSESSMENT OF THE INSTRUCTIONAL EVACUATION**

(satisfactory, unsatisfactory)

(name, surname, middle name of the evaluator)

(date)

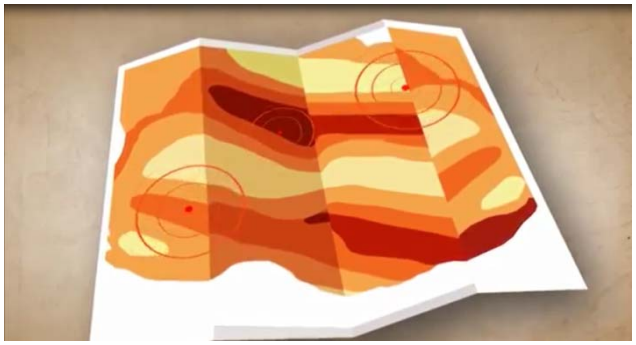
(signature)

Implementation of the instructional process

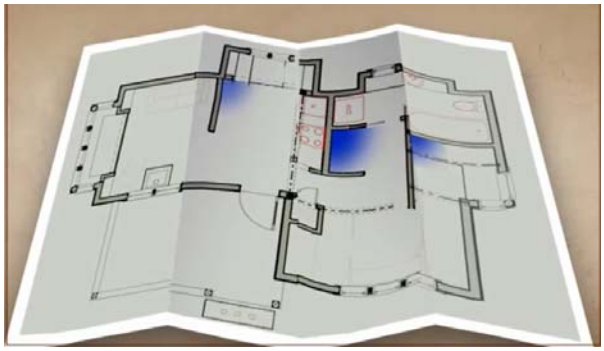
Hereby effective code of conduct on earthquake protection has been developed, which consists of 3 phases:

What to do before the earthquake?

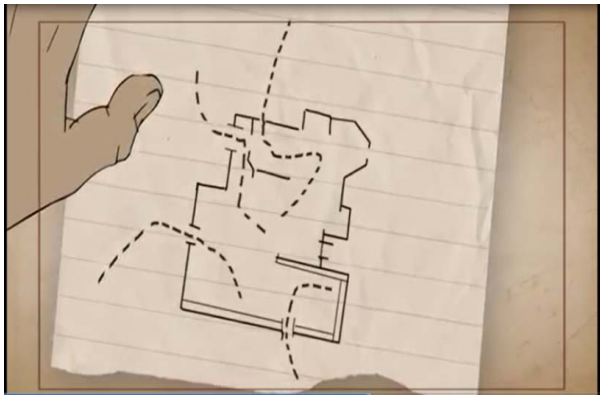
Get a map of seismic risk assessment, where the seismic resistance coefficient of the building of your interest will be noted.



Check in advance the safest areas of the school or the workplace, to shelter during the shakes.



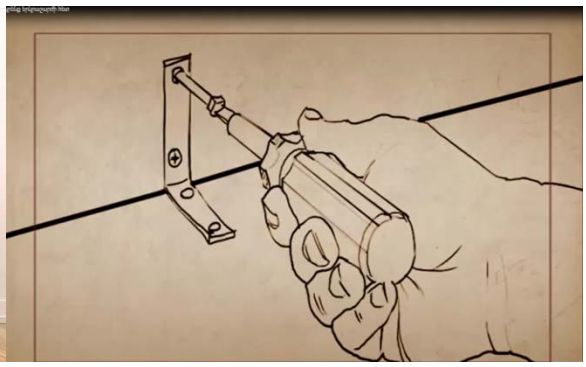
Make an exit plan in advance and test it several times.



Agree with family members on where you are going to meet after the earthquake.

Do not make any constructional interference in your house which will reduce the seismic resistance of the building.

Fix the furniture.



Free the exits from capacious items ones.

Replace the iron doors with wooden

Make the metal grilles of the windows portable.

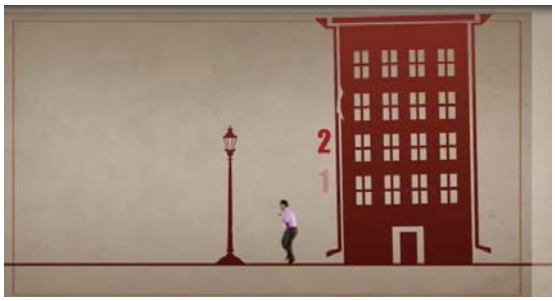
Do not place sizable items on loosest.

Lace the bed far from the windows, under the main wall. Do not hang a shelf or a painting above it.

Prepare a bag with essential items.

What to do during an earthquake?

If you are on the 1st-3rd floors, immediately leave the building.



Under no circumstances use any elevators.

If you are on the 3rd and above floors, do not leave the building.

Stand under columns of the main walls or on the door openings holding above you a chair or a bag, in order to protect yourself from falling small pieces.

You can find shelter under a table.

Use a kerchief or any piece of a cloth available at your hands to protect yourself from the dust caused by the collapses.

If you are in a street during an earthquake, move from buildings and electric poles.

If you are in the car during an earthquake, park it far from buildings, in open spaces.

Avoid bridges, since these are very vulnerable.

If you are in underground during an earthquake, firmly hold the poles and listen to the metro driver's instructions.

If you wake up from the underground shocks and you need to lighten the space, do not use electricity or matches under any circumstances.

Use torchlight to ensure the lighting.

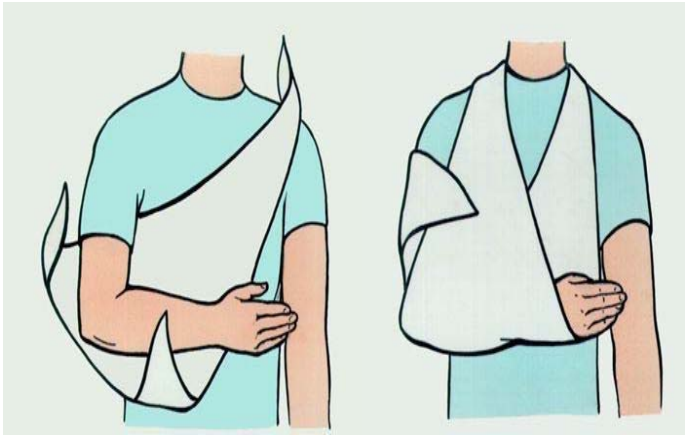
What to do after an earthquake?

Do not panic, since a panic-stricken person is distinguished with inadequate behavior and is unable to implement thought and focused actions.

Stay far from the external walls of the building and windows, since they collapse the first.

If you are under the ruins If possible, move to a safer place. If necessary, show first aid to yourself.

If there are people with injuries in the ruins, calm them down and show first aid to them.

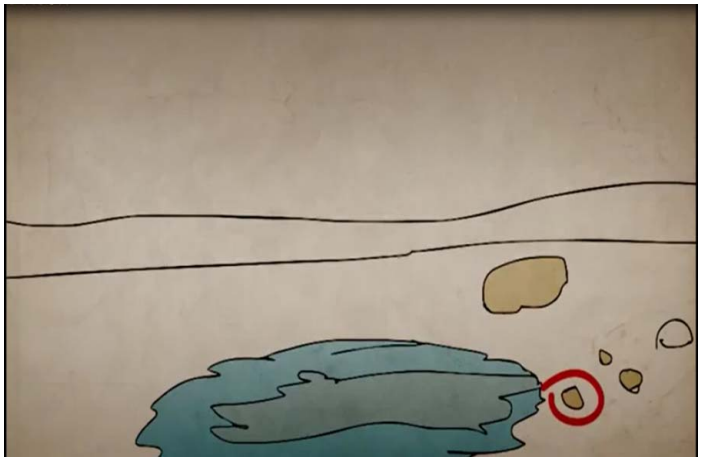


Work on communicating with those in neighboring ruins or from outside. Shout with temporary breaks, hit sound items to each other.

Use sparingly the resources of water at hand.

Remember that a person can stay without food for more than 15 days, but without water – for only 7 days.

If you have no water under your disposal, and the water pipe has been damaged, but there is a small puddle nearby, tear a piece from your clothes, soak it in water and then put on your lips. Keeping a small flat stone and iron items in your mouth also reduces the feeling of thirst to some extent.



If you are in the ruins and you are sure that you'll be able to get out of there yourself, open a loophole, avoiding large debris. Strengthen the loophole with pillars, for which you can use firm debris, wooden and iron items under hand. Carefully examine the loophole after each shake.

Use the phone only for the purpose of connecting with rescue service, since the overload of telephone may cause problems for the rescue operations.

Do not try to enter the area of the disaster by car, since you will prevent the operations of professional machinery, as well as the work of ambulance and rescue equipment.

Returning home, attentively examine whether flammable materials haven't been spilled and continue maintaining fire prevention measures.

Trust only the official information.

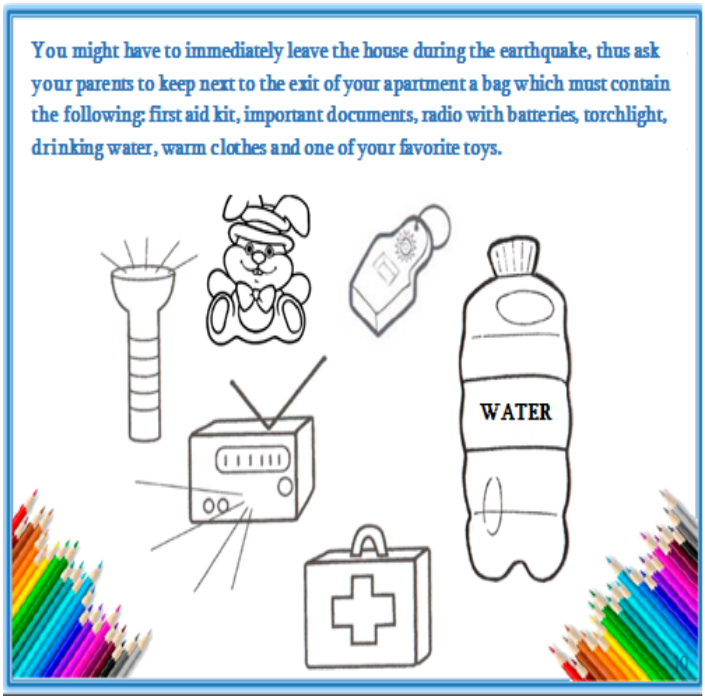
And remember – the one is protected who is informed.

Department of Methodology

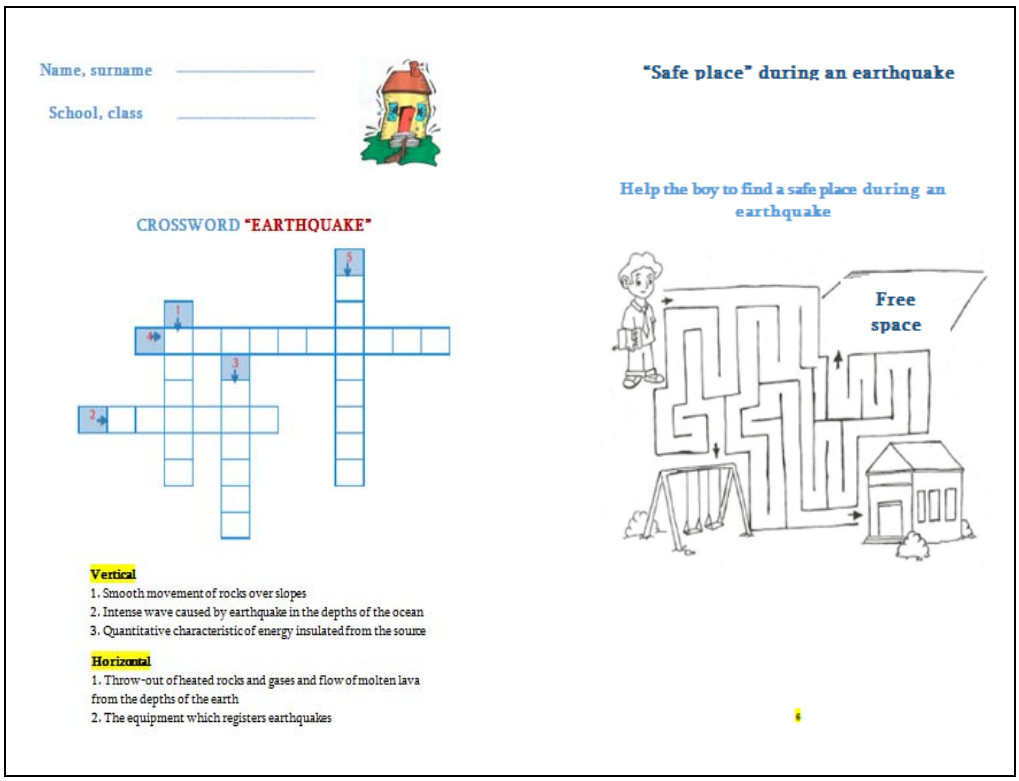
The Department of Methodology performs development of educational programs on earthquakes for different segments of the population.

The department implements development of different methodical materials and manuals to provide various segments of population with necessary knowledge and skills on earthquake code of conduct. Didactic materials are developed taking into account the psycho-physiological peculiarities of the age groups.

1. The **"Code of Conduct on Earthquake Protection"** guide is designed for children of preschool and early school age. The aim of the manual is to increase the level of the knowledge of preschool and early school age children in earthquake resistance. The brochure is intended for painting, thus the psychological characteristics of the above-noted age group have been taken into account so that the inner world of the children is not subjected to trauma.

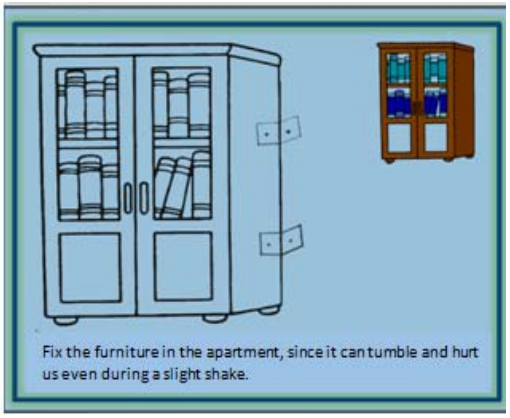


2. **"Game-book for pupils of secondary school"** The game-book includes a crossword, exercises, labyrinths and other tasks on earthquake, the aim of which is to increase the pupils' knowledge level of earthquake resistance.



3. "The Message of the Planet"

This manual is a fairy-tale, the aim of which is to increase the level of preschool and early school aged children's ability of resisting the earthquake.



4. Educational poster on code of conduct on earthquake protection

The 3 consecutive stages of effective behavioral models on earthquake protection are presented in the poster in a detailed and vivid form

1. What to do before an earthquake?
2. What to do during an earthquake?
3. What to do after an earthquake?

Department of Sociology and Psychology

The Department of Sociology and Psychology conducts social-psychological research , sociological surveys, as well as processing and psychological analysis of data. It also takes part in the cooperation with respective services of foreign countries and with international companies, as well as in the process of development, implementation and introduction of the results of projects and sound scientific methods in the sphere of seismic protection. As Department of Sociology and Psychology, social-psychological investigations are implemented, the goals of which are to reveal the level of cognitive and psychological preparedness on earthquakes among different segments of population.

Example of Disaster Activities

"What should I and my friends do in case of an earthquake?"
Social psychological work

Training on code of conduct of seismic protection is implemented by SSP CAP with an aim of increasing the level of knowledge on proper behavior during a possible earthquake, as well as a psychological research program is conducted in order to form the description of anxiety, stress resistance, cognitive-psychological preparedness of population on earthquake.

The relevance of the above noted activities is directly driven by the fact of seismic riskiness of our region.

The Department of Sociology and Psychology of CAP implements social-psychological work with the theme of "What should I and my friends do in case of an earthquake?", which is intended for the pupils of the 5^{th}-12^{th} grades.

The aim of the program is to

Increase the level of cognitive-psychological preparedness of earthquake resistance, as well as to investigate the effectiveness of the training on code of conduct on seismic protection implemented by CAP and the possible level of application of that knowledge in practice by the trainees.

Work description

The process consists of the following 5 stages:

I. Training stage

- ✓ Instruction of code of conduct on seismic protection
- ✓ Group discussion on "What should I and my friends do in case of an earthquake?"
- ✓ Watching of didactic materials
- ✓ Role plays

II. Research stage

- ✓ Characteristics of a temperament (test, author – Rusalov)
- ✓ Trepidation (test, author – Spilberger-Khanin)
- ✓ Perception of cognitive and practical knowledge on earthquake, as well as emotional attitude (questionnaire)

III. **Stage of an instructional alarm drill**

IV. **Psychological debriefing**

V. **Social-psychological analysis of the group behavior**

I. Training stage

Training of code of conduct on seismic protection is implemented with a presentation material developed by CAP, which includes 3 basis points of actions:

- **What to do before an earthquake?**
- **What to do during an earthquake?**
- **What to do after an earthquake?**

Group discussion

During the thematic discussion on "What should I and my friends do in case of an earthquake?" a conversation-discussion is held with the group on earthquake, on its possible consequences, on necessary code of conduct during an earthquake and on the importance of the code's applicability.

Observation of didactic materials

- **Exploration of a poster prepared by CAP**
- **Watching of visual materials on earthquake – cartoons on "The disaster-let and the earthquake" (2,5 minutes), "This is the planet" (6 minutes),**

"The disaster-let in everyday life" (3 minutes) and films on "When the crust is shaking" (5 minutes), "Resistance" (55 minutes), "How to resist the earthquake" (14,5 minutes), "Mega-tsunami" (50 minutes).

