

Turkey

National progress report on the implementation of the Hyogo Framework for Action

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Strategic goals 1

Area 1

The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

Strategic Goal Statement:

Development plans are prepared by State Planning Organization (SPO). Natural disasters issue is a sectoral group established within SPO due to the importance of disasters on sustainable development. Natural Disasters topic is included in 8th Five Years Development Plans (2001-2005) as an individual section under the item "Increasing the Efficiency on Public Services". In this plan, several proposals on the current problems faced on the episodic disasters those caused both human and economic losses are included. In this plan the need for social, legislative, organizational and technical structures in order to better achieve disaster risk reduction is highlighted. Another important item included in this plan is the achievement of continuous and systematic educational activities on public awareness. In the 9th Development Plan, under the item "Rationalization of Responsibilities and Authorization Among Organizations", the need for reorganization process on disaster management is emphasized. According to the "Political Build-up and Development of Application Capabilities" item of the same plan, the priority is given to high risk disaster areas on the rural urbanization practices. The 9th plan also has references to global climate changes.

In mid-term plan of 2008-2010, it is stated that disaster management, at both central and local level will be restructured in an adequate and comprehensive form with institutional, administrative and legal dimensions.

In 2008 Annual programme of the government, there are some statements referring disaster risk reduction. According to the programme, in order to establish safe and livable cities by preventing and reducing possible natural disaster damages, public investments are essential to improve damage reduction strategies and implement these strategies in cross sectors. Furthermore, disaster risks should be taken into consideration in the selected process of new investment projects. The projects directed to natural disaster mitigation and compensation for damages would be priorities in 2008 in addition to general sectoral and regional set of priorities.

SPO prepares Strategic Plans for municipalities and natural disasters are also included in those plans. For example, in strategic plan prepared for Istanbul Metropolitan Municipality, disaster risks and deficiencies of the city are included in the plan and recommendations are also included in these plans.

Area 2

The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

Strategic Goal Statement:

At the moment there are three main governmental organizations dealing with disaster related issues. General Directorate of Disaster Affairs under Ministry of Public Works and Settlement, G.D. of Civil Defense under Ministry of Interior and Turkish Emergency Management G.D. under Prime Ministry are the main actors in this field. Their roles and responsibilities are clearly defined by laws and legislations and each unit has their own budget allocated from national annual budget. In addition to those stakeholders, there is Crises Management Center established under Prime Ministry in case of disaster

and emergency and being represented by high level governmental authorities. Municipalities and governorate 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 by national and provincial level committees.

Turkey has not established a multi-sectoral national platform at the moment. There is a new study on the re-organization of above mentioned three governmental units under one umbrella (Prime Ministry) and legislative studies are expected to be completed in a short time interval. Following this new re-organizational process, Turkey will establish its National Platform. Draft scheme of the NP have been prepared by National Focal Point. For this purpose other NP examples have been investigated.

Area 3

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Strategic Goal Statement:

Turkey's Disaster Management System was mainly focused on the post-disaster period and there were no incentives or legislations to encourage risk analysis or risk reduction approaches before 1999 two big earthquakes. After these two big events (lessons learned) the main concepts of Disaster Management System has been changed. Many new laws, regulations and other instruments on planning and implementations in all phases of disaster (mitigation, preparedness, response, recovery and rehabilitation) were accepted. Turkish Government and Turkish Grand National Assembly (TGNA) gave great importance on this issue. In 2008 Plan, one of the priority statement of government is "Organizational and administrative improvements shall be established in order to have an integrated system which covers risk mitigation of disaster management, preparation, response, reconstruction/recovery stages. New proposal law is in the agenda of TGNA. According to this proposal law three main disaster responsible organizations will be merged (GD of Disaster Affairs, GD of Civil Defense, GD of Turkish Emergency Management) under one umbrella organization in the office of Prime Ministry. These dramatic change will be the benchmark of this process for incorporation of risk reduction approaches into implementation of emergency preparedness, response and recovery programmes.

In Turkey, post disaster reviews are so important both at central and local level and also lessons learned from previous disasters included into pre-disaster planning to avoid past mistakes and to address the underlying causes of risk. Especially after 1992 Erzincan Earthquake and 1999's big two earthquakes Turkish Grand National Assembly established a special commission on disaster management issues. Ministry of Public Works and Settlement organized "National Earthquake Convention Meeting" in 2004 where more than 300 specialist, academicians and NGO's representatives participated and accepted resolutions on Disaster Management System of Turkey.

Priority for action 1

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Core indicator 1

National policy and legal framework for disaster risk reduction exists with decentralised responsibilities and capacities at all levels.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

DRR system of Turkey is mainly centralized. Depending on the magnitude and intensity of the event, responsibilities move from provincial level to national level.

At the moment there are three main governmental organizations dealing with disaster related issues. General Directorate of Disaster Affairs under Ministry of Public Works and Settlement, G.D. of Civil Defense under Ministry of Interior and Turkish Emergency Management G.D. under Prime Ministry are the main actors in this field. Their roles and responsibilities are clearly defined by laws and legislations and each unit has their own budget allocated from national annual budget.

Disaster Law N.7269, Civil Defense Law (No:7126) and Decree N:600 are the main legislative documents where all disaster related activities and responsibilities are referred at country level. In addition to those laws and regulations some ministries like Ministry of Environment and Ministry of Health, etc. are involved in disaster risk reduction and post disaster response and rehabilitation issues.

Crisis Management Center in the Prime Ministry and provincial crises center operate in case of an emergency at national and local level. According to the extent and severity of disaster, the administrative level of those commissions becomes higher. The system may be termed both central and decentralized but coordinated from central bodies.

Disaster risk reduction policies are included in Turkey's 8th and 9th National Development Plans. In medium term programme covering the years between 2008-2010, there are also references to disaster risk reduction activities. State Planning Organization, preparing sectoral development and strategy plans for municipalities in Turkey has included risk reduction activities for those reports. Within the reports prepared for three major cities of Turkey (Ankara, Istanbul and Izmir) there are references for local level risk reduction and response activities.

In National Millennium Development Goals Report of Turkey, under Goal 7 (Ensure Environmental Sustainability) atmospheric pollution, deforestation, protection of biodiversity issues are addressed and uncontrolled increase in building stocks is defined as an hampering factor to take preventive measures against natural disasters.

Context & Constraints:

Since the responsibilities and roles of each unit are clearly defined, the abundance of too many units is believed to cause sometimes hierarchy problems when responding. The necessary coordination and cooperation amongst the institutions responsible from DRR may sometimes be poorly conducted. Agencies responsible for DRR activities need strong financial resources and when distributed between several units they become inadequate. From this belief and the necessity, there is a re-organizational draft study on the de-fragmentation of disaster management system by gathering those three main units under one unit called "Turkish Disaster and Emergency Management Presidency" under Prime Ministry. This process is still on progress and being discussed in the parliament at the time when this report was prepared.

Supporting document:

Report on the Current D.M System of Turkey (2008)

http://www.preventionweb.net/files/3077_dmturkey.doc [DOC 3.16 MB]

Related links:

Web Site OF GDDA, Earthquake Research Department <http://www.deprem.gov.tr>

Web Site of General Directorate of Disaster Affairs <http://www.afet.gov.tr>

Web Site of State Planning Organisation <http://www.dpt.gov.tr>

Core indicator 2

Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

Turkey allocates annually a specific amount of money for disaster risk reduction and response activities. The three main units acting in disaster management activities of Turkey have their own budget to perform day to day businesses and also perform projects. Special fund allocated for General Directorate of Disaster Affairs' annual budget is used for rapid rehabilitation activities after disaster events and mainly sent to provincial administrations following a disaster to let them maintain their rapid and short time rehabilitation. GDDA has nearly 250 M. USD budget allocated for DRR activities. In addition to this Prime Ministry also have special funds for disaster management activities.

The amount allocated by government for disaster risk reduction activities is controlled by State Planning Organization and distributed to unit on project basis. After 1999 catastrophic earthquakes and as stated in 8th Development Plan, projects aiming disaster risk reduction activities are primarily evaluated and funded.

