



Van, Turkey Earthquake of 23 October 2011, Mw 7.2; An Overview on Disaster Management

***Mehdi ZARÉ¹, Behnaz NAZMAZAR²**

1. *International Institute of Earthquake Engineering and Seismology, Tehran, Iran*

2. *Northern Tehran Branch, Islamic Azad University, Tehran, Iran*

***Corresponding Author:** Email: mzare@iiees.ac.ir

(Received 18 Jul 2012; accepted 11 Dec 2012)

Abstract

An earthquake was happened on 23 October 2011 in Van, Turkey (Mw7.2) at the eastern most area of Anatolian plateau and in the neighborhood of Iranian border (West Azerbaijan Province). The study was performed based on field and office observations and has been focused on the process of disaster management in Turkey after the 23 October 2011 earthquake. We surveyed the quake from the view point of disaster management, and study the relief process during and after the catastrophe. The day-to-day disaster management procedure in seventeen days after the event has been scrutinized as well. The number of victims and extent of damage in Van earthquake was relatively limited according to the national experiences and recent modernization of infrastructures in Turkey. The Van earthquake caused 644 deaths and demolishing of several buildings in the cities of Van and Erciş in Van Province. The performance of the government organizations is however criticized based on their response to the event.

Keywords: Turkey, Disaster, Management, Crisis, Earthquake

Introduction

In 23 October 2011, at 13:41, local time, an earthquake jolted eastern Turkey (Van Province) for about 25 seconds. In its first assessment, Kandilli Observatory and Earthquake Research Institute (KOERI, Bogaziçi University) announced the quake magnitude to be ML6.6 and its epicenter in Tabanlı village, north of the city of Van. Disaster and Emergency Management Presidency of Turkey (in Turkish; *Afet ve Acil Durum Yönetimi Başkanlığı*, AFAD) announced dispatching of more than 1275 savior and nurse from 45 provinces and 37 different institutes to Van, immediately after the event. AFAD 20 person committee reached to region immediately and 200 technicians from different provinces devoted to help the hurt people. Moreover, AFAD designated a coordinator and an envoy three major airports of An-

kara Esenboğa, Istanbul Atatürk and Izmir Adnan Menderes, in order to organize the save and rescue (SAR) groups and the first aids, medical and service persons. Turkish Red Crescent (Türk Kızılayı) as a contribution to public service intervening in disasters coordinating with units as AFAD, fire stations and therapeutic centers. All of the follow up search and rescue actions being coordinated at the center of AFAD, and Turkish Red Crescent was a part of the incident national response structure and in the circle of command centers affairs.

Report

The method we applied was disaster relief provided to the disaster-affected population of Van

and Erçis after the 23 October 2011 earthquake in Turkey. The intention of performing this study was to evaluate the actions and to review the process of the management after the Van earthquake of 23 October 2011. Therefore it is not only an executive report, but is a fresh eye witness to what had done in view point of disaster management after the Van earthquake. Our team attended in the earthquake prone area therefore this article summarizes our study based on a day by day focusing on what happened after the Van earthquake and finally a conclusion is provided on these observations. This way of disaster management surveying is provided as well in many other studies (i.e. (1, 2) on the integrated approach to natural disaster management and as a case study on the January 2001 Earthquake in Gujarat, India (prehospital and disaster medicine).

Rescuing operations

Turkish Red Crescent Society, immediately after informing about the quake, held its disaster management meeting at Disaster Management Center (HQ) and alarmed the other centers in North Anatolia (Erzurum), North East Anatolia (Elazığ), East Anatolia (Muş) and Mediterranean (Adana). In order to assess damages in the epicentral region, the information was gathered through Turkish Red Crescent representatives, local states, gendarmeries and the other security organizations in the cities.

These activities include preparing shelters for quake-victims, food procurement, blood granting services and social and mental support of hurts during the crisis. In the first day, Red Cross and Red Crescent launched the blood granting zones in hospitals. People were unsatisfied from Red Cross performance, but days later the situation improved and their satisfaction grew up.

Turkish Red Crescent also with contribution of the other groups and Red Cross, after surveying the crisis needs, prepared its proposal in declared it on 26 October.

