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CAPACITY FOR DISASTER REDUCTION INITIATIVE

Disaster Risk Reduction Capacity Assessment Report

For Turkey

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ACRONYMS

AFAR	To Come
CADRI	Capacity for Disaster Reduction Initiative
CCA	To Come
CDG	Capacity Development Group
DPEU	Disaster Preparedness Education Unit
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ES	To Come
EU	European Union
FAO	To Come
GIS	To Come
HFA	Hyogo Framework for Action
IPA	Instrument for Pre-Accession Assistance
ISMEP	Istanbul Seismic Risk Mitigation and Emergency Preparedness Project
JICA	To Come
JP	Joint Program 'MDG_F 1680 Enhancing the Capacity of Turkey to Adapt to Climate Change'
MEF	To Come
MPWS	To Come
NCIP	To Come
NESC	National Exercise Simulation Center

NGO	Non-Governmental Organization
NP	National Platform
SEE	South-East Europe
SPO	To Come
TCIP	To Come
UN	United Nations
UNDAF	To Come
UNDP	United Nations Development Programme
UNISDR	United Nations International Strategy for Disaster Reduction
WB	To Come

INTRODUCTION

The capacity assessment mission for Turkey is implemented at the request of the regional project for South-East Europe (SEE) and Turkey on Disaster Risk Management (DRM). Similar capacity assessment missions have also been conducted for Bosnia and Herzegovina, Serbia, Turkey, Macedonia, Kosovo and Montenegro out of eight of the Instrument for Pre-Accession Assistance (IPA) beneficiaries of the project (with the exception of Croatia). It is meant to complement the needs assessments conducted in all eight IPA beneficiaries of the project conducted in 2010 by both a regional and local consultant in each location.

The purpose of the Disaster Risk Reduction (DRR) capacity assessment is to identify capacity gaps related to risk reduction, understand desired capacities and propose recommendations on how these capacities can be achieved. Results of the DRR capacity assessment will contribute to the development of strong national components as part of the regional capacity development proposal – to be submitted to the European Commission and potentially other interested donors for Phase II of the regional DRM project for SEE and Turkey.

NOTE TO THE READER

The Capacity for Disaster Reduction Initiative (CADRI) recognises that findings of the initial DRR needs assessment conducted between August and October 2010 provide a basis to look into capacity development aspects in order to advance DRR in Turkey (see report in Annex I). Where relevant, extracts of the needs assessment report may be used in this report to show some of the challenges also identified to affect capacity development aspects. Regarding recommendations, the report will only propose actions that can realistically be implemented in the next three to five years, based on the existing in-country capacities to absorb them. The reader will find a list of interviewees in Annex III.

With regards to the assessment in Turkey, CADRI will not only look for areas where support can be provided to build further capacity for DRR, but will also take stock of strengths identified that can be proposed to other countries in a South-South Cooperation framework. As Turkey and the United Nations (UN) are entering into a partnership framework not based on a UNDAF, but more on identifying Turkey's comparative advantages of a developing nation, the report will mention areas in DRR where Turkey could offer technical support to SEE countries and also Africa where there are important needs in terms of DRR, and especially in preparedness and response.

CADRI CAPACITY ASSESSMENT APPROACH

This capacity assessment is conducted by a joint initiative of United Nations Development Programme (UNDP), CADRI, United Nations International Strategy for Disaster Reduction (UNISDR) and United Nations Office for Coordination of Humanitarian Affairs.

It uses the methodology developed by the UNDP Capacity Development Group (CDG) and is adapted for the DRR sector by the Bureau for Crisis Prevention and Recovery of UNDP and CADRI and CDG. The methodology was first piloted in Armenia in 2010 and adapted to the regional context of Balkans in 2011 by CADRI and the regional project management for South-East Europe DRM.

CADRI's capacity assessment is conducted with a clear focus on national capacities for DRR. The assessment will look into five technical areas of capacity development: ownership, institutional arrangements, competencies, working tools and resources, and relationships.

