

TURKISH REPUBLIC

COUNTRY REPORT ON DISASTER MANAGEMENT

Turkey lies between the Black Sea and the Mediterranean Sea, bridging Asia and Europe and located within the rectangle bounded approximately by latitudes 36-42 degrees North and longitudes 26-44 degrees East. It comprises an area of 778.000 square kilometers. The land borders of Turkey are 2.573 kilometers in total and the costlines (including islands) are 8.333 kilometers. Turkey borders by two European and six Asian countries. Greece, Bulgaria, Georgia, Armenia, Azerbaijan, Iran, Iraq and Syria.

The European side and Asian sides are divided by the Bosphorus Straits at İstanbul, the sea of Marmara and the Çanakkale Straits (Dardanellas). Anatolia is the name given to the larger part of the country which is a plateau rising progressively towards the east and broken by the valleys of 15 rivers. In the north, the Black Sea Mountain chain runs, paralel to the Black Sea and in the south, the Taurus Mountain sweep narrow, fertile coastal plains along the Mediterranean Sea.

Because of its geographical location, the mainland of Anatolia has always found favor throughout history and is the birthplace of many great civilizations that the remains of them made it one of the best tourist attraction center of the world. It has also been prominent as a center of commerce because of its land connections to three continents and the sea surrounding it on three sides. Turkey enjoys a variety of climates ranging from the temperate climate of the Black Sea region to the continental climate of the interior then to the Mediterranean climate of the Eagean and southern coastal regions.

THE STATE ORDER

Turkey is a unitary state governed by the parliamentary democratic system. The Republic was founded on October 29, 1923 by Mustafa Kemal Atatürk. Its capital is Ankara. The principle of "seperation of powers" prevails among legislation, executive and judiciary. The legislative power is vested in the Turkish Grand National Assembly. The Assembly is composed of 550 members of parliament elected directly by the citizens every four year.

Executive power and function is exercised and carried out by the President of the Republic and the Council of Ministers. The Council of Ministers consists of the Prime Minister and 24 ministers. The Prime Minister is appointed by the President of the Republic, from among the members of parliament.

Judical power is used by means of independent courts. The Constitutional Court, the High Court of Appeals, the Council of State, are regarded as the higher courts in the Constitution.

Administrative institutions in Turkey may be classified under three groups:

- Central Administration
- Local authorities
- Other institutions and organizations.

Administratively the country is divided into 81 provinces where appointed governors serve the institutional functions of the government. The provinces are divided into districts and districts are divided into villages. There exist 900 districts and 36.500 villages. The elected mayor of municipalities (3228) are in charge of providing public services such as drinking water, waste management, public transportation.

ECONOMY

According to WB data, Turkey was in sixteenth place among 127 countries with its 5.5 percent rate in the average per capita GNP increase between 2001-2007. Turkey's dynamic economy is a complex mix of modern industry and commerce along with a traditional agriculture sector that still accounts for more than %35 of employment. It has a strong and rapidly growing private sector. The largest industrial sector is textiles and clothing and also the automotive and electronics industries are rising in importance within Turkey's foreign trade.

Some figures about Turkey's economic and social structure are as follows:

Population: 72.000.000 (2008)

Median age: 29 years

Population growth rate: %1

Life expectancy at birth: 73,1 years

Literacy: % 88 (definition: age 15 and over can read)

GDP (purchasing power parity): 670 billion USD

GDP per capita (ppp): 9.500 USD

GDP composition by sectors: agriculture:% 9, industry: % 31, services: % 60

Unemployment rate: %10

Inflation rate: % 8,5

Budget: 290 billion USD

Electricity production: 180 billion KWH

Export: 110 billion USD

Imports: 170 billion USD

Exchange rate: 1 USD= 1,3 YTL

Telephones-mobile: 60 million

Internet users: 22 million

Airports: 117

Railways: 9.000 km

Roadways: 430.000 km.

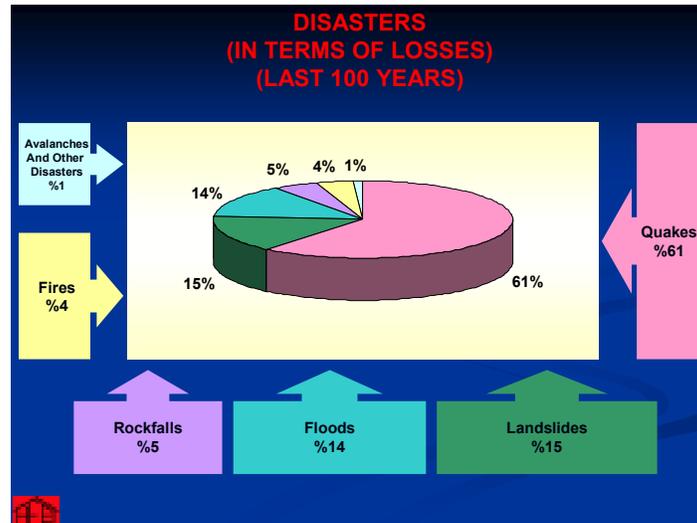
International Organizations Participation: BSEC, Council of Europe, EAPC, EBRD, ECO, EU (pre accession) FAO, IAEA, IBRD, ICC, IDA, IFRC, ILO, IMF, IMO, MIGA, NATO, OECD, OSCE, UN, UNCTAD, UNESCO, UNHCR, UNIDO, UNIFIL, UNIMOG, UNRWA, WHO, WMO, WTO etc.