Some 110 disaster expert from crisis management centers of Turkish cities and from the presidential institution branches, as well as 37 vehicles, volunteers and religious promoters, police forces and

teachers with working ground of "the society leaders organizing" were being detached to the incident region. The Foundation for Human Rights and Freedoms and Humanitarian Relief (İHH; İnsan Hak ve Hürriyetleri ve İnsani Yardım Vakfı, Endowed Organization of human rights and liberties, (3)) conveyed its team (Fig. 1) before Sunday sunset there and started its operations to save people beneath debris.



Fig.1: İHH rescuer is looking for a survivor in Van (3)

Shelter

In 23 October, 2600 tents, 7500 blankets, 100 ovens and other means, namely sleeping bags, heater and food procured for the quake victims. Food procurement centers were held for whom lost houses, or having unsecure houses because of the possible aftershocks. Referring to near zero temperature at nights, the need for blanket and tent were of the high precedence.

Crisis response groups of Turkish Red Crescent established two tent camps in a stadium at Erçis County. Two hundred and sixty families settled down in these camps. Sufficient blankets and 118 heaters distributed in these two camps. Turkish Red Crescent was dispensing warm food among people. The mobile kitchens were installed in location. Red Crescent food machines were dispensing soup and tea among them as well (4). One month after the event (21 November 2011) the first author was told in Van food assistance center, about 120,000 peoples received warm food per day after the quake. In addition, two wind

tents and two storage tents were established to adopt individuals and storing the helps. Another tent camp was pitched at the Van city center with the capacity of 232 tents (5). Food was sent from different sources including Van and the other provinces to the prone areas.

MOH warned people just to drink the mineral water because of the numerous cases of the diarrhea prevalence between populations (4).

Until 21 November, 18000 persons were fixed in 12-tent city in Erciş and Van. Turkish Red Crescent established four tent camps and two Mevlana house from which three camps and one house were in Erciş and one camp and one house in Van center. Moreover, distribution of tent and Mevlana house in the village residents continued. The Red Crescent settled down 50,547 tents and 2,348 Mevlana houses and prepared a shelter for 248,859 persons and planned a contract for 2,000 container house (having an area of 21m² equipped with bathroom, restroom and kitchen) for Van and Erciş. AFAD ordered building of 20,000 containers. Until November 30, 2711 containers were built, from which 2081 were installed (5).

A Turkish journalist exploited from his popularity to help those who lost their house in the quake, through Twitter social network, wanted 22000 of his fans to email him if they were ready to help, and he could attract enormous helps (6).

Health

Ministry of Health activated SAKOM (Emergency and Crisis Coordination center of Turkish Hygiene Ministry) for the operational response to the event under supervision of the Vice Minister. The quake injured people received medical care in Van, Erciş and the other neighboring provinces. Relief medicine groups from Van and other provinces began their operations immediately after the quake in the region. MOH sent 6 air ambulances and 201 normal ambulances and prepared 1700 hospital beds in the Van surrounding cities at the first day of incident for the saved persons.

Public services

The local officials closed universities and schools for 3 days. The government demanded the private

sector to prepare the cranes to pick up the debris and this sector replied to this request. Electricity and telephone lines, which been disrupted after the event, a day after, came back to the ordinary status (5).

Education

An enormous loss was imposed to education and study during the quake. According to the official statistics, 65 teachers died and a large number injured. Many of schools also collapsed. Minister of education, Omer Dinçer devoted a lot of his time to this issue and put it that the education should not been interrupted. He also exclaimed that his objective was to reestablish schools at November 14. Finally schools have reopened nearly two-and-a-half months after earthquake.

It was requested from the teachers who had returned to their cities to return to Van. The minister also suggested that it would not allow to the schools in which there was possibility of destruction until the time they will be reconstructed. He announced that an equip comprising of 29 engineer and architecture were sent to Van to determine the demolished schools. The schools to which those students would be sent also determined.

International aids

The Turkish government announced in 23 October that there is no need for international aids and it only accepted Iran and Azerbaijan, its neighboring countries. Nonetheless, by increasing the number of unsheltered people at under zero temperature, two days after the main shock, they accepted the help proposals from all countries. The government suggested that it needed the after emergency aids such as prefabricated houses, container and tent (7).

Iranian Red Crescent (IRC) detached its personnel to Turkey. All of the actions of this group were in complete coordination with Turkish Red Crescent. Because of the previous coordination of these two organizations, IRC could begin its operations spontaneously. As well as the group settled in Van, three relief teams of IRC were in preparedness stage on the border line of two countries. This

group settled its base on Iran border. IRC prepared 3000 tents, 1500 blankets and 2500 pre-cooked foods for the rescued people.

