Disaster Management and Disaster Preparedness: Examples of Practices in California and Turkey

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Abstract: Disaster is the result of natural and human-induced events that community can't be able to overcome by their own facilities and that causes economic and social losses by interrupting or stopping the social life. Nowadays, causes of the transformation of the disasters to catastrophes appear to be the results of incorrect risk management methods. Most effective way of preventing the losses resulting from disasters is applying a good disaster plan. In order to ensure this, it's necessary to increase the awareness of community members about the disasters and on which task they will be responsible in case of disaster.

In this study, practices in the California State are examined as a sample of disaster preparedness and disaster management applications due to its similarity to our country because of its location in the area that has high probability rate of natural and technological disasters and on the major fault outlines. Also results and recommendations achieved in this area are given as illustrating best practices in our country in terms of raising awareness.

Key words: Disaster, disaster management, incident command system, Great Shakeout Drill.

Introduction

Disaster is a natural or human-induced impact that adversely affects a society or the environment. Nowadays, disasters appear as the results of the wrong risk management practices. These risks are the products of hazards and vulnerabilities. Developing countries are much affected by natural disasters. Financial losses of developing countries access 20 times more than the developed countries while 95% of death events occur in developing countries as the results of disasters (http://www.ahder.org).

Disasters are divided into two groups as natural disasters and human-induced and technological disasters. Natural disasters occur as the results of natural hazards as earthquake, flood and volcanic eruptions that affect people. Vulnerability caused by lack of emergency management, leads to financial and moral losses. On the other hand, technological and human-induced disasters are the results of the human impact, negligence, error and system failure. These disasters can be classified into two groups as technological and sociological disasters. Technological disasters are caused by technological failures such as traffic accidents and engineering errors. Nuclear and chemical accidents, major fires and environmental pollution are some examples of technological disasters. In sociological disasters, there are powerful human impulses as the events of crime, riots, wars and panics.

The main task of disaster management is to reduce loss of life and property, and protect the nation against natural, technological and human-induced disasters. In doing so, a risk-based comprehensive disaster and emergency management system including items such preparedness, protection, response, recovery and mitigation should lead

and support the public. Recently modern disaster management systems also emphasize the importance of preventing disasters before occurrence in addition to the disaster preparedness issue (Kadıoğlu, 2008).

The State of California, USA, is similar to our country due to its place in a region that people intensely experiences disasters and must always be ready to cope with these hazardous incidents. The largest earthquake in the history of California occurred in 18 April 1906. After this 7.9-magnitude earthquake in San Francisco, three thousand people died and 200 thousand people became homeless and San Andreas Fault was broken along the 500 km distance. Experts have detected underground vibrations on incomprehensible reasons when examining the San Andreas Fault along the Pacific in California in the centenary of the massive earthquake. For a while, new movements of the earth's crust have expressed suspicions after 100 years passed over the San Francisco Earthquake, one of the most powerful earthquakes in history. San Bernardino Fault that most recently caused an earthquake of magnitude of 7.7 in 1690 is expected to break again in the near future. According to experts' estimates, in the next 30 years, a devastating earthquake in San Francisco is likely to be expressed as 62 percent.

This area is also under the threat of storms, hurricanes, floods and tsunami as well as earthquakes. Not only natural disasters but also technological disasters affect this area adversely. Latest in April of 2012, San Onofre nuclear power plant, in the south of the province, was closed indefinitely due to problems of radioactive gas leak. Because the geography is always vulnerable to disasters and these disaster and emergency situations lead to casualties, a systematic disaster and emergency system is established.

In 2001, the United States Federal Emergency Management Agency (FEMA - Federal Emergency Management Agency) working group indicated the greatest third disaster scenario listed below and the risk map of the region is shown in Figure 1 (Carter, 1992):

- Terrorist attack in New York,
- Hurricane in New Orleans,
- Earthquake in California.