- **Watching of thematic photos, booklets, brochures.**

Role play

This is an effective method applied during an education process. For instance, the trainer can suggest unexpected situations to the group, where they need to take a role or a viewpoint and further, try to develop or finish it.

Those who aren't taking part in the main role play take a role of an observer and make conclusions after the end of the game.

After the role play

- what happened is clarified,
- the mistakes are discussed,
- the positions, feelings, changes are discovered which existed during the main role play,
- a possibility of self-observation is created,
- the results of the role play are compared with the initial goals,
- the behavior is analyzed,
- new topics for thinking are proposed,
- the role play is connected with already-watched didactic materials.

The effectiveness of the method is that the gained practice is maintained for a long time. This is an interesting way of accumulation of knowledge and skills and gives a possibility to understand the situational demonstrations of the problems.

II stage. Social-psychological research

Diagnostics of a **temperament** with testing (Rusalov)

Temperament is a complex of more or less stable typological characteristics which describes the dynamic specifications of mental processes and behavior of an individual, their strength, the speed of their occurrence, flow and pause, as well as influences on the vital and energetic tonus of a personality.

It is important to note that in nature there is no pure type of a temperament and people are bearers of each of the above noted types, however, prevalence of one of them predefines the behavior of a personality, based on what we have decided to explore the types of temperaments of the group members.

Diagnostics of **trepidation** with testing (Spilberger-Khanin)

Trepidation is the expectation of a negative outcome of certain situations and phenomena. When the level of trepidation is high, a person is distinguished with inclination of emotional outbursts. It is important to note that in case of high trepidation the self-esteem of a personality is low, because of which he does not consider himself and his actions to be competent. In case of low trepidation a person is distinguished with inactivity, indifference and low level of motivation. Thus, in both of the cases the inclination of a personality on acting in an organized and targeted manner decreases. Based on all this we have considered it to be purposeful to explore the grade of trepidation of the group members.

Diagnostics of **cognitive-emotional** attitude towards earthquake with a questionnaire (author S. Kakoyan)

III stage. Instructional alarm drill – announce an instructional alarm drill and observe the behavior of the group.

IV stage. Psychological debriefing

Debriefing is a means of group, urgent psychological help and is usually held immediately after a stressful event, sometimes several hours or days later. The most effective debriefing is considered to be the one held 48 hours after the occasion. Its procedure is the revealing of stressful reactions in the atmosphere of safety and confidentiality which give an opportunity to share the impressions and feelings caused by the emergency situations.

The goal of debriefing is to weaken the severity of psychological effects of emergency situations, to minimize the psychological sufferings.
The following problems are solved for that goal:

1. processing of impressions, confrontations and feelings,
2. cognitive organization of the experience through understanding of the structure and meaning of what happened,
3. individual and group relaxation,
4. decrease of the feelings of peculiarities of own confrontations and of own abnormality,
5. mobilization of internal and external resources, acceleration of group support
6. decision on means of further assistance.

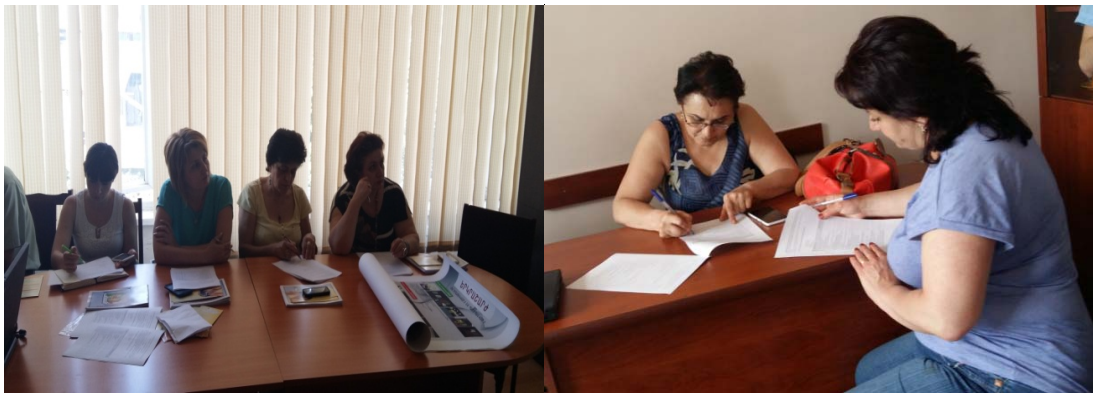
V stage. Social-psychological analysis of the group behavior

Therefore, it is assumed that this complex program will increase the proficiency level of the code of conduct during an earthquake and the cognitive-psychological

preparedness and, in the meantime, an opportunity will be created for the evaluation of this assumption with the means of feedback.

Social-psychological research program intended for 17-65 age group

Psychological research is implemented by the Department of Sociology and Psychology of SSP CAP , which tend to discover the level of stress resistance and trepidation, as well as the cognitive-emotional perception of the earthquake among the population of RA (17-65 years).



The aim of the implemented research is to discover the following:

- Specifications of cognitive and emotional attitude towards earthquake, on whether those surveyed possess the necessary code of conduct of behavior during an earthquake, how much they highlight the application and maintenance of the code of conduct (questionnaire, author – S. Kakoyan)
- Level of trepidation expression (Spilbelger-Khanin, test of trepidation diagnostics)
- Overall level of de-adaptation risk and neuropsychological stability during stress

It is important to note that

Stress-resistance is the ability of a personality for resisting stress, conditioned with a person's

- individual,
- social-psychological,
- social-demographic characteristics.

Trepidation is the felling of expressed uncertainty, fear and expectation of negative outcome, i.e., the perception of different situations (regardless of their nature) as distressful and fearing, where expectation of some sort of negative flow and outcome is existing.

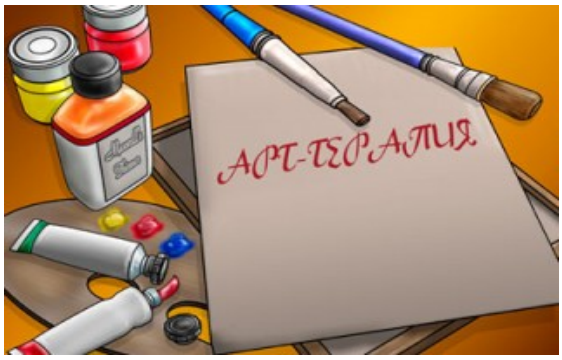
It is important to note that the low level of stress-resistance, as well as the high indicator of

trepidation can conduce that a person gets into panic even in case of slight shocks and is not able to use the necessary code of conduct.

Panic is the occasion when a person is distinguished with untargeted actions, performs inadequately and is unable to make thought and centralized actions. Because of that a big danger exists for the personality and his surrounding environment.

Based on the received results necessity of psychological work arises. For its implementation we consider to be effective the application of such psychological methods and techniques as:

- **Relaxation techniques** which are special means of creating psycho-neuromuscular relaxed, peaceful and balanced condition via generation of inhalation, special breathing and corresponding therapeutic atmosphere
- **Art therapy** – therapy of self-expression via art. Art therapy is a psycho-therapeutic method, which is implemented with means of imaginative activity. It is one of the most gentle and, in the meantime, deepest methods in the work of psychologists and psychotherapists.



By painting, carving or expressing the problem or mood in an artistic way, a person seems to receive an encrypted message from the subconscious level.

Art therapy ensures

- expression of feelings, emotions
- search of new ways for communicating with the world
- confirmation of the uniqueness and significance of the self
- increase of adaptability in the constantly changing world.

Several Indicators were implemented by the Centre of Activities with Population (CAP) of SSP of MES 2015

In 2015 trainings on seismic protection code of conduct, quiz-games with theme of “Be ready to withstand the disaster” and educational alarm-exercises have been implemented in 60 schools of 10 administrative districts.

6733 pupils and **491** teachers have been trained in Yerevan in 2015.

3661 persons were trained in 31 schools of 5 marzes of the Republic of Armenia in 2015.

Within the frameworks of the **27th** anniversary of Spitak 1988 Earthquake different events were held for representatives of regional administrations and municipalities of marzes (regions) of the Republic of Armenia. In total 88 staff members have been trained.


Spontaneous activities have also been carried out.

803 pupils and **181** staff members of kindergartens from 5 marzes (regions) of RA and from Yerevan have been trained in 2015.


In total **11869** persons were trained in 2015.

4.2 Disaster mitigation education for different age groups of population as a part of Disaster Risk Reduction in Japan.

Disaster Education

Education about disaster reduction is quite important for enabling individuals to have correct understanding about natural disasters, and be able to act on their discretion to prevent and reduce damages from disaster. In the Great East Japan Earthquake, case of an elementary school was reported to have safely evacuated based on their daily education of the past disasters and training about evacuation. Thus, importance is recognized to enhance education and training at schools and in local communities so that people are nurtured to be equipped with correct understanding about prevention and escape from the disaster.

In order for school children to be able to learn and acquire knowledge and practical skills about disaster reduction, Fire and Disaster Management Agency has compiled ,,Challenge Disaster Reduction 48,, a textbook for school teachers and leaders.

Ministry of Education, Culture, Sports, Science and technology (MEXT) has a Disaster Operational Plan (2001) which one is last amended in 2016. One of the points of plan is Guidance about Disaster Education at School which include advice to relevant organizations about education of safety, spirit of respect for life and volunteerism, and must be improved for securing children's safety and disaster resilience at disaster time. It is especially about disaster prevention, response and recovery. MEXT compiled a ,,Guide to Make a Disaster Reduction Manual for Schools (Earthquake and Tsunami),, and ,,Development of a Disaster Reduction Education to Nurture Power to Live On,, demonstrating the direction of the school education in disaster reduction, and to enhance the disaster education at school.

Further, in order to enhance the disaster reduction education in local communities and schools nationwide, the Cabinet Office is carrying out a campaign ,,Disaster Reduction Education Challenge Plan,, to nurture positive environment for more proactive disaster reduction education by picking up active local groups, schools and individuals who demonstrated better disaster reduction plans and actions, give support to them, and publicize the achievements (including education methods, materials used, precautions, contacts), through the Office's web site, intending that such plans and programs be widely recognized and utilized throughout the nation.

Stakeholders for disaster education: School teachers, Communities, Municipalities, Prefectures, Ministries for example MEXT, Agencies, NGOs, Private companies.

Methodology and tools for disaster education

- Lectures by school teachers
- Lectures by officers and experts
- Books, guidance, pamphlets, handbooks...
- Games

- Museums
- Audio and video materials
- Visits to relevant facilities
- Drills
- Disaster activities
- Others

Disaster activities by Community (example of Hyogo Prefecture, Kobe city)

Drills: Bokomi Drill**,** Nada Ward Drill**,** National, Prefectural or Municipal Comprehensive Disaster Drill, with school cooperation.

Disaster activities by Prefecture and by Municipalities: Prefectural and Municipal DM offices, DRR learning centers, facilities, Camp (Saijo city, Ehime Prefecture), Lecture by officials

Disaster activities by Ministries: MLIT- Lecture by MLIT Regional development bureaus, Officials at school and on site, nationwide. Town watching and hazard map.

Lectures and Visits in Museums

Emergency organizations: Fire station, Police station

Lifeline facilities: Water, gas, power station, dam, sabo facilities

Research Institutes: NIED, JMA, Schools (Maiko High School, Nagisa Elementary School) Universities…

Museums, Exhibitions, DRR Learning centres: Based on of affected areas (Great Hanshin Awaji Memorial Museum, Inamura-no-Hi no Yakata Tsunami Educational Center and Museum, Abeno DRR learning centre of Osaka, DRR Learning Centre of Nara City)

Human Resources Development

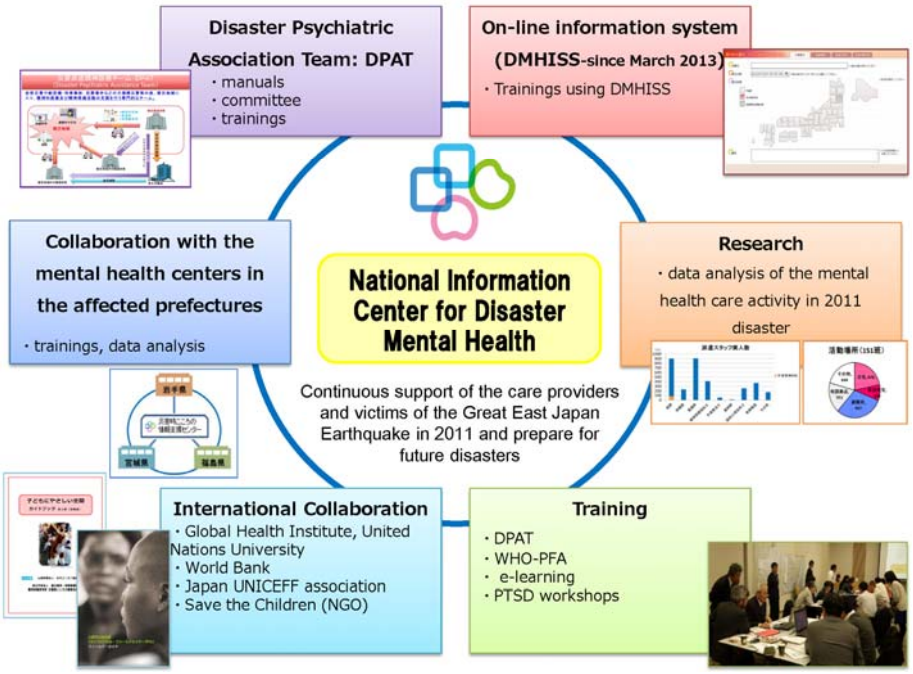
The Cabinet Office started a ,,program for developing disaster management specialists,, for the purpose of developing and training people ,,who can respond to the emergency promptly and appropriately,, and ,,who can form a network between the national and local entities.,,

Specifically, it provides training programs to employees of local public organizations who are engaged in services at the Cabinet Office and take lectures from various organizations related to disaster management. It also conducts training programs organized at the Ariake-no-Oka Main Wide-area Disaster Management Base Facility, such as ,,Training on comprehensive management,, tailored for core management personnel level, “ Themed trainings ” for specialists who are in charge of specific disaster field, and “ Basic training on disaster management ” for those who have recently appointed as disaster management personnel. In addition, it organizes trainings in various locations under a theme which is specific to characteristics of each location.

National Information Center for Disaster Mental Health

The awareness of the importance of post-disaster mental health support and countermeasures has been increased in past two decades, namely since the Great Hanshin Awaji Earthquake in 1995, till the Great East Japan Earthquake and Tsunami in 2011. To organize effective mental health support, this center was created in 2011 to help the activity of mental health

care centers established in the affected prefectures. So the functions of this center Psychological first aid and rehabilitation and they have educational programs and training, for nurses, volunteers, etc. For example Disaster Psychiatric Association Team DPAT has different type of manuals, trainings and committee which is important in case of human resource development.



source

http://www.ncnp.go.jp/nimh/english/disaster.html

In general similar activities are implemented by **Hyogo Institute for Traumatic Stress (HITS)** not only for psychological rehabilitation and recovery but also about human recourse development, which is very important step for disaster mitigation education as a part of disaster management.

HITS opened since April 2004, and it is the first-ever specialized institute on trauma and PTSD in Japan, the HITS is a multi-functioned facility which has conducted researches, and provided training, consultation and treatment, and information on trauma. The HITS has dispatched staff to disaster stricken areas both international and domestic including Banda Ache, Sumatra. Present age, after disasters, crimes, accidents, abuses and other trauma-inducing incidents, mental health care i.e. ,,kokoro no care,, has become highly demanded..

So HITS has different type of training some of the trainings in case of human recourse development, because they implementing programs for nurses and teachers and educate them how to make attitude with person, after trauma.

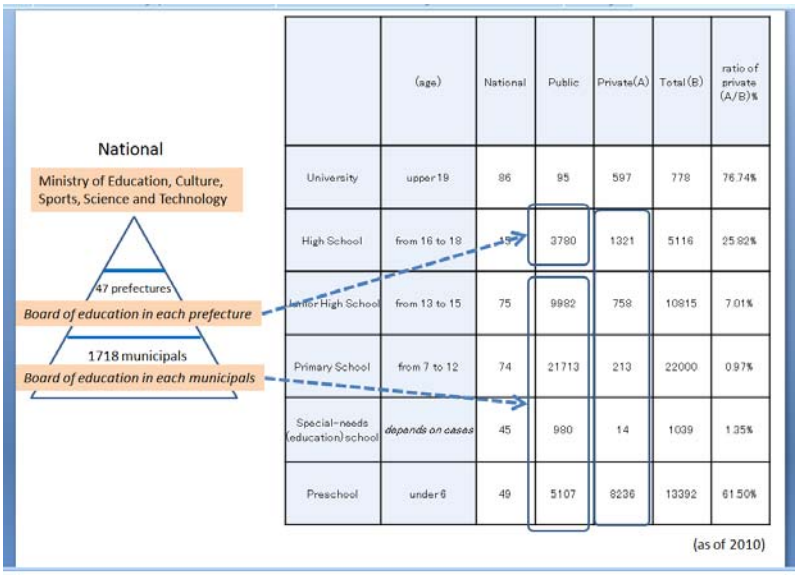
Training programs include cognitive-psychological methods and based on education of some psychological skills, which is important during daily communication with person after trauma.

source

http://www.mext.go.jp/bmenu/hakusho/html/hpab201401/1376911.htm

Disaster Mitigation Education at schools

Important to mention that Each Prefecture's school's Disaster Education based on own Prefectures and Cities Board of Education. For example Disaster Education of Kobe City based on Board of Education of Kobe City and Board of Education of Hyogo Prefecture. And this mechanism is actual for each Prefecture in Japan.