European International Federation office was in contact with Turkish Red Crescent from the beginning. It was in contact as well with the International Committee of Red Cross (ICRC) to coordinate the actions and activate the Recovery of Familial Links (RFL) in order to help the hurt families. The federation was cooperating with the other institutes and organizations involved in the humanitarian helps. These collaborations are in the first place crucial in preventing interference and overlapping of the helps, supplying the standard reply and guaranteeing the dignity of humanitarian actions commensurate with the needs of Turkish population. Austria, Belgium, Slovenia, France, England and Sweden procure more than 2300 winter tents in the first three hours of the incident. The other member countries of the civil support structures of Europe as well enunciated their readiness for the help. After the acceptance of the aids by Turkey, European Union dispatched its aid groups with a six-person team (9). In addition, Ireland sent 600 tents and 3000 blankets for the hurt people (3). Russia sent its aids including necessary goods and 214 tents with 37 tones weight (10). United States was the last country that proposed help and utilized its own planes on the European bases for the relief purposes (11). Japan granted enormous aids such as considerable number of tents for the hurts.

AmeriCares- an American organization- that previously trained a large number of Turkish medical rescuers detached its needed storage for curing of 15000 survived injured people from its goods store in Amsterdam at October 24 (11).

Humedica- a German organization- detached its medical team together with their equipment to the region for curing of 3000 people. This team arrived at October 24 there. Its American counterpart, OBI (Operation Blessing International) arrived at October 25 to Van and settled its field hospital in the local club of Erciş. This group dispensed two trucks loaded with mineral water, 3500 precooked foods and hygienic packages among 170 families living in the camp (12).

French NGO of borderless telecommunication (TSF; Télécoms Sans Frontières) as the only international NGO, despite of the rejection of the international aids by Turkish state, arrived in 24 hours at Van province and resided in Erciş and set up the telecommunication network and contributed Red Crescent in management of shelters. TSF provided the possibility of foreign contacts and exploiting Internet particularly for the refugees. This group mission ended at October 28 (12).

Moreover, United Nations High Committee for Refugees (UNHCR) contributed in occurred crisis through providing tent and blanket for quake hurts and especially Iranian and Afghan refugees, resident in Van and also via sending the specialized rescue force and exclaimed that the refugees of this region, generally from Iran and Afghanistan, are more vulnerable than indigenous people are (12).

Social and mental aftermaths

Psychologists and social services experts dispatched to the region to give the social aids, mental support for victims who lost their families, and whom diagnosed by post-traumatic stress disorders (PTSD). They exclaimed that among their patient, impacts caused by the event have created influences such as sorrow, anxiety, insomnia and reaction to partial noises. Doctors tried to solve these problems and particularly insomnia via medicines. Children suffered from mental disorders too. In such as these incidents, children depend on their mothers far more than other times and refrain from entering in the closed places. Waking up with repetitious nightmares, polyuria, sleep talking and fear of sleeping alone are the other symptoms seen in children that psychologists should cure. In these occasions, father, mother or other relatives should support the child at the first step, calm him/her and talk while playing with him/her.

Totally 155 children became orphan. The manager of Social Services Department of Van affirmed that those orphans would be under their support, the government would give their families pecuniary helps, they would not dissent from their

families and they would be under supervision and retrieve psychological aids.

The cold weather provoked people stress and they were unsatisfied of unequally distribution of the aids. Such that they complained that: "despite the existence of the aids, but they were granted unfairly and by prejudice. In that circumstance in which they could not enjoy of the preparations and by considering the cold weather of the region in which there is fear of snow and rain every time, they are worry about death (13). After the quake, some holes were created with 10-15 meters length and several meters depth. Consequently, the rustics could not sleep comfortable and feared that the similar holes would form under their houses and they request from the officials to survey those holes (14, 15).

Since the region were suffering from numerous aftershocks days after the main shock, many of them by magnitude more than 3, there was the probability of collapse of partially-damaged buildings or even the apparently safe and buildings. Therefore, people were not going to their houses. 50 hours after the main shock, an aftershock of M5.7 occurred and caused more damages.

Results of the Surveying: Disaster Management: Day per Day

The process of disaster management is studied herein in a day per day basis until 23 days after the main shock. It was aimed to follow up briefly the disaster management process, document the interventions and responses and qualifying it.