Within the Hyogo Framework for Action (HFA), and specifically regarding HFA Priority 1, the assessment will focus on ownership as a basis for setting the right enabling environment for DRR, in order to guaranty sustainability in developing capacities. It will also look at the overall institutional arrangements for DRR set in the legal base, and the level of financial resources allocated to DRR as a sign of a strong commitment.

Within HFA Priorities 2–5, the assessment will concentrate on capacities related to institutional arrangements, competencies, working tools and resources, and relationships specific to these thematic areas. In terms of recommendations, concrete capacity development actions will be proposed at the end of each of the HFA Priorities 1–5 to address any challenges identified. The level of proposed actions will take into consideration the country's real capacity to implement them within three to five years.

TURKEY NATURAL HAZARD PROFILE

(Extract from the needs assessment in Annex I)

Potential disasters in Turkey are mostly associated with earthquakes, droughts, heavy rain and floods, landslides, rock falls, forest fires, industrial explosions and fires, wind and snowstorms, avalanches, heat wave, fog, transportation accidents and terrorist attacks. Given the size of Turkey and the fact that the main hazard is earthquakes, most disasters are localized in certain provinces and do not affect the entire country. However, there is no information for the vulnerability of social groups such as women, the elderly, minorities, etc.

Disasters are one of the biggest obstacles to the sustainable development and social security of Turkey. Measured in terms of direct economic losses, natural disasters have, on the average, accounted for 1 percent of GNP. The majority of the population lives in earthquake-prone areas, where major economic investments and significant vital infrastructure and related construction take place.

There were relatively recent earthquakes on 17 August 1999 and 12 November 1999, with magnitudes of 7.4 and 7.2 respectively, which took place in the populated and industrial north-western parts of Turkey. According to official data, the earthquakes caused 18,373 deaths and 48,901 injuries and a further 311,693 residential units and 46,538 business units either collapsed or were lightly to heavily damaged in an area of some 30,000 km^2, including 8 urban areas and

the country's industrial and economic centre. Numerous schools, health facilities, roads, bridges, water pipes, phone lines and gas pipelines were severely damaged. Up to 600,000 people were forced to leave their homes, perhaps half of who became homeless and had to stay in tents. GDP dropped 6.1 percent after the earthquakes mentioned above – 97 percent of human and economic losses from natural disasters in Turkey come from earthquakes.

The region affected by earthquakes is both geographically extensive and economically dynamic – it forms the industrial heartland of Turkey. The area's major industries include: auto mobile and other manufacturing; petrochemicals; repair of motor (and railway) vehicles; basic metals; production and weaving of synthetic fibers and yarns; paint and lacquer production; and tourism. The four provinces most severely affected (Kocaeli, Sakarya, Bolu and Yalova) contribute to over 7 percent of the country's GNP and 14 percent of the industrial value added. The next ring of affected provinces (Bursa, Eskisehir and Istanbul) suffer indirectly due to their close economic linkages with the main industrial area – industries supply services and material inputs to each other's production processes. Including all seven provinces, this broad earthquake region accounts for 35 percent of national GNP and almost half of the nation's industrial output.

Apart from relatively frequent earthquakes, Turkey is vulnerable to natural disasters such as floods and droughts, which increase water stress in parts of the country. Floods are therefore among the most frequent and costly natural disasters in Turkey in terms of human suffering and economic loss. The historical flood database for the period between 1955 and 2009 provides information for 4,067 flood occurrences in Turkey, causing 1,400 deaths and serious damage to 30,800 dwellings. Izmir, Rize, Kahramanmaraş and Trabzon provinces are the most affected areas[1]. Severe droughts were experienced during the springs of 1999 and 2000 in the southern regions of the country causing a reduction in agricultural production of 30 percent. Heat waves have not only caused increased forest fires but also human and animal deaths. Climate change may therefore lead to ecological, environmental, social and economic problems in Turkey.