International donations from World Bank, European Union, European Development Bank, European Investment Bank and some international cooperation agencies like Japan International Co-Operation Agency (JICA&JBIC) are the other principal funds that contribute to disaster related budget in the country. After 1998 floods and 1999 earthquakes World Bank loaned a considerable amount of money in order to increase the current disaster management and risk reduction activities and capabilities of the country.

After 2004, The Scientific and Technological Research Council of Turkey (TUBİTAK) started a new programme called "Public Research Grant Committee" and begun to fund projects proposed by governmental units in joint collaboration with universities, research institutes, private sector and NGOs. The projects are proposed by governmental units and participatory projects including academic units, private sector, etc. are highly promoted and considered when funding. Projects aiming disaster risk reduction is being promoted and supported. For example, GDDA has three on going projects on several areas of risk reduction with a budget of approximately 24 Million USD.

Context & Constraints:

Establishing several agencies for DRR is not sufficient to bring desired results. These agencies must be supported with more financial resources. The migration from rural areas to urban areas is too rapid and the concentration of the population in dangerous areas increases the vulnerability of society. The sources of municipalities (finance, human) sometimes become insufficient.

Related links:

Web Site of JICA, TURKEY <http://www.jica.go.jp/turkey/turkish/>

Web Site of Turkish Scientific and Technological Research Council, <http://www.tubitak.gov.tr/kamag>

Core indicator 3

Community Participation and decentralisation is ensured through the delegation of authority and resources to local levels

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

The organizational structure of DRR at provincial level is under the authorization of the governor. Each governorship has own "Provincial Rescue and Aid Committee" and under this committee there are nine service groups those are responsible for response and recovery activities. Provincial Private Administration has its own resources for DRR activities.

In every province and district Turkish Red Crescent has its own branches for community participation and in most of the big cities there are special NGOs for search and rescue activities and they also conduct educational activities for public awareness.

After 1999 earthquakes lessons learned, government decided to give more responsibilities to local administrations. Some important changes made in "Provincial Special Administration Law (No: 5302) and "Metropolitan Municipality Law (No: 5216) and Municipality Law (No: 5393). After those changes municipalities and governorates are given increased tasks and responsibilities for DRR and most of the mitigation, preparedness, planning and recovery works have been transferred to them.

Context & Constraints:

There are still some conflicts between these three laws and Disaster Law (No:7269) and the idea on what type of planning processes are necessary for DRR is not clarified. In some aspects, some of these tasks given to provincial administrations (under governorship) show similarities with the tasks of municipalities. Local administrations (both provincial and municipalities) should be supported in terms of organizational structure and financial resources.

Related links:

Web Site of Turkish Red Crescent <http://www.kizilay.org.tr>

Core indicator 4

A national multi sectoral platform for disaster risk reduction is functioning.

Level of Progress achieved:

2: Some progress, but without systematic policy and/ or institutional commitment

Description:

One of the deficiencies that could be defined in this Core Indicator might be the lack of a multi-sectoral national platform in Turkey. Turkey with its National Focal Point started studies to establish a NP after 2007 Global Platform meeting. The draft scheme of this platform including members, short term programmes are sketched out by NFP. However, with the current agenda on re-organizational issue, this process delayed until the establishment of new disaster management organization.

As being one of the core disaster related organization, GD of Disaster Affairs acts like an office of National Platform. The preparatory works are carried out by this GD and a small group of experts come together regularly and implementing educational activities on NP. This group serves as a coordination mechanism between government agencies and universities and encourages adaptation and ownership

of HFA at national level.

Context & Constraints:

Turkey is determined to establish a national platform within a short time interval under new organizational structure or under ongoing structures. For this purpose several country examples where national platforms were established and have been functioning well were investigated and analyzed. Amongst them the ones that might fit well with the current disaster management system were considered in detail.

According to the experiences gathered from current NPs, it is obviously seen that effective and functional platforms might be represented by multi-stakeholder participants from different sector like government, academic units, private sector and finally NGOs. The draft of Turkish National Platform is scheduled in line with these inputs and will be implemented as soon as the new structure is established.

Priority for action 2

Identify, assess and monitor disaster risks and enhance early warning

Core indicator 1

National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

There are different scaled hazard/susceptibility maps prepared for Turkey at national level. One of them is the National Seismic Zoning Map of Turkey. The last seismic zoning map of Turkey (fifth in the history because of development in earthquake science) was prepared in 1996 by using peak ground acceleration contour map that was constructed base on probabilistic method. This zoning map is also available at local level in order give a basic understanding of the seismicity of a specific area. By taking the advantage of geographical information systems, this map can be analyzed both regionally and locally. There is also maps showing the distribution of landslide, rockfall and snow-avalanche affected residential areas at national level. Active fault map is another important input map for seismic analysis and prepared at national level by G.D. Mineral Research and Exploration (MTA). Landslide inventory mapping is also being performed by the same directorate and assumed to be concluded in the near future. G.D of State Hydraulic Works collect the data on floods at national level and published it with annual bulletins. National scaled forest fire susceptibility maps are prepared by G.D. Forestry of Ministry of Environment and can easily be accessed from internet.

In addition to national hazard data, there are lots of studies executed at local and regional level in order to evaluate hazard and vulnerability assessment. G.D. Disaster Affairs has started a regional multi-hazard and risk mapping project in 2000 in NW Black Sea region and studies are concluded in 3 main districts in the region. Within this pilot project hazard and vulnerability of whole districts are investigated, vulnerability of key sectors like governmental buildings, factories etc. are also investigated and for some disaster types hazard maps are prepared by using GIS and remote sensing technologies. Another study in this field is executed by Istanbul Metropolitan Municipality with the assistance of JICA in Istanbul where multi-disciplinary and detailed micro-zonation maps were prepared.

Some municipalities have prepared disaster recovery plans and those include hazard and vulnerability data, especially vulnerability of critical structures to disaster at multi-hazard approach. Istanbul Metropolitan Municipality has prepared those datasets mainly for whole city.

Disaster Risk Indication study is another local project implemented by Istanbul Metropolitan Municipality (IMM). IMM works together with Earthquake and Megacities Initiative (EMI), Centre for Disaster Management and Risk Reduction Technologies, University of Karlsruhe (CEDIM) and Bogazici University. Within the scope of this study physical vulnerability, social vulnerability and disaster response capability of Istanbul against to a catastrophic earthquake is investigated. Response capability and current preparedness background of the city will be rated.

Standardization of data production, data usage is an important factor and must be promoted at all levels. This will also contribute to rapid response to disasters and minimize disaster related loss of lives.

Context & Constraints:

Preparation of hazard and risk maps at national level is difficult for some specific disaster types like landslides, rockfalls etc.

After 1999 earthquakes the municipalities located on 1st and 2nd degree earthquake zones are obliged to prepare and/or revise their micro-zonation maps based on multi-hazard approach. However this application has not become prevalent for all municipalities and also for residential areas.

Multi-stakeholder participation amongst the relevant institutions is a key factor in preparation of national level risk and vulnerability mapping and data collection. In addition to these academic units, local administration may play an important role in this process.

Related links:

Web Site of Istanbul Metropolitan Municipality <http://www.ibb.gov.tr>

Web Site of General Directorate of Mineral Research and Exploration <http://www.mta.gov.tr>

Web Site of World Water Forum Meeting <http://www.worldwaterforum5.org>

Web Site of General Directorate of Forestry <http://www.ogm.gov.tr>

Web Site of GDDA, Earthquake Research Department <http://www.deprem.gov.tr>

Web Site of General Directorate of State Hydraulic Works <http://www.dsi.gov.tr>

Core indicator 2

Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

Disaster data is mainly stored in GDDA's databases. Databases of earthquakes, landslides, rockfalls and snow-avalanches are stored in this GD's database. The databases include date of event, affected geographical area, affected number of people, affected infrastructures and photos if available. Archive of GDDA contains more than 18.000 reports which are in digital environments. Other relevant data on floods and forest fires, marine accidents etc. are stored in relevant institutions' databases. Some databases like seismic information are open for public use. However databases on landslides, forest fires can be reached from relevant institutions by demand.