October 23, 2011

At 13:41 by the local time, the earthquake jolted East Turkey (Van province) for about 25 seconds. In its first account, Kandilli Observatory and Earthquake Research Institute (KOERI) in Istanbul announced the local magnitude (ML) as 6.6 and its epicenter to be at Tabanlı village in the north of Van. This quake was felt in the cities of Diyarbakir, Ağrı, Iğdır, Şirnak, Muş, Tunceli, Batman, Mardin, Erzurum, Bingöl, Bitlis, Siirt and Şanlıurfa regions. According to earliest reports, about 60 buildings were collapsed. Electricity and telephone communication were cut in Van and

Erciş. In addition, some buildings in some of neighboring cities (Bitlis and Hakkari) were damaged. Problems in air transportation in, Ferid Melen airport of Van were reported, but except for the first hours (when the airport was declared temporarily out service and the flights were conducted to Erzurum airport), the airport continued action for service flights (5).

At the first hours after the main shock, 50 persons rescued from the debris, received initial cure at the hospital yard. Fire fighting groups started their actions. The Red Cross announced collapse of 25 flats and 1 dormitory. "Mujadele" newspaper web site reported immediately that the situation is good now and in the city center, no dead or damage is seen. Erzurum governor announced the detachment of a search and rescue group to Van. Turkish Red Cross moved towards the region to bring necessary tools such as blankets and tents. Turkish Prime Minister, R. T. Erdoğan, revoked Monday (24 October 2011) session and went to Van. During the evening, homeless people faced the cold weather. The survey of the early response to the Van earthquake in the first day is as follows:

- 13:41- Occurrence of the quake with 7.2 magnitude 19 kilometers from Van.
- 14:30 – The first group from Turkish Red Crescent dispatched to region to survey (Turkish Red Crescent as other Red Cross Societies in the world is just responsible of preliminary medical relief, food dispersing and temporally and emergently settlement).
- 15:55 – Kandilli Observatory director, Professor Mustafa Erdik announced the magnitude to 7.2 (modifying from early announcement of M6.6).
- 16:08 – Kandilli Observatory announced the macroseismic intensity to be between VIII and IX Mercalli in the epicentral region.
- 16:32 – Kandilli Observatory, estimated the structural damages and imposed losses to be 3200 to 3400 buildings out of order, 600 buildings with sever damages, 50 buildings fully collapsed and deaths 500 through 700 persons.

- 16:42 – Reopening of Ferid Melen airport, (declared out of service at the time of the event). In the first 3 hours after the event planes went to Erzurum airport.
- 16:54 – A dormitory collapsed and fortunately has no death.
- 17:30 – According to initial affirmations, 30 dead and 156 injured were reported in Erciş.
- 19:57 – Rescue and search groups arrived at Van.
- 21:00 – Prisoners in Van prison takes the opportunity of opened doors and escaped!
- 21:10 – From 200 escaped prisoners, 50 surrender themselves after meeting their family.
- 21:30 – All of the National Red Cross Society and Turkish Red Crescent forces detached to the east for relief.

October 24, 2011

Totally 217 dead and 1090 injured were reported and 970 buildings collapsed. Natural gas, water, electricity and telephone systems, disconnected after event in Van, reinstalled after 24 hours.

Turkish government sent Urban Search and Rescue (USAR) forces and emergency medical team from 44 provinces and 37 different organizations with military and urban planes to the region. Three cargo military planes were responsible for transmitting equipment and persons from Ankara to Van full time and continuously and this was continued later days. USAR actions continued uninterrupted. 1584 USAR personnel, 491 medical personnel and 10 USAR dogs worked on region, while 68 ambulances, 7 air ambulances, 256 loader trucks were used.

Turkish MOH settled two field hospitals in Van and Erciş. Turkish Disaster and Emergency Management Presidency, AFAD (which is an organization equivalent to Iranian Disaster Management Organization but in Turkey, it directed under the supervision of Prime Minister) dispatched equipment and rescue and save groups until 11 a.m. to the region. 2398 rescue groups went from 25 provinces to Van, comprising 680 nurses, 12

search and rescue dogs, 355 relief machinery, 7 air ambulances, 101 normal ambulances, 30 generators, 95 mobile toilet, 1719 kitchen sets, 3812 heater, 425 sleeping bags and 1 mobile oven (5). Turkish President and Prime Minister announced that they do not need international aids through Turkish Crisis and Emergency Management Broadcasting.