Landslides, rock falls, avalanches and other disasters of hydro-meteorological origin have also caused the loss of many lives and considerable economic loss during the last 50 years. From 1955 to 2009 landslides affected 5,472 settlements and killed 200 people. In this period 68,300 dwelling units were relocated to safer places. Landslides frequently affect inner and eastern Anatolia, and particularly the Black Sea regions in Turkey. In the period of 1955 to 2007, 2,956 rock falls have occurred causing 34 deaths and damages to 22,500 houses. Snow avalanches are frequently observed in the mountain area of Aegean (eastern and southeastern regions) where snowfall is heavy. Between 1950 and 2010 there were 1,380 snow avalanches causing 1,420 deaths, 417 injuries and damage to 6,182 dwellings[2]. Mid- and eastern Anatolia regions and Kayseri, Niğde and Tunceli provinces are affected by rock falls.

Economic losses from flooding and landslides, as a proportion of Turkey's GDP, have historically been among the highest in Europe and CIS. Increasing temperatures coupled with decreasing precipitation are leading to serious water stress, particularly in the southern and

[1] GDDA database, 2009
[2] GDDA-ARDRPB database, 2009

western parts of the country. This situation will be exacerbated by sharply rising demand, for water, particularly from farmers. It is projected that nearly 20 percent of the surface water in some basins will be lost by 2030. The results of climate change will also seriously affect land use and land cover of the basins. Turkish shorelines are negatively affected by coastal erosion and flooding. In the Mediterranean coastal zones, the demand for water is lowering the water table and leading to seawater intrusion in most coastal aquifers.

In Turkey, 80 percent of the land area is subjected to various levels of soil erosion. Between 1955 and 2007, 500,000 ha of land have been included in schemes of reforestation and erosion control activities by the MEF. Between 1977 and 2007, there were 69,000 incidents of forest fires, which negatively affected 1.5 million acres of forestland. Every year 13,000 ha of forestland burns.

On a daily basis, traffic and ship accidents in the Bosphorus create losses for the city. For example, in 1979, a crude oil tanker (Independentza) had an accident at the southern entrance of the Bosphorus and 110,000 tons of fuel oil burned for more than two months, causing very serious environmental problems at the heart of the city. On average, 48,000 ships cross the Bosphorus every year – 173 serious accidents have taken place in the last ten years.

THE ASSESSMENT FINDINGS

HFA PRIORITY 1

Ensure that DRR is both a national and local priority, with a strong institutional basis for implementation.

The most important requirement for sustainability on any work on capacity development is ownership. For DRR, ownership starts with authorities showing a strong commitment to engage on a long-term approach in addressing disaster risk resulting from the exposure of populations and their assets to natural hazards. Ownership is initially shown by making DRR a priority through national legislation, by drafting a DRR strategy, putting in place adequate institutional structures to address priority risks, and allocating financial means to support national institutions to implement national strategies.

The 1999 Marmara Earthquake was an important turning point in Turkey. National authorities, as well as the public, started to reflect on issues related to disaster risk and vulnerabilities of cities. DRR began to be more seriously discussed at policy level involving authorities, academics and professionals from various sectors. Through the participation of congresses, such as the one in Izmir on the International Decade for Natural Disaster Reduction[3], the publication of the Earthquake Council Reports of October 2004, and various learning events, the will to engage in DRR was clear. Turkey also adopted the HFA as a guide for its DRR work. However, the general

[3] UN-IDNDR Izmir in 1998–2000

feeling is that DRR hasn't got sufficient support from various political entities of Turkey in terms of advocacy.

Turkey has had a law on disaster management since 1959. A new law on disaster management was passed in 2010 – Disaster Law No. 7269. However, the scope of the new law is limited to earthquake, landslide, rock fall, avalanche, fire and flood hazards. This law still deals with disaster preparedness and response but doesn't address risk reduction in a comprehensive manner, even though it mentions prevention and mitigation.