	(age)	National	Public	Private(A)	Total(B)	ratio of private (A/B)%
University	upper19	86	95	597	778	76.74%
High School	from 16 to 18	19	3780	1321	5116	25.82%
Junior High School	from 13 to 15	75	9982	758	10815	7.01%
Primary School	from 7 to 12	74	21713	213	22000	0.97%
Special-needs (education) school	depends on cases	45	980	14	1039	1.35%
Preschool	under6	49	5107	8236	13392	61.50%

(as of 2010)

Educational curricula of disasters applied in schools of different provinces of Japan are different. The main ideology is based on recognition of the natural phenomenon and on organization of quick and relevant actions during a possible disaster. The models of training inside and outside a classroom are topical, critical role is given to recognition of the experience of the past and to the issue of avoiding the failures of the past, for implementation of which efficient means are considered to be meetings with adults with experience of surviving disasters and visits to museums and libraries of disasters. Numerous manuals, guides, booklets and banners exist, which are prepared by private and non-private organizations of different provinces. It is important to note that the decision on selection from the existing diverse list depends on the corresponding teacher of a given school.

Based on the decision and invitation of the school and the teacher, various events on disaster training are conducted in schools, which are organized by volunteers or staff of state and non-governmental organizations.

After Hanshin-Awaji earthquake, a lot of disaster education materials were developed and distributed in Hyogo Prefecture.

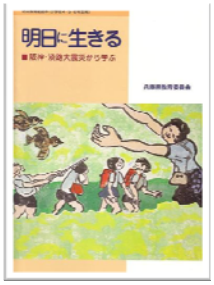
Disaster Education Materials

1. **"School disaster mitigation manual for teachers".**

Base on this experience, Board of education in Hyogo prefecture also developed "School disaster mitigation manual".

The main contents of manual is

- How to respond to different disasters
- When students are in school or going on a field trip
- When students are at home
- When students are on their way to/from school
- Initial response and role sharing (including a shelter support group)
- How to make sure that parents/guardians pick up students
- Plans to open school facilities to local people



2. **Disaster Education Materials**

Living for Tomorrow for students

This material was developed by Board of education in Hyogo prefecture in 1997.

There are 4 type materials, for lower grade in elementary school, for higher grade in elementary school, for junior high school, for high school.

3. **"Bring happiness to the World".**

Kobe city developed a disaster management education booklet, "Shiawase Hakobo,, (Bring Happiness to the World).

This document was developed not only in Japanese but in English, Chinese and other languages. It is intended for students in disaster prevention education. It aims to increase awareness of the lessons to be learned from the Great Hanshin-Awaji earthquake. "Bring Happiness to the World" allows pupils to gain basic knowledge about various disasters such as earthquakes, floods, tsunamis, and landslides. It also describes the preparations people can make for possible disasters, like stocking supplies.

In 2006, an officer from the Kobe City Board of Education was dispatched to Armenia who helped to execute a disaster management education project using the "Bring Happiness to

the World" booklet. It is accompanied by a DVD which introduces practical examples of disaster mitigation education in Kobe schools and local communities.

International cooperation with other disaster prone countries including Armenia

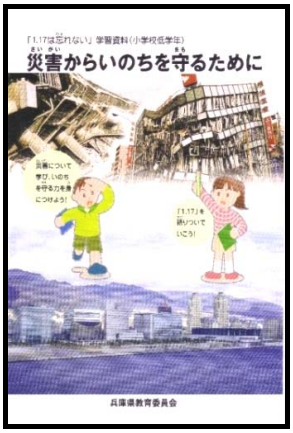

ADRC Highlights
Vol. 155
Asian Disaster Reduction Center Biweekly News
1 February 2007

4. Disaster Education Materials

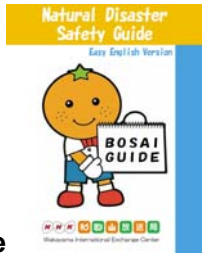
Saving life form disaster

Following 4 kinds of materials were published in 2005

- For lower grade students in elementary school
- For higher grade students in elementary school
- For junior high school students
- For high school students



The one of main goal of Disaster education process is to become from the person to be save to person who can save others.



One example for Disaster Education Guide from Wakayama Prefecture

Wakayama and Earthquakes

As of January 1st 2015, there is a 70% chance that the Nankai trough giant earthquake (magnitude of 8 to 9) will happen in the next 30 years. When it happens, Wakayama will shake very strongly. There will also be a risk of tsunamis in the areas near the sea.

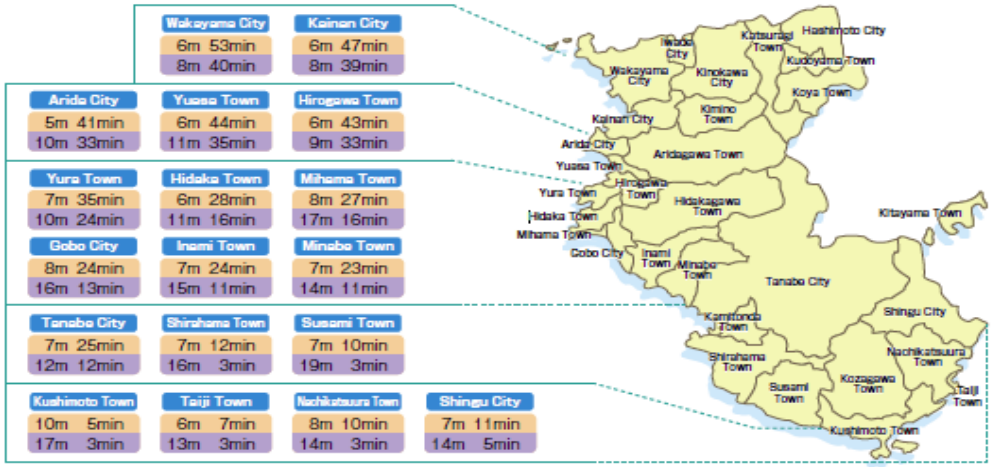
Preparing for Tsunamis

Tsunamis sometimes happen after earthquakes. Tsunamis come fast and waves are high. They are very dangerous. Soon after the earthquake happens the meteorology agency will give warnings of any approaching tsunami. If a tsunami is coming, move away from the shore right away, and evacuate to a safe place on high ground.

< Tsunami warning and advisory issued by the meteorology agency >

Tsunami advisory	Those in the ocean are to come ashore right away. Keep away from the ocean.
Tsunami warning	Tsunamis are predicted to cause damage to areas near the shore. Move away right away.
Giant tsunami warning	

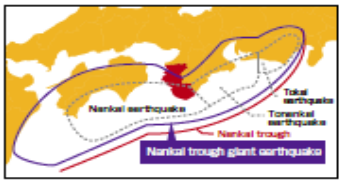
● Prediction of tsunami heights and arrival times



Tokai, Tonankai, and Nankai earthquakes	Nankai trough giant earthquake
Highest tsunami wave Maximum wave arrival time of the first tsunami	Highest tsunami Arrival time of 1 m tsunami

[Wakayama pref.]

● There are three earthquakes, the Tokai, Tonankai, and Nankai Earthquakes that happen at the same time together (magnitude 8.7) in the Nankai trough about every 90 to 150 years.



● About the magnitude 9.1 Nankai Trough Giant Earthquake
There has been no record of over magnitude 9 in the Nankai trough yet. But if it happens, there will be very big damage.

(＊ This document uses the western Magnitude scale of earthquake movement, but Japan usually uses the Japanese 'Shindo' scale to measure earthquakes.)

There are tsunami hazard maps at city halls and town halls. Please check it beforehand and see where you need to evacuate to.

When an earthquake happens…

Crawl under a table or desk

Stay under a strong table or desk to protect your head. Hold the desk legs tightly. Be aware of any objects falling or collapsing from above.

Open the door or window

When buildings collapse, sometimes doors and windows become stuck. Open doors and windows right away so you have a way to get out.

Turn off heaters, stoves, etc. as the shaking subsides

Turn off any heaters, etc., but only after the shaking stops.

Do not go outside at first

Window glass or sign boards may fall down. It is dangerous to go outside at first. Brick walls may also collapse.

Stay away from cliffs

Steep mountain slopes can collapse, so stay away from them.

Evacuate to somewhere far from the ocean

Tsunami can come. Evacuate to high ground or as far as possible from the ocean.

Park your car on the left side of the road

It is very dangerous to evacuate in a car. If you are driving, park on the left side of the road carefully and turn off the engine. Leave the key in the car.

In case of a typhoon and heavy rain

It rains a lot during the rainy season from June to July and when there is a typhoon. The water level in the river increases and overflows. In the mountains you should be careful about landslides. In Japan typhoons happen a lot from August to October. As the wind becomes strong, objects are blown around and they can be very dangerous.

Before a typhoon or heavy rain

- Check the house. Repair any damaged parts.
- Bring all the objects outside your house inside or secure them so that they are not blown away.
- Clean your drainage and gutters so wastewater can flow.
- Put your furniture and electric appliances on a high place if water might come in your house.
- Sometimes electricity can go out. Prepare by having a flashlight and a portable radio handy.

When the rain or wind is strong

▶ Outside the house
- Trees can fall down. Objects can be blown away. If you go outside try to protect your head as much as possible.
- Areas near the sea, rivers and mountains are dangerous. Never go near there during a typhoon.

▶ Inside the house
- Do not go outside when rain or wind is strong.
- Close the window shutters, curtains and doors.

Get information

When a typhoon is coming, you should get information from weather reports, etc. Prepare in advance for evacuating. When an evacuation warning or evacuation advisory is issued, evacuate safely and be careful to avoid danger. If you are unable to leave the building you are in, take refuge in the most secure part.

< Weather warnings and other information issued by the meteorology agency >

Heavy rain・Storm High sea・High tide, etc.	Advisory	A dangerous natural disaster may occur.
	Warning	There is a considerable risk of danger.
	Emergency order	There is a high risk of danger.

A "landslide disaster warning" announcement is issued when there is a high risk of landslide disaster. It is issued by the prefectural office and the meteorological observatory.

< Type of evacuation information issued by municipalities >

Information to prepare for evacuation	The elderly and sick people should evacuate as early as possible.
Evacuation advisory	You need to evacuate.
Evacuation order	Be sure to evacuate quickly. This order is the highest level of evacuation advice and is given when the danger is the greatest.

In case of evacuation

Important points when you evacuate

- Stay safe and move quickly away from danger.
- Keep the things you carry to a minimum.
- Do not use a car when you evacuate from tsunami.
- Help the elderly, sick or injured people to evacuate.

Emergency evacuation area	This is a place where you can evacuate temporarily when there is a natural disaster. This can be school ground, park, high ground, etc.
Evacuation shelter	You can stay in the evacuation shelter when an earthquake or typhoon, has caused the gas, electricity and water to stop and it is difficult to live in your house. You can get commodities and necessary information. Foreign residents can also use these shelters.

Things you should do at evacuation shelter

- Fill out your personal details at the reception. This is to help other people know where you are.
- Get the food and water as needed.
- There is a lot of information at the evacuation shelter. If you can translate, please help out people who need your help to communicate.
- Anyone who lives in their own house with no access to gas, electricity, water, etc. can receive water and food at the evacuation shelter.
- You can use portable toilets.
- Evacuation shelter is a place where all people who have evacuated can stay. So, follow the instructions of the supervisor and help one another.

Useful smart phone applications for evacuation

Information transmission application for foreign people「Safety tips」(Japan Tourism Agency)
This application will inform you of emergency earthquake reports and tsunami report in English.
You can access evacuation plans or other contents such as how to obtain necessary information. This is useful for foreign travelers and foreign residents in Japan.

Download page
Android https://play.google.com/store/apps/details?id=jp.co.rcsc.safetyTips.android
iPhone https://itunes.apple.com/jp/app/safety-tips/id858357174?mt=8

To get information

The information is very important when a disaster happens. NHK broadcasts the latest information on TV, radio, internet, etc.

Emergency earthquake report

You hear a special chime sound on TV, radio and mobile phones just before a big earthquake. When you hear the sound, stay safe, stay calm, and evacuate to a safe place.

TV

The latest information is broadcasted by the news at the time of disaster. Information in Wakayama is broadcasted through datacasting, etc.

Radio

Battery-powered radios are useful when there is no electricity. You can also listen to NHK radio broadcast on the internet.

NHKネットラジオ らじる★らじる

You can access the internet through the computer or smartphone, and listen to NHK radio programs.

● **Computer**
http://www.nhk.jp/netradio

● **Smartphone**

Internet

Japan Broadcasting Corporation Wakayama Station Homepage carries detailed information in Wakayama.

● Japan Broadcasting Corporation Wakayama Station Homepage
http://www.nhk.or.jp/wakayama/

International broadcasting

NHK WORLD

NHK World is broadcasting news to the world in multi-language on TV, radio and the internet.

● NHK World Homepage
http://www3.nhk.or.jp/nhkworld
● NHK World TV/NHK Radio Japan
Smartphone application download page
http://www3.nhk.or.jp/nhkworld/app/info/index_jp.html

Keep these items near you before evacuation

Supplies

- ☐ Flashlight
- ☐ Lighter, matches
- ☐ Portable radio
- ☐ Batteries, recharger
- ☐ Medicine, medical supplies, masks
- ☐ Tissues
- ☐ Plastic bags
- ☐ Can opener, bottle opener

Food

- ☐ Drinking water
- ☐ Food

Other everyday items

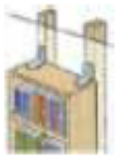
- ☐ Clothes,underwear
- ☐ Towels
- ☐ Work gloves,gloves
- ☐ Rainwear, umbrella
- ☐ Safety gear, such as helmet, life jacket, etc.

Valuables

- ☐ Passport
- ☐ Residence card
- ☐ Health insurance card
- ☐ Money, etc.

Prepare beforehand

Attach furniture to the wall. It will help save your life.



Disaster Prevention Memo

Name _____ Nationality _____

Blood Type _____ Passport No. _____

Residence Card No. _____ Date of Birth _____

Address in Japan _____

Telephone No. _____

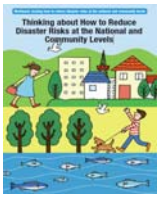
Country Contact No. _____

Embassy or consulate telephone No. _____

● Nearest emergency evacuation area

Map

Name of place _____



Disaster Education Workbook

Thinking about How to Reduce Disaster Risks at the National and Community Levels.

Here you can understand what kind of secondary effects can have main natural phenomena.

Landslides and cliff failures

An earthquake may cause landslides and cliff failures, damaging roads and houses.

1995: Great Hanshin-Awaji Earthquake (rockfalls); Rokkosan Driveway (Kobe City)

Collapse

Old wooden houses are most likely to suffer damage or collapse. Tall buildings may also collapse, crushing many people to death.

1995: Great Hanshin-Awaji Earthquake; western part of the northern district of JR Shin-Nagata Station (Kobe City)

Tsunamis

Lowlands are vulnerable to tsunamis. A large tsunami could overflow low levees and reach several kilometers inland.

2011: Great East Japan Earthquake; Wakabayashi, Sendai City (Sendai City)

Fires

Large fires can occur in areas with many wooden houses, killing many people.

1995: Great Hanshin-Awaji Earthquake; 6-chome, Futaba-cho (Kobe City)

Liquefaction

Due to quakes, reclaimed land liquefies, expanding damage in coastal areas.

2011: Great East Japan Earthquake; damage to a manhole in the Takasu District, Urayasu City (Institute of Scientific Approaches for Fire & Disaster)

Disaster Prevention Awareness through Schools
Nagisa Elementary School and Maiko High Schools

After Great Hanshin-Awaji earthquake, some of disaster management courses at schools were established in Hyogo Prefecture.

Each elementary school has various disaster management activities. This section describes how two schools are actively promoting disaster management activities: **Kobe Municipal Nagisa Elementary School" and Hyogo Prefecture Maiko High School."**

Kobe Nagisa Elementary School is located near the coast in Chuo Ward, Kobe. There are 59 teachers and 914 pupils. The Nagisa Elementary School conducts three sets of disaster management activities every year.

The first type of activity is the execution of evacuation drills. The school holds **three evacuation drills a year: in the spring, autumn, and on January 17**, the day that the Great Hanshin Awaji Earthquake occurred. Essentially the entire staff and all the pupils participate in the drills, which are held under the assumption there has been an earthquake and resultant fire. The emergency evacuation drill takes approximately an hour and a half. This span of time was chosen to take into account the limits of young children's attention spans. First, they have a simple program of **disaster management education**, and then **actual evacuation drills**, and finally a review **meeting held** with their teachers. The emergency evacuation drill is timed to see how long evacuation takes, but the school puts its first priority on safety, so they do not encourage competition.

The second activity is an event memorializing the GEJE that occurred on March 11, 2011. The principal and teacher responsible for disaster management talk to the students about this disaster and they pray for the victims. They continue to hold these events yearly in order to prevent the memories of earthquake disasters, including the Great Hanshin Awaji Earthquake, from fading.