October 25, 2011

Military planes and two cargo planes (totally 37 planes) were sent to the region. In addition, 200 technical crew and 3 cargo military planes were ready to be sent to transmit subsidiary personnel and requirements. In order to cover the need for blanket and tent, five civil planes, three military planes worked to transmit the aids. A connection line set up between Ankara and Van. The requirements transmissions were continuing by cars. Ankara Esenboğa, Istanbul Atatürk and İzmir Adnan Menderes airports employed noticeable number of their crew for transportation and transmission operations of the aids and people.

In general, 3346 search and rescue groups, 787 medical groups, 16 search dogs, 563 cranes and tractors, 138 ambulances from which 7 were aerial, 33 generator, 95 mobile toilets, 11211 tents, 25539 blankets, 1120 food packages, 513 heaters and 425 sleeping beds were sent. Search and rescue of peoples and first aids were uninterruptedly continued.

Although it was not appropriate season for construction, TOKİ (TOPLU KONUT İDARESİ BAŞKANLIĞI; Turkey housing development administration) was ordered to rebuild the damaged buildings and finalize the half-constructed ones in one month so that people could reside there. The labors and farmers debts to Turkish National Bank postponed one year. Until the noon time of October 25, from 6 ruined buildings the rescue operations finished in three.

President Abdullah Gül canceled the Republic celebration ceremony due to the Van earthquake (29th October) that is an official ceremony and holiday in Turkey. Turkish government gave positive answer to the international aids propositions,

for which two days ago declared there is no need for such assistance (7).

In Van, some of Turkish Kurds stoned journalists and police forces in complaint against partially coverage of the disaster news by Turkish media (8).

October 26 2011

The confirmed number of death loss was declared to be 481 and 1650 injured. The number of after-shocks until 12:00 was 639 and the greatest after-shock was M5.7.

The Mayor of 34th district of Van resigned because of the people complaint and their confrontation with Municipality workers. The Mayor himself acclaimed that the Municipality did not distribute aids and tents between people. The Mayor's spokesperson told that people want tent, we have no authority, and the government does not collaborate with us. Therefore, we cannot persuade people that we have nothing and we resign. President Gül suggested that "we still do not need any help and, of course this does not mean the rejection of aids". In response to the Israel proposition to help, he also emphasized that if they accept aids from other countries, they do not differentiate between them. He announced that he would travel to Van but did not determine date. He told that: "We would travel to Van, But in order not to form any obstacle in the progress of helps, this issue is under assessment". Turkish Red Crescent formed National Pecuniary Aids Collecting Campaign and requested help from people and representative of International Red Crescent and Red Cross Societies (5).

October 27, 2011

The number of death declared to be 550. To meet the needs for tent and blanket in prone areas, five civilian planes, three military planes and totally eight planes were allocated to aids transmission. Terrestrial transportation continued as well.

After Turkey requested help, European Union responded immediately through preparing a six persons team of experts and 100 tents. According to the account of Prime Minister Office and in response to the Van province governor, 13 million

TL (Turkish Lira) as the subvention was sent immediately.

Istanbul University set up an aids collection camp. In addition, its administrative and scientific employees delivered requirements such as blanket, hand-washing liquid, wet kerchief, battery, layette, dry milk and dry foods to a group of the Beyazit University to be reached to the students. The gathered goods via University rescue team were arrived to the villages around the region. Istanbul University also sent one 27 persons group to Van in order to technical survey. They should reside there until terminating of the search and rescue operations and should supervise and attend in reconstruction phase.

October 28, 2011

According to the account of the manager of Turkish Emergency and Crisis Management Organization (AFAD), up to 15:30 of October 28, the number of death was declared to be 575, and 2068 injured and 187 rescued people. As well as 8,710,000,000 TL subvention of state, 14,960,000,000 TL was the amount of gathered pecuniary aids. A transportation chain comprising of eight planes (5 civilian and 3 military) took the responsibility of aerial transmission of blanket and tent towards hurt regions.