In order to collect all disaster data in one database, GDDA started a new project called “Turkish National Disaster Archive System” within Marmara Earthquake Reconstruction Project (MEER) which is funded by World Bank. Within the scope of this project a center is established in GDDA Earthquake Research Department. Other international disaster databases like EM DAT, CRED were investigated and special software was prepared. Data collection process from relevant institutions is continuing. National Disaster Archive System is compatible with e-government concept and will be accessible in three languages (Turkish, English and French). In order to decide the criterias on disaster data, the examples of other countries were reviewed and best criteria for Turkish National Disaster Archive was chosen. It will also be open for future developments. After the conclusion of the integration all disaster data, the information will be accessible for public

For Istanbul there are some vulnerability analysis of some critical buildings and structures. In Istanbul, where an earthquake is expected bigger than magnitude 7 in the near future, two bridges connecting Asian and European parts are analyzed in terms of their seismic vulnerability. Governmental buildings, especially schools, hospitals, historical and archeological structures have also been analyzed for Istanbul city under ISMEP project conducted by Istanbul Governorate.

Context & Constraints:

In developing countries which have poor social memory, the awareness on disasters is being forgotten and people live none of those events ever happened. That's why archives play an important role in the establishment of disaster awareness.

Data storage systems show differences from one institute to another. For this reason, putting all those different formatted datasets into one single database and their mutual integration takes time.

The data on vulnerabilities are mainly on project basis and are limited to the project areas. At national level some statistical information on the numbers of industrial areas located on earthquake zones are available.

Supporting document:

Document of Turkish National Archieve System (2008)

http://www.preventionweb.net/files/3077_ArchieveTurkey.ppt [PPT 2.17 MB]

Related links:

Web Site of General Directorate of Disaster Affairs <http://www.afet.gov.tr>

Core indicator 3

Early warning systems are in place for all major hazards, with outreach to communities.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

In terms of monitoring there are two national seismic observation systems in Turkey. One of them is operated by GDDA and there are 137 seismic stations and 231 strong motion instruments all around the country. Another institute operating seismic network is Bogazici University, Kandilli Observatory. In addition to these national systems, there are some local and regional sub-systems operated by academic research institutes.

Early warning systems in Turkey are operated by several governmental institutions. State Meteorological

Organization G.D. has short and long term climate predictions and for some cases announces warning messages for flooding, severe weather conditions, meteorological hazards, extreme heat weather.

General Directorate of State Hydraulic Works, operating flood early warning and prediction systems mainly established after 1998 heavy rains and flash flood occurred in NW Black Sea Region which is funded by World Bank. The project is executed for river basins in Black Sea and Western Aegean regions. Within this project there established 206 automatic meteorological stations, 3 meteorological Doppler radar stations, 148 hydrometric data storage platforms and VSAT Telecommunication systems. By using continuous measurements, the system predicts the floods by using several flood prediction models. There are studies in order to develop those systems for other regions and studies to develop in Thrace Meric and Antalya (Mediterranean) regions have started.

In 2008 General Directorate of Forestry started pilot project on forest fires early warning. This is a joint project between Turkish Scientific and Technological Research Council and Bilkent University. The aim of this early warning system is to respond forest fires immediately and effectively. Some forests in the Western parts of Turkey are being monitored by several on-line cameras and analyzed 24 hours basis. The system automatically alarms the administrators and response teams can be directed to the fire in a short time interval. The system also uses geographical information system data layers like topography, vegetation, roads etc. Integration of those systems with online camera records facilitates effective and rapid response to forest fires.

After 1999 earthquake, by taking into consideration the vital importance of Early Warning and Emergency Rapid Response, the project prepared by Bogazici University Kandilli Observatory and Earthquake Research Institute, has been realized. The agreement involving Turkish Republic and Credit Suisse First Boston in relation to Istanbul Earthquake Early Warning System and Rapid (Emergency) Response project that will be carried out by Bogazici University Kandilli Observatory and Earthquake Research Institute, has become valid after decree of Council of Minister on 2001 Fiscal Year. The system is designed and operated by Bogazici University with logistic support of the Governorate of Istanbul, First Army Headquarters and Istanbul Metropolitan Municipality.

Context & Constraints:

Early warning systems for some types of disasters are still polemical and on evaluation process. For example, since there are some theoretical studies on early warning systems for earthquakes, there is no general acceptance on the reliability and use of those systems.

Early warning systems for atmospheric and hydrological disasters are effective tools for disaster risk reduction in these fields and national systems might contribute for long term disaster risk reduction achievement.

There had been some experimental early warning systems initiatives on landslides in Denizli (Western Turkey) and Sivas (Eastern Turkey) regions performed by universities, but those are not applicable everywhere at this moment.

The high cost of those systems are another factor for not to enhance those technology all over the country.

Supporting document:

Studies on Flooding by General Directorate of State Hydraulic Works

http://www.preventionweb.net/files/3077_dsienvfloodbooklet.doc [DOC 235.00 KB]

Related links:

Web Site of GDDA Earthquake Research Department <http://www.deprem.gov.tr>
Web Site of Bogazici University, Kandilli Observatory <http://www.koeri.boun.edu.tr>
Web Site of General Directorate of State Meteorological Works <http://www.dmi.gov.tr>
Web Site of General Directorate of State Hydraulic Works <http://www.dsi.gov.tr>

Core indicator 4

National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

Natural disasters have extraordinary results in 21st century. The capacity of each country is not sufficient for dealing with these big events and also disasters are unlimited from borders. Turkey gives great importance for regional and international cooperation on DRR. In the last 40 years we realized many joint projects within the region on this issue.

Turkey has taken an important step forward in order to improve the disaster preparedness, prevention and response capability and co-ordination by signing a memorandum of understanding on the institutional framework of the Disaster Preparedness and Prevention Initiative for South Eastern Europe (DPPI SEE). Document was signed by Turkish Emergency Management Agency General Directorate on 7th of April, 2008.

Another regional co-operation in the field of disaster management is Civil-Military Emergency Planning Council of South Eastern Europe (CMEP-SEE) which is focused on encouraging civilian control of military resources during disasters within countries while building a multi-national "network of networks" among countries that facilitate regional co-operation among neighboring countries.

UNDP-TCDC PROJECT; The Project title is " Technical Cooperation Amongst Developing Countries, Disaster Information and Disaster Investigation-Education Centers " and initiated in 2005 with a protocol between GDDA and State Planning Organization under support of UNDP TCDC programme. The main scope of this Project is to change and develop views and experiences on local and regional disaster mitigation issues with participant countries by multilateral agreements, technology transfer and development of technical cooperation amongst member countries. We have distinguished administrators and participants from 4 participant countries; Tajikistan (Seismology and Earthquake Engineering Institute), Kyrgyzstan (National Academy of Science, Seismology Institute), Ukraine (National Academy of Science, Geophysical Institute), Kazakhstan (Ministry of Education and Science, Seismology Institute and National Nuclear Center, Geophysical Institute).

Some other examples to international co-operations are:

- Council of Europe's " Open Partial Agreement on Prevention and Protection Against Major Natural Disasters,
- Cooperation with Germany on Earthquake prediction,
- Cooperation with China on Earthquake research,
- Cooperation with USA (FEMA and USGS),
- Cooperation with Switzerland and France (on snow avalanches),
- Cooperation with NATO (EADRCC and CEP),
- Joint Task Force Agreement between Turkey and Greece,

- Cooperation with Japan (JICA),
- Under Black Sea Economic Cooperation Agreement “ Cooperation among BSEC member states Emergency assistance and emergency response to natural and man made disasters”,
- Hazard and Risk Assessments for mass movement between Mediterranean countries (RISCMASS Project),
- GD of Disaster Affairs became authorized user to “ International Charter for Space and Major Disasters (2005),
- Scientific and Technical Cooperation Agreement for DRR with Bangladesh,
- Agreement on DRR with Azerbaijan.
- Agreement on “ Scientific and Technical Cooperation for Public Works and Natural Disaster Loss Reduction” with Lebanon.