NATURAL DISASTERS

In Turkey, disasters are both natural and human made, causing serious disruption of normal daily life, causing widespread human, material or environmental losses that exceed the ability of the affected populations and the government to cope using its own resources.

Turkey has always been vulnerable to various kinds of natural disasters because of its geology, topography and meteorological conditions. Earthquakes, landslides, floods, drought, rock falls and avalanches are the main natural disasters. Deforestation and soil erosions exacerbate these disasters.

FIGURE 1 NATURAL DISASTERS LOSSES



Since the beginning of the 20. century, approximately 87.000 people have lost their lives and nearly 300.000 people have been injured. The total number of houses damaged by natural disasters is nearly 700.000

FIGURE 2 HOUSES DAMAGED BY NATURAL DISASTERS

Disasters	Number of Collapsed Building	Ratio (%)
Earthquakes	495,000	76
Landslides	63,000	10
Floods	61,000	9
Rockfalls	26,500	4
Avalanches and Other Disasters	5,154	1
TOTAL	650,654	100

EARTHQUAKES:

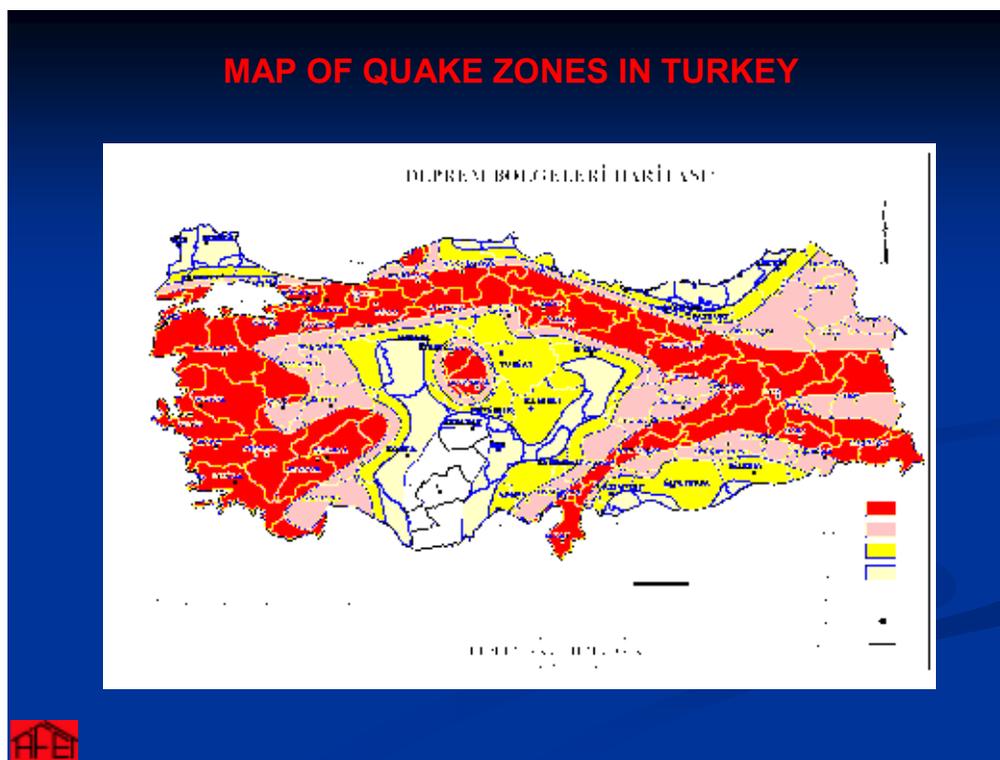
Turkey is located one of the most seismically active region of the world. It lies within the Mediterranean sector of the Alpine-Himalayan orogenic system. The alpine orogeny is

produced because of the compressional motion between the Europe and Africa whereas the Himalayan orogeny has resulted from the India- Asia collision. Turkey is surrounded by three major plates: African, Eurasian and Arabian and two minor plates: Aegean and Anatolian

The relative motion between the Eurasian and Arabian plates and the westward motion of the Anatolian block under this compressional plate motion are the main causes of earthquake hazard in Turkey.