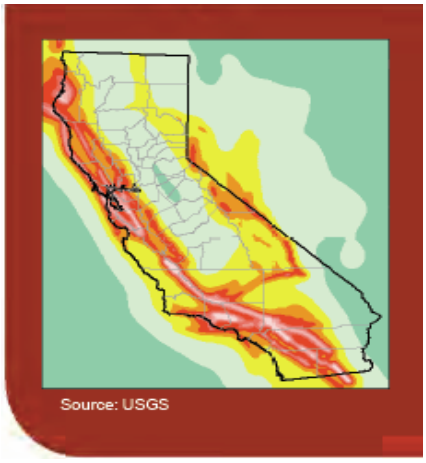

Figure 1. FEMA 2001 report

In the first part of this study, an introduction to the concept of disaster, disaster types and disaster management systems is presented and it’s focused on elements of integrated disaster management systems in the second part. In the third part, plans of creating disaster awareness and disaster preparedness implemented in California is examined, in the fourth part, best practices from our country are sampled and finally conclusions and recommendations are given in the fifth part.

Integrated Disaster Management System

Integrated Disaster Management System consists of disaster management and incident command system.

A. Disaster Management

Disaster management is the task of managing whole of the resources and institutions of the society together in order to plan and implement activities to be done before, during and after the disaster intended to prevent these events or mitigate the damages. On the conversion of a natural event to a disaster, what is done in the previous and subsequent periods has a very important role. Those made after the realization of the danger has an influence on preventing the next danger from becoming a disaster or reducing the losses that may be caused by a disaster.

With dealing the periods before and after the disaster within a process:

- Hazards can be defined correctly,
- Risks of hazards can be analyzed,
- Communities can be informed about the risks and can be informed in required level about the potential disaster risks,
- Activities can be planned to reduce the risks,
- When danger comes true, intervention measures can be intaken in order to prevent the danger from turning into disaster and deal with the disaster in a controlled manner.
- By taking disaster-development relationship into consideration, development can be achieved in a way that it reduces rather than increase the existing risks.

Approaching this process in a detailed and a holistic manner allows the development of more systematic approaches in order to increase community's resistance to disasters and minimize the adverse impacts (Erkan, 2010).

During disaster management loop, as taking into consideration the activities carried out before and after the disaster can be expressed as in Figure 2 (Erkan, 2010):

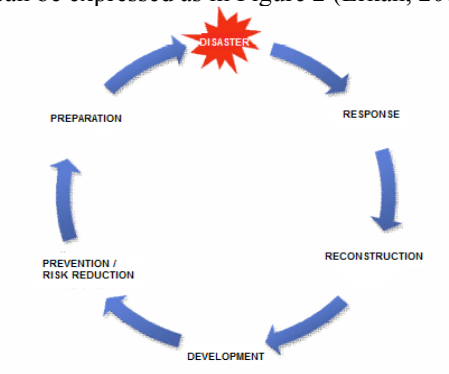

Figure 2. Schematic diagram of disaster management loop

In our country, progress of disaster management has begun after 1939 and what to be done before and after the disaster was identified with the law 4623. The first building code and seismic zones map were prepared according to this law. Ministry of Development and Housing was established in 1958 and with the law numbered 7269 which came into force in 1958, disaster services are counted among the tasks of this ministry. Then, the Directorate of Disaster Affairs was established in 1964, converted in 1965 to the Directorate General of disaster search and rescue process, except for safety and health services are authorized in almost all the central level. Search and rescue services are conducted by the Ministry of Interior, General Directorate of Civil Defence with the Law 7126; other than this, Red Crescent has very important tasks as providing especially tents, blankets, food, clothing, domestic and foreign aid, including medical services, including the collection and distribution of blood supply. At the central level, General Directorate of Turkey Emergency Management under Turkish Prime Ministry, Mineral Research and Exploration, Universities, the Scientific and Technological Research Council of Turkey and Turkish Armed Forces are the major institutions involved in this process. At local level, Provincial Governor and Provincial Rescue and Aid Committee attached to it has the full authority (http://www.afet.gov.tr).

B.Incident Command System

Search and rescue operations, such as other all emergency interventions, require fast, efficient and continuous action plan. Most efficient assessment of time and conditions can be ensured through a well-designed and planned operation. Incident Command System (ICS) is a system developed for the purpose of ensuring the functioning of the planned action in order to ensure the continuity of the intervention independent of individuals. Which is ideal is development of such a system in the national level and ensuring the system working in coordination with other services.

This system is configured with an expandable five functional sections:

- Responsible People of Incident Command Systems and Command Staff,
- Intervention / Operations Service Supervisor,
- Information and Planning Service Supervisor,
- Logistics and Maintenance Services Supervisor,
- Head of Finance and Administration Services.