Context & Constraints:

As it is well-known, Turkey serves as a bridge between Europe and Asia and situated in a very strategic location at the intersection of these two continents.

Turkey`s crucial geographic location makes Turkey a key point for the region defined by the Middle East and Caucasus. For this reason Turkey attracts countries of region and international bodies` attention. Too many agreement and joint projects on the same region creates some duplication on the same issue. This duplication also makes unproductive usage of limited resources (human and financial).

Priority for action 3

Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Core indicator 1

Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

Information dissemination is a crucial factor among all disaster related stakeholders. In order to maintain this target a comprehensive archive systems must be established. In Turkey governmental units, academic units and research institutes have their own data storage systems with different formats and different systems. Some of those data, like seismic data, are available through web sources and can easily be accessed from internet. On the other hand most of the disaster related data are stored in institutions` own data storage systems.

In order to collect all disaster data in one database, GDDA started a new project called “Turkish National Disaster Archive System” within Marmara Earthquake Reconstruction Project (MEER) which is funded by World Bank. Within the scope of this project a center is established in GDDA Earthquake Research Department. Other international disaster databases like EMDAT, CRED were investigated and software was prepared. Data collection process from relevant institutions is continuing. After the conclusion of the integration all disaster data, the information will be accessible for public.

Context & Constraints:

Disaster Archive Systems are used and/or designed mainly for collecting and disseminating data on

disasters. Since those environments are useful for researchers when analyzing past occurrences of specific types of hazards, may not appeal to all walks of life including public and more professional users. Archive systems must be supported with geographical information system analysis, web mapping techniques in order to increase the visual quality.

Archive systems may also be used as a good platform for sharing disaster related documents. Those environments could also be used as knowledge portal including full spectrum of educational materials and becomes a one stop shop for users from both academic and private areas. Thus, operators of this system must be well educated on the management of Archive systems and disaster education.

Core indicator 2

School curricula , education material and relevant trainings include disaster risk reduction and recovery concepts and practices.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

Educational activities in order to achieve disaster resilience and awareness are being executed by several governmental bodies and academic units. GDDA, G.D. of Civil Defense, TEMAD and Local administrative bodies of Istanbul, like Istanbul Governorate and Istanbul Metropolitan Municipality are the main governmental actors organizing public awareness campaigns to ensure disaster risk reduction.

After two big earthquakes in 1999 Ministry of Education has changed school curricula radically with the help of universities. In primary and secondary level (age 6-14) new curricula focuses on preparation and protection for disasters. In high school (age 15-17) they got more detailed knowledge like reasons of disasters, protection of community, mitigation and response activities. Schools invite external specialist speakers for training of both teachers and students and they do evacuation exercises yearly.

Another specialized center is Natural Disasters Education Center (AFEM) under GDDA. AFEM is a specialized center established after EUR-OPA open partial agreement. European Natural Disasters Training Centre (AFEM) is a non-profit organization which delivers training on hazard reduction activities. AFEM was established within the EUR-OPA (European Major Hazard Agreement Council of Europe) framework in 1988 and affiliated to the Ministry of Public Works and Settlement. Its operating rules and establishment principles have been determined by Turkish laws. AFEM aims to reduce the destructive effects of disasters through training. AFEM's target group comprises technicians, administrators several groups who have responsibilities on various disaster management subjects, as of before, during and after disasters and public. Due to extensive target area of training, programs proposed by AFEM should have done in training of trainer's manner. On the other hand, documents of training programs should have disseminated to member countries in order to make the training comprise whole target area. Printing and publishing the information both make the information permanent and give opportunity to maximum number of publication. This will also ensure the activity of the center. Direct training techniques like courses, seminars, working groups and circular desk meeting should be revived by audio-visual training tools and in-situ watching etc. techniques. In addition, besides dissemination of information by printing and publishing, most attractive methods for public like television, video and cinema films should be considered.

In addition to governmental bodies, there are specialized research centers in the field of disaster management within Istanbul Technical University and Middle East Technical University. Amongst them, Istanbul Technical University, Center of Excellence for Disaster Management is established to serve

activities e.g. training, consulting and research to the public and to all establishments in our country. The activities in the center are conducted by certified faculty members and experts in disaster management field. The broad aims of the center are to follow up the principles of modern disaster and emergency management, to develop strategies and projects due to developments, to construct a bridge between neighboring countries and developed countries specifically in disaster management. The members in the center are motivated to conduct research and development activities comprising all levels of disaster management e.g. preparedness, mitigation, response and recovery phases ranging from both natural disasters to man-made. The center has a master degree programme on several branches of disaster management. 15 people graduated from this programme and by June 2008, seven people are continuing their studies. Between 2000-2008, 25 training activities organised by the center. The center also published 20 professional educational materials in the field of disaster management.

One of the objectives of Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP) is to conduct public awareness campaigns and training in emergency management. Target groups of those educations are individuals, families, disaster volunteers, disabled people, students, officials. Some training topics are; survival under extraordinary situations, first aid, structural awareness, non-structural risk awareness, retrofitting of public buildings etc.

Japan International Cooperation Agency, organised training activities at different formats like educational activities, publications, visual training sets (in CD and DVD format), video conference trainings in the field of Disaster Management in coordination with different governmental organizations. Target groups of these trainings are governmental officers, emergency managers and technical staff. 253 high level local administrators like governors, deputy governors benefited from this training activity. As the result of this programme, an interactive training set in DVD format was prepared and book of "Basic Principles of Disaster Management" published and both of them were distributed to all governmental units, civil society and universities. JICA also organised video conference training programmes. With this programme, Japanese experiences on disaster risk reduction are transmitted to the Turkish counterparts by creating on line dialogue system.

Context & Constraints:

Increasing the awareness of school children is one of the important factors in creating disaster resilient communities for the future. That's why integration of disaster risk reduction into school curricula is one of the deficiencies at the moment. Number of Msc. programmes in disaster risk reduction must also be increased in universities. Establishment of portals including necessary information on disaster education and easily downloadable training materials could be beneficial for the establishment of disaster resilience of populations at national level.

Despite these efforts the links between disaster education and communities still require upgrading with students as the leading actors.

Supporting document:

Brochure of ISMEP Project (2008) http://www.preventionweb.net/files/3077_ISMEPEN.jpg [JPG 747.35 KB]

AFEM Brochure (2008) http://www.preventionweb.net/files/3077_ISDRAFEM.doc [DOC 299.50 KB]

Related links:

Web Page of Istanbul Governorate, Istanbul Project Implementation Unit <http://www.ipkb.gov.tr/hp.htm>

Web Site of Middle East Technical University, Disaster Management Center <http://www.dmc.metu.edu.tr>

Web Site of Istanbul Technical University, Center of Excellence for Disaster Management

<http://www.aym.itu.edu.tr>

Web Site of Bogazici University, Kandilli Observatory <http://www.cedm.itu.edu.tr/>

Web Site of Istanbul Metropolitan Municipality <http://www.ibb.gov.tr>

Core indicator 3

Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

In Turkey almost all governmental units like GDDA, MTA, etc. uses geographical information system (GIS) tools in their studies including disaster management and other related topics. There are numerous studies on the integration of all historical disaster data into digital databases and all of them are compatible with GIS. For example, relevant data on previous earthquakes, landslides, rockfalls, snow-avalanches, floods and forest fires are stored by using GIS tools. Most scientific and technological development projects also involve GIS as a tool for spatial analysis and visualization. Some municipalities preparing micro-zonation maps, disaster response and rehabilitation maps also use GIS and some of them like Istanbul Metropolitan Municipality, Ankara Metropolitan Municipality and many others established specialized GIS laboratories.

In 2001 GDDA has started a pilot project in Northern parts of Turkey called "Multi-hazard mapping of North Western Black Sea Region".