Most of the cities, industrial areas, dams are located in seismically active areas. Official EQ hazard zoning map of Turkey shows us that % 66 of the surface area of Turkey lies on zone 1 and zone 2 levels of seismic hazard and % 71 of the population living in these dangerous areas.

FIGURE 4 EQ HAZARD ZONES AND PROVINCES OF TURKEY



The disaster history of Turkey is dominated by EQs. 137 earthquakes have been occurred in the last hundred years and killed 84.000 people, injured 200.000, damaged 500.000 buildings. The amount of losses are totally more then 20 billion USD.

FLOODS

Floods are among the most frequent and costly natural disasters in Turkey in terms of human suffering and economic losses. In the period of 1955-2007 there have been 1400 flood occurrences that caused 1400 deaths and 65.000 dwelling units collapse.

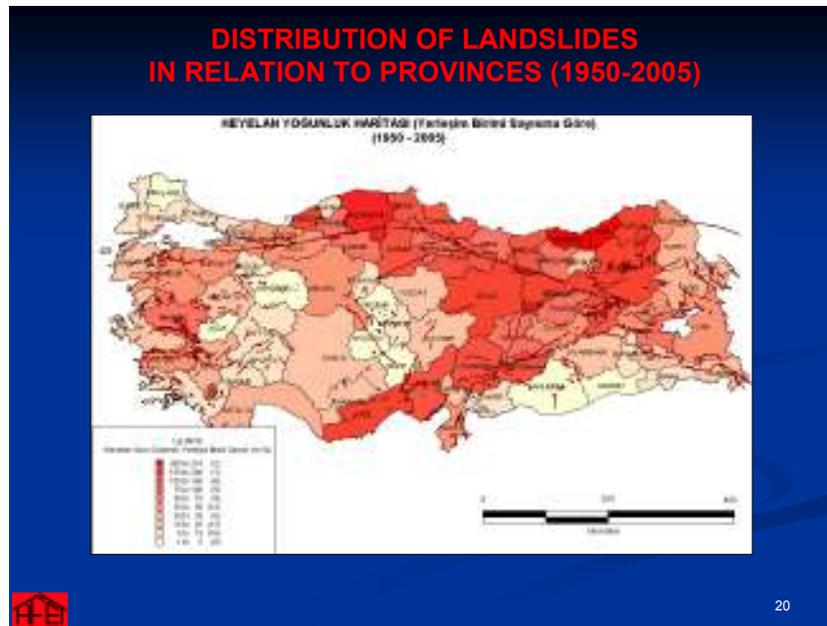
FIGURE 5 FLOOD HAZARD MAP AND LOSSES (Source: G.D. of State Meteorological Organisation)



LANDSLIDES, ROCK-FALLS and SNOW AVALANCHES

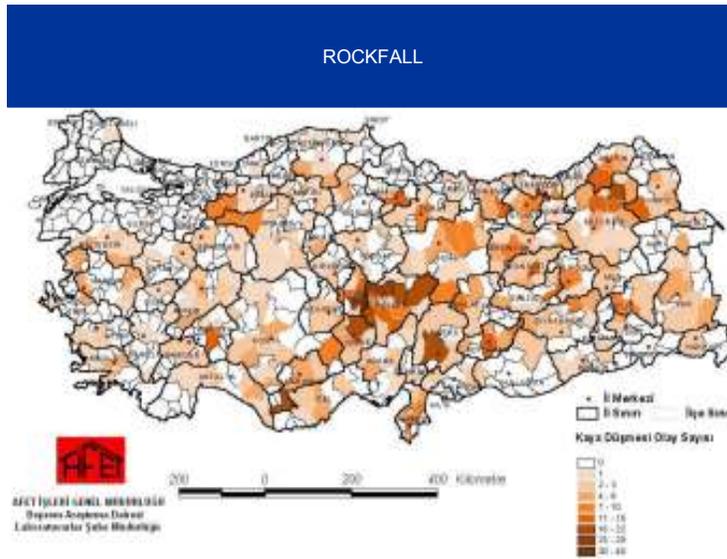
Landslides frequently affect inner Anatolia, Eastern Anatolia and particularly the Black Sea regions in Turkey. Between 1955-2007, landslides affected 4500 settlements and killed 200 people. In this period 65.000 dwelling units were relocated to safer places.