The main condition of activating incident command system is to create an emergency plan. To do this, the following sequence must be enabled (http://www.biltek.tubitak.gov.tr):

Sensation

Receipt and delivery of sensation mechanisms must be created in advance. What should the first sense information include, how to categorize the sensations and which areas of expertise should start-up must be clearly planned.

Organization

Immediately after the completion of the sensation process, ICS should be organized. Neither should this process fast, nor should be slow. It's necessary to establish ICS in the right place and the time, with the right content and qualification.

Intervention

A well-organized ICS is not enough alone. The intervention phase that implements this system should renew the steady state analysis, assess the possibilities and change the strategies if it's necessary.

Example of Practices from California

It is the State's responsibility to take all appropriate measures on the safety of life and property of the citizens. At the state level, to cope with the adverse effects before and after the disasters, local authorities have the great responsibility. State administration has the guiding role of being a model for mitigating the local hazards measures and entering the inputs to national disaster reduction programs in the future (Koçak, 2004).

There are many laws on disaster management such as California Earthquake Education Law, California Emergency Services Act and California Earthquake Mitigation Law etc.

The coordinating institution responsible for emergency and disaster management in the United States is Federal Emergency Management Agency (FEMA). FEMA is an independent organization which manages disaster management system and prepares reports for the President. In state level, FEMA and other institutions implement and fund the mitigation of disaster measures. The head of FEMA serves as a consultant for the National Security Council on national security preparedness (Şengezer, 2002).

Although "Emergency" passes in the term "FEMA", its law and practices are based fully on the tasks and phases of "Integrated Disaster Management System" (Kadıoğlu, 2008).

National Level Policies and programs are guiding the states. Each state has different regulations. However, these legal regulations at the federal level integrate with the upper scale system.

As it is an example of the functioning of the Incident Command System, the School District Administration that connects the school incident command systems across the region exemplified below. School District Administration is a systematic structure that connects the police and the fire brigade, hospitals, radio, television and communication networks as newspapers with the schools.

A. School Incident Command Systems and Their School District Administration

In California, each school has its own incident command system and everyone is trained to know what to do in emergency situations. School District Administration Emergency Management Center provides education in all areas and is the unit that will help in an emergency situation. There are 13 units of School Police Department across the United States. In the State of California, it's indicated that there are 7 regions; from these regions only in Los Angeles there are 1100 schools, in week days with the elders there are over 1.000.000 students and the number of teachers and the staff is 95000 (MONE-Study Visit Report, 2010).

There are many devices with their backups used for communication in this region. 88 different agencies are studied with for the communication. Radio and wireless communications are very important. In this center, there is a system that allows communication with all the regions. Schools, police departments and hospitals are essential communication units. On monitors, police cars, fire brigades and student services are displayed. Thus, referrals can be made. To do this, electronic maps are used and there are 3 different projection systems. The main objective is monitoring the schools on the host system (MONE-Study Visit Report, 2010).

In the School District Administration Center for Emergency Management, people are trained about the National Incident Management System. Central Steering Committee of Emergency Management Board is trained here, too.

Trainees of this unit come together under certain groups to do their duties in case of disaster and emergency situations. These groups are Operations, Planning&Intelligence, Finance&Administration, Liason, Logistics, Personal Information Office (PIO) and Management. Each group is represented in a different color; members of the groups wear waistcoats in the colours of their groups during their extraordinary tasks. Managers are represented by black color, Command group by orange, Planning&Intelligence group by blue and Finance&Administration group by green (MONE-Study Visit Report, 2010).

In these centers, software system of ShakeCast- Background provided by American Geological Center, is used. In these software system, Decision Support System that will be used after an earthquake and Shake Map System are also available. ShakeCast software provides a Geographical Information System including all schools. Schools are monitored by the help of this software and a message is sent to all staff by this system in the situation of an earthquake (LAUSD-Executive Briefing, 2010).