Another technology used in disaster management is the use of satellite imagery and remote sensing. In this respect, GDDA is acting as national focal point to UN-SPIDER and also is the authorized user of International Charter "Space and Major Disasters". The use of satellite data on disaster related studies is increasing by the day with an increase in experienced people in this field. In the field of GIS and remote sensing, JICA has organized two video conference type educations on these two topics. Experts working on GDDA, G.D. of Hydraulic Works and G.D. of Meteorology benefited from those courses. There are also academic programmes offering Msc. degrees in GIS and remote sensing technologies.

In this field Istanbul city could be termed as a well-prepared since most of the hazard and vulnerability analysis were completed within the boundaries of Metropolitan Municipality. With JICA supported project, all geological and seismic vulnerabilities were determined. In addition to this study, ISMEP project also contributed to this vulnerability analysis and in detail some studies have been carried out in some parts of the city like Zeytinburnu, Avcilar, etc.

Context & Constraints:

Unfortunately cost-benefit analysis is not common on this subject. So we try to improve our capacity of making this type of analysis.

Related links:

Web Site of International Charter, Space and Major Disasters <http://www.disasterscharter.org>

Web Site of Istanbul Technical University Center of Excellence for Disaster Management

<http://www.cedm.itu.edu.tr>

Core indicator 4

Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

Public awareness campaigns conducted by GDDA aims to build a culture of disaster resilience at all levels. In this respect first off all education and training activities at schools are given importance. Another pilot project started at GDDA is in Ankara region and aims to train school children on disaster, especially earthquakes.

There have been lots of public awareness campaigns organized by different governmental and academic units. For example Middle East Technical University, Disaster Management Implementation and Research Center (METU-DMC) conducted a local pilot project namely "Strengthening citizen participation in disaster management; Pilot project in Bursa". DMC also started a painting contest for school children on disasters

ISMEP Project is also a good example to public awareness activities in Turkey. Within the aim of the project there are public awareness campaigns and training activities to be conducted in Istanbul.

Istanbul Metropolitan Municipality plans to establish Natural Disasters Training Park in Istanbul in 2009. The aim of this project is defined as to increase the awareness of public. There is planned to be first aid unit, shaking table unit, fire smoke simulation unit, simulation rooms for different types of disasters, etc. Another good example is the publication of disaster training books. One of them is the "I am Learning Safe Life" and 240.000 of this publication is distributed at schools in Istanbul.

In order to improve public awareness, a pilot project is being implemented in a district of Ankara province. "Çubuk District Disaster Education Program" has 5 sub Project and the aim of program is educate nearly 45.000 citizens aged between 6 and 65. 5 different education modules were using and at the end of this program it is expected to change their behavior against disasters.

Context & Constraints:

There is not a country-wide public awareness campaign as a national programme being implemented in a coordinated manner at the moment. The public awareness campaigns are conducted at regional and local levels by different institutes like governmental, academic and non-governmental units. A committee should be established consisted of representatives of the related public institutions, academic units, NGOs, etc. to provide strategic guidance and to oversee the implementation of the campaigns and trainings. Another alternative could be the national platform of any country could co-ordinate those campaigns at national level with Ministry of Education and universities.

Related links:

Istanbul Governorate Crisis Center <http://www.istanbulaym.gov.tr>

Middle East Technical Universtiy, Disaster Management Center <http://www.dmc.metu.edu.tr>

Priority for action 4

Reduce the underlying risk factors

Core indicator 1

Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

Turkey gives importance on the coordination of disaster risk reduction with environmental and natural resources policies. In all plans and programs, one of the key elements of the feasibility reports is the disaster risks of the area. Detailed geological and geotechnical reports and water/meteorological reports are necessary for final decision to avoid or to limit adverse impact of hazards.

Climate change issues are a new concept for Turkey on Disaster risk reduction subject and environment. The National Environmental Approximation Strategy was adopted by Higher Planning Council and then GD of Disaster Affairs has undertaken the responsibilities of adaptation of climate change issue. A special division was established under the organization and they begin to coordinate with other governmental units and important NGO's for joint projects and training. The Ministry of Environmental and Forestry (MEF) gives special importance on the adaptation of climate changes issues and they made substantial progress in strengthening the administrative and institutional capacity at central level. As a result of the new concept of environment, GD of State Hydraulic Works joined to MEF last year.

The 5th World water Forum will be held in Istanbul, Turkey from 16 to 22 March 2009. In the Forum the specialists all over the world will be discuss impact of climate changes, water related disasters, vulnerability assessments and adaptation measures.

Context & Constraints:

Unfortunately up to now Turkey has not ratified Kyoto Protocol. Turkey is assumed as a developed country for being a member of OECD countries (in reality developing country) and some parameters of protocol are too high for the country. But this year (2008) the Government decided to ratify the Kyoto Protocol and the process has been initiated.

Related links:

Web Site of 5th World Water Forum <http://www.worldwaterforum5.org/>

Core indicator 2

Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

In every 5 Year Development Plan and also mid and short term plan one of the aim is to increase the resilience of vulnerable people. The government initiated a new program "Urban re-generation" and one of the aim of this program is to build a safe building for people most at risk.

The expenditure of the cost of disasters is spent from Disaster Fund under Disaster Law (Law No: 7269). Disaster Fund is supplemented with annual allocation from yearly national budget. In case of a big event, government decide extra budget for rehabilitation and construction affairs. New buildings constructions expenditure made for victims of disasters are without interest and paid back in 15-20 years.

Context & Constraints:

After Compulsory Disaster Insurance Fund established (only for urban area) there was confusion about

the urban and rural areas disaster victims. Most of the poor people have illegal houses (slum dweller) and after a disaster happen, they don't have a legal right of being a beneficiary from disaster fund.

Protection of the people most at risk is a heavy work that needs extra financial sources. Local authorities don't have enough money and specialists for planning poverty reduction works

Core indicator 3

Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities

Level of Progress achieved:

2: Some progress, but without systematic policy and/ or institutional commitment

Description:

Turkey, having 96% of its land is on variously risked earthquake regions. The Compulsory Earthquake Insurance Pool (DASK) is a system which is formed with the collaboration of the State and the private sector is also an important insurance application relating to the financial consequences of earthquake.

DASK is a non-profit institution, having the status of a public co-operation, established with the Decree No: 587 pertaining to the Compulsory Earthquake Insurance, to provide compulsory earthquake insurances and to perform its affairs in full compliance with the insurance techniques. The primary objectives of DASK can be summarized as follows:

1. To provide insurance coverage for all the dwellings within the scope of its establishment against earthquake in return for a premium,
2. To ensure risk sharing within the country and also to distribute the financial liabilities caused by earthquake onto international reinsurance markets through insurance,
3. To mitigate the possible financial burdens on the government due to earthquakes (especially in terms of building disaster victims dwellings after the earthquakes),
4. To utilize the insurance system as a mean for the construction of reliable structures,
5. To ensure the accumulation of long term resources to meet the earthquake damages,
6. To contribute to the development of earthquake consciousness in the public.

In general terms, the Compulsory Earthquake Insurance is an insurance product oriented towards the dwellings within the boundaries of the municipalities. This coverage is a mandatory insurance, for which the guarantee is provided by DASK but the marketing authority is given to the authorized insurance companies and their agencies to provide coverage for the financial damages caused by the earthquake on dwellings. DASK is a very important application for Turkey which suffers from various magnitudes of earthquakes, which application aims at meeting property damages caused by earthquakes by means of insurances and also by risk sharing (co-insurance).

Turkey is one of the rapidly growing countries in the world and in the last 10 years the growth rate was nearly %6-7 percent. Key production and service sectors are construction, automotive, textile, energy, agriculture, tourism and mining. Each of these sectors will be subject to specific natural disasters because most of them concentrated on Marmara and Aegean region where most of our disaster incidents occur. Turkish Government uses Development Plans to distribute the investments geographically all over the country by using premiums. Also Government is bound to coordination between development plan and sectoral plan with disaster risk reduction. In 2008 Yearly Plan " in order to establish safe and lively cities by preventing and reducing possible natural disasters damages, public investments are essential to improve damage reducing strategies and implement these strategies in cross sector. Furthermore, disaster risks should be taken into consideration in the selected process of new investment projects. The new disaster sub-sector department in State Planning Organization can be

a very useful agent for his objective.