FIGURE 6 LANDSLIDE HAZARD MAP OF TURKEY (Source: GDGA)



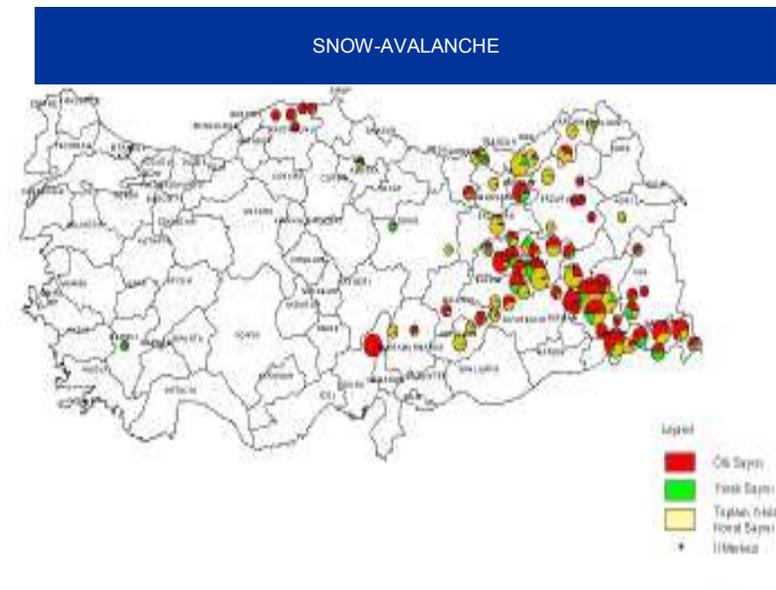
In the same period according to the disaster database, 775 rock falls have occurred and caused 34 deaths and 27.000 houses damaged.

FIGURE 7 ROCK FALLS HAZARD MAP OF TURKEY (Source: GDDA)



Snow avalanches are frequently observed in eastern and south eastern region, where snow fall is heavy. Since 1950 there have been 389 snow avalanches and this disasters have caused 1039 deaths and 5200 houses were damaged.

FIGURE 8 SNOW AVALANCHES MAP OF TURKEY (Source: GDDA)



OTHER FORM OF DISASTERS

In Turkey % 80 of the land area is subjected to various levels of soil erosion. Between the years 1955-2007, 500.000 hectares of land have been subjected to reforestation and erosion control activities by the Ministry of Environment and Forest.

During the 1977-2007 period, there were 69.000 incident of forest fires which consumed 1,5 million acres of forest land. Statistics shows that in every year 13.000 hectares of forest land is burned.

Severe droughts were experienced during the springs of 1999 and 2000, in the southern regions of the country causing % 30 of agricultural losses.

Extreme heat waves have not only caused increased forest fires but also human and animal deaths. The Government declared 13-14 July 2004, as no-work days due to very hot weather but about 5 million poultry animals died because of it. Climate changes lead to ecological, environmental, social and economic problems in Turkey. In a country that doesn't have any petroleum resources, energy deficits caused by climate changes can be expected to become more important in the future.

DISASTER MANAGEMENT SYSTEM

Development of Disaster Management (DM) System and National Strategies in Turkey can be divided into for distinct periods:

- 1- The Pre-1944 period: There were no effective policies for DM
- 2- The 1944-1958 period: Feeble countermeasures period: Government declared Law No: 4623 in 1944 that is foundation of DM activities in Turkey. In this period "Development Law (Law No: 6785) and Civil Defense Law (Law No:7126) were enacted also.
- 3- 1959-1999 period: National Assembly passed Law No. 7269 (Disaster Law) and created a new Ministry which is responsible coordinating and implementing states obligations Law 7269 and 6785.
- 4-The Post 1999 Awakening Period: The enormity of the losses from 1999's big two earthquake forced the government to promulgate 7 new laws and 32 decree laws to improve national disaster management system.

