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ASIAN DISASTER REDUCTION CENTER VISITING RESEARCHER 2016A (AUGUST-NOVEMBER 2016)

DISASTER EDUCATION AND HUMAN RESOURCE DEVELOPMENT
防災教育と人材育成

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General information of Republic of Armenia

Head of the State	President
Official language	Armenian
Capital	Yerevan
Administrative and territorial unit	Marz (11 Marzes in all including Yerevan)
National currency	Dram (international currency code - AMD)
Territory	29.74 thousand square km
Neighbouring countries	north- Georgia south- Iran east- 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
Population	3,018,000
Average temperature	in January - -6.8 ° C, in July - +20.8 ° C
Time zone	Greenwich mean time + 4 hours

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)
Capital	Tokyo
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
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
Environment - current issues:	Japan is one of the largest consumers of fish and tropical timber, contributing to the depletion of these resources in Asia and elsewhere
Population:	127,220,000
Geography	strategic location in northeast Asia
Time zone:	Greenwich mean time + 9 hours

DISASTER MANAGEMENT POLICY IN ARMENIA

Natural Hazards in Armenia

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

Spitak Earthquake 1988

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

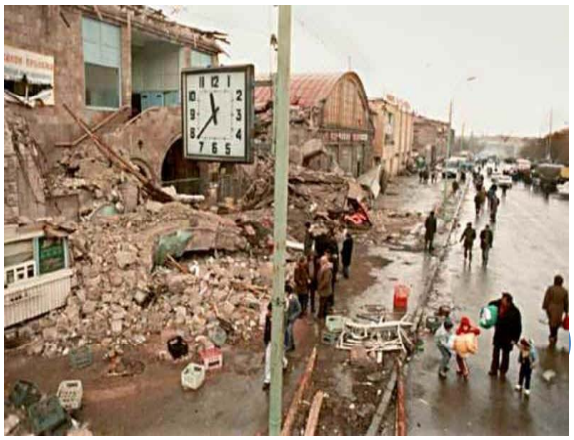
Coordinates of epicenter: latitude 40.92°N, longitude 44.23°E

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)

25 000 victims
250 000 people were injured
12 500 people were hospitalized
514 000 homeless



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

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-meteorology and Monitoring State Service	National Technical Safety Center	Atmospheric Phenomena In Active Service Impact	State of Emergency Crisis Management Academy

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

Armenian SSP was founded in 1991. The main objectives and the aims 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.

LAWS AND REGULATIONS

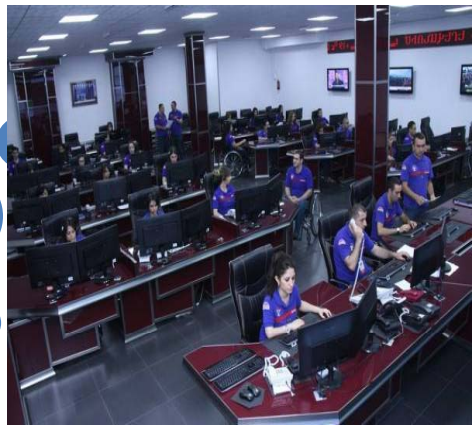
Seismic Protection activities are regulated by a number of laws and legislative acts and national programs of the Republic of Armenia:

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)

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

MES 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 11 regional (marz) level.