One reason could be that in the preparation of the law, academicians and disaster management practitioner's views might not have been sufficiently considered. In addition, there seems to be a lack of knowledge of DRR concepts by institutions that are involved in making legislative arrangements. Also, although Turkey has adopted the HFA, the content of the plan might have not been fully understood by the relevant institutions involved in drafting the law. Many of those interviewed recognise that DRR is still perceived as emergency preparedness and response even though in some regions there have been significant advances in risk reduction as part of long-term development. Finally, officials and managers of disaster and emergency situations in Turkey only have the experience of post disaster response activities and do not yet fully grasp risk reduction concepts as a contributor to long-term sustainable development.

In terms of structure, Turkey's parliament has a working group on disaster management. Law No. 5902 also establishes presidency of disaster and emergency management – the presidency is also likely to be the DRR National Platform (NP) coordinator. Turkey (with its National Focal Point) instigated studies to establish an NP after the 2007 Global Platform meeting. It was decided to establish a multisectoral National Platform in January 2011 and its first meeting is due for July 2011. The lack of a common terminology and understanding of DRR concepts is a gap that will need to be addressed as soon as the NP starts its activities, in order to avoid possible misunderstandings in roles and responsibilities of various institutions involved.

AFAR is the main organization in Turkey in terms of capacity to advance DRR. It has 4,500 personnel that go through regular training and are posted in 81 regions. They already have good technical capacities to assist local governments, especially in disaster preparedness and response. With some tools, guidance and training in DRR concepts, AFAR is more than capable of building further capacity in Turkey for DRR.

While there is a new disaster law and a national DRR platform, there is neither a DRR national policy nor a DRR strategy, and subsequent plan of action to guide all organizations at central and local level. Supporting the elaboration of a DRR national policy, a strategy and action plan and their implementation will require coordination by the NP. The SPO is very supportive of the elaboration of the DRR policy and strategy, and it has the technical capacity to do it. However, SPO is also aware of the many strategies that are being prepared for disaster management, for climate change adaptation, for environmental sustainability etc. SPO is advocating for a solution to integrate some of the topics for more efficiency in implementation and use of financial resources.

In the context of various legislations related to local governments (such as Law Nos. 5302 and

5393) some responsibilities are defined for risk reduction and emergency planning. The local governments have more authority with the establishment of the new institution. A common problem is that in most cases, provincial officials charged with disaster management are unfamiliar with on-the-ground realities since they are often not from the provinces in which they work. In addition, the rapid turnover of government officials in some provinces may render DRR works and rescue plans obsolete.

In terms of mainstreaming DRR into development, the SPO prepares five- and seven-year development plans. The natural disasters issue is covered by a sectoral group established within SPO due to the importance of disasters on sustainable development. The natural disasters topic is included in the eighth Five Years Development Plan (2001–2005) as an individual section under the item 'Increasing the Efficiency of Public Services'. In this plan, several proposals on the current problems faced through the occurrence of episodic disasters causing both human and economic losses are included. In addition, the need for social, legislative, organizational and technical structures in order to better achieve DRR is highlighted. Another important item included in this plan is the achievement of continuous and systematic educational activities on public awareness.

In the ongoing ninth Development Plan, under the item 'Rationalization of Responsibilities and Authorization Among Organizations', the need for reorganizing the process of 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 and rural urbanization practices within these.

The ministry of development planning has a very good understanding of how DRR and climate change can be mainstreamed in various sectors of development (representatives of the ministry attended the third Global Platform). The ministry provides technical support in strategic planning and reviews plans of 80 different sectors to see how it can ensure that various issues such as DRR are addressed (all strategic plans have to be approved by the SPO, this is mandatory). SPO has gone further in influencing all sectors to engage in DRR by providing financial incentives for DRR. For example, the national urban development strategic plan is a key one for Turkey and it has DRR quite well mainstreamed with sufficient funding. The challenge is that local governments are free to decide if they will implement the activities or not, due to various other priorities. Ministries seem not to have powers to make the local governments accountable in terms of implementation due to the actual decentralization system.