List of Disaster Education Activities

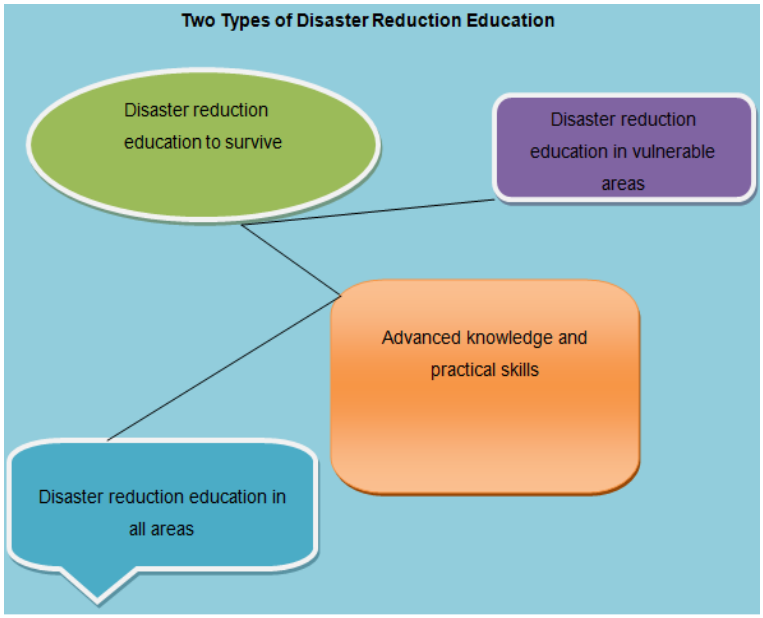
	Contents			Cooperation with other agencies	Evaluation
1	Evacuation Drill	First Semester	90 minutes lesson - lesson of disaster education - evacuation drill - evaluation with teachers and students	fire department sometimes supports for evacuation drill	after drill *teachers and students
2		Second Semester			
3		17-Jan			
4	School Assembly	11-Mar	60 minutes - silent prayer - sing a memorial song	none	none
5	Lesson of Disaster Education	Several time per year	60 minutes - disaster education by using materials which was published by Kobe city	none	none

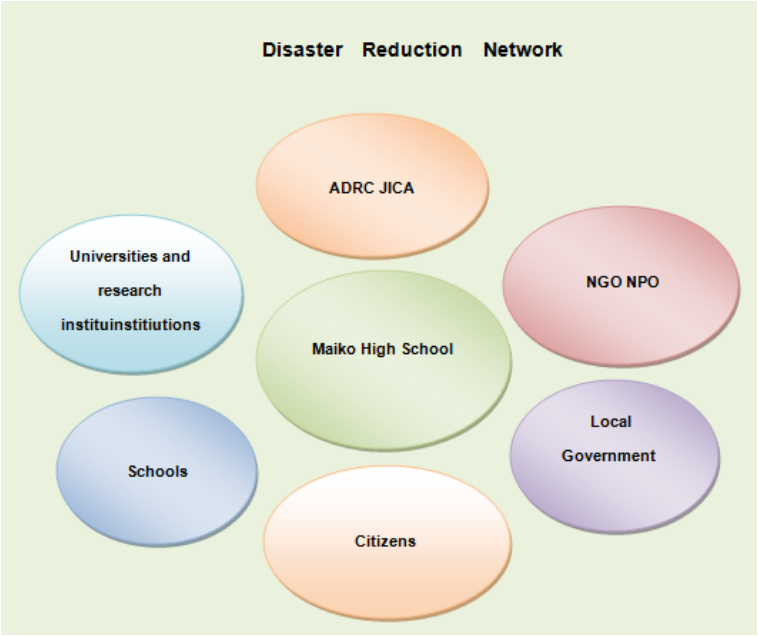
The last type of activity is the inclusion of disaster management education classes in the normal curriculum. During these classes, the teachers convey basic knowledge about disasters, provide notifications about evacuation activities, instruct the children about preparations to make during normal life for future possible emergencies, and talk about the importance of communicating with family members.

Maiko High School

Maiko High School started the Preparatory Study in April 2000. And disaster management course was launched in April 2002

Maiko high school implemented the new type of disaster education for high school students.





Characteristics of Educational Activities (Maiko High School)

Lessons by the Guest Teachers

Many teachers are invited to school to talk about their experiences during and after the disaster. Teachers are from universities, police station, fire station, life-line related companies, the city government, the prefecture government, the volunteer organization and so on. Their precious stories make the students realize the importance of human lives and help to each other, which is the energy to facilitate the citizen-centered disaster mitigation.

Studies Outside of the School

Students visit the Disaster Reduction and Human Renovation Institute, Museum of Nature and Human Activities, Hokudan Cho Earthquake Memorial Park. They walk around the disaster area to interview the citizens. They stay one night two days at Kobe Fire Academy to learn the fundamental skills of extinguishing fires, rescuing people, and collecting information. They take part in the disaster mitigation training held by the prefecture, the city and the regional ward. They go to the Rokko Mountains to investigate the faults, the dangerous streams of debris flow, and the raised bed rivers, which were the causes of the floods in Kobe.

Studies Outside of the School

While studying the disaster mitigation, the students are not only given lectures to get the knowledge but also given the problems, or they set the tasks by themselves and they solve them by the students themselves or by the cooperation with the other students. For example, in the study of "the disaster management of a virtual community", the students set the population, the industry and the geographic characters of the community, and made a "Disaster Management Manual". In another activity, the students study the relationship between some typical disasters

which took place in Japan and the lows which were adopted after the disasters. They made a newspaper of the heavy floods in Kobe area and used this newspaper to teach the pupils in an elementary school. The aim of these activities is to have the students master the attitude and the technique of life-long education. Once the students master the cycle of the life-long education, they can continue learning in their long life.

Disaster Mitigation Education with the Pupils of the Elementary School nearby

Maiko High School is in corporation with an elementary school to do the disaster mitigation education. The students make a regional map with the 3rd year pupils. They don't call this map "Hazard Map" but they call it "Safety Map" because they believe that people don't feel like living in the town full of dangerous information. On the other hand, they become serious to the disaster mitigation of the community if the map is full of the places they like and are proud of. The students talk about their experiences of the Great Hanshin-Awaji Disaster to the 4th and 6th year pupils. Maiko High School students were 1st or 2nd year pupils those days. Their experiences were hard and tough and serious but they didn't have good vocabulary to express their experiences. Now they use the high school students' language to tell the experiences of the small children. To teach the mechanism of the earthquake and the importance of preparedness they use the "Wall Newspaper". To the 5th year pupils the high school students show the experiment of the flood and teach the history of the heavy flood in Kobe by the newspaper they made.

The pupils learn something about the disaster mitigation and they are sure to talk about what they learned at school to their family members at home. While listening to the children's story, the parents may be interested in the disaster mitigation and then, the regional disaster mitigation may start.

Events of Disaster Mitigation

Every January 17th a memorial event for the victims of the Great Hanshin-Awaji disaster is held at Maiko High School. It will be held annually as the main event of Maiko High School. The purposes of the event are the collection, the arrangement and the transmission of the experiences of the Great Hanshin-Awaji Disaster and the construction of the base center of the disaster mitigation education. "The record collection" is published. It will be used as the teaching materials of both Maiko High School and other schools. In addition, they would like to inform the world of the experiences of the Great Hanshin-Awaji Disaster. The students of the environment and disaster mitigation course work as the staffs. They will be engaged in planning workshops, requesting lecturers, coordinating workshops, publishing record collections, and so on. Schools must do the training of evacuation twice a year. The ordinary training are that after the fire alarm rings, the students evacuate to the school ground. The students seem less motivated and so they are not so serious in this training. At Maiko High School the conventional training of evacuation is changed into the new training with the disaster mitigation study at classroom or the lectures of disaster mitigation at school gym.

Presentation outside of the School

The teachers and the students are often invited to the seminars or the workshops outside of the school. They utilize these opportunity for both the advertisement of the course and the spread of the disaster mitigation education.

International Exchange with Nepal

Examples of the educational activities

All the examples of the educational activities here were really offered to the high school students. It is possible to practice the same activities to the pupils of elementary schools and the students of junior high schools by arranging the degree of the quality of the contents. All the activities here are the materials or the ingredients. It depends on the teachers how to make them.

Main steps of Disaster Mitigation Education

Speeches by those who experienced Kobe Earthquake

Learning at Disaster Museums

Educational Purpose is To have the students learn the real aspects of disasters by the exhibitions. They will be interested in the disaster mitigation through the special lessons done by the specialists there.

Procedure The students visit the disaster museums. They see the exhibitions, hear the stories, and make a report about what they learn at the museum.

Outcomes The students will be more interested in the disaster mitigation. They can realize the dreadful facts of the disasters. They come to know the disasters peculiar to the region and learn the human wisdom, capacity, and potential to cope with the disaster.

Making of "Concept Map"

Simulation to Cope with the Disaster

Educational Purpose To have the students thinks how they act at the time of the disaster. It raises the students' awareness toward preparedness.

Procedure In a list time is set horizontally from "the taking place of the earthquake", "ten minutes after the earthquake", "30 minutes", "1 hour", "2 hours",...,"1 day", "2 days", ..., "1 week", "1 month". Vertically is set 24 hours of a day. The students are requested to fill in the blanks by writing where they are and what they are doing at the certain time of the day.

Outcomes The students realize that they spend most of the time of a day at home. This will make them aware that the disaster management at home is necessary. The students come to know the wisdom of the human beings and the necessity of helping each other during the process of the emergent management and the recovery. It is possible to confirm the results of the study when this is done twice, before the certain periods of the learning and after the learning.

Making of "Related Map of the Disaster"

Educational Purpose To have the students realizes that the degree of the disaster is strongly influenced both by the natural phenomenon and by the social environment (vulnerability).

Procedure The Students use a wide paper. Write "Kobe Earthquake" at the 1/3 from the top of the paper. Upper side of the "Kobe Earthquake" is the social environment before the disaster took place. The lower side is the society after the earthquake. They write and draw as many social factors as possible in the "before the disaster" part (traffic, buildings, population, fire bureau, life line, and so on). In the "after the earthquake" part, they write and draw the damages and the problems during the process of the emergency management and the recovery.

Outcomes The students learn the complexity of the society and the difficulty of the disaster mitigation. The students think what they can do in the complex society. They may realize that disaster management must be done totally with as many coherent sectors as possible.

Making of "Safety Map" of the Community

Educational Purpose To have the students knows the community they live in and think what they can do in the community.

Procedure The students are divided into small groups and walk around the community, finding the dangerous places, the evacuation places, the fire extinguishers, and so on. The places they can boast are also checked. It is important for the people in the community to know that their community has not only dangerous places but also good places. They take the pictures. After walking they put the pictures on the map, write some comments, and draw some illustrated pictures.

Outcomes The students come to know the community better. Walking with the neighbors in the same community will facilitate the communication among them. This will facilitate the people's participation in the evacuation drills implemented in the community, enable the better communication between the community and school, and as a result help run the shelter at school more smoothly at the time of the disaster.

Disaster Imagination Game

Educational Purpose To have the students simulate the disaster and find the problems their community have, discuss how to solve the problems and what they can do at the time of the disaster.

Procedure **(A) Simulation using a map -**Use the "Safety Map" the students made. Cover the map with the transparent vinyl for the repeated writing and erasing. The teacher is the coordinator. First set the situation like "A strong earthquake took place in this area." The teacher gives the information such as **"Fire took place at 3 houses in the town", "300 people are evacuating at school"**, and so on. Each of the information is given according to the time table. The students discuss how to cope with the situation **(B) Simulation by the role playing -**The students are divided into some groups, taking the role of the fire station, police station, the school running the shelter, NPO, the city office, the educational board, and so on. The teacher is the coordinator. First set the situation like **"A strong earthquake took place in this area." The teacher gives the information cards such as "Fire took place at 3 houses in the town", "300 people are evacuating at school"**, and so on. Each of the information is given according to the time table. Some information is given to a group but not given to another groups. The communication among the groups is permitted under a certain condition. The students discuss how to cope with the situation. After the discussion the students are requested to make the presentation.

Outcomes The students learn that it is important to help each other. They learn that it is necessary for every organizations and sectors to cooperate strongly at the time of disaster.

They can also think of the weak points of the community. It is not recommended for all the citizens to experience the real disaster. This kind of the virtual experience is necessary to know how to act at the time of the disaster.

Disaster Management of my House

Educational Purpose To have the students realizes that it is most important to protect their own lives by themselves. The students will know that it is necessary to build the earthquake-proof house and to fix the furniture to the wall.

Procedure First the students learn that more than 90% of the victims of Kobe Earthquake were pressed dead under the collapsed houses **15-30minutes** just after the earthquake took place. Then they draw the sketch of their house and diagnose their house. After this work they draw the blueprint of the earthquake-proof house by modifying their own house.

Outcomes The students learn that the construction of the earthquake-proof houses and the fixing of the furniture to the wall is the first step to protect them from the earthquake. The familiar topic of their own house makes disaster management easy to access for the family members.

Disaster Management of Imaginary Town

Educational Purpose To unite the knowledge of geography, geology, sociology and so on with disaster management.

Procedure The students make an imaginary town by themselves. The necessary factors are the natural environment, population, industry, infrastructures, and so on. They think of the disaster management manual of the town.

Outcomes The students need the overall knowledge of geography, geology, and social studies. Thus they can relate these subjects to each other and think of the disaster management totally. They love the town they made themselves. The important factor of the citizens is this attitude to love their own town. University students who major in the disaster management will be able to make a quite complicated manual while the elementary school children can only draw the map of the region and write their opinion on the map. This activity can be used to every age according to their degree of study achievement. Raising motivation is the main goal for the younger students while the more complicated contents will be made by the older students.

Making of "Wall Newspaper"

Educational Purpose To have the students consolidates what they have learned by making the (wall) newspaper. Presentation using the (wall) newspaper will cultivate their positive and active attitude towards the presentation.

Procedure First set the tasks. For example, divide the students into some groups and give them the tasks to tackle with, such as "fire bureau", "life line", "school shelters", "volunteer", and so on. Each group make a (wall) newspaper and present what they have learned using the (wall) newspaper. The presentation will be evaluated by the students themselves.

Outcomes The contents they have learned will be consolidated. The ability to present will be raised. The mutual evaluation will help the students find what they have to learn more. They can set the tasks again and keep on studying to solve the problems.

Making of the "World Hazard Map"

Educational Purpose To have the students knows that there are many kinds of disasters all over the world.

Procedure The students study the disasters all over the world by the internet or the books. They draw a world map and write down what they learned on the map.

Outcomes The students learn that not only the earthquake and the volcanoes which are characteristic of Japanese disasters there are a lot of other disasters all over the world. The students realize that most of the disasters take place in the developing countries, especially in Asia. They think what the international contribution should be.

Town Walking in the Disaster Area

Field Work at Mt. Rokko

Educational Purpose The students learn that not only the earthquake and the volcanoes which are characteristic of Japanese disasters there a lot of other disasters all over the world. The students realize that most of the disasters take place in the developing countries, especially in Asia. They think what the international contribution should be.

Procedure The students learn Mt. Rokko from the point of both natural environment and social environment. They especially focus on Kobe Earthquake and the Great Hanshin Flood. After this successive study of Mt. Rokko and the two disasters, the students visit the mountain area to observe the active faults, rapid streams, and so on. The students make a report after the observation.

Outcomes The students can connect the natural environment (by the study of the subject "Environment and Science") with the social environment (by the study of the subject "Disasters and Human Beings").

Ten Ideas to Make Community Safer

Learning with the Different Ages

Educational Purpose In order to record the experiences of Kobe Earthquake, the high school students talk their experiences to the pupils of an elementary school nearby. They also teach the children what they learned at high school. Teaching small children is very difficult but helpful for the high school students to deepen their knowledge and work out the device for the children's better understanding.

Procedure Pupils from 3rd grade to 6th grade join this activity. There are various practices we have done so far; safety map-making, story-telling of Kobe Earthquake by the high school students, explanation of Kobe Earthquake using wall newspapers, plain science experiments like liquefaction, and so on.

Outcomes The high school students can consolidate what they have learned. The children become more interested in learning from the high school students. The children are sure to talk at home what they learned at school. Disaster mitigation spread from children to the family, from the family to the community.

Example of School Activity for Disaster Education

Fuchu Chuou Elementary School (Hiroshima Prefecture)

Fuchu Chuou Elementary School organized **Disaster Education Activity** with volunteers from **Hiroshima Prefecture Sabo Division**. The volunteers are retired officials who visiting different schools in Hiroshima Prefecture after school request.

They organize Disaster Education Activities at schools. For education process, they use presentations with colorful animation about Sediment Disaster, Heavy rain, Flood, Landslide, Debris and Slope flow, especially threatening Hiroshima. They use special experimental layouts which show the debris flow or landslide and prevention mechanism, which can be tried by children.

Volunteers explained steps how to work with hazard maps, and told children to follow 3 main steps: House, High risk area and Evacuation way.

So children had to mention on hazard map their home, high risk area, evacuation shelter, and way which they must use for evacuation. Students worked with hazard maps doing evacuation plans and management during disasters.

Elementary school students actively and efficiently participating during all lectures asking questions and answering the questions had given to them.

The activities main principles are: Teach natural phenomena and then how to protect yourself and what kind of prevention mechanism they have in case of different disasters.