Crisis Management Center in Yerevan



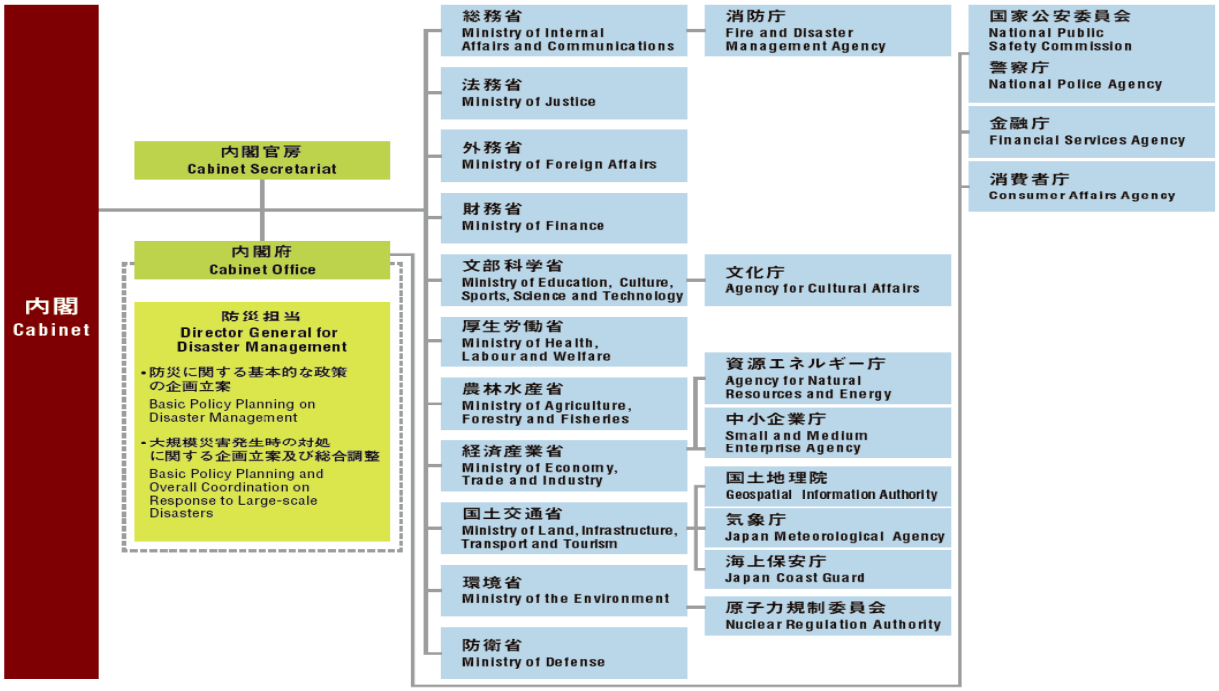
Crisis Management Centers in Marzes

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.

DISASTER MANAGEMENT POLICY IN JAPAN

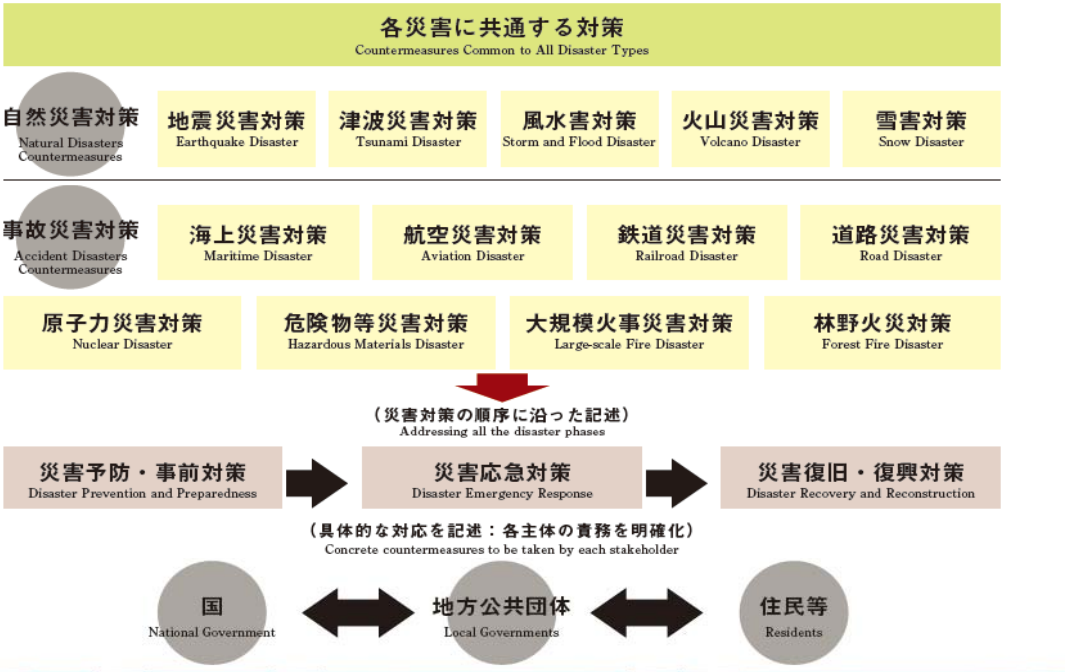
Cabinet Office, which is responsible for securing cooperation and collaboration among related government organizations in wide-ranging issues, the Director-General for Disaster Management is mandated to undertake the planning of basic disaster management policies and response to large-scale disasters, as well as conduct overall coordination.