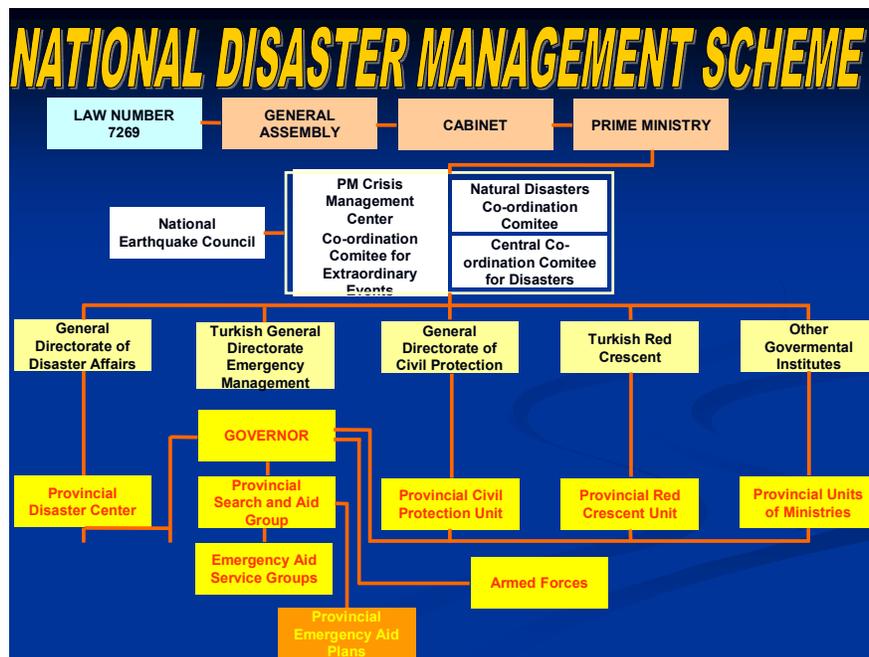
Currently, Turkey Emergency Management General Directorate (TAY) of the Prime Ministry, General Directorate of Disaster Affairs (GDDA) of the Ministry of Public Works and Settlement and General Directorate of Civil Defense (GDCCD) of Ministry of Interior are in overall responsibilities with respect to disaster management duties in Turkey.

Municipalities and governerships are also responsible for mitigation and response activities. Turkish Red Crescent Society (TRCS) is an integral and important part of overall disaster management structure in Turkey. It is represented at national and provincial level committess. The TRCS is active in the areas of disaster preparadness and response, blood-transfusion services, first aid and temporary housing units (tents). There are many ministries, Turkish

Armed Forces, state agencies and institutions, NGO's, foundations, S&R groups involving in disaster preparedness and response activities.

Disaster Management system of Turkey is highly centralized and hierarchical. Responsibility for DM goes bottom-to-up, from district to province and to national level depending on the scale of the event. Small scale disasters can be handled first at district level. If the disaster surpasses the capacity of district level the provincial governor, who heads the "provincial rescue and relief assistance committee" (known as a crisis committee) is involved response and recovery activities. If a major event occurs that requires central government intervention, then the "Central Coordinating Committee for Disaster" coordinates the response efforts for the disaster. These structures were installed in 1959 through Law No: 7269 (Disaster Law)

FIGURE 9 NATIONAL DISASTER MANAGEMENT SCHEME



If the Prime Minister decides that the size of disaster needs more comprehensive approach, a "Crises Management" situation is declared. In this case a "Crises Center" is established in the Office of the Prime Ministry. During the crises time each organization sets up its own crisis centers in its HQ's.

MAIN ORGANIZATIONS FOR DISASTER MANAGEMENT

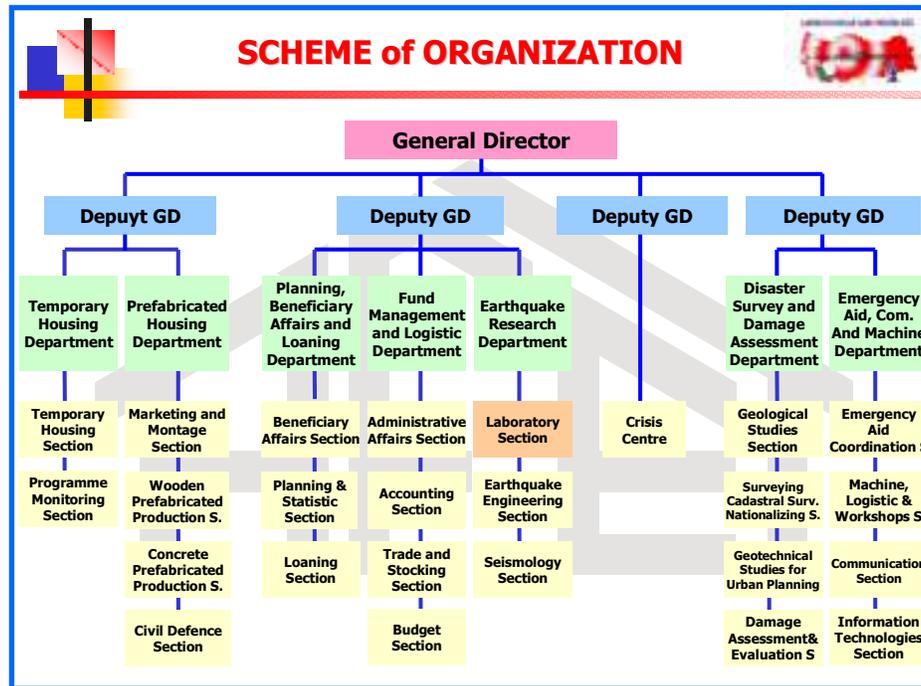
GDDA, GDCD and TEMAD

General Directorate of Disaster Affairs (GDDA):