After hazard mapping teacher made feedback with children and got a lot of interesting questions. Many children believed that they had thought that their houses or prefecture was in safe area. Some of them mentioned that they want to remember main steps of hazard mapping and how to evacuate.

The educational process was very interesting with a lot of didactic materials and animations. The materials are tangible and children can get experience which is the most effective way to learn.

EARTH Concept

Emergency And Rescue Team by school staff in Hyogo ,,EARTH,, founded in 2000.

EATRH groups

- School education group
- Research and planning group
- Shelter management group
- Mental care group
- School lunch group

EARTH Activities

During disasters（support for affected schools）	During normal times
①Emergency measures in school education and early restart of education ②Mental care for students ③Shelter management	①Contribution to local disaster-prevention systems ②Contribution to the promotion of “disaster-prevention education in Hyogo” ③Implementation of training

EARTH Handbook

Handbook, as well as organize the know-how for the early resumption of school educational activities from the large-scale disaster, in order to contribute to the activities of EARTH members, was issued in March 2006. Under such circumstances, the Great Hanshin-Awaji valuable lessons and experience rich EARTH members of the know-how of the inheritance in Earthquake organize such issues obtained by the support activities of the Great East Japan Earthquake and the like, other than earthquake storm and flood damage and landslides. It was revised this book from the perspective of responses.

Three principles of disaster education (EARTH)

1. Knowledge about mechanism of hazard and disaster.
2. Disaster reduction Knowledge: Disaster reduction actions and evacuation after the occurrence of actions Foundations of Well-Being hazard.
3. Foundations of Wellbeing and symbiosis.

Four pillars of disaster education

Foundations of well-being	Respect for lives Compassion for people Volunteerism
Understand natural and social factors	Natural phenomena Social phenomena
Develop systems for disaster reduction	Regional characteristics of disaster System development
Prepare and react to reduce disaster	Disaster reduction actions

Sources：EARTH handbook

Elements of disaster education at school

- Disaster education for students
- Capacity building for faculty members
- Safety building and facilities
- Emergency response

Promotion of disaster education utilizing regional resources

Perspective for material development

Social perspective

- Historical perspective: Disaster history and experiences and wisdom of people to overcome disaster
- Modern perspective: Disaster reduction system of municipalities, community development for resilience

Scientific perspective

Geological perspective: topography or geology

Promotion of disaster education utilizing regional resources

- Learning methods
- Literature review: books, internet
- Fieldwork：disaster reduction facilities, geological and topographical observation, disaster history
- Geographical learning：Geography, hazard maps
- Visits to related institutions: Fire stations, disaster reduction education centers, disaster control centers
- Local human resources：storytellers, city officials, people who experienced disaster

Disaster Education has Linkage with different subjects

- Language: Reading poems, understand people's feelings
- Ethics: Be aware of universal values, be conscious about human rights
- To motivate students to act (volunteering or disaster reduction)
- Science: Understanding natural disaster, earth science, geology
- Social studies: Public services, lifelines
- Be conscious about crisis
- Comprehensive study: fieldworks, disaster reduction of region, hazard map, suggestion for resilient city
- At home: Disaster reduction measures at home, mutual support in the community
- Special activities: Emergency drills, games
- Health and physical education: understand own physical condition, rescue and lifesaving

Experiencing and learning

- Volunteering
- Emergency drills
- Survival camp

- Experiencing shelters
- Disaster games: Crossroads, Bosai-duck
- Town walk：Safety or hazard map making
- DIG（Disaster Imagination Game）

Lessons from the past must be enough to save life, because every large-scale disaster shows something new for.

Lessons from experience of Great Hanshin Awaji Earthquake, Great East Japan Earthquake.

So school children must to be informed about strong, historical disasters.

津波によって浸水した鵜住居小学校（手前）と釜石東中学校（奥）

小中学生が最初に避難してきた場所（ございしょの里）

中学生が落石に気付いた避難先の裏山

小中学生が一緒に避難している様子（H23.3.11津波襲来前に撮影）

http://dsel.ce.gunma-u.ac.jp/research/cont-302-4.html

Miracle of Kamaishi

Three principles to evacuate from Tsunami（Dr. Toshihiko Katada, University of Gunma）

■Do not be constrained by expectation

(Do not believe in hazard map)

Hazard map is made based on expectation (assumption), and it is possible that more serious disaster happens. It is important to make a judgment by yourself, observing nature.

■Try best you can at the time

Students evacuated further from the determined evacuation place, so that they saved their lives themselves. It is a result they did their best. They evacuated as much as they could to survive.

■To be a leader in evacuation

Sometimes humans do not have strong wills to take actions to save their lives, and wait for directions from leaders. It is important to have a strong will to overcome disaster and survive. In this case, students were not passive, but they think and make a judgment by their own and run as much as they can. It saved lives of people in the community.

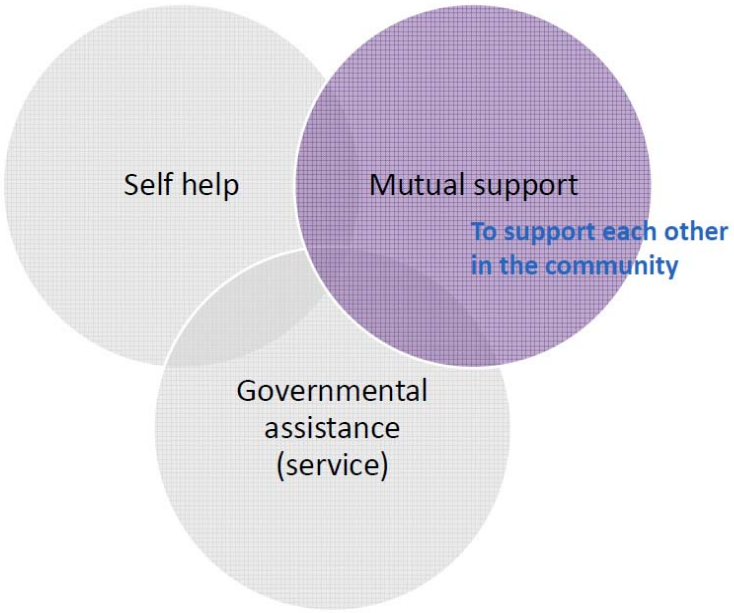
So when tsunami occurs, everyone even child who can run should evacuate by himself without relying on others.

It means that it is not something to be blamed if someone saved his/her life without caring others.

Source http://www.hyogo-c.ed.jp/~kikaku-bo/EARTHHP/

Disaster Education in Communities

Main principle of Community-Based Disaster Risk Reduction and Management



Why CBDRRM is required?

- ✓ Community members are the first responder of disasters. Initial response at the first stage sometimes determines results of disasters. -> Need proper knowledge on risks and actions to be taken in case of disasters

- ✓ Mutual help can make big differences in the result of disasters -> Need to make pre-coordination among community members and with other stakeholders
- ✓ Local knowledge is indispensable for the effective disaster risk management including policy planning
- ✓ Initiatives of community people have an impact on prompt recovery from damages and making community resilient to future disasters

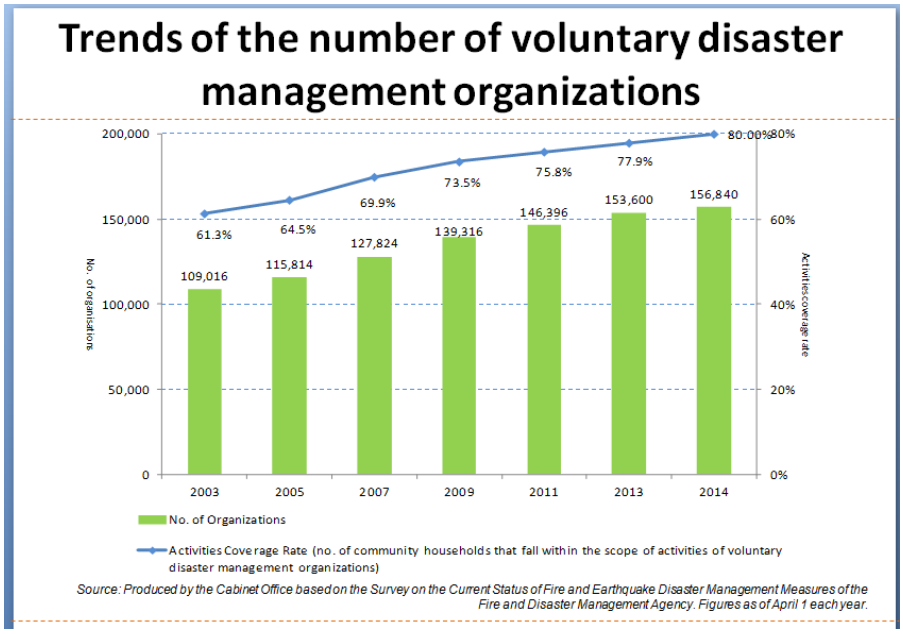
For disaster resilient community important

- Establishment of Voluntary Disaster Management Organizations
- "Basic Framework for Promoting a Nationwide Movement for Disaster Risk Reduction -Actions with Added Value to Security and Safety-"

Legal basis

The Disaster Countermeasures Basic Act, the most fundamental law of disaster measures in Japan, regulates that the municipalities must make efforts to fulfill the "Disaster-management organization based on the spirit of citizen's neighborhood cooperation" (Section 2 of Article 5: Responsibilities of Local Governments).

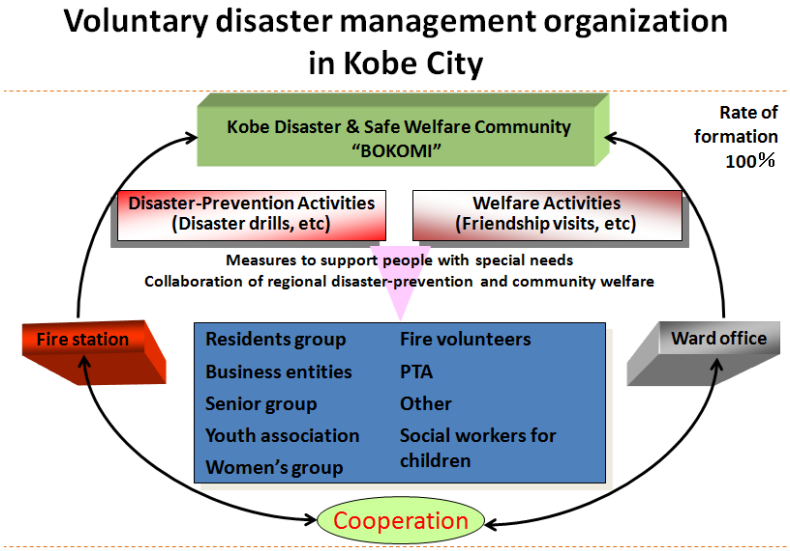
In Japan, the term, "voluntary disaster management organization," was used for the first time in an official document in 1961. Since then, this term has gained recognition every time the country has been challenged by disasters, and its importance gained dramatic recognition at the time of the Great Hanshin-Awaji earthquake.



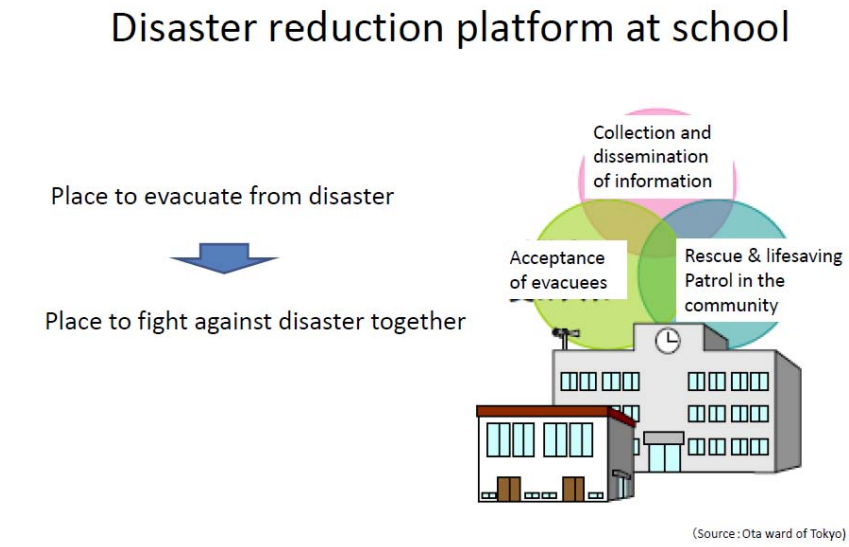
BOKOMI: New Sustainable Approach of Community Involvement

The aim of "BOKOMI" building resilience of its communities against disasters. BOKOMI is the short term of "Bousai Fukushi Community" [Disaster preparedness and welfare community], where the disaster preparedness is linked to daily welfare of the people. It was understood that the needs of the aged community is daily welfare. Therefore, to continue to the disaster preparedness activities, it is required to link this to welfare activities. After the pilot phase in 11 districts, the BOKOMI concept was formalized in 1997 according to the Mayor's decision, and mainstreamed in

all the school districts of Kobe City. BOKOMIs are established based on municipal elementary schools districts in Kobe City. The number of BOKOMI steadily increased and reached 100 % coverage in 2008.



The reason why BOKOMIs are based in elementary school districts is because 'welfare-community' groups were already established in each elementary should district and thus, disaster prevention activities could be integrated into these existing groups. In addition, elementary schools are designated as evacuation sites for communities in emergencies in Japan.



Main activities by BOKOMIs have two perspectives: disaster prevention and risk reduction activities and welfare related activities. These activities are combined and carried out together. Disaster-prevention and risk reduction activities by **BOKOMI** are as follow:

- Disaster drills and training
- DRR education program with schools

- BOKOMI junior team (fostering children's teams to lead and work on DRR
- activities)
- Public awareness event
- First-aid seminar, checking emergency materials and equipment
- Town watching and preparation of community safety map, risk reduction activities

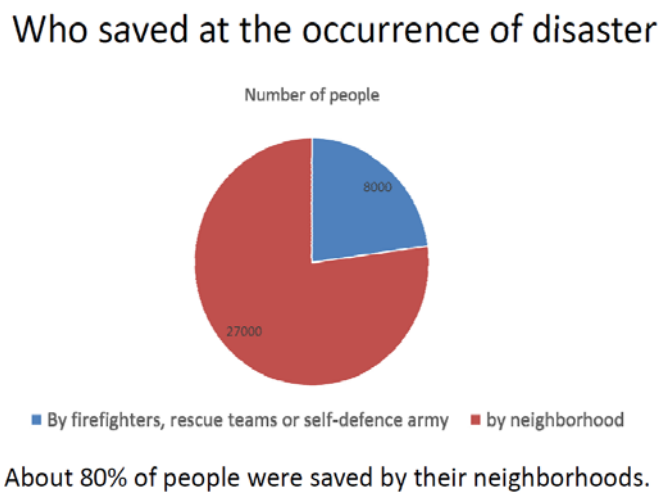
with rescue workers and fire fighters (identify caution evacuation root, removal of object blocking these roots, fixing furniture etc.)

Combining with welfare activity are as follow:

- Regular communication within communities to form their unity, so that they can take action, when emergency/disaster happens, considering needs of vulnerable
- Groups such as elderly and disabled people.
- Learning how to support the people with special needs during disasters (elderly people and handicapped people).

To strengthen community resilience and mutual support:

- Get to know each other
- Capacity building of each individual for disaster reduction
- Promote participation of people in emergency drills
- Support people who need helps at the time of emergency



Strengthening School–Community Linkages: Policies Concerning School Education and Involvement of Community

The importance of enhancing school–community links has been marked in principle documents, including the Fundamental Law of Education, which was revised in 2006.

Act 13 of the revised law states, "Schools, homes and community are responsible to put effort in coordinating and cooperating with each other." One principal document that supports this rational is a policy paper released in 1996 by the Central Council for Education of MEXT entitled, "Education of Japan Envisioning the 21st Century" that introduces the idea of **"Open**

Schools" in which adults in the community take active part in educational activities to help schools, particularly in teaching the **"Zest for Living"** to foster the humanity aspect of children to become responsible citizens of the society. This idea does not merely focus or set goals in improving educational levels, but envisions improvement of community ties through participation of the whole community in school management and education.

School–Community Linkages Through DRR Education

In 2006–2007, the United Nations International Strategy for Disaster Reduction (UNISDR) promoted with the campaign "Disaster Risk Reduction Begins at School." Although the campaign underlined the importance of conducting DRR education in schools, it also emphasized the signify chance of community participation in DRR education for the sustainable development of the whole society. As the case, DRR education may begin at schools, but not confined in schools. Students must learn to protect themselves not only in schools, but also at their homes and also on their way to schools. Referred by UNISDR as model city for DRR education with effective school–community coordination**, Saijo City in Ehime Prefecture** has been conducting the **"12-year old Education Project" since 2006**, in which not only the students, but parents, community association members and local government officials jointly take part in DRR education activities, such as town watching and mountain watching to raise community awareness and to understand the roles of each stakeholders. The students who participate in this program are able to convey what they have learned about DRR at school and through DRR activities to their family members in the Family DRR Meeting conducted at their homes. As most parents would not ignore what their children have to say, the adults are encouraged to listen and participate in DRR drills, prepare emergency backpacks and become aware of the possible dangers around their homes. The Family DRR Meeting also allows children to ask their parents and grandparents about past disasters and ideas on taking necessary measures. This kind of co-learning within homes and communities provides opportunities and encouragement for the whole community to get involved to work on a common issue that enriches community ties.