According to Kandilli Observatory, an aftershock of M4.5 occurred in Van. Turkish government announced that to prevent the reiteration of Van earthquake disaster, it would strengthen all of the buildings against quake with magnitude of nine throughout Turkey. In fact such declarations in the developing countries are mostly for public media usage, because the level of the great earthquake (Magnitude 9) is not experienced in Anatolian and Iranian shallow crustal earthquake history and the level of vulnerability in a country like Turkey is almost neglected in such histrionic declarations of the authorities!

The authorities declared that in this project, all of the poor people houses will be reconstructed. Furthermore, all of the existing buildings in the city centers would be surveyed in terms of the strength and old ones would be reconstructed. Constructors announced that in this project, 9

million of obsolete buildings to be surveyed and to be reconstructed. Turkey has a seismic building code for construction of public buildings, but for the ordinary buildings, new regulations to be ratified. In this respect, all of the buildings with less resistance would be reconstructed.

Twenty-year house loan conveniences would be available to people and it will be tried to rebuild all of the non-resistant buildings.

October 29, 2011

Until 29th October, the number of victims was declared to be 582 (of which 455 were in Erciş) and 4152 injured. From six ruined buildings in center of Van, the rescue operations ended in five of them. In one remained building six relief equipments were still active. In Erciş, from 65 ruined buildings, operations ended in 58 and in the remaining ones, 26 groups with 150 personnel were still working.

The Deputy Prime Minister said that tomorrow night (at the end of 7th night after the quake), search operation would end and disinfection operations would begin. He also wanted people to grant hot clothes to the people survived and lived in tents in the cold weather.

The gathered aids had been brought to a sugar factory in Erciş to be distributed. These aids include food, water, blanket and clothes. Five hundreds of 5 Liters water bottles were to be sold illegally that stopped based on reports coming from inhabitants and after the police reaction.

Turkish Minister of Urban Planning promised people lost their house to prepare the residential buildings of Van until September 2012 and while they were being constructed, the government would provide temporary shelters with prefabricated units for them (9). A comedian group from Istanbul went to Erciş to change the tragic ambience of that city. This group held a birthday ceremony for a one-year old child.

October 30, 2011

The number of victims exceeded than 600. At night, the rescue groups terminated their work. It was set that since tomorrow, the disinfection operation begun.

According to Kandilli Observatory, an aftershock occurred at 03:55 with magnitude of M4.5 and its epicenter was Aşağı Gölalan village. This aftershock occurred with 5km depth. This aftershock followed by three other aftershocks having the magnitudes M2.5 to M2.7.

According to the direction of MOH and via Red Cross, a tent for drug distribution was settled in which 30 people were working and by presenting the doctor prescription, they received free drugs. Moreover, in a tent settled in the yard of one of the medical universities, psychologists gathered to help the quake victims having psychological injury. The local state exclaimed that it would employ 3000 persons for cleaning the debris and rubbles and supplying the social aids. This was an appropriate opportunity for temporary employment of workers who had been jobless due to the earthquake.

October 31, 2011

Eight hundreds new teachers dispatched in to Van by Ministry of education. The Minister also told that schools would be reopened until November 14 and the necessary measures for securing and reconstructing them have been taken.

Turkish Minister of Commerce and Customs, Hayati Yazıcı, exclaimed that all of foods, cloths, electronic instruments, stationery and hundreds of other tools existing in the customs would be sent for the quake hurts. In the first step, several tones of rice, sugar, oil, flour, conserved foods, clothes, shoes and washing substances would be sent to Van after precise laboratory control. In the whole winter, all of the discovered and seized goods and food materials would be sent via customs. He also said that prior to other works; the customs would pay attention to the aids received from foreign countries.

November 1, 2011

The list of sent items to the hurt regions announced as follows: 143 generator, 77 projector, 95 mobile toilet, 42711 tents (8166 from foreign aids), 54 public residence tents, 69 prefabricated houses, 160,360 blankets, 179,000 quilts, 37 mobile kitchens, 3051 kitchen sets and 5,792 sleeping

bags. The Red Cross and the other rescue groups in tent towns (temporary residences) distributed warm food three times a day. In nine settled tent regions, the attempts to set up public telephones, laundries and other instruments were going on.

November 2, 2011

The Prime Minister, Erdoğan, granted his one-month salary to the quake hurts. Many of the Parliament Representatives and Representatives of the Governing Party of Development and Equality Party in the Parliament (*Adalet ve Kalkınma Partisi*; AK Parti) granted their salaries as well. Their subventions are excessive than 200,000 TL. The Prime Minister wanted the increment of Parliament Representatives to help quake victims. The other contributors were artists and representatives of other parties such as CHP, MHP, and AKP.