内閣府及び関係省庁　Cabinet Office and Related Ministries and Agencies



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.

防災基本計画の構成　Structure of Basic Disaster Management Plan



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	2013 Law on Recovery

DISASTER EDUCATION AND HUMAN RESOURCE DEVELOPMENT

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

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.

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.

Ministry of Science and Education together with the Ministry of Emergency Situations in the frame disaster risk reduction program will 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.

For Example

TICKET N 1

When does the natural phenomenon turn into a disaster? Define the disaster.

Of how many types are the seismic waves?

How will you behave, if you are in the lower floors of the building during an earthquake?

THE INSTRUCTIONAL ALARM DRILLS ARE CONDUCTED TO TURN THE ACQUIRED KNOWLEDGE INTO BEHAVIORAL SKILLS.

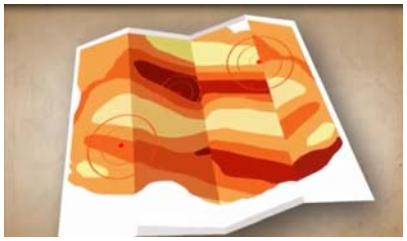
Before making of evacuation the following activities are implemented:

The structural features of the school building are studied. It is found out whether the school has civil defense (CD) and Situations Evacuation plan (ES) , which is agreed with the local body of the 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.

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

What to do before the earthquake?

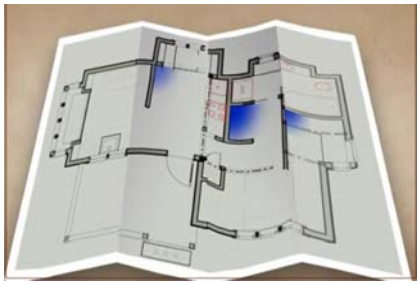
Get a map of seismic risk assessment, where the seismic resistance coefficient of the building of your interest will be noted.



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

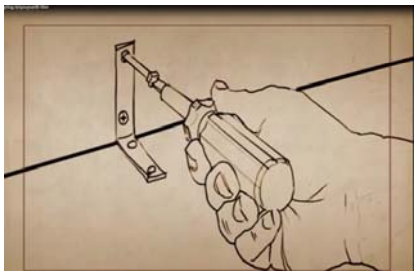
Do not make any constructional interference in your house which will reduce the seismic resistance of the building.

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



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

Fix the furniture.



Make the metal grilles of the windows portable.

Free the exits from capacious items

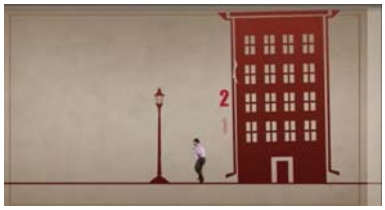
Replace the iron doors with wooden ones.

Do not place sizable items on loosest.

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.

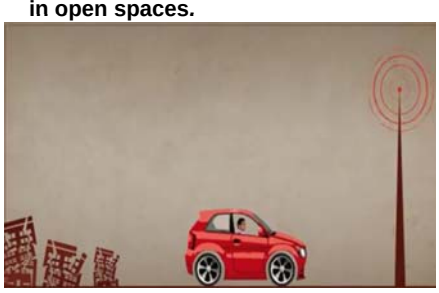
You can find shelter under a table.

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.

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 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.