The idea takes advantage of parents' nature of them listening more to their child instead of others outside of the family. Adults in the community usually are concerned of what their children are being taught in schools, students can become promoters of DRR through interactions with their family and community.

The approach in targeting DRR education for students for dissemination proved to be also effective in Kamaishi City during EJET. The school children were not only able to initiate their own evacuation, but also were able to encourage or help other community members to escape with them, producing a sense of solidarity in the whole community to better cope with the disaster.

Exploring Different Types of Education Programs for School–Community Linkage

Community's engagement in school education is commonly to seen in the integrated study program, which is part of the extracurricular program in Japanese school education. The contents of integrated study may include issues ranging from health, social welfare and

environment/disaster management. In general, specific topics are decided by the school and its teachers. The whole aim of the Program is to let students experience and better understand the local industry, culture, history and environment and to see how adults are living and taking roles in the community. Integrated study provides school children with chances to receive “real life” education, sometimes outside of the classrooms, for the students better understand about their own community and develop a sense of responsibility as a citizen to make contribution in making their community a better place. Informal education, such as family education or social education, is a more flexible way for community participation, but would have less involvement of schools and more likely to be conducted on an ad hoc basis. However the form, these different types of out-of classroom education, developed after the adoption of **Yutori education (translated as “relaxed education”)** in the late **1980s,** provide multiple entry points for community to participate in educational activities of the school.

Disaster Reduction Drills and Exercises

In order to improve the disaster resilience of the community and to reduce disaster damages, there must be close cooperation among individuals, families, local community, businesses and relevant entities to build momentum for a nationwide movement. The Government has designated the 1st day of September as the ,,Disaster Preparedness Day,,and the week including this day as the Disaster Preparedness Week, and carries out various events to raise awareness and readiness about the disaster. Disaster drills and ,,disaster reduction fairs,, are held in various parts of Japan.

Principle of Disaster risk reduction drill with local communities

- Cooperation with the disaster management and welfare community
- Disaster risk reduction and child handover drills with a holiday visit

Use of local and human resources

- Use of authorities concerned, universities, and NPOs
- Local human resources working as guest teachers

Example

Evacuation drill with kindergarten and school pupils

Example of Hyogo Prefecture's Disaster drills by Community

- Bokomi Drill
- Nada Ward Drill
- National, Prefectural or Municipal Comprehensive Disaster Drill. With school cooperation.

HAT Kobe disaster drill

Kobe city organized HAT Kobe disaster drill, with community volunteers, Kobe fire department, University of Hyogo and Disaster Reduction and Human Renovation Institution. People took part in different types of activities.

- Earthquake occurred during daily life, after early warning people must organize self defense activities
- Shaking table

- First aid

- How to use AED

- How use fire extinguisher.

- Exhibition of equipments by Firefighters and case, how to help person in time of any disaster from the top of the building.

PROJECTS OF UNIVERSITY OF HYOGO

Community development for disaster resilience

Town walk→Understand geography and dangerous location

Survival camp→To acquire skills in the emergency

Community event→Strengthen community ties, enlightenment of knowledge of disaster reduction

Drill of management of shelter

Japan Meteorological Agency

As part of Japan's government, the Japan Meteorological Agency (JMA) implements its services with the following ultimate goals in compliance with the Act for Establishment of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the Meteorological Service Act:

- Prevention and mitigation of natural disasters
- Safety of transportation
- Development and prosperity of industry
- Improvement of public welfare

To meet these goals, JMA focuses its efforts on monitoring the earth's environment and forecasting natural phenomena related to the atmosphere, the oceans and the earth, as well as on conducting research and technical development in related fields.

JMA accepts different visitors for example teachers, students etc. and organize lectures, observatory visits. The agency has a lot of brochures, guidance videos and animations in case of Disaster Mitigation Education.

Kids Welcome to the Corner "e- meteorological observatory"!

Stand tall I Land

"Meteorological Research quality" to introduce the weather and weather do is the Doctor, there is your answer to the "?" "Swelling do library".
Also some games and gifts corner!

Tell me stand tall I (animation)

Shun-kun, who went to camp without looking at the weather forecast. When playing in the river ....

Swollen do is, will introduce in the anime that work and the weather of the Japan Meteorological Agency.
Click on the left of the picture, animation begins by selecting the "open"!

Towards the adult:
page that introduces the "teaching stand tall are you" is here is.
If a video does not play well, please refer to the link destination of the description.

Pamphlet

This brochure introduce the work of the Japan Meteorological Agency. I click on the left of the picture!

Source http://www.jma.go.jp/jma/indexe.html

,,Plus arts,, Organization

Basic Principles of +arts and disaster tools
"Iza! Kaeru Caravan!"

Existing various fields in society (Education, welfare, environment, disaster, and crime-prevention ・・・)
To solve the problem of social issue
+arts is not an old-fashioned form of arts. It is a new concept, including modern arts variety of descriptions and design and architecture.
"Iza! Kaeru Caravan!" is a disaster prevention education event that combines a local disaster drill program and "Kaekko Bazaar," a toy exchange bazaar, created by artist Hiroshi Fuji. In this event, children learn about disaster prevention as a continuation of play. Started in 2005, this event has been held nationwide in cooperation with various enterprises and organizations.

They offer many disaster drill programs that are helpful for emergency situations!

These disaster drill programs, developed and improved by listening to the victims of the Great Hanshin-Awaji Earthquake in 1995 and those of the Great East Japan Earthquake in 2011, provide not only fun activities but also practical activities that are helpful at times of earthquake disasters.

- **Target shooting game with water extinguisher**

Have an extinguisher ready

"Fire will spread and cannot be extinguished except at an early stage.

Have an extinguisher in each household, and remember how to use it."

Cooperation with Fire fighting Service

- **Experience of passing through the smoke caused by a fire**


- **Jack-up game**


- **Blanket stretcher time-trial**

Carry anything all over the place.

“Carry anything all over the place with a blanket, tatami-mat (at home), or a door.”


It is important to highlight that for each location a doll with an appearance typical to the given locality is used which makes the game-training process more attractive and lovable, since children have feelings of familiarity-amity towards the doll.

Thus, the game is adapted to the locality thanks to which the interest towards the process increases. This means that the age-related and psychological characteristics of children have been taken into account in the game and this way it is accessible for a child's perception. The child helps her doll which is reinforced in her demeanor if the game is repetitive in its nature. Correspondingly, the child has a subconscious behavioral model for responding to such a situation.

Localized examples of disaster-prevention programs

Various places in Japan and Guatemala

Examples of making dolls for use in blanket-stretcher time trial or jack-up game, by those good at handicrafts in the area, or making a doll in the local character.

Paper tray making, Disaster chair-box

- **Workshop to prevent furniture falling over**

- **Challenge bucket relay!**

All visitors participated in the program

- **Quiz – Which items to take?**

➢ **Puppet play "Otama Play"**

➢ **Disaster-prevention picture story show**

➢ **Original disaster-prevention card game (3 types)**

Positive effects brought by "IZA! KAERU CARAVAN!"

- Since "fun" makes children participate actively, and makes them want to participate repeatedly, the learning effect is extremely high.
- "Fun" energizes program-operating staff (volunteers and those involved in disaster prevention), and with a sense of accomplishment, activities are likely to continue.It is truly a "festival for disaster prevention."
- Since the program itself is "incomplete," it is easily customized, easy to edit to the style that fits the area, and easy to take root.
- The existence of a character (frog) is also very effective in terms of "fun," "continuity," and "customization."

Red Bear Survival Camp

It is a survival experience program for parents and children. The participants have fun while learning what to do during a disaster and acquire the skills and strength required to survive whatever situation they may face.

Camp Programs

1st Day

Hearing stories of disaster experiences

Survival Workshop

Fire-making

Making a water purifier from plastic bottles

Making lanterns from empty cans

Rope work

Cooking rice in pots

Making paper dishes

2nd Day

Red Bear Orienteering

- Go to check points following a map
- Review skills learned on the first day at the check points
- Receive a badge for you succeeding in the game

- Fire-making
- Rope work
- Paper dishes

Survival Cooking

- Fried rice

Mix egg with rice ball from a convenience store in a plastic bag and fry. Ideas for rationed foods.

- Salad with dried food

Soak dried food with water in a plastic bag and then flavor. Learn how to save water.

Badges

Children have fun collecting badges.

Development of Attractive Educational Tools

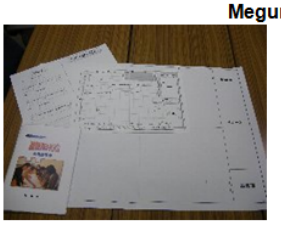
◆ Develop Educational Tools of High Quality

Vibration Experiment Education Tool: Bururu

Leaning Actions in a Disaster for Kids: “Bosai Duck”

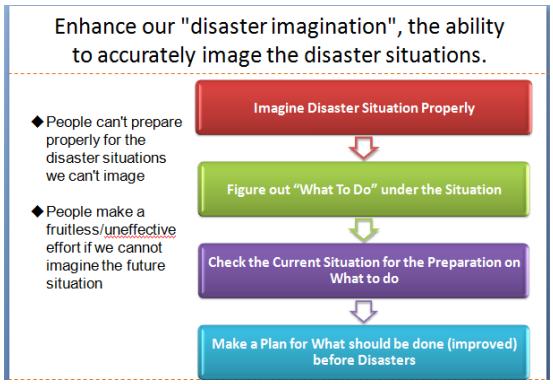
Disaster Situation Imagination: Meguro-maki

Risk Communication Learning Tool: CrossRoad



Evacuation Shelter Management Game: “HUG”

Disaster Imagination Training Tool "Meguro-maki"

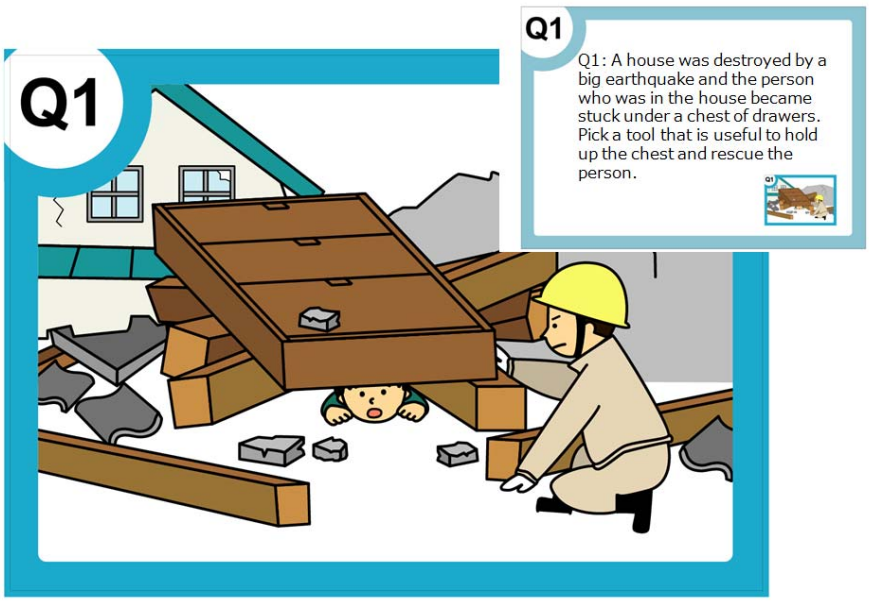


Risk Communication Learning Tool

"Cross Road"

Purpose of the "Crossroad"

- "Crossroad" aims at making participants consider the disaster response as their own issues and sharing their own views and opinions in case of emergency easily with other participants.
- In real situation for disaster response, people are forced to stand at a critical juncture to take important decision. Usually there is no single right answer for the decision because of the different circumstances with uncertain factors. "Crossroad" game will provide opportunity to think about such situation and share opinions of others from different point of view.



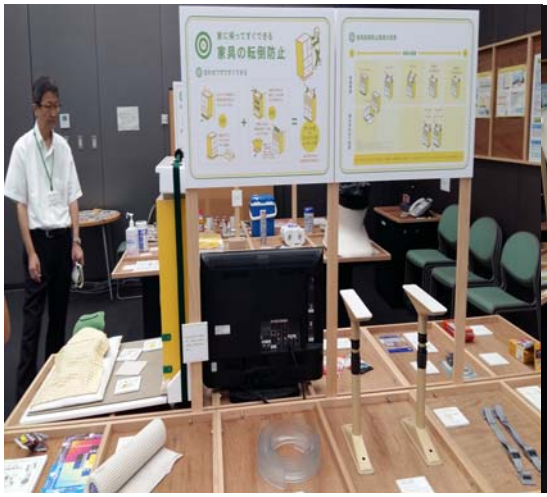
Question sheet (*picture card type)

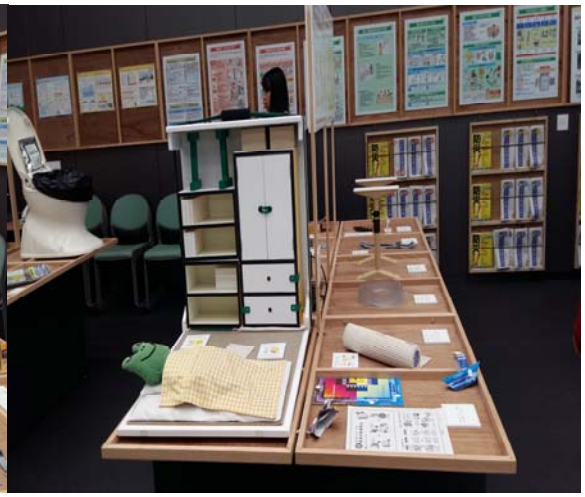
Disaster shelter workshop

,,Use personal belongings to make a shelter in which you can spend 3 days

Hyogo Prefecture Crisis Management Center

Hyogo Prefecture's Crisis Management Center has a special room where visitors can find different type of disaster education tools and materials. Guide introduces the main disasters and educational tools.





National Research Institute for Earth Science and Disaster Resilience

The goal of the National Research Institute for Earth Science and Disaster Resilience **(NIED)** is the "maximization of research and development results" for improving disaster resilience.

The mission of NIED is "to conduct comprehensive fundamental basic study and fundamental research and development in order to increase the level of science and technology for disaster risk reduction" as stipulated in the "National Research Institute for Earth Science and Disaster Resilience Law."

Based on disaster Risk Reduction and Human Resource Development objectives NIED create Experimental Facilities which is:

Experimental Facilities

Large-scale Earthquake Simulator

The 2nd largest scale in the world was established in 1970. This facility enables large-scale earthquake-proof experiment.

Shaking test of reinforced concrete building

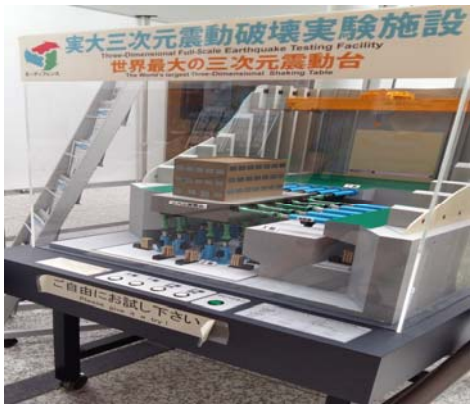
Shaking test of five-storied pagoda

Large-scale Rainfall Simulator

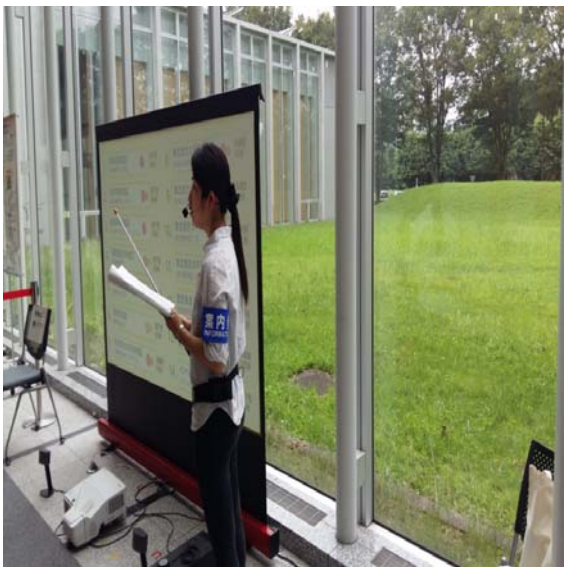
This facility has the world's largest rainfall area and sprinkling capacity, and can produce rainfall intensities between 15 and 300 mm/hr. The facility is used to conduct research into landslides, debris flow, soil erosion, urban flooding, etc.

Rainfall Testing Facility, where you can get experience of heavy rain with such intensity and speed which is specific for Japan.

Earthquake tasting facility Shaking Table



During a year a lot of people of different age groups visit to NIED and they can have some experience of any disaster, for example they can feel different types of earthquakes. The main goal of this experience is to recognize different type of earthquakes and understand your psycho-physical condition during and after the experiment, it is very interesting way to understand this natural phenomenon. Because when person has an experience it can help to have correct behavior in case of earthquake will happen in future.