ShakeCast system structure and operation flow are shown in Figure 3 (U.S. Geological Survey, 2004):

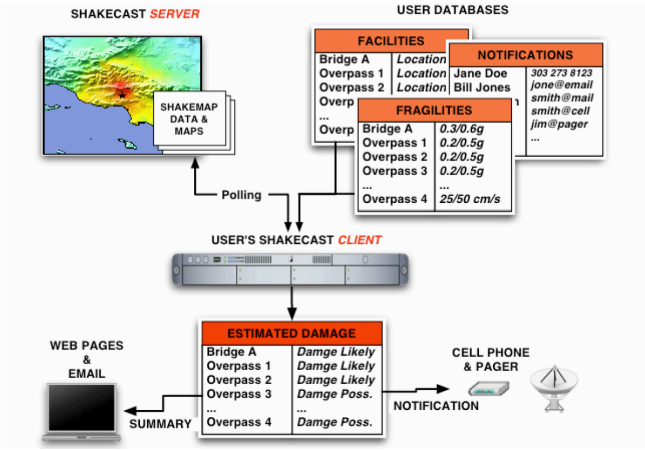

Figure 3. Summarized ShakeCast flowchart

B. Great ShakeOut Drill

ShakeOut Drill is a coordinated organization that has started to be implemented in California, but increasingly spread to other states and countries. This is a very important initiative on creation of disaster awareness. Participation to official ShakeOut organization requires a significant local or regional coordination that is carried out

by an institution responsible for emergency situation management or an alliance of many organizations. Total of 8.6 million people worldwide consisting of individuals, schools, universities, governments, institutions and organizations participated to 2011 ShakeOut Drill. On October 18, for 2012 ShakeOut Drill, numbers of participants reached 14.6 million (http://www.shakeout.org)

Scenarios that will be followed in this great drill applied to a wide range are delivered to people in public areas and by the Internet before the drill date. This scenario is an earthquake scenario likely to occur in more than estimation and it's prepared by U.S. Geological Research Center experts. The aim is to present the preparedness awareness to a possible earthquake event as starting with a specific scenario.

Stages of the realization of a well applied ShakeOut scenario are as follows:

- Urban planning,
- Emergency response training,
- School, work, environment and public earthquake drills,
- Prioritization of preparation efforts,
- Understanding the potential impact on the financial and social systems,
- Identifying vulnerabilities of the system infrastructure caused by interactions of the separate systems (Southern California Fall, 2008).

People are invited to this exercise carried out on the 3rd Thursday of October, days or even months before the incident. It's aimed to raise the awareness of people that can cope with any moment turn into a major catastrophe of an earthquake. People are earned to protect themselves from the damages of the buildings and the furniture as a reflex with the aid of DROP-COVER-HOLD ON exercise carried out in schools, universities, all institutions and organizations. It's highlighted that it's not the earthquake that kills people, buildings, furnishings and the negligence are more threatening. In the next stage of this exercise, an exercise on how can the building evacuated healthily and with least damage after the event is applied. "DROP-COVER-HOLD ON" and "Building Evacuation Drill" are drill applications in the 1st level as "Simple".

Figure 4. Representation of "DROP-COVER-HOLD ON" exercise

"Basic" drill exercise at the 2nd level of the practice is the "Safety of Life Drill". This drill ensures participated students, teachers and other staff to think over the actions of their emergency response during the drill and provides discussions about reducing risk and reaction time in order to make changes on later exercises [14].

3rd level "Intermediate" work is "Desktop Exercise to Decide". In this application, by the help of a comprehensive overview and additional regulations made with teachers, parents, staff and administrators after the drill, contribution to the next exercise is performed (The Great ShakeOut Drill Manual).

In the 4th level practice, as considering applications in schools, it represents "School Standard Emergency Management Simulation Drill". This exercise involves the implementation of the whole school and the school's emergency plan. It targets all of the response system. All staff in schools is as well as employees in the event of an emergency. For this reason, all of the staff previously trained or untrained, would have applied in an emergency duties with this application (The Great ShakeOut Drill Manual).

C. Other Best Practices

In schools and other public buildings, there are double entrances and doors have no risk of being locked and damaging people at the time of panic and can be opened outward by pushing manner. Heavy objects are fixed

against the danger of falling. Attention is paid to maintaining smoke and fire sensors. Also there are small water jets in the roof to repel water in case of fire.

Buildings are built considering the geographical characteristics of the region. Fire fighting cocks are kept in the beginnings of the streets. Ramps are set to make life easier for people with disabilities.

Receiving basic first aid training is widespread because its importance is understood by people. Even people who will be employed as a teacher in the United States are required to have first aid certificate. People carry cards involving their personal information and their critical health status with themselves. Students' emergency cards are also kept in schools and also their earthquake bags are kept ready for them.