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

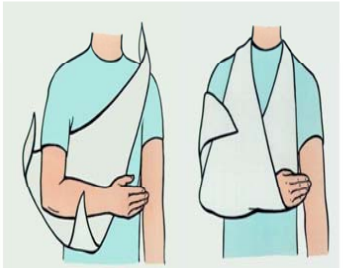
What to do after an earthquake?

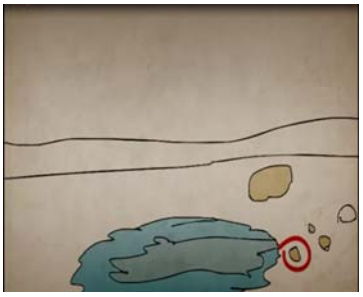
Do not panic, since a panic-stricken person is distinguished with inadequate behavior and is unable to implement thought and focused actions.

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.

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.

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

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.

Trust only the official information.

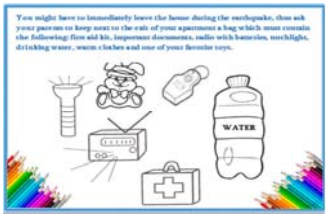
And remember – the one is protected who is informed.

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.

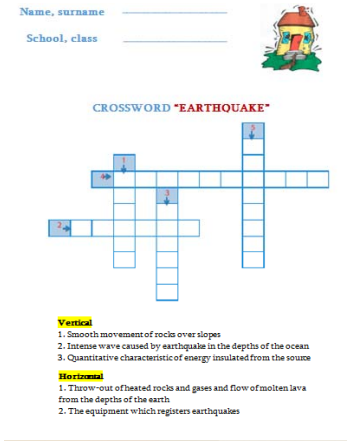
The **"Code of Conduct on Earthquake Protection"** guide is designed for children of preschool and early school age. The aim of the manual is to increase the level of the knowledge of preschool and early school age children in earthquake resistance. The brochure is intended for painting, thus the psychological 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.



"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.

“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.

Educational poster on code of conduct on earthquake protection



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. As the leading specialist of the Department of Sociology and Psychology, social-psychological investigations are implemented, by me 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 CAP of SSP 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.

"What should I and my friends do in case of an earthquake?" social-psychological work is intended for the pupils of the 5th-12th 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.

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

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.

Debriefing is a means of group, urgent psychological help **and is usually held immediately after a stressful event, sometimes several hours or days later. 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:

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

Social-psychological research program intended for 17+ 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+ 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)

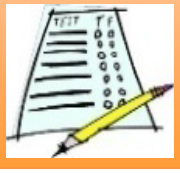
❑Level of trepidation expression (Spilbelger-Khanin, test of trepidation diagnostics)

❑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.

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 RA.

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

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

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

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:

Emergency organizations, Lifeline facilities, Research Institutes, Museums, Exhibitions

Ministry of Education, Culture, Sports, Science and technology (MEXT) has a Disaster Operational Plan (2001) which one is last amended in 2016.

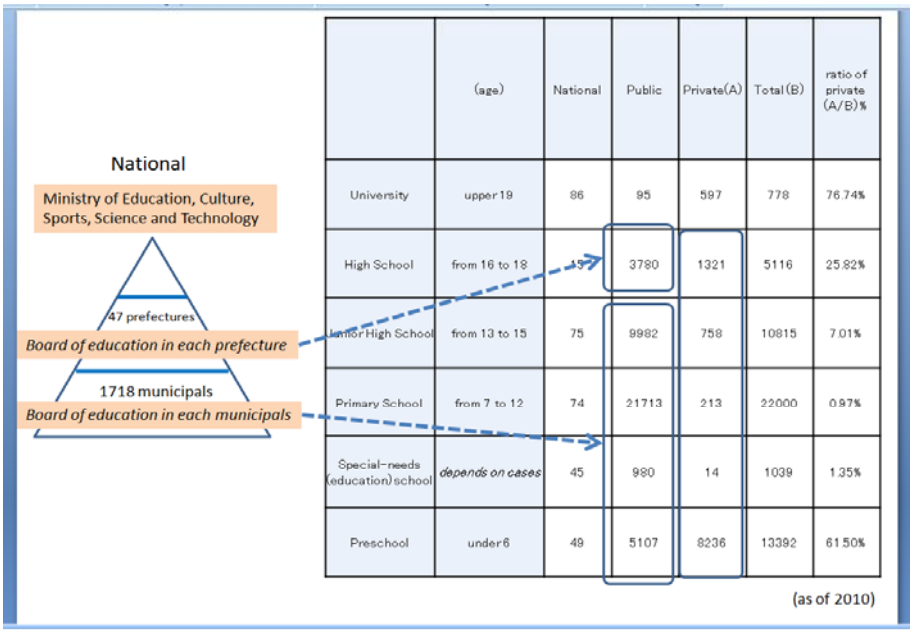
One of the points of plan is Guidance about Disaster Education at School which include advice to relevant organizations about education of safety, spirit of respect for life and volunteerism, and must be improved for securing children's safety and disaster resilience at disaster time.