The major legislation pertaining to the implementation of GD is Law No: 7269. The law determines the protective and preventive measures as well as regulating the activities to be undertaken before, during and after natural disasters and defines guidelines for terms and

condition of assistance to be provided to affected people. GDDA is composed of seven departments

FIGURE 10: GDDA's ORGANIZATIONAL SCHEME



The GDDA is entrusted with the following responsibilities:

- Providing emergency relief and coordination when a disaster strikes
- Taking short term and long term measures in disaster stricken areas to provide urgent settlement and shelter
- Identifying natural disaster prone area, taking the required measures to prevent disasters
- Making preparations, all kind of plans, projects, implementations, management and auditing

General Directorate of Civil Defense (GDCD)

The goal and purpose of the civil defense organization is to minimize the life losses and other type of losses during warfare and disasters. Civil Defense Law (Law No:7126) explains the main purposes of the organization as follows:

- To secure the lives and belongings of the civil people during war,
- Saving lives and belongings of people during disasters
- To reduce the damage to the lives and the belongings of victims in a fire
- To build up morale among civilians.

GDCD's responsibilities are as follows:

- To set up Civil Defense Service nationwide and to ensure planning application, coordination and supervision of measures in government and private establishments
- To plan and execute all activities for unarmed protection, emergency help and fire aid
- To set the standards for fire department, education, supervise, coordinate
- To train civil defense staff and inform the public about CD

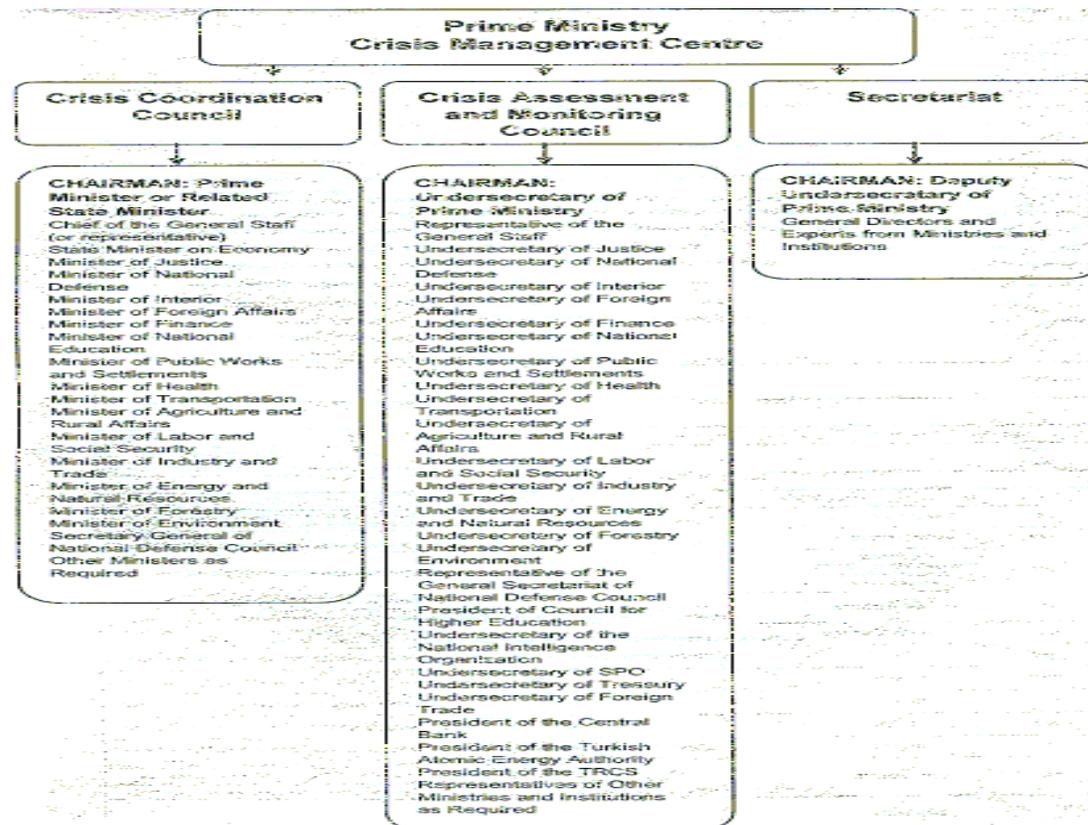
GDCD has a Civil Defense College in Ankara for training search and rescue and firefighting teams.