In California, everyone who is working as a staff in the local region must take disaster and emergency trainings. All public officials do not go to their homes in case of disaster, work as disaster workers and perform their duties in an extraordinary situation defined for them.

In written and visual media, books and publications are available to increase the awareness of people about disasters. Also documents for small children's level are prepared. Science Centers give information about disasters as illustrating the state. As an example, purpose of California Science Center is to train students and inform people who comes to visit California.

Disaster Preparedness Practices in Turkey

Our country Turkey is also frequently facing natural disasters especially earthquakes and floods due to its geographical conditions. To increase awareness of our people on this issue, it's important to inform them on the issue at early ages. In addition, to ensure the sustainability of these training programs, it's essential to inform especially teachers and administrators about the importance of the issue.

For this purpose, Turkish Ministry of National Education signed a protocol with Japan International Cooperation Agency (JICA) on 18th October 2010 for collaboration on "School-Based Disaster Education Project" on account of the similarity between two countries in terms of disasters and benefitting from Japan's experiences on disaster management and mitigation. Overall purpose of the project being carried out by Turkish Ministry of National Education -General Directorate of Teacher Training- and Japan International Cooperation Agency (JICA) is strengthening the capacity of disaster management in order to promote awareness of risk management throughout elementary and secondary schools in Turkey. In this context, during implementation of 3-year duration of the project, it was started with 8 cities in the Marmara region and in the provinces of Bolu and Düzce involving 80 pilot schools. By the help of training programs throughout primary school students, school managers and parents, raising awareness of disaster and trying to create a culture of disaster preparedness is targeted. Thus, school-based education will be strengthened in the target area. Following the dissemination of the project is also aimed at training and practice throughout the country. In this context, established model classrooms in 10 demonstration schools selected from 80 pilot schools, when extension of the project across the country actualized, pilot schools will serve as a model for other schools (http://www.meb.gov.tr/duyurular).

"Disaster Preparedness Training Programme" carried out by Bogazici University Kandilli Observatory and Earthquake Research Institute since 2000, with the financial support by the United States Agency for International Development Office of Foreign Countries Disaster Support (USAID / OFDA), on the issues of "the basic disaster awareness", "earthquake against the structural consciousness", "non-structural hazards reduction"," governmental disaster volunteer skills" by public education and teacher training programs, training materials, have been developed and successfully implemented. The most striking and significant success in extending the program, has been provided in cooperation with the Ministry of National Education. In this context, 4,000 teachers in provinces i.e. Istanbul, Bursa, Canakkale, Istanbul, Izmir and Yalova and their districts attended "Basic Disaster Awareness Training of Trainers" program and completed in success and transferred these information to more than 30,000 teachers and school employees, more than 1.5 million students and tens of thousands parents (http://www.meb.gov.tr/duyurular/duyurular/TemelAfetEgitimiProjesi).

However, DREAMS project (Disaster Reduction Education Learning Support System) carried out in collaboration of Ministry of National Education and the American Red Cross and Risk Red was completed at the end of 2011. Under the distance education system offered within the scope of this project, there are two courses and 19 lessons. By the help of these course materials, through all teachers and administrators works in 30.000 schools in

Turkey, Disaster Preparedness Training for Individuals and Families (DPTIF) and School Emergency and Disaster Management (SEDM) Training is provided (http://www.riskred.org).

Viewing rates of these training courses data queried in November 2012 is taken from the Ministry of National Education is seen in Table 1 and Table 2:

Table 1: **Teachers-**Viewing rates of courses on disaster issues in Distance Education System of Ministry of National Education **(November-2012)**