November 6, 2011

At 04:43 local time, another earthquake occurred with a M4.5 and its epicenter was located in Van Lake. It has not had any damage. In Van and Erciş, the quake victims held Qurban Fiesta and praying ceremony in the tents settled by Red Crescent and in undamaged mosques. The rescue groups and victims people greeted Qurban Fiesta to each other and gave thanks to the helps of the rescue groups. The Red Crescent rescue groups distributed fiesta food and gifts among people.

November 7, 2011

The Minister of Development visited the tents settled by Red Crescent in Qurban Fiesta. He visited as well a six-member family lived in a tent, listening their requests for immediate help to the family, in which two children and their father have been physically disabled.

November 9, 2011

According to the Kandilli Observatory, at 00:05 (midnight by local time) an important aftershock with a M5.5 occurred in Adilcevaz (closed to Van) with 4.3km depth. The Bayram Hotel in the Van City center collapsed. This hotel has been in service even after the earthquake and at that night was full of passengers, mostly the rescue workers

and journalists, and was located at the south corner of Valiliği square. In this hotel, 44 persons were killed among which there were three Iranian tradesmen and one Japanese relief force. During this aftershock, 20 buildings demolished, two of which were hotels. In general, about 100 persons were imprisoned under debris.

According to the recorded videos of CCTV's, at the quake moment, electricity was disconnected and passenger running out from hotel. Two cars belonged to World News Agency, also parked in front of the Bayram hotel (Fig. 2), one of them buried under the debris and became useless. From the other videos retrieved from the cameras throughout the city, whole city's electricity was seen to be disconnected and separated slices of some buildings fell down on the ground.



Fig. 2: Hotel Bayram of Van, before (down) and after (up) of its collapse in the aftershock of 9 November 2011, M5.6 (3, 4)

Given the primary reports, 25 buildings were damaged. The rescue operations performed in six

regions of Van. Many of journalists resided in two damaged hotels; Bayram (which collapsed totally) and Aslan hotel. The number of survivors from these two hotels was 13 persons. Twenty-eight injured people rescued out of debris. Transportation of tent and blanket to the region was done using five military and two THY (Turkish airline) cargo planes. In addition, 260 of the region residents were translated to Istanbul and Ankara.

November 10, 2011

After demolishing of Bayram hotel, the angry inhabitants of Van gathered against hotel debris and demonstrated against Erduğan government and wanted Erduğan to resign. This protest ended by police intervention. Because of the explosion of pepper gas to disperse people, rescue groups get distance from the place inevitably and rescue operations were paused for a while.

November 14, 2011

According to Kandilli Observatory, three aftershocks occurred during half an hour: at 18:31 and 18:47; two of which with the magnitudes of M4.4 and M4.5 respectively, in Van Lake, and another one occurred at 18:54 with magnitude of M4.2 in the city of Muradiye (about 100km NE of VAN).

November 15, 2011

In the prone area 200 residential facilities were prepared for teachers. Four hundred prisoner of Van Tipi prison were sent to other prisons due to quake and the possibility of aftershocks. Most of prisoners were sent to the prisons in Black Sea coastal cities.

Conclusion

In Van earthquake by attending to damages extent and number of 644 deaths (of which 470 in Erciş) and also place of epicenter out of Van - about 30 km – and the time of the earthquake occurrence at 13:42 of weekend holiday (Sunday) (14, 16, 17), it seems that the extent of damages and casualties was limited for a country such as Turkey and an earthquake with such a magnitude (Mw7.2). According to the vulnerability of infrastructures in

this country, the existence of ethnic tensions in Van province, and the location of the prone area in the most undeveloped eastern part of Turkey, and being away from the country's developed section, the crisis was relatively well managed during and after the quake. After the event temporary shelters installed during a week and distribution of hygienic and alimentary requirements was made possible in 48 hours (People retrieving warm food were 120,000 in Van). These may relate to existence of Van airport and well equipped new hospital of Van, which have been inaugurated in September 2011, a month before the Van earthquake. Other positive point in disaster management in Van earthquake was the Turkish experiences in confrontation the natural disasters. The review of these achievements in the crisis management for our country, Iran, could be very important because of enormous similarity in cultural and economic issues, as well as the proximity of the two countries geographically and analogy in seismicity and vulnerability status particularly in North West of Iran and East of Turkey.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

Acknowledgment

The assistance of the IIEES colleagues specially Dr's E. Haghshenas and M. Bastami is greatly acknowledge for their useful assistance in the field studies and their helpful comment. The authors declare that there is no conflict of interest.