Kyoto University Open Lab

Kyoto University has different type of lab, and during of open lab event children and adults can recognize and learn scientific development of Kyoto University. Especially Disaster Prevention Research Institute's open lab is one of the interesting types of Disaster Education, where you can have experience of different type of disasters and understand phenomena and prevention

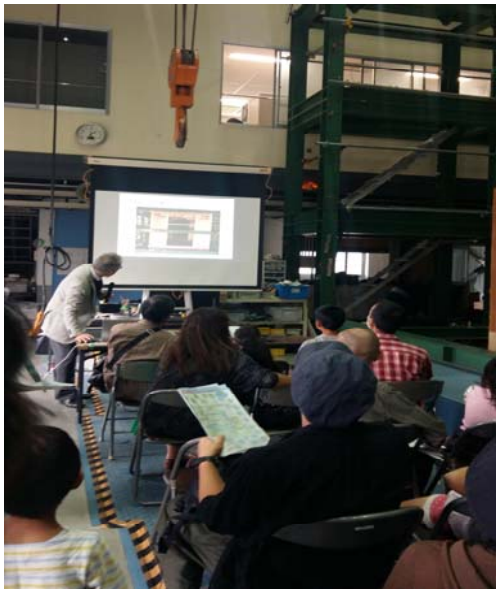
mechanism in experimental facilities.

For example flood manipulating lab, where visitors can participate wearing necessary clothes and walking throw ,,flood,,. Heavy rain manipulating lab, Earthquake prevention lab etc. Visitors can see disaster prevention and explanation labs.

For example, sediment disaster prevention lab, where you can see cause of sediment and debris flow and mechanism of prevention made by University students.

Earthquake prevention lab, where children can make faults with different colours of sand.

Earthquake experimental facility, where the lecturer made presentation about last Earthquakes for different age groups visitors and then he talked about importance of fixing of furniture and TV in house and showed the importance of his words in experiment with shaking table.




In some rooms students organized Disaster Education Games, where children and parents took part with big interests.


You can have experience of intensive wind in one of experimental facility of Kyoto University, with different age groups children and parents.


The most interesting you can see that in every lab there were many children who looking all

this with great interests and asking many questions.

These kinds of activities are interesting and attractive type of education, because you can learn and have fun in the same time.

After every visit to any lab you can get stamp, and after collecting some quantity of stamps you can receive any gift which can make the process more attractive, especially for children. It means that via this approach organizers took into account differences of age and psychological features of children and it hugely increases the motivation of children and the effectiveness of process.

Disaster Reduction and Human Renovation Institution

The Great Hanshin Awaji Earthquake Memorial Hall holds evidence of the experiences and lessons learned from the Great Hanshin Awaji Earthquake, and contribute to decreasing the damage caused by disasters. It is a facility that is designed to teach about the dignity of life and the delight of sharing our lives together. There are approximately 150 registered volunteers who work at the facility. Storytellers convey the memories of the earthquake to visitors.

Approximately 500,000 people visit this facility annually. 60% of them are from schools, and 40% of them are from overseas. This concept is expanding overseas, and museums similar to this facility have been constructed in Indonesia and Turkey.

The following is a list of exhibits at this museum. Detailed information with photos is available online (http://www.dri.ne.jp/english/kanran/index.html).

1. Theater
2. Streets immediately after the Quake
3. The Great Earthquake Hall
4. Memories Corner
5. Five dioramas, showing the road to recovery from the earthquake
6. Recital Corner
7. Station, providing the latest information of natural disasters
8. Workshop of disaster prevention and disaster mitigation
9. Gallery of disaster prevention for the future

Schoolchildren are getting some instruction before going to the Great Hanshin-Awaji Memorial Museum at the front of Museums Building.

The Great Hanshin-Awaji Earthquake Memorial Museum Website: http://www.dri.ne.jp/en

Inamura-no-Hi no Yakata Tsunami Educational Center

Inamura-no-Hi no Yakata Tsunami Educational Center is the one of the Disaster Education Centers in Japan, which is using interesting type of education for population. In Disaster Simulation Room Visitors can learn three pieces of wisdom, namely, “emergency action,” “recovery” and “prevention,” for use in protecting lives from a tsunami disaster in case of emergency. Visitors of different age group can acquire important knowledge on disaster preparation while enjoying some activity (witty poems) on disaster prevention, explanatory graphics, simulation videos and the game itself. Visitors can see there Hamaguchi Goryo Archives and learned lessons from the past.

A great tsunami caused by the Nankai earthquake hit Hiromura village on November 5, 1854. Goryou saved the villagers by setting “the fire of rice sheaves” and also accomplished a far-sighted disaster prevention project in Hiromura village by building a large embankment. Goryo then came up with the plan to build a sea wall to protect the village. It is more than 600m. long, 20m wide and 5m tall. Goryo led Hiromuras recovery from disaster by spending his own money to hire villagers for the construction. Since that time, the seawall has minimized damage to the town tsunamis. So the story of Goryo’s actions has spread around the world as a lesson for tsunami preparedness. In 2015 the UN designated November 5th as Tsunami Awareness Day based on the power of Goryo’s story. The museum based on this story.

You can find stimulation room, which has a corner for visitors to learn about disaster prevention like the form of game in which you get ranked as emergency action – recovery-prevention in the decreasing order. Try challenging the game to become an INAMURA Ranger. After the game you can receive a certificate at the judging corner. It is effective type to inform children about Wakayama Prefecture's Tsunami history and to integrate them in disaster Education process.

There is 3D Tsunami Video Theater, where visitors can experience the danger and power of an earthquake-tsunami. **They can watch the film about how to evacuate and protect yourself. And especially children can understand that they must evacuate by themselves and they must not wait their parents at home if they hear tsunami warning.**

The Tsunami Simulation is an interesting way to learn about the propagation mechanism of tsunamis with the 16m long tank used for tsunami experiments.

Tsunami Library which is a corner for studying earthquake-tsunamis. Visitors can enjoy learning about evacuation from a tsunami with the tsunami evacuation simulation and 3D hazard map. So visitors can learn how to protect lives and livelihoods from any future tsunami disasters on the basis of Hamaguchi Goryou's spirit of disaster prevention and the respect for human life shown in "the fire of rice sheaves."

Kobe University's Library ,,Earthquake Disaster Materials Collection,,

"The earthquake disaster material collection" is an institution through which the Kobe University Library independently collects materials related to the Great Hanshin-Awaji Earthquake and shows to them the public.

Establishment

In April 1995, Kobe University Library decided to keep collecting and maintaining materials related with this disaster, because it would be the mission of the university library placed on the center of devastated region. They have implemented

public release of these materials as "Earthquake Disaster Materials Collection(EDMC) in Kobe University Library" since Oct. 30, 1995.

Materials

They collect not only general books and magazines but also leaflets, posters, handouts, brochures, publications, photographs, and audiovisual data. They provide widely these materials for everyone in the world including the area devastated to utilize them for emergency restoration, earthquake research, or disaster-prevention measures.

They store about 50,000 materials now, and the number is increasing.

Digital Gallery

The Earthquake Disaster Material Collection is moving ahead on digitalizing not only information of catalogs but also its contents themselves in order to be useful for those who can not visit the Kobe University Library. People can search Great Hanshin-Awaji Earthquake Disaster Materials Collection (Photographs) from Google Map.

So this is one of ways of Disaster Education, because everyone can find different type of information about Great Hanshin-Awaji Earthquake. It is big heritage for new generation and for everyone they can understand the reason of disaster and learned lesson from last mistakes.

Activity of Asian Disaster Reduction Center (ADRC)

The Asian Disaster Reduction Center was established in Kobe, Hyogo prefecture, in 1998, with mission to enhance disaster resilience of the member countries, to build safe communities, and to create a society where sustainable development is possible. The Center works to build disaster resilient communities and to establish networks among countries through many programs including personnel exchanges in this field. Main activities of ADRC:

Information Sharing on Disaster Reduction

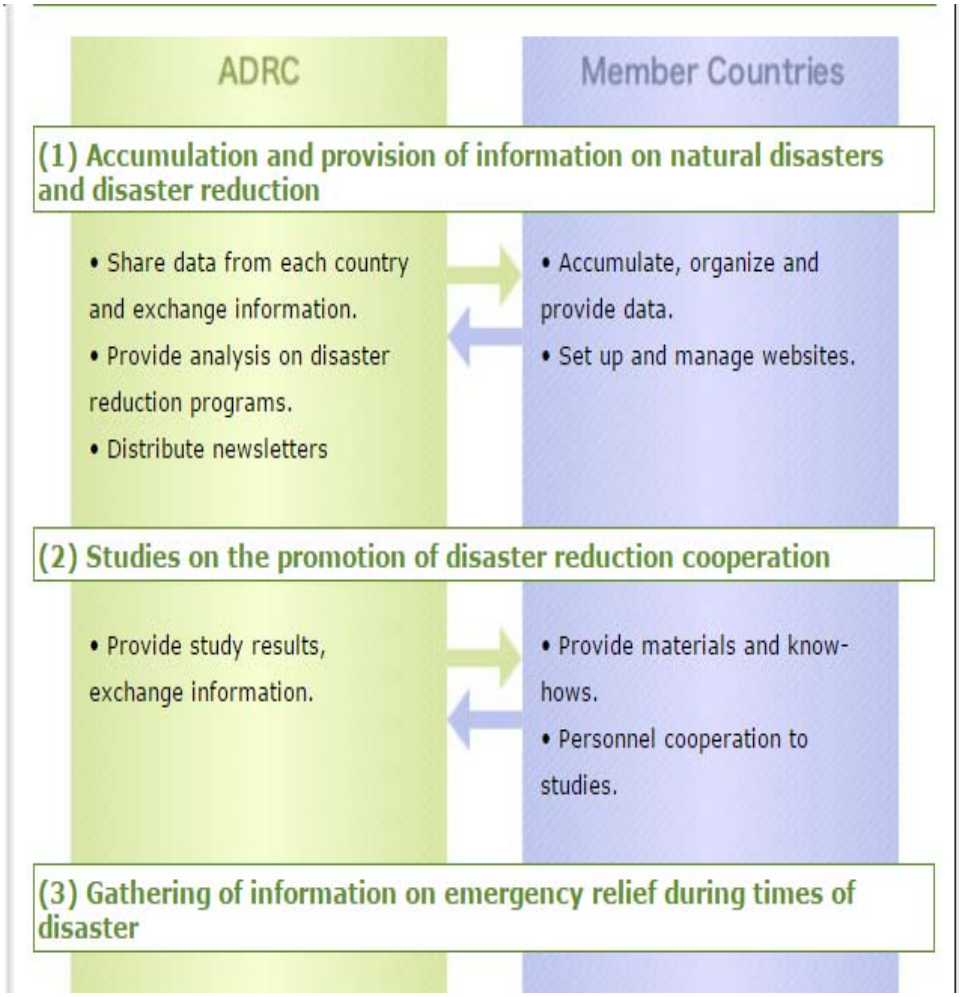
Learning from Disasters and Benefiting from Information

a. Provision of information on the latest disasters, disaster preparedness of member countries, and good practices
b. Promotion of GLIDE (Global unique disaster ID)
c. Disaster management support system (Sentinel Asia Project)
d. Organization of international conferences

Human Resources Development

Disaster Risk Reduction begins with Capacity Building

1. Organizing conference, workshops and trainings on disaster risk reduction.
2. Program for inviting visiting researchers from member countries.



Building Communities Capabilities

Community Participation is a Key to Effective Disaster Reduction

1. Development and dissemination of tools for encouraging community participation
2. Support for the activities of Asian Disaster Reduction and Response Network (ADRRN)

Steps after Sendai for a more resilient Asian region

- ✓ Raising awareness -- World Tsunami Day --
- ✓ Community-based DM in ageing and urbanizing Asia through people-centered disaster risk reduction
- ✓ Better use of satellite imagery, better bridging scientific and locally based knowledge

Community Based Hazard Mapping

ADRC developed the tool for capacity building at community level

Hazard mapping is one of ways of Disaster Mitigation Education because you must Identify high risk areas, evacuation routes/ centers, you must get information about Past disaster experiences and get information about Disaster Equipments in that area.

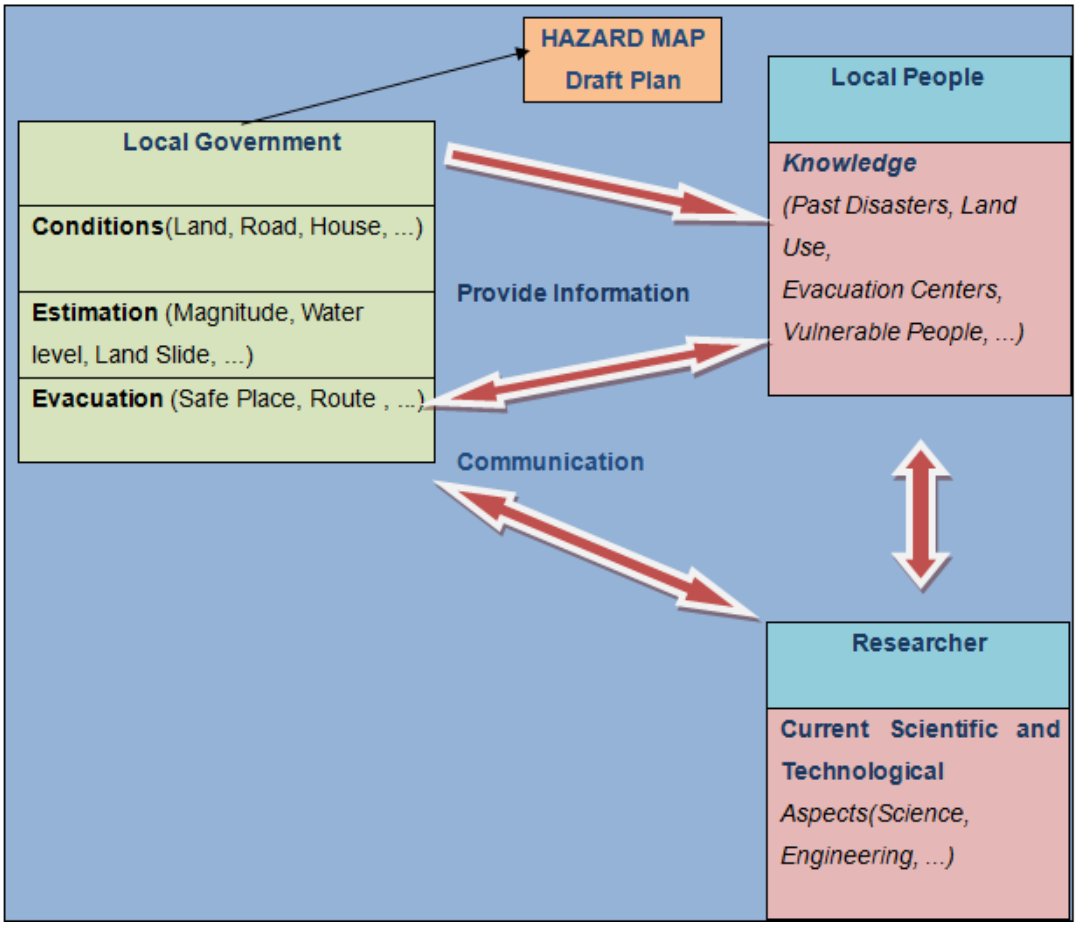
So Hazard map can help in case of evacuation and person can understand, where he must evacuate, by which way and what kind of high risk areas has that area.

- ✓ **Hazard map** covering multi hazards with the involvement of community/ residents, officials and experts
- ✓ **Town Watching** is conducted in order to develop Community-based Multi Hazard Map
- ✓ **Town Watching** method is widely used in urban planning and environment fields but it was first applied systematically to disaster risk management in the late 1990s by Former ADRC ED Mr. Yujiro Ogawa

Objectives

- ✓ To involve local residents in developing hazard maps for their community
- ✓ To reflect the opinions of local residents in local policy making
- ✓ To promote common understanding of risks among local residents, governments and experts

Concept



Necessary Steps for Hazard Mapping

Step 1

Basic Knowledge on DRR

Get necessary information on DRR

Basic knowledge on disasters, disaster management, hazard assessment etc.

Step 2

Preparation

Before Town watching

Divide into groups. Each member is to play a role;

Group leader

Navigator

Photographer

Note-taker (findings, map, routes, photo-taken spots…)

Presenter(s) of presentation

Tools: camera, notepad, pens and map

Step 3

Field Survey

Town watching by group

Each group freely walks around the streets in the area

- **Survey and photograph BOTH positive & negative features in DRM**

MULTI hazards such as Flood, Landslide, Storm, Drought, Earthquake, Tsunami, Wild Fire, Animal Attack, Epidemic, Fire etc.

Structural and non structural viewpoints Seasonal disaster characteristics

- Identify high risk areas, evacuation routes/centers
- If possible, interview residents

Past disaster experiences

Efforts of individuals and community

Indigenous, local knowledge about disasters

These findings/ results should be photographed and recorded on notepad

Step 4

- **Mapping**

Make a community-based hazard map by integrating findings during town watching

Make a map of the site

Mark findings on the map

Digitalizing community Safety map

Routes where the group walked around, Evacuation routes, Shelters etc, Traffic, Hospital, Schools, Disaster Point.