School Emergency and Disaster Management (SEDM)		Total Number of Teachers	703776	
CONTENT NAME	Teachers_ Viewed	Teachers_Not_Viewed	Teachers_ Viewed_%	Teachers_Not_ Viewed_%
01. Comprehensive School Safety	109.612	594.164	16%	84%
02Disaster and Emergency Management Committee and Plans	73.739	630.037	11%	89%
03. Assessment and Planning	66.480	637.296	10%	90%
04. Physical Protection for Schools	64.141	639.635	9%	91%
05. Basic Disaster and Emergency Response Procedures	62.586	641.190	9%	91%
06. Hazard-Specific Procedures	61.735	642.041	9%	91%
07. An Overview of the School Event Management System	61.118	642.658	9%	91%
08. School Disaster Response Materials	60.898	642.878	9%	91%
09. School Disaster Drills	63.795	639.981	9%	91%
Disaster Preparedness Training for Individuals and Families (DPTIF)				
CONTENT NAME	Teachers_ Viewed	Teachers_Not_Viewed	Teachers_ Viewed_%	Teachers_Not_Viewed_%
01.Scope of Disaster Preparedness	100.016	603.760	14%	86%
02.Earthquake Risks in Turkey	64.164	639.612	9%	91%
03 Structural Awareness Against Disasters	55.997	647.779	8%	92%
04.Reducing Non-Structural Hazards	51.562	652.214	7%	93%
05. Fire Protection and Prevention	49.513	654.263	7%	93%
06 Other Hazards	48.035	655.741	7%	93%
07. During the Disaster	47.254	656.522	7%	93%
08. Psychological Support	46.436	657.340	7%	93%
09. Disaster Response Skills	45.744	658.032	7%	93%
10. Personal Needs	45.571	658.205	7%	93%

Table 2: **Managers-**Viewing rates of courses on disaster issues in Distance Education System of Ministry of National Education **(November-2012)**

School Emergency and Disaster Management (SEDM)		Total Number of Managers	77027	
CONTENT NAME	Managers_Viewed	Managers_Not_Viewed	Managers_Viewed_%	Managers_Not_Viewed_%
01. Comprehensive School Safety	11.857	65.170	15%	85%
02.Disaster and emergency management committee and plans	7.191	69.836	9%	91%
03. Assessment and Planning	6.445	70.582	8%	92%
04. Physical Protection for Schools	6.221	70.806	8%	92%
05. Basic Disaster and Emergency Response Procedures	6.060	70.967	8%	92%
06. Hazard-Specific Procedures	5.953	71.074	8%	92%
07. An Overview of the School Event Management System	5.901	71.126	8%	92%
08. School Disaster Response Materials	5.883	71.144	8%	92%
09. School Disaster Drills	6.267	70.760	8%	92%
Disaster Preparedness Training for Individuals and Families (DPTIF)				
CONTENT NAME	Managers_Viewed	Managers_Not_Viewed	Managers_Viewed_%	Managers_Not_Viewed_%
01. Scope of Disaster Preparedness	10.441	66.586	14%	86%
02. Earthquake Risks in Turkey	5.846	71.181	8%	92%
03. Structural Awareness Against Disasters	4.982	72.045	7%	93%
04. Reducing the Non-Structural Hazards	4.573	72.454	6%	94%
05. Fire Protection and Prevention	4.407	72.620	6%	94%
06. Other Hazards	4.259	72.768	6%	94%
07. During Disaster	4.177	72.850	6%	94%
08. Psychological Support	4.103	72.924	5%	95%
09. Disaster Response Skills	4.029	72.998	5%	95%
10. Personal Needs	4.002	73.025	5%	95%

Numbers and proportions seen in Table 1 belongs to teachers that had disaster education by the method of distance education and Table 2 indicates the number and proportions of viewing rates of the managers in the schools. Percentages seen in both tables are calculated by proportioning the numbers to the total numbers of teachers (703776) and managers (77027). In the project, as of 2013, at least 40%-50% of teachers and managers are targeted to be taken these courses. In order to achieve the targeted rates, follow-up of the usage of the system, the necessary announcements and disclosures made by the relevant units. On 30th March 2010, under the coordination of the Prime Ministry - Disaster and Emergency Management Presidency, "Disaster Education Accreditation Principles Determination of the Workshop" was organized.

Conducting studies on the different branches within the scope of this workshop, especially the Red Crescent, non-governmental organizations, universities, municipalities, representatives of public institutions and organizations came together. The workshop has been beneficial in terms of gathering different stakeholders carrying out independent studies within the topic of disasters and take joint decisions on the subsequent activities in the future. As a result of this workshop on disaster awareness and risk management decisions were taken for as follows:

- National Disaster Education Strategy should have been prepared together with all stakeholders.
- Through close cooperation with the Ministry of Education, disaster education curriculum should be taken.
- A common terminology should be determined in the process of disaster management.
- Voluntary system in disaster education should be developed.
- Training exercises should be used and should be consolidated and made mandatory.
- Education certification must be provided and certificates should be updated.
- Disaster training should be taken at all levels of the public with all relevant stakeholders.
- Repeats in projects should be avoided and waste of time and sources should be prevented.
- A standard in disaster training materials should be developed and these materials should be designed according to the target audience.
- Screening and case studies should be made for the serving institutions / organizations in "Disaster and Emergency Situations", NGOs and volunteers.
- Indicators of minimum service standards of institutions/organizations that provide disaster education should be identified.
- Cooperation with the Council of Higher Education shall be provided with the aim of putting compulsory and/or elective courses for training about disasters in the universities.
- Trainings for on-site manager that takes part in disaster response phase should be provided.