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.

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	upper 19	86	95	597	778	76.74%
High School	from 16 to 18	15	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	under 6	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.

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.

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**

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.

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.

International cooperation with other disaster prone countries including Armenia

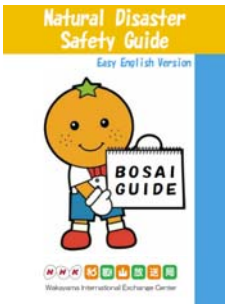
Disaster Education Materials

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

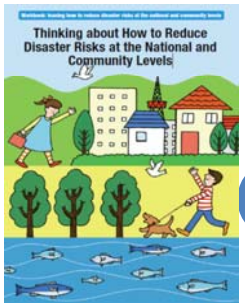
One example for Disaster Education Guide from Wakayama Prefecture



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



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

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.

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. **First, they have a simple program of disaster management education, and then actual evacuation drills, and finally a review meeting held with their teachers**.

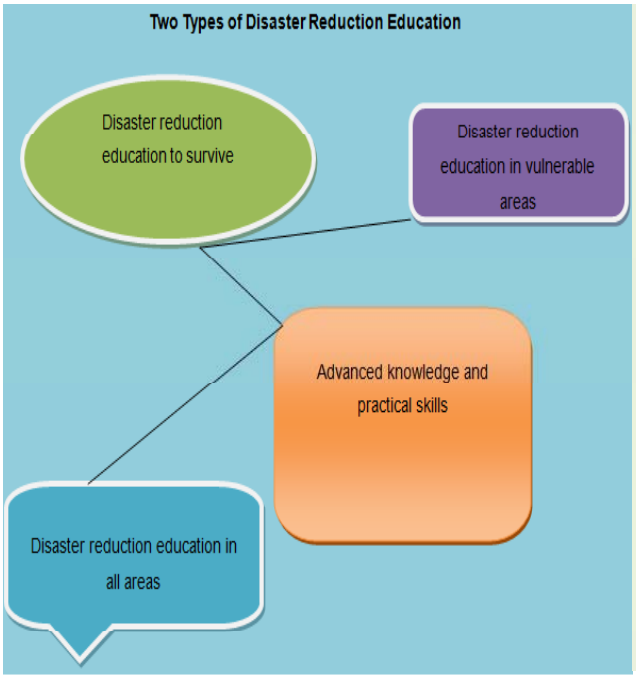
The second activity is an event memorializing the GEJE that occurred on March 11, 2011.
The principal and teacher responsible for disaster management talk to the students about this disaster and they pray for the victims.