Step 5

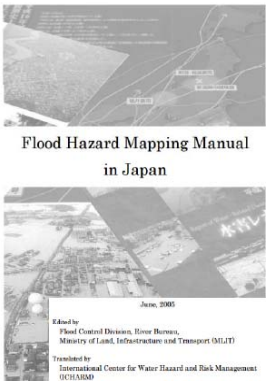
Use photos, images

- **Analysis**

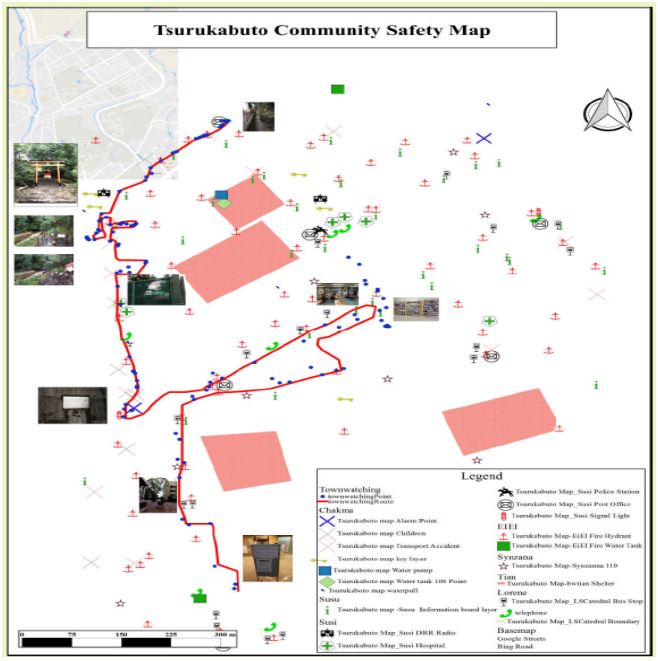
Summarize the results based on the findings of town watching

Make a table of analysis which includes problems, and respective solutions/countermeasures responsible sectors, organizations (national/ local government, community, resident

Etc.) required time & season, cost **or municipalities HM Development Manual.**

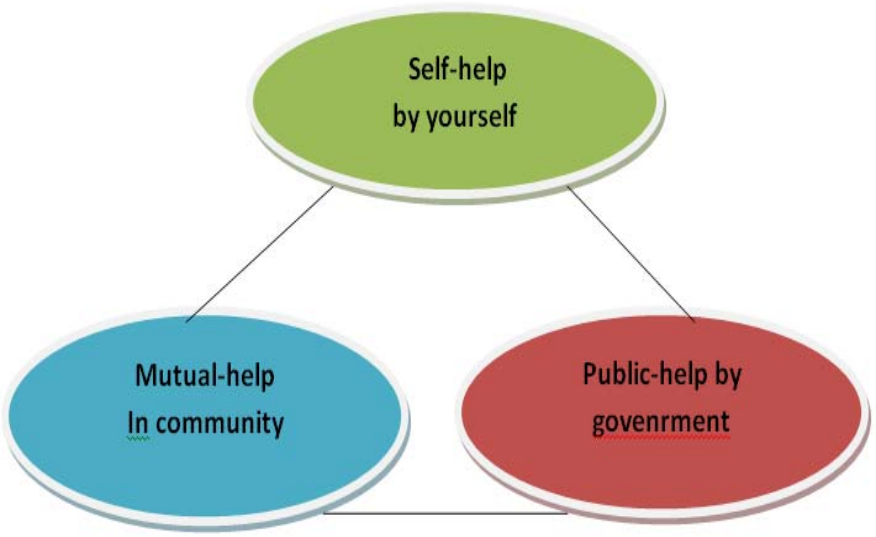


Based on this concept ADRS VR 2016 had a GIS training and made Safety Map for Tsurukabuto area which is the one model of ADRC Human Resource development activities.



Conclusion

The main principle of Community-Based Disaster Risk Reduction and Management in Japan is.



Because

- ✓ Community members are the first responder of disasters. Initial response at the first stage sometimes determines results of disasters. -> Need proper knowledge on risks and actions to be taken in case of disasters
- ✓ Mutual help can make big differences in the result of disasters -> Need to make pre-coordination among community members and with other stakeholders
- ✓ Local knowledge is indispensable for the effective disaster risk management including policy planning
- ✓ Initiatives of community people have an impact on prompt recovery from damages and making community resilient to future disasters

Disaster Mitigation Education at School

Each Prefectures school's Disaster Education based on own Prefectures and Cities Board of Education. For example Disaster Education of Kobe City based on Board of Education of Kobe City and Board of Education of Hyogo Prefecture. And this mechanism is actual for each Prefecture in Japan.

Thus, the choice of tools and methods for conducting disaster education depends on the decision of the school and the teacher. Besides the lectures on specific disasters organized by a school, it also issues an invitation and the experts and volunteers of a given entity organize a visit to that school with an aim of conducting disaster education. For example Fuchu Chuou Elementary School organized Disaster Education Activity with volunteers from Hiroshima Prefecture Sabo Division. The volunteers are retired officials who visiting different schools in

Hiroshima Prefecture after school request.

Methodology and tools in case of disaster education

- Lectures by school teachers
- Lectures by officers and experts
- Books, guidance, pamphlets, handbooks...
- Games
- Audio and video materials
- Visits to relevant facilities
- Drills
- Disaster activities
- Others

Stakeholders in case of disaster education: School teachers, Communities, Municipalities, Prefectures, Ministries for example MEXT, Agencies, NGOs, Private companies

Disaster activities by Community (example of Hyogo Prefecture, Kobe city)

Drills: Bokomi Drill, Nada Ward Drill, National, Prefectural or Municipal Comprehensive Disaster Drill, with school cooperation.

Disaster activities by Prefecture and by Municipalities: Prefectural and Municipal DM offices, DRR learning centers, facilities Camp (Saijo city, Ehime Prefecture), Lecture by officials.

Disaster activities by Ministries: MLIT- Lecture by MLIT Regional development bureaus, Officials at school and on site, nationwide. Town watching and hazard map.

Lectures and Visit

Emergency organizations: Fire station, Police station.

Lifeline facilities: Water, gas, power station, dam, sabo facilities.

Research Institutes: NIED, JMA, Schools (Maiko High School, Nagisa Elementary School) Universities…

Museums, Exhibitions: Based on of affected areas (Great Hanshin Awaji Memorial Museum, Inamura-no-Hi no Yakata Tsunami Educational Center and Museum).

The main ideology is based on recognition of the natural phenomenon and on organizing of quick and relevant actions during a possible disaster.

The models of training inside and outside a classroom are topical. This implies not only in-classroom lectures, which are conducted by the teacher or the expert invited by the teacher, but also periodical visits to disaster training museums, libraries, learning centers, as well as active participation in disaster exercises. Examples of the above-listed entities are: Inamura-no-Hi no Yakata Tsunami Educational Center, Abeno Disaster Prevention Center, Disaster Reduction and Human Renovation Institution, National Research Institute for Earth Science and Disaster Resilience, Kobe Universiti's Library ,,Earthquake Disaster Materials Collection,, Kyoto Universities research facilities, etc.

Critical role is given to recognition of the experience of the past and to the issue of avoiding

the failures of the past, for implementation of which efficient means are considered to be meetings with adults with experience of surviving disasters, and visits to museums and libraries of disasters. Numerous manuals, guides, booklets and banners exist, which are prepared by private and non-private organizations of different provinces. Thus the decision on selection from the existing diverse list depends on the given school and the teacher.

Many of the manuals suggest complete models for education on disasters and include:

1. Training on natural phenomena typical to the specific area,
2. Recognition of the risky zones of the specific area.
3. Recognition of the secondary effects of a respective natural phenomenon.

For example, tsunami, fire, landslide can be sequences of an earthquake. The next step is the training on the competent and right behavioral counteraction model for a natural phenomenon and its secondary effects.

The history of the Japanese disasters showed that besides following the concretely defined behavioral models the development of ability of getting oriented in a given situation and making a decision based on already possessed knowledge.

小中学生が一緒に避難している様子
(H23.3.11津波襲来前に撮影)
http://dsel.ce.gunma-u.ac.jp/research/cont-302-4.html

Major attention is paid to the assimilation of each other's support model, which implies taking of social responsibility and helping not only himself, but also, in case of possibility, other people who need it - especially the elderly people and people with disabilities.

Special significance is given to mental care for both teachers and pupils. For example, in Kobe the cooperation-consultation with Hyogo Institute for Traumatic Stress (HITS) is applied. The teachers can consult with members of the EARTH organization.

The speech-lectures by population or professionals who have had an experience of a disaster are topical.

Town Watching and Hazard or Safety mapping with students and community members is considered to be a major activity.

The Hazard map or Safety map is created due to the cooperation with Local Government and Community, which is used in Disaster Education. On example of Fuchu Chuou Elementary School Disaster Education Activity, Volunteers from Hiroshima Prefecture Sabo Division explained steps how to work with hazard maps, and told children to follow 3 main steps: House, High risk area and Evacuation way. So children had to mention on hazard map their home, high risk area, evacuation shelter, and way which they must use for evacuation. Students worked with hazard maps doing evacuation plans and management during disasters.

Volunteerism and Disaster Mitigation Education

The Disaster Countermeasures Basic Act, the most fundamental law of disaster measures in Japan, regulates that the municipalities must make efforts to fulfill the "Disaster-management organization based on the spirit of citizen's neighborhood cooperation" (Section 2 of Article 5: Responsibilities of Local Governments). In Japan, the term, "voluntary disaster management organization," was used for the first time in an official document in 1961. Since then, this term has gained recognition every time the country has been challenged by disasters, and its importance gained dramatic recognition at the time of the Great Hanshin-Awaji earthquake.

Kobe developed BOKOMI (Disaster preparedness and welfare community). BOKOMI concept was formalized in 1997. BOKOMI has active and fundamental role for implementing Disaster activities.

Disaster-prevention and risk reduction activities by BOKOMI are as follow:

- Disaster drills and training
- DRR education program with schools
- BOKOMI junior team (fostering children's teams to lead and work on DRR
- activities)
- Public awareness event
- First-aid seminar, checking emergency materials and equipment
- Town watching and preparation of community safety map, risk reduction activities with rescue workers and fire fighters (identifi cation evacuation root, removal of object blocking these roots, fixing furniture etc.)

It is obviously that Disaster Drills is one of the very important tasks for Disaster Education: Examples of Hyogo Prefecture's Disaster drills by Community

- Bokomi Drill
- Nada Ward Drill
- National, Prefectural or Municipal Comprehensive Disaster Drill, with school cooperation.

For Example HAT Kobe Disaster drill organized by Kobe city

Kobe city organized HAT Kobe disaster drill, with community volunteers, Kobe fire department, University of Hyogo and Disaster Reduction and Human Renovation Institution. People took part in different types of activities.

- Earthquake occurred during daily life, after early warning people must organize self defense activities (evacuation)
- Shaking table
- First aid and how to use AED
- How use fire extinguisher
- Exhibition of equipments by Firefighters and case, how to help person in time of any disaster from the top of the building.

Since drill is similar to an event by its nature and requires active participation, the organizers take care of creating a gaming atmosphere and maintaining the fun-education principle, which makes the whole process attractive, and correspondingly, the number of those willing to participate increases. Thus, drills are a more active, practical and effective means for disaster education, since they represent a game and education in the meantime, as a result of which people acquire particular experience. The latter can orient a person's behavior in case of appearing in a similar but real situation, as a person already has practical knowledge or behavioral model for responding to such a situation. This factor in its turn lowers the possibility of getting into panic, which can be disastrous for the given person, as well as for the surrounding people, since actions of a person in panic are irregular and non-organized, can make a negative emotional influence and create obstacles for others' activities as well.

It is important to note that Japan has no marginal divisions for adults' and pupils' disaster education. The following ideology is topical – "transmission of knowledge". Children share the knowledge and skills acquired during school or community activities with their parents, very often parents and adults are also integrated into community based drillings. Open lab exhibitions, which are conducted by research centers and institutions, are open for all age groups, where you can meet from newborn infants to 75+-aged people.

It is worth to note that all the tools that are applied during activities are saturated with colors, are tangible and attractive, which makes the education get-at-able. An opportunity is created to make a visible-tangible insight on the natural disaster based on the examples of experimental layouts. Presentations are filled with animations, which make the perception of the phenomenon more obtainable, thus the psychological characteristics of children's understanding are taken into account in the methodology, which increases the influence of the presented material on a child's perception. This correspondingly escalates the level of effectiveness of education and the level of possibility of memorizing the skill.

Major highlight is made on enjoying the education or on the combination of the training-fun principle. The latter is observed in all the Disaster Activities and Disaster Tools.

An effective educational method is extracurricular training, which is implemented in Disaster Education museums, centers, libraries, research laboratories which exist in Japan.

Disaster museums give a chance to periodically remind the generations of disasters which have already occurred in the given region and to learn on the experience and shortcomings of the past, not repeating them.

Experimental facilities enable to not only see the possible demonstration of the natural phenomenon and the mechanism of its prevention, but also to acquire experience with practical participation. It is known that, based on the psychological peculiarities of perception, practical

education is considered a mean for easy assimilation of the phenomenon and for effective memorizing. Thus, this mechanism of education is one of the most effective ones in the psychological-pedagogical practice.

Three Elements of Disaster-Prevention Education in Hyogo

HEART

Understanding how to live as a human being

- Learning to respect lives
- Learning to embrace human relations
- Learning to actively participate in voluntary activities
- Learning to care for others

KNOWLEDGE

Deepening the understanding of science

- Learning the relationship between natural and social environments and disaster-prevention
- Learning the types of natural disasters and how they occur
- Learning the history of and measures against local disasters
- Learning the future disaster-prevention system

SKILLS

Learning how to be disaster-prevention literate

- Learning how to protect yourself during disaster
- Learning first aid and cardiopulmonary resuscitation measures
- Learning how to prepare for disasters (including how to fix furniture)

Important to mention, that in general, this kind of elements of Disaster education are actual and implement not only in Hyogo and Japan but also abroad. Since in Japan an important ideology for human resource development exists, high level of networking is one of the roads towards its implementation.

Comparative Analysis

Disaster education is a major school subject neither in schools of Japan, nor in those of Armenia. Certain reflections on natural phenomena exist in the textbooks of Earth science subjects of both of the countries. In a different way from Japan, in Armenia the staff of Center of Activity with Population of Survey for Seismic Protection prepares the list of schools of a given year's semester in advance and decide which schools must be educated in the given semester. The selection is implemented with the principle of succession. Afterwards the list of the schools and the proposal on disaster education is sent to the Department of Education of the Ministry of Education and Science of RA, where after the approval of the schedule it is sent to the Directorate of a respective school. Later the staff of the educational department visit the school and organize disaster activities, presentations, social-psychological works, game quizzes, drills, etc.

Disaster education for adultes in Japanese and Armenian models is based on the activities organized by community, however CAP of SSP conducts disaster education also for the top and middle-level officers of town halls, local governments and local municipalities, who must transfer their experience and apply in case of necessity.

One of the differences is that in Armenia EARTH concept doesn't exist, however CAP of SSP implements disaster education and training also for pedagogical staff and personnel.

The tools ensuring education, in particular booklets, banners, books, game-exercises and their contents are in general the same, since in both of the cases the age-related psychological peculiarities, maintenance of the game-education or learn and have fun principle are taken into account for increasing the level of influence.

The department of sociology and psychology of CAP of SSP of RA conducts the Social-psychological training program, which consists of Training stage, Research stage, Stage of an instructional alarm drill, Psychological debriefing, Social-psychological analysis of the group behavior. In the Japanese model of Disaster Management psychological work and research is implemented particularly by National Information Center for Disaster Mental Health, Hyogo Institute for Traumatic Stress (HITS) and by several universities, which have different types of trainings. Some of the tranings are for human resource development, they implement programs for nurses and teachers and educate them how to behave with a person after trauma. In the Armenian model such projects are conducted by psychologists of schools, since each school has its own psychologist.

It is worth to note that the social-psychological work on disaster education is involved in the operations of CAP and in the Psychological Service of MES of RA. The difference from the Japanese model on the social-psychological research is that it is organized after disaster trainings to get feedback and to organize the perceptional-psychological description of the group, where the perceptional-emotional attitude towards a temperament, trepidation and earthquake are observed. Temperament is investigated in order to compose a person's behavioral characteristics, since temperament preordains our behavior (i.e., whether a person will respond to the situation in a slowly, organized manner or more emotionally, whether he will behave in a presumed way or the opposite).

In addition, psychological research program is conducted in order to form the description of anxiety, stress resistance, cognitive-psychological preparedness of population on earthquake. It is important to note that the low level of stress-resistance, as well as the high indicator of trepidation can conduce that a person gets into panic even in case of slight shocks and is not able to use the necessary code of conduct. This is what the goal of this project's implementation is. Based on the received results necessity of psychological work arises. For its implementation we consider the application of such psychological methods and techniques as Relaxation techniques, Cognitive-psychological therapy, Art therapy - therapy of self-expression via art to be effective.

One of the major differences is that in Armenian model the volunteering experience is absent in disaster activities, compared to the Japanese model, where the term, "voluntary disaster management organization," was used for the first time in an official document in 1961. Since then,

this term has gained recognition every time the country has been challenged by disasters, and its importance gained dramatic recognition at the time of the Great Hanshin-Awaji earthquake.

Kobe has developed BOKOMI (Disaster preparedness and welfare community). BOKOMI concept was formalized in 1997. BOKOMI has an active and fundamental role in organization of Disaster activities. Whereas in Armenian model volunteerism finds active expression after the disaster.

Another fundamental difference that exists between Armenian and Japanese disaster activities is the absence of Disaster museums and Experimental facilities in Armenia, which are effective tools for ensuring psychological-perceptional preparedness on disasters.

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