General Directorate of Turkish Emergency Management

Although the law No: 7269 gives the overall coordination duty to the Ministry of Public Works and Settlement, in practice there were some difficulties to coordinate the ministry in same level therefore higher authority was necessary to make coordination by using the power of Prime Ministry. For his reason after 1999 big two earthquakes, TEMAD was established by Decree No: 600 in June 2000. The main responsibilities of TEMAD are:

- Have emergency management centers established in governmental organizations for effective realization of EM, identify their working principles
- Monitor and evaluate the organizations taking necessary measures to prevent situations that requires EM
- Carry out coordination services in utilizing all kinds of land, marine and aviation vehicle, when EM is applied
- Make incentive arrangements for volunteers and organizations providing relief in emergency situation, coordinate national and international relief workers

FIGURE 13: PRIME MINISTRY’S CRISIS MANAGEMENT CENTER



Crisis management arrangements were developed in early 1990's in Turkey. Crisis Management Center in the office of the Prime Ministry is a general coordinating body in nationwide.

This body includes:

- Crisis Coordination Board
- Crisis Monitoring and Assessment Board
- Secretariat

CRISIS MANAGEMENT CENTER

- It carries out the missions and responsibilities in accordance with the procedures in national legislations and in national plans.
- CMC in the office of the Prime Ministry is activated by the PM upon the proposal of the National Security Council, Board of Ministers, or State of Secretary who is responsible for CM or Secretary General of NSC if there are some clear indications of crisis.
- According to its regulation, it has been established with core personel in peace time. After it has been decided to activate in times of crisis, according the type of crisis, it is agumented by the members of related ministiries and institutions. If crisis management is failed and in the case of escalation of the crisis and it may be proposed by CCB to competent this bodies in order to declare state of emergency, martial or mobilization and war.

CRISIS COORDINATION BOARD

- CCB is chaired by the Prime Minister or one of the State of Secretary.
- It's members are : Related ministers in accordance with the type of crisis, Chief of the General Staff and The Secretary General of NSC
- CCB may meet upon the Prime Minister or one of the members of CCB, It also may convene by Crisis Monitoring and Assesement Board in situation warrants.

- CCB is responsible for;
- Making assesments about the proposals and information provided by Crisis Monitoring and Assesement Board and determinig essentials of political guidance.
- Taking necessary decisions related to problems in light of these assesements.
- Monitoring implementations about decisions and their executions,
- Deciding establishment of ministrial centers, provincial centers.

CRISIS MONITORING AND ASSESEMENT BOARD

- CMAB, under the CCB is chaired Under Secretary of Prime Minister. It is composed of undersecretaries of related ministers and chairmen of the other organizations concerned.
- It convenes upon the decision by the CCB. If its required it may be called to convene upon the Secreteriat of The Crisis Management Center of Prime Minister.

- Assessing the information about crisis

- Determining the measures to be taken dealing with crisis according to these assessments and initiating implementation of these measures.
- Coordinating among related ministries and organizations
- Guiding the activities to be maintained by authorities in order to allocate public resources such as equipments, personnel and other means
- Monitoring the implementations on decisions and directives by the Council of Ministers and CCB and providing their implementations.

- Proposing state of emergency, martial, and state of mobilization and war to CCB if necessary
- Inviting CCB to convene in the matters which are not under its authorities
- Delegating Secretariat about some services and activities if required
- Monitoring the implementation and decisions and directives by the Council of Ministers and CCB and providing their implementation
- The Secretariat is composed of the representatives and experts of Prime Ministry, Turkish General Staff, ministries concerned, General Secretariat of NSC and other representatives of related organizations.
- According to the Regulation on CMC it was established with core personnel at the General Secretariat of NSC in the peacetime.
- After it has been decided to activate in times of crisis, it is augmented by officials who have good knowledge in their field of concern from related ministries and institutions.