Context & Constraints:

According to Earthquake Zoning Map nearly %70 of our population and surface area is on the 1. and 2. degree zones. Most of the economic activities are concentrated on these dangerous regions. One of the reasons for concentration is closeness of sea and harbor for export and import. So it's not easy to control the distribution of economic activities all around the country. After 1999's two big earthquake the economic losses reached 12-15 Billion USD.

The use of earthquake insurance system is not applicable for whole country at the moment and it is only restricted with earthquakes. There are some restrictions on the implementation of this system.

Supporting document:

Brochure of DASK 2 (2008) http://www.preventionweb.net/files/3077_TCIP2.gif [GIF 97.50 KB]

Brochure of DASK (2008) http://www.preventionweb.net/files/3077_TCIP1.gif [GIF 116.20 KB]

Related links:

Web Site of Turkish Catastrophe Insurance Pools <http://www.dask.gov.tr>

Core indicator 4

Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

The seismic design code of Turkey was revised several times; and the last four previous revisions were made in 1968, 1975, 1998 and 2007. These revisions made the Turkish Seismic Design Code include the most up-to-date information available worldwide. Although, Turkey experienced catastrophic consequences after earthquakes, it is believed that the damage did not stem from insufficiency of codes but substandard construction practice, inadequate inspection and the insufficient enforcement of seismic design codes. The knowledge of existence of many structures, which were not constructed according to seismic design codes and are highly vulnerable in terms of seismic damage, urged the Ministry of Public Works and Settlement to form a commission for revising the 1998 version of the Turkish Seismic Design Code and drafting a new chapter on seismic safety evaluation and retrofitting of existing structures. This new chapter sets standards for assessment and rehabilitation of existing buildings. Retrofit techniques are also proposed for reinforced concrete (RC) buildings.

Building designs and construction are supervised by the municipalities. Provincial offices of the Ministry of Public Works and Settlement supervise public buildings under construction and buildings in rural areas. After the 1999 earthquakes, the government enacted new laws, firstly the Decree No. 595 and later Law No. 4708 for building construction supervision. Accordingly, the building supervision firm exercises the duties of the municipal offices in ensuring the correctness of designs and construction conformed to the design.

Land use plans those are prepared at several scales are based on disaster risk reduction policies.

Context & Constraints:

It is generally agreed that building departments of municipalities are not technically (manpower, laboratory etc.) capable of fulfilling their intended building supervision duty of providing final quality assurance of structural design. Currently legislative regulation for building supervision (Law No: 4708) covers 19 provinces out of 81 and excludes supervision of buildings up to two storey with less than 200 m² construction area.

Supporting document:

A paper giving basic idea about Turkish Design Code (Kuran et. al., 2007) (2007)
http://www.preventionweb.net/files/3077_compdyn2007kuran.pdf [PDF 316.41 KB]

Seismic Design Code of Turkey (in Turkish) (2007)

http://www.preventionweb.net/files/3077_buildingcodeturkeyturkish.pdf [PDF 1.63 MB]

Related links:

Web Site of GDDA, Earthquake Research Department <http://www.deprem.gov.tr>

Core indicator 5

Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

Turkey gives highest importance for disaster risk reduction activities relationship with post disaster activities. According to provisions of Disaster Law, the government is responsible for replacement of destroyed building and infrastructure and rehabilitation of moderately damaged building stock. After a big disaster occurrence (disaster that affected general public) Ministry of Public Works and Settlement's (MPWS), Disaster Affairs GD experts mobilize to disaster stricken area and make damage assessment, geological, geophysical, geotechnical investigations for proper site selection of permanent housing settlement. They also take advice and support from universities (which have disaster management center) and NGO's. Urban plans of new settlement areas are prepared by city and regional planners of MPWS's Technical Research and Implementation G.D. Important governmental buildings (hospitals, schools, fire brigade, police stations etc) are inspected carefully by structural engineers and architects of MPWS's GD of Construction Affairs for disaster resistant standard. Construction of permanent houses and rehabilitation of existing buildings and governmental offices are under the supervision of the same GD and their local bureau. Infrastructure works (water supply, waste water) and environmental design are under MPWS's Bank of Provinces GD and Ministry of Environmental and Forest (MEF) responsibilities. They all use high level construction standards and official building code. Before investments begin decision makers come together and makes detailed risk assessments of selected area. Up to now the results are very positive that we never had a human and property loss in this kind of new settlement areas.

Context & Constraints:

In Turkey the human and material toll of disasters are severe. The combination of high property and human losses is evidence of a systemic failure to enforce building codes and implement appropriate land use and planning policies even in relation to known risks. Coordination deficiency between central and local level authorities may have been a negative factor also.

Core indicator 6

Procedures are in place to assess the disaster risk impacts of major development projects, especially

infrastructure.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

Before the realization of big development project (housing development, dam, power plant, pipeline, organized industrial region, educational and health facilities), public authority request detailed risk analysis for disaster risk assessments of the project. This analysis is a sub section of Environmental Impact Assessment (EIA) report for reducing the reverse impacts.

It is known that natural disasters are a development issue and they can dampen growth by destroying capital and diverting resources toward relief and reconstruction. As an example of this kind of procedure BTC pipeline EIA can be given. In this 1.075 km length petroleum pipeline the whole area (in Turkey, Azerbaijan and Georgia) were explored and reviewed both geologically and meteorologically for disasters. Mitigating the effects of disasters prevention measures were implemented. EIA of BTC Project included a detailed risk assessment and provided alternative solutions or options. Environmental and disaster risk management practitioners involved deeply on this special project.

Context & Constraints:

However in practice we have some difficulties to coordinate the disaster risk reduction efforts and development projects. As being fast developing country (%6-7 in the last ten years) execution of risk reduction efforts is inefficient. There are some duplication and overlapping of authorities in Turkey's Disaster Management System and also we have some financial restrictions on budget. These are some barriers for effective assessments on disaster risk impacts of major development project. One of our main deficiency is that disaster affected areas are countries industrial heartland and nearly % 70 of our population live in this dangerous area

Priority for action 5

Strengthen disaster preparedness for effective response at all levels

Core indicator 1

Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Description:

Disaster preparedness capacity in terms of post-disaster response is mainly the one of the best successful area in Turkey. Especially post-disaster response and rehabilitation activities and practices in Turkey show better development trend. In this field (disaster response and rehabilitation) GD. of Civil Defense (GDCD), GDDA, TEMAD, Turkish Red Crescent and Turkish Armed Forces are the main actors. There are also civilian volunteer SAR Teams.

In case of disaster response, search and rescue activities GDCD and Turkish Armed Forces have valuable experience and profession in this area and those are proved by both national and international

disaster response activities. GDCD has a central administrative unit with 81 district and 11 regional centers. There is a Civil Defense College in Ankara for training of SAR teams.

Turkish Armed Forces has designed a special group called "Natural Disasters Search and Rescue Team". The team established after 1999 earthquakes and equipped with recent technology SAR equipments. The team has successfully performed national and international SAR practices.

Another actor mainly acting on disaster preparedness is Turkish Red Crescent Society (TRCS). TRCS is not responsible only from post-disaster response activities but also public awareness campaigns by doing countrywide training activities. TRCS has a disaster response and assistance unit consisted of 5 branches called; Disaster Preparedness and Planning Unit, International Disaster Response Unit, Operational Unit, Logistics Unit, Psycho-Social Support Unit. TRCS maintains emergency shelter products like tents, food, blankets, for disaster victims in the disaster area. TRCS has logistic depositories distributed around the country in order to rapidly respond disasters and maintain rapid rehabilitation.