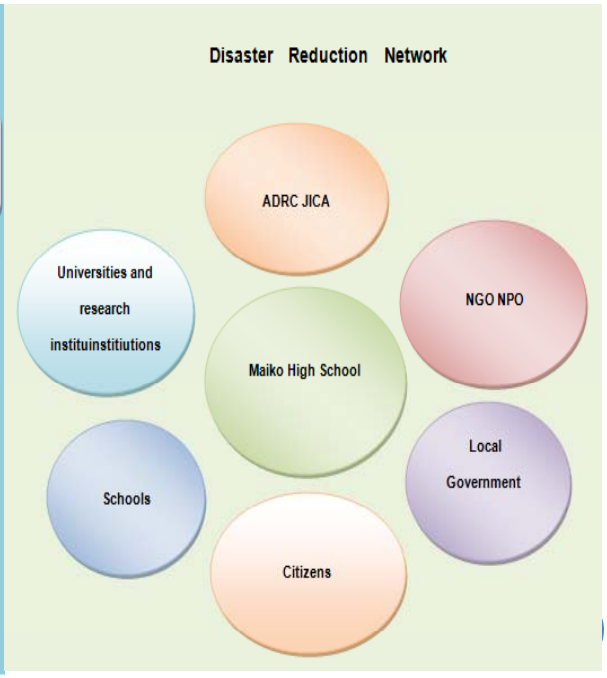
List of Disaster Education Activities

	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.

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

Main steps of Disaster Mitigation Education

Speeches by those who experienced Kobe Earthquake

Learning at Disaster Museums

Making of "Concept Map"

Simulation to Cope with the Disaster

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

Making of "Related Map of the Disaster“

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).

Making of "Safety Map" of the Community

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

Disaster Imagination Game

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.

Disaster Management of Imaginary Town

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.

Making of "Wall Newspaper"

Town Walking in the Disaster Area
Field Work at Mt. Rokko

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.

Ten Ideas to Make Community Safer
Learning with the Different Ages

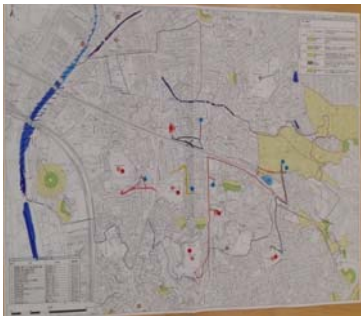
In order to record the experiences of Kobe Earthquake, the high school students talk their experiences to the pupils of an elementary school nearby. They also teach the children what they learned at high school.

Example of School Activity for Disaster Education
Fuchu Chuou Elementary School (Hiroshima Prefecture)

The 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.

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. 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.

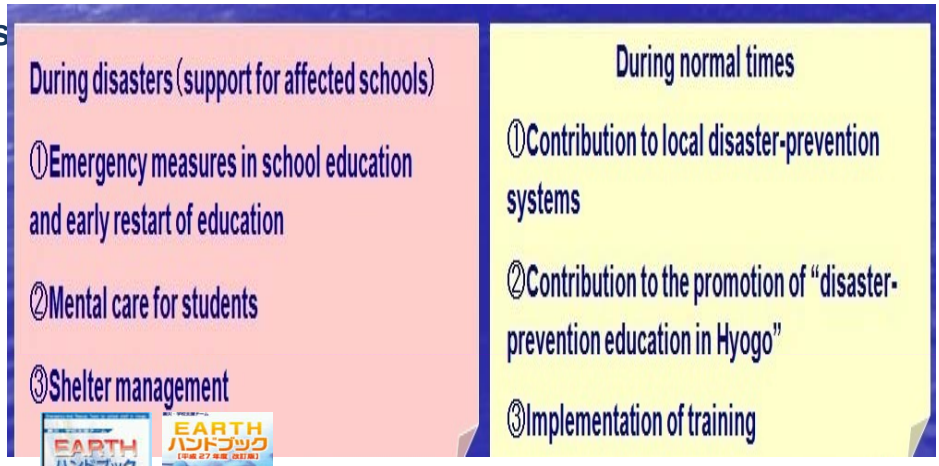


EARTH Concept

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



EARTH 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.