References

1. Bremer R (2003). Policy Development in Disaster Preparedness and Management: Lessons Learned from the January 2001 Earthquake in Gujarat, India. *Prehospital and Disaster Medicine*, Vol.18. No.4, 2003.

2. Tun L, Pairote P (2003). An Integrated Approach to Natural Disaster Management: Public Project Management and its Critical Success Factors, *Disaster Prevention and Management*, Vol. 15 Iss: 3, pp.396 – 413, 2003.
3. İHH (2011). İnsan Hak ve Hürriyetleri ve İnsani Yardım Vakfı, Endowed Organization of Human Rights and Liberties, Available from: <http://www.ihh.org.tr/ihh-vandaki-calismalarina-araliksiz-devam-ediyor/>
4. United Nations Office of the Resident Coordinator (2011). *Turkey Earthquake: Situation Report*. s.l. ; 2011. 1-18.
5. IFRC (2011). *Information Bulletin :Turkey: Earthquake*. s.l. : International Federation of Red Cross and Red Crescent Societies, 23 October, 2011. 1 to 18.
6. Government of the Russian Federation (2011). [Online] , An EMERCOM jet loaded with humanitarian aid has taken off for Turkey. Oct 27, 2011. Available from: <http://www.mchs.gov.ru/eng/news/detail.php?ID=572481>.
7. Reliefweb (2011). [Online] Ankara Accepts International Aid As Quake Crisis Grows. october 25, 2011. Available from: <http://reliefweb.int/node/455204>.
8. Ozerkan F (2011). Turkey's ethnic tension boils over in quake city. AFP. [Online] Oct25, 2011. Available from: <http://www.google.com/hostednews/afp/article/ALeqM5jmu8C3nhM9EdewW9TbJgS1bXhUZw?docId=CNG.e953307fb21b1766114179006e2d47a2.3b1>.
9. Ozerkan F (2011). Search for Turkish quake survivors called off. AFP. [Online] Oct 29,2011. Available from: <http://www.google.com/hostednews/afp/article/ALeqM5jnwpsfkiXkt7LjTOciswoFh2uTYw?docId=CNG.db36bfab46eee355ae8cabe781314432.141>.
10. Guardian (2011). [Online] Twitter plea for help gets 17,000 responses october 24, 2011. Available from: <http://www.guardian.co.uk/world/2011/oct/24/tutkey-earthquake-twitter-plea-help>.
11. European Commision (2011). European Union joins the effort to assist survivors of earthquake in Turkey . [Online] European Commission Humanitarian Aid department , Oct27, 2011. Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1290&format=HTML&aged=0&language=EN&guiLanguage=en>.
12. Ireland provides emergency aid for Turkey following earthquake (2011) Government of Ireland . [Online] 10 26, 2011. Available from: http://www.irishaid.gov.ie/latest_news.asp?article=1891.
13. AmeriCares (2011). [Online] Emergency Response to Deadly Earthquake in Turkey. october 24, 2011. Available from: <http://www.americares.org/newsroom/news/emergency-response-prepared-turkey-earthquakes.html>.
14. Releifweb (2011). Operation Blessing International responding to deadly earthquake in eastern Turkey. reliefweb. [Online] october 26, 2011. Available from: <http://reliefweb.int/node/455527>.
15. Télécoms Sans Frontières (2011). [Online] Earthquake in Turkey: TSF on the ground within 24 hours. Available from: <http://www.tsfi.org/en/action/emergencies/175-tremblement-de-terre-devastateur-en-turquie-tsf-se-deploie>.
16. Earthquake - Humanitarian Update (2011), [Online] UNHCR Briefing Notes . UN High Commissioner for Refugees, nov 1, 2011. Available from: <http://reliefweb.int/node/456604>.
17. Ergin H, Pamuk E (2011). After quake Turkish villagers fear white death. reuters // Reuters. [Online] Oct 26, 2011. Available from: <http://www.trust.org/alertnet/news/after-quake-turkish-villagers-fear-white-death/>.