Context & Constraints:

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Related links:

Web Site of GD of Civil Defense <http://www.ssgm.gov.tr>

Web Site of Turkish Red Crescent <http://www.kizilay.org.tr>

Web Site of Turkish Armed Forces SAR Team <http://www.tsk.mil.tr>

Core indicator 2

Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

In Turkey, disaster emergency management plans are obligatory for all administrative units. There are 81 main administrative units (province) and more than 890 counties in Turkey. Emergency management plans include information on the major natural and/or technological threats affecting the region. Those plans also include the capacity of the city in order to respond disasters effectively. There exists information on the number of SAR teams, evacuation plans, most vulnerable governmental and/or industrial units, machinery capabilities, number of first aid personnel and places for temporary housing. There is an obligation for those administrations to revise and update those plans regular and send to central responsible organization, GDDA for revision.

In addition to those plans some municipalities have prepared their preparedness plans against natural disasters like in Istanbul and Izmir which are based on scenarios. Some of them like Istanbul Metropolitan Municipality and Istanbul Governorate established Emergency Management Centers which are operable 24 hours. Municipalities like Istanbul and Izmir practicing field exercises for natural disasters.

Some strategic plans prepared by State Planning Organization, includes preparedness plans and proposals.

Context & Constraints:

Integration of information systems and geographical information analysis to emergency management plans are crucial. Establishing emergency management systems compatible with above mentioned technologies should be promoted to local governorates.

There are also problems due to insufficiencies in financial sources and lack of experts.

Core indicator 3

Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

In order to maintain rapid rehabilitation in the disaster area government has a special budget. After any disaster strikes one region government sends an amount of money to the local administration to cover emergency rehabilitation like restoration of critical infrastructure, maintaining temporary housing, daily expenses etc. The distribution of financial resources is under the responsibility of local units, mainly the governor. There also happens national donation campaigns and those are also coordinated by Prime Ministry TEMAD.

The Prime Ministry has "Emergency Aid Fund" which can be used directly by Prime Ministry or by way of governorship.

Context & Constraints:

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Core indicator 4

Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Description:

Information/data collection and dissemination is an important issue for local coordination units and local crisis management centers at post-disaster rehabilitation and response activities. In Turkey, crisis management centers are established in order to provide rapid rehabilitation in disaster area. Most of those units are equipped with necessary information and technological infrastructure. Within the scope of the Disaster Information System project implemented by GDDA, necessary technological infrastructure has been established to transmit all collected data like damage assessment reports, geological investigation results etc. to provincial crises centers.

With periodical practices these systems are being tested in accordance with emergency management applications.

Under Prime Ministry there are two coordination units for disasters and two extra committees for crises. National Disaster Coordination Committee (minister level) and Central Coordination Committee for Disasters (undersecretary level). The second one has sub committee consisted of deputy

undersecretaries of related ministries. These bodies are responsible from post event review and a place for information exchange between government agencies, military, Turkish Red Crescent, In local level every governorship has his own crises center and they have the same responsibilities.

Context & Constraints:

Standardization of data production, data usage is an important factor and must be promoted at all levels. This will also contribute to rapid respond to disasters and minimize disaster related loss of lives.

Drivers of Progress

a) Multi-hazard integrated approach to disaster risk reduction and development

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Do studies/ reports/ atlases on multi-hazard analyses exist in the country/ for the sub region?:

Yes

If yes, are these being applied to development planning/ informing policy?:

Yes

Description (Please provide evidence of where, how and who):

Multi-hazard approaches are crucial in all phases of disaster management planning. In pre-disaster risk reduction approaches, all types and scale maps must be prepared in accordance with multi-hazard approaches. Moderate scaled hazard maps (1/25.000 scaled) must be prepared to give an idea for detailed hazard and risk mapping and must be prepared for whole country in multi-hazard approach. One example to this approach in Turkey is the Multi-hazard mapping of natural disasters in NW Black Sea Region. In this project all individual hazard types are prepared and mapped. In order to give an advice to local authorities when preparing and updating their emergency management and preparedness plans, all those maps are overlaid in one single map in order to give a basic output. Once local authorities have this kind of information, they can easily prepare and organize their emergency management and preparedness plans considering the dominant disaster type and/or combination of one or more threats in the region.

This is an ongoing project and is not prevalent in the whole country. Future steps of this study is the putting the standards for preparing multi-hazard maps at national level. In order to achieve this study at national level multi-stakeholder participation of governmental organizations, academic units and local units are necessary.

Multi-hazard approach is also applied in detailed microzonation mapping applications in Turkey. Following the 1999 earthquakes, the municipalities were obliged to prepare and revise their geotechnical studies which are used as a base for land use plans. There are good examples amongst those studies which used multi-hazard zonation techniques including several hazards like liquefaction, flood, landslide, etc. Ministry of Public Works and Settlement published several guidelines on this topic.

b) Gender perspectives on risk reduction and recovery adopted and institutionalized

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to

address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

Turkey gives importance on the vulnerability of women and children against disasters. In this context, Government and Turkey and UNICEF signed an agreement in 28.09.2001. Within this paper one of the topics amongst 9 is the “Conducting effective works in order to decrease adverse affects of disasters on women and children”. Numerous workshops organized in this topic and the results are put into training booklets.

In gender topic, some academic units have prepared reports with the support of World Bank. One of them is the report called “Bridging the Gender Gap in Turkey: A Milestone Towards Faster Socio-Economic Development” prepared for the World Bank a team of Turkish researchers (Karanci, 2004). There are some proposals pointed out by Karanci (2004), in the report. Some of them can be summarized as follows:

1. Women need to be involved in community training programmes for disaster mitigation and preparedness (how to reduce vulnerabilities, what to do before, during and after disasters) as trainers as well as trainees,
2. Community organizations, starting with neighborhood groups can be vital to effective disaster management. Women should be encouraged to take an active role in these organizations,
3. Disasters and especially post-disaster situations can be used as a window of opportunity for instituting gender equality. In this regard women survivor should be taken on an active participants rather than passive beneficiaries. To do this women need to be involved in decision making on matters related to disasters, such as aid distribution, reconstruction and schooling choices for their children.
4. Institutions dealing with the problems and the status of women such as the General Directorate on the Status and Problems of Women need to be strengthened to approach the situation of women both before and after disasters. An awareness of the strengths and vulnerabilities of women in relation to disasters need to be developed with various in-service training programmes.

There are many studies on the psycho-social impacts of 1999 earthquakes on the affected populations in Turkey. Amongst them Kasapoglu and Ecevit (2001) noted that women expressed the need for psychological assistance more than men. Karanci et al. (1999) found that there were gender differences in reported coping strategies following the Dinar earthquake, in that the “problem solving/optimistic approach” was the most frequently used coping strategy for men, whereas for the women the “helplessness approach” was the most frequently employed coping strategy. Therefore it is important to involve women, as well as men in the post disaster and pre-disaster activities and to make them active collaborators. According to Karanci and Ak#351;it (1999) women report more change and loss in their social networks following disasters. After 1999 earthquakes community, women and child centers in tent cities were provided with the contribution of various NGOs and volunteers.

c) Capacities for risk reduction and recovery identified and strengthened

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

The number and scale of disasters have not decreased while a lot of progress have been achieved since 1990's. This situation shows us that we urgently need to take more systematic and concerted actions. One of the main issues in this context is to develop strong institutions and mechanisms on disaster risk reduction activities. Also we need to increase community capacities so we achieve to build a

disaster resilient society. Countries that develop and support administrative capacities are much more able to manage their disaster risks. Establishing a national system for recording and disseminating statistical information on disasters (risk, impact, losses) increase capacities of authorities and society to respond disasters. Also we know that disaster losses can only be reduced if people are well informed. This requires the generation and dissemination of knowledge and information.