- People must become an integral part of disaster education.
- A digital library on the issue of disaster should be designed.
- Phychosocial aid training should be considered as the basic component of disaster trainings.
- Training should be planned with a focus on harm reduction.
- Feedback of the training should be followed.
- Disaster trainings should have leveling/grading system.
- Accredited institutions and organizations should be inspected.
- Accredited studies with other institutions / organizations made together, a large contribution in this regard should be provided.
- Realities of the country should be made on the basis of studies to determine the standards of disaster education.
- Trainings should be classified as basic disaster training, training of volunteers, training of experts and training of trainers.
- Trainings in schools should be provided by Ministry of National Education, other trainings by Turkish Red Crescent, universities, NGOs, Provincial Disaster Emergency Directorate and the President coordinate all of the training activities. Principles, standards, should be made in a coordinated manner by the Presidency.
- Expression of "informing" should be used instead of training people.
- Disaster trainings should not be only considered in the concept of the earthquake and intervention.
- Disaster coordination in the education has the priority (http://www.afetacildurum.com)

Conclusions

According to experiences acquired as a result of disasters, most damaging effects are that the negligence and insufficient disaster awareness was experienced. Considering the structural hazards is very important on construction of buildings and structures. Non-structural hazards must be eliminated as fixing all the utensils that can damage by falling. It'll minimize the loss of life that even the smallest individuals in our society, rather than to escape by running during the earthquake they protect themselves until shaking will have stopped. Because the experts clearly stated, earthquakes do not kill, unfixed goods and panic kills.

Training on disaster and risk management, and individual, family, neighborhood, school, institution and country-level action plans to be prepared for emergency will decrease the incidence of disasters caught unprepared. As mentioned in the example practice, regular and large-scale exercises will facilitate the conversion of the information received by training programs into behavior. Also by increasing the awareness of the community, support and solidarity will be placed.

In the situation of disaster, if staying alive is possible, people will need to sustain life, a bag containing materials readily available is very important. Public education about life after the disaster is of great importance too. The purpose of public awareness about life after the disaster is to prepare people to continue living in spite of the losses and damages. Protection and backup of personal and corporate information on the policies and values are determined and applied to make the point to continue living in the post-disaster is an important detail.

It is very important for the countries in disaster risk, to generalize the disaster awareness practices. Strict building codes, the buildings to have two outputs, the doors to be opened to the outside, the buildings kept in fire and smoke sensors, educational environment and other buildings to be free from structural and non-structural hazards, disaster education programs that increase awareness, exercises, written and visual elements preparing of a person's identity information will intervene in an emergency situation and keep in contact cards that contain critical information related to the health status; earthquake kit application; disaster management chain of command to be created and that this coordination is tested every year, a large-scale exercises and so on are examples of best practice applications that need to be taken.

Awareness about disasters in our country come into prominence and is being carried out by several studies on this subject. Teacher and administrator training projects were delivered to a certain extent. By the distance

education method of Ministry of National Education, summary of each lesson taken by teachers and administrators is displayed in Table 1 and Table 2, the participation rate in later times to reach the level of the 40%-50%, will make much closer to the objectives of awareness about disasters. In order to increase this ratio, the provision of certification at the end of education is considered to be effective.

A number of practices on disaster management and education are carried out in our country, independent from each other. On March 30, 2010 under the coordination of the Prime Ministry - Disaster and Emergency Management Presidency of the "Workshop on Disaster Education Accreditation Principles Determination" on this issue with all stakeholders in the joint decisions were taken. In this context, it has great importance that the Prime Ministry chairs a full coordination on disaster education and nationwide implementation of a National Disaster Education Strategy. All attempts to get ready for the point of disaster and awareness of people in a holistic manner should always be based on the national strategy at the top.

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