Three principles of disaster education (EARTH)

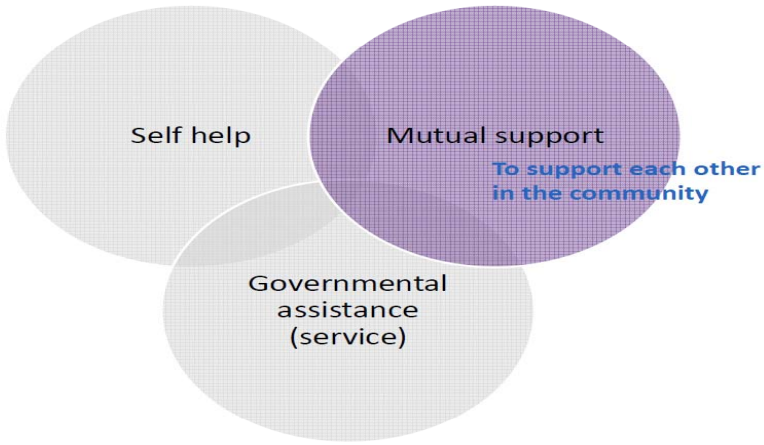
1. Knowledge about mechanism of hazard and disaster.

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.

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

Disaster Education in Communities
Main principle of Community-Based Disaster Risk Reduction and Management



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.

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

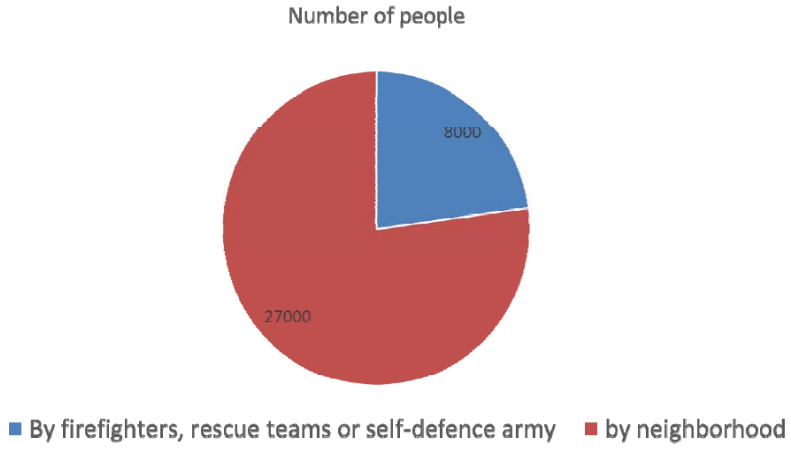
Disaster-prevention and risk reduction activities by BOKOMI are as follow:

- **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.)**

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

Who saved at the occurrence of disaster



About 80% of people were saved by their neighborhoods.

Disaster Reduction Drills and Exercises

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.

It is obviously that Disaster Drills is one of the very important tasks for Disaster Education.

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.

Example

•Earthquake occurred during daily life, after early warning people must organize self defense activities

•Shaking table

How to use AED

First aid

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.

Lectures and Visits:

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, Abeno DRR learning centre of Osaka, DRR Learning Centre of Nara City)

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 ･･･)

“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!

Target shooting game with water extinguisher

Cooperation with Fire fighting Service

•Experience of passing through the smoke caused by a fire

Blanket stretcher time-trial

Carry anything all over the place.

"Carry anything all over the place with a blanket 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.

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.

Attractive Educational Tools

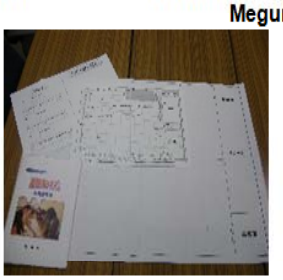
♦ Develop Educational Tools of High Quality

Vibration Experiment Education Tool: Bururu

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

Disaster Situation Imagination: Meguro-maki

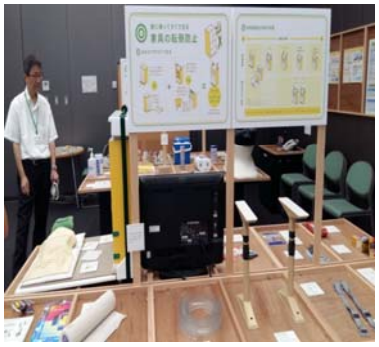
Risk Communication Learning Tool: CrossRoad

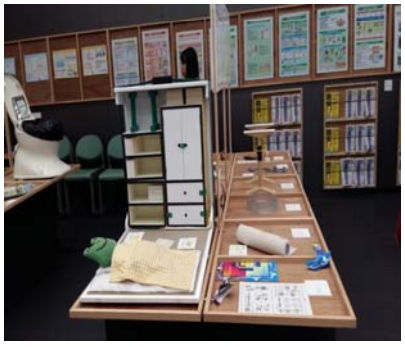


Evacuation Shelter Management Game: “HUG”

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

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, 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.