Continuous training activities for local leaders and for governmental officers who are responsible for disaster risk reduction activities are vital element for capacity building. For technical capacity building; monitoring, early warning, using space technologies, remote sensing, GIS, prediction and forecasting, modeling are necessary steps. As a general rule all kinds of database must open for citizens, decision makers, researchers on local, regional, international level.

d) Human security and social equity approaches integrated into disaster risk reduction and recovery activities

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

Vulnerability of people living in rural to disasters is an important issue since their economic and social situation is completely different than the ones living in cities. Turkey started some a pilot study in order to evaluate the vulnerability of people living in rural areas in Eastern Anatolia. The study is being conducted by General Directorate of Disaster Affairs. The scope of this study is to determine the buildings in rural areas those can be heavily damaged and/or collapse due to a scenario earthquake and reconstruct them with new ones. By doing so both casualties and damages and post-disaster recovery and reconstruction expenses will be decreased dramatically. For this purposes two areas were selected in East Anatolian Fault Zone which are also known as seismic gap. Scenario earthquakes created for those two segments and maximum expected intensities and expected damages and casualties were determined by using several attenuation relationships. Civil engineers conducted field surveys in the rural areas where highest intensities are expected and determined most vulnerable buildings. By analyzing cost-benefits of demolishing vulnerable ones and constructing new residential areas revealed that in case of an earthquake in the one of the region post disaster recovery and reconstruction facilities will cost more than the fund needed for new constructions. Government is still trying to find finance for this study. When necessary funds are found the project will be implemented and probably will be a best practice for reducing vulnerability of people in rural areas at national and regional level.

e) Engagement and partnerships with non-governmental actors; civil society, private sector, amongst others, have been fostered at all levels

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

There has notable improvement in number, quality and effectiveness of NGOs in disaster related activities. We know that comprehensive disaster management strategy is possible only with integration and participation of civil society organizations and the community based organizations in every level. Effective relief and response efforts require active participation of community, NGOs, business organizations and private foundations. Media has the same importance for all stages of disaster management. Up to 1999's big earthquakes only a few NGOs and community based organizations involved in disaster related area. After 17th August 1999 more than 500 organizations went disaster

stricken area for helping the victims. It was the first time that NGOs have actively participated in disaster management. This experience was followed by 12th November 1999 Kaynasli earthquake and the results are very encouraging in community participation and public-private partnership area. Now there is a very good atmosphere and support among the public to integrate them into disaster management system of Turkey. Unfortunately there isn't enough coordination among NGOs and public authority. The foundations have also great importance on research, training and educational activities. Earthquake Foundation of Turkey (TDV) published 78 scientific publications, brochures, wall posters and video films for public training and awareness. TDV also organized three international and five national conferences related to earthquake loss reduction activities. Chamber of Engineers and Architects (TMMOB), Chamber of Medical Doctors (TTB), The Union of Chambers and Commodity Exchange of Turkey (TOBB) are some NGOs those are related with disaster issues very closely.

Unfortunately as has been the case in many other countries following a large disaster, a strong interest for disaster related issues increases in the public opinion and therefore harmonized with organizational and financial priorities. Such activities become blurred and seemingly less important as memories fade and fatalistic attitudes become prevail. This situation is the biggest barrier for public-private cooperation in disaster management both national and local level. Therefore, there is necessity to develop a sustainable and systematic approach for NGOs participation in disaster risk reduction process. Also we need to develop a framework for NGOs performance evaluation. For a successful engagement and partnership with civil society, we need to develop common terminology and standard for planning, implementation, reporting. So we must create an accreditation system in the area of public-private partnership.

New draft law (in the agenda of Turkish Grand National Assembly), that merging three disaster responsible organizations, has a special provision on this subject.

f) Contextual Drivers of Progress

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

Media Management and to understand the role of media in disaster risk reduction activities:

Media has a very critical and important role at disasters and crises. This important role becomes more in the stage of disaster response. Disaster affected community and citizens need information which is reliable and at the right time. At the same time governmental authorities (local and central level) need to learn disaster affected society's needs and problems. The community usually learns the situation (real or not) from media so the priority must be given to having the media as a stakeholder in disaster management system and all kinds of plans. So we (disaster managers), need more cooperation with media to understand each others duties and responsibilities.

Future outlook

Area 1

The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

Overall Challenges:

After adoption of new Constitution in 1961, we are using five year plans for a principal development instrument. From 1963 up to 1996 in these six development plans, integration of disaster risk reduction into sustainable development policies was not sufficient enough. It is the first time, in 7th Five Year Development Plan (1996-2000) risk reduction issues were mentioned and in 8th Five Year Development Plan (2001-2005) a new commission were organized and they made concrete recommendations on DRR and planning process relationships. But unfortunately political agenda and financial restrictions raise difficulties for implementation. For rapidly growing countries, it's not too easy to control migration from rural areas to urban areas so there was a kind of risk concentration around main cities of Turkey like Istanbul, Izmir, Kocaeli, Bursa etc. The disaster fund allocated for disaster risk reduction was not sufficient to facilitate mitigation activities. Up to now the correlation between development plan and regional or urban planning weren't managed and misuse of land, uncontrolled urban growth, illegal settlements, lack of public training and awareness programs are some of the challenges we have.

Future Outlook Statement:

56th Government gives highest priority to DRR integration into sustainable developments. In 2008 Annual Program it is expressed " In order to establish safe and lively cities by preventing and reducing possible natural disaster damages, public investments are essential to improve damage reducing strategies and implement these strategies in cross sectors. Furthermore, disaster risks should be taken into consideration in the selected process of new investment projects. Besides, the projects directed to natural disaster mitigation and compensation for their damages would be priorities".

Area 2

The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

Overall Challenges:

There are three main disaster related organization (GD of Disaster Affairs attached to Ministry of Public Works and Settlement, GD of Civil Defense attached to Ministry of Interior and GD of Emergency Management of Prime Ministry) and this situation creates very complicated structure at national level. The necessary coordination and cooperation among governmental and other type of institutions have not been designed properly. Research, training, data collection and dissemination activities have some problems also. The rational balance between the duties and the responsibilities of central governmental agencies have not been established properly and also it is true for central-local, central-local-civil society organization (NGO) relations. The hierarchical, top-down nature of disaster management system tends to discourage local initiatives. Two new organizations which created after 1999 two big earthquakes (Compulsory Earthquake Insurance Authority and Building Construction Supervision System) have not been implemented completely. The insurance system covers only urban areas houses and Building Supervision System covers only 19 provinces out of 81.

Future Outlook Statement:

In 9th Five Year Development Plan the deficiencies on this subject said that " Confusion about authority and duties among public institutions and organizations is still being encountered in some sectoral and thematic fields, especially in disaster management ".

So in Mid Term Development Plan (2008-2010) issued by State Planning Organization (SPO) , it is stated that

"disaster management, at both central and local level, will be restructured in an adequate, effective and comprehensive form with institutional, administrative and legal dimensions.

- Overlapping responsibilities and duties of institutions relating to disaster management will be eliminated and necessary arrangement will be realized by reviewing existing laws and regulations

- The development and building codes will be revised in terms of risk mitigation and management in order to make cities safer
- Compulsory Earthquake Insurance will be improved in order to cover countrywide and all disaster types and buildings. "

Area 3

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Overall Challenges:

Turkey's Disaster Management System has been mainly focused on post-disaster period and there were no incentives or legislations to encourage risk analysis or risk reduction approaches before 1999's big two earthquakes. After these two big events the main concepts of Disaster Management System has been changed. In 2004 Ministry of Public Works and Settlement organized first " Earthquake Convention" and more than 300 specialist, decision makers and academicians discussed disaster related issues. They decided mainly "the proactive role of government and public administration on disaster management". The lack of "National Disaster Management Strategy" were expressed also. We need to rectify the duplication of central and local level authorities' responsibilities in our disaster management system. Public participation mechanism into disaster management system is not sufficient also.

Future Outlook Statement:

In 2008 Annual Program that is issued by SPO; it is stated that " Priority/Plan: Organizational and administrative improvement shall be established in order to have an integrated system which covers risk mitigation of disaster management, preparation, intervention (response) and reconstruction / recovery stages.

Works to be done and explanation: In order to provide emergency response and relief timely and effectively at the time of disaster and aftermath, coordination will be controlled from one center. Parallel to that, new opportunities for local administrations in which those provide emergency response and relief directly will be structured. In this context, overlapping responsibilities and authorizations of disaster management related organizations will be solved by revising and making necessary measurements to current laws and regulations.