SECRETARIAT

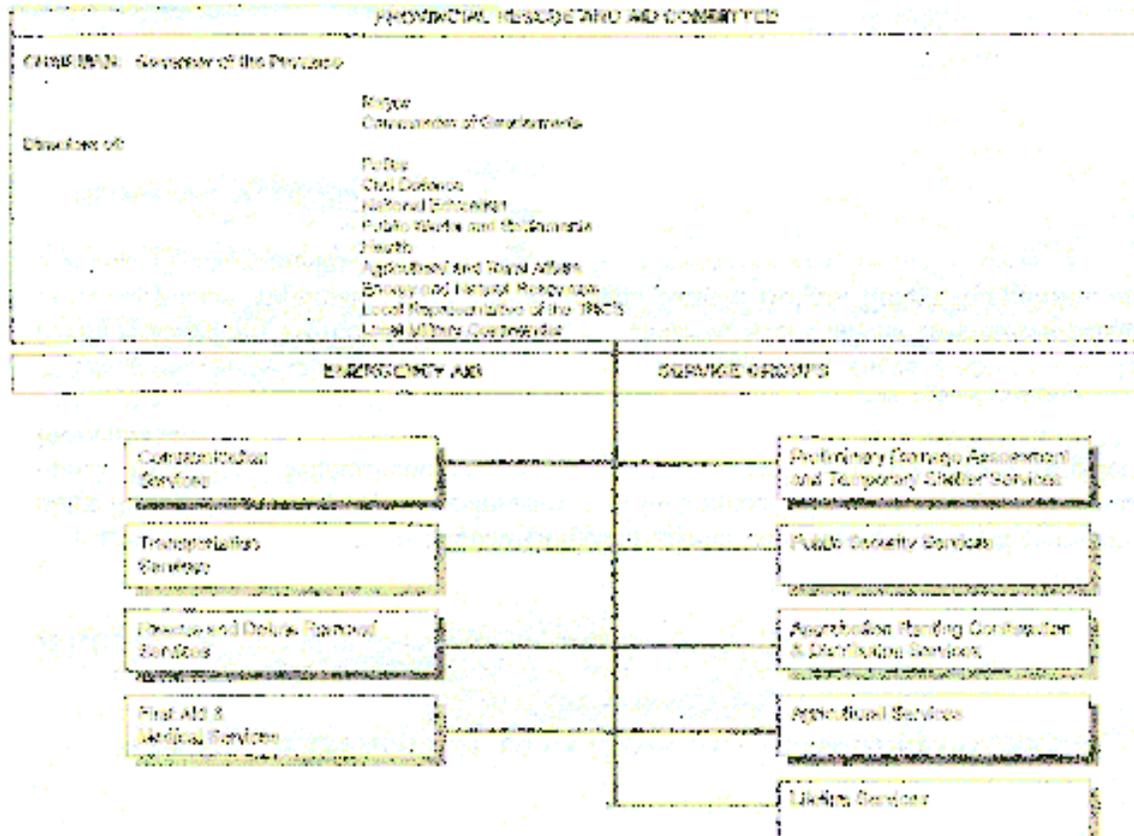
- The Secretariat's duties and responsibilities divided into two categories, in times of crisis and peace, according to the Regulation on CMC.
- In the peacetime The Secretariat is responsible for:
 - Maintaining equipments, devices communication means in CMC.
 - Providing training for officials who are carrying out their duties at ministerial, provincial and organizational crisis centers.
 - Monitoring current crisis arrangements and undertaking necessary planning activities regarding to these legislation

- Preparing reports on the situation of current crisis centers and submitting it to PM
- Gathering information for crisis and providing necessary information related authorities or CMAB
- Monitoring implementation for crisis
- Providing the necessary information to the public by mass media
- There have also been CC in central and local level. Central ones have been established at Turkey General Staff and the others at every ministries and concerned organizations.
- Local ones have been established at provinces and towns.
- They are responsible for:
 - Monitoring and evaluating crisis
 - Determining the requirements
 - Providing coordination among the organizations
 - Reporting the implementations to the CMC in the office of PM

PROVINCIAL LEVEL

The organizational structure for DM at provincial level is under the authorizations of the governor. Each governorship establishes a "Provincial Rescue and Aid Committee". There are nine service groups within this body during disasters to implement effective response and recovery efforts. Districts also establish the same structure for their own DM activities.

FIGURE 14: PROVINCIAL RESCUE AND AID COMMITTEE



INTERNATIONAL RELATIONS ON DISASTERS

Bilateral, multilateral, international and regional cooperations significantly enhance Turkey's ability to respond effectively and recover easily, through the technology transfer and sharing of information and resources. Since 1955, Turkey established strong links with a large number of international organizations in terms of disaster management, response and relief operations. About 80 international relief organizations participated actively in response and recovery activities after the big two earthquakes in 1999.

The most relevant organizations names are given below:

- 1-Black Sea Economic Cooperation (BSEC)
- 2-Council of Europe
- 3-European Investment Bank
- 4-European Seismology Commission

- 5-International Atomic Energy Agency (IAEA)
- 6-International Committee of the red Cross
- 7-International Committee on EQ Engineering
- 8-International Federation of the RC and RC Society (IFRC)
- 9-North Atlantic Treaty Organization (NATO)
- 10-Stability Pact for South Eastern Europea
- 11-UNEP
- 12-FAO
- 13-UN High Commissioner for Refugees (UNHCR)
- 14-UNIDO
- 15-UN-OCHA
- 16-World Food Program (WFP)
- 17-WHO
- 18-WMO

CONCLUSIONS:

The last twenty years of big disaster experience have clearly shown us the shortcomings and weaknesses of the DM strategies and systems that exist in Turkey. So Turkey will have to rectify the duplication and overlapping of authorities in its existing DM System. Turkey is now trying to improve his capacity of DM system with the help of UN-ISDR's "Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters" strategies.