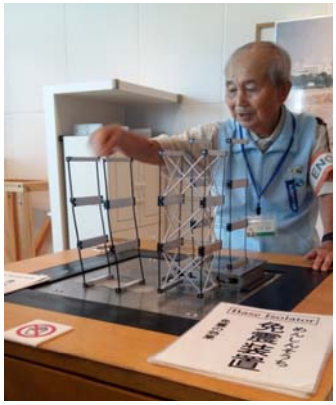
Visitors can have experience of intensive wind in one of experimental facility of Kyoto University, with different age groups children and parents.

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.

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.



The following is a list of exhibits at this museum.

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

Detailed information with photos is available online (http://www.dri.ne.jp/english/kanran/index.html).

Inamura-no-Hi no Yakata Tsunami Educational Center

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.

There is 3D Tsunami Video Theater, where visitors can experience the danger and power of an earthquake-tsunami. They can can understand that twatch the film about how to evacuate and protect yourself. And especially children hey 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.

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.

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


EXTRA THE DAILY YOMIURI
Big quake hits Kinki
75 people killed
hundreds injured

Digital Gallery

Activity of Asian Disaster Reduction Center

The **ADRC 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**
- **Human Resources Development**
- **Building Communities Capabilities**

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.

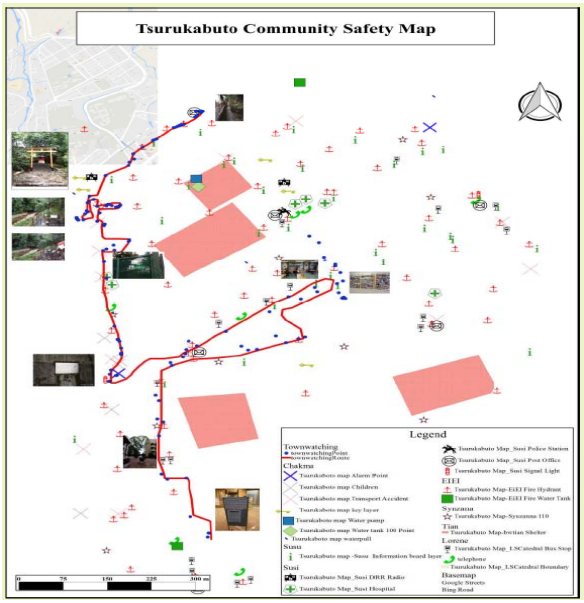
So Hazard map can help in case of evacuation and person can understand, where he must evacuate, by which way and what kind of high risk areas has that area.

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.

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

Comparative Analysis

Each Prefectures school's Disaster Education based on own Prefectures and Cities Board of Education.

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.

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.

❑Training on natural phenomena typical to the specific area.
❑Recognition of the risky zones of the specific area.
❑Recognition of the secondary effects of a respective natural phenomenon.
❑Training on the competent and right behavioral counteraction model for a natural phenomenon and its secondary effects.
❑Development of ability of getting oriented in a given situation and making a decision based on already possessed knowledge.

❑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.

❑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.

Disaster education is not major school subject in Japan and in Armenia. Pupils study about disaster in the textbooks of Earth science subjects of both of the countries.

In Armenia the staff of the CAP of SSP prepares the list of schools must be educated in the given semester. Afterwards the list of the schools and the proposal on disaster education is sent to the Ministry of Education and Science, where after the approval of the schedule it is sent to the Directorate of a respective school. Later the staff of CAP of SSP visits the school and organizes disaster activities, presentations, social-psychological works, game quizzes, drills, etc.

Disaster education for adults 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.

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 on earthquake are observed.

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.

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.

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.

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