According to the Disaster Law, local governments are to mainstream DRR, including preparedness for response into their local development plans. A majority of local governments do not have the technical capacity to integrate DRR and CCA into their plans but they have access to technical support from AFAR. AFAR can only provide technical support but there are no real mechanism that would oblige the local governments to implement their plans. Istanbul is the exception as it has been implementing a very large programme in DRR including a strong preparedness for response component (see Annex).

Community participation and gender sensitivity have not been taken into consideration effectively in disaster management in general. An examination of the national legislation and

action plans for DRR reveals that there are no gender-based provisions and no attention is specifically given to the situation of women either before or after disasters. However, there are some efforts to foster women's empowerment and gender equality throughout Turkey. To access a toll that explains the gender concept in DRR might be very useful.

In Turkey, the State has a legal obligation (Disaster Law No. 7269) to fund the costs of reconstructing buildings after an earthquake – but the State does not have a similar legal responsibility to provide funding for DRR. However, the SPO has clearly indicated that there is funding available for DRR for central, and especially local, governments as long as they make it as a priority.

HFA PRIORITY 1: RECOMMENDATIONS

1. To advocate for secondary legislation (by-laws) specifically for DRR as part of, or in complement to, the new Disaster Law, Municipal Law, Special Provincial Administration Law etc. in order to build up further ownership for DRR and give it a more prominent place in the context of the overall attention given to disasters in Turkey.
2. Organize a yearly event for ministries during International Disaster Risk Reduction Day. The potential engagement of Turkey as a donor and technical advisor in international cooperation in DRR should also be used as a strong tool for national DRR advocacy.
3. Organize a yearly DRR overview course for national authorities from various ministries and State level institutions. This should enhance the understanding of risk reduction concepts as part of the national long-term development processes.
4. Prepare a national policy, a national strategy and subsequent operational plans for DRR that will address various hazards (not only earthquakes).
5. UN to provide tools and technical guidance and training in mainstreaming DRR, CCA and ES in an integrated manner into development planning to personnel involved in planning in ministries and at local government level.
6. To organize regular one-day events for mayors of cities to discuss DRR and urban risk in particular, and to train local level technical staff on urban risk reduction. These sessions will be an occasion to facilitate the sharing of experiences between cities in Turkey, and also to sign up more cities to the UNISDR campaign for resilient cities that may increase commitment to address disaster risk.
7. Provide training for members of the newly established National Platform for DRR on their roles and responsibilities. Advocate for the establishment of regional/municipality level DRR platforms and provide orientation.
8. The UN to share with AFAR all relevant tools and guidelines in DRR to be adapted to the Turkey context to foster a better understanding of DRR concepts.
9. Put in place clear mechanism for allocating funding for DRR at national and local levels (1 percent of the budget). All relevant institutions and organizations should have a DRM budget. A mechanism should also be put in place to monitor the proper use of this budget.
10. Improve networking with international organizations/institutions present in the region and to promote the increased involvement of such organizations in the strengthening of DRR in Turkey.

HFA PRIORITY 2

Identify, assess and monitor disaster risks and enhance early warning

Rapid urbanization in Turkey has led to the exponential growth of unregulated housing. Population growth along fault lines, flood plains and coastal areas is exposing a greater number of people to the effects of earthquakes and severe weather. While these risks may be considered moderate in themselves, the rapid growth in population, investment and increasingly complex infrastructure associated with cities is thrusting an even greater number of urban citizens into higher categories of risk. Naturally occurring hazards are co-mingled with other equally pressing urban issues such as: decaying infrastructure; poor housing; homelessness; hazardous industries; inadequate services; unaffordable and poor transport links; pollution; crime; insecurity; and conflict.

There are some examples in Turkey that illustrate both a growing awareness to these issues in cities and communities alike and what is necessary to protect their essential services and related infrastructure. For example, Istanbul counts on detailed studies on vulnerability and risk assessment for the different sectors such as health, education and energy, but also with loss estimates for each one of the districts, based on different earthquake scenarios. Particular interest has been given to detailed studies regarding vulnerability assessment of the building stock, in such a way that intervention in different districts can be prioritized. Landslide and soil liquefaction susceptibility maps are available for the entire city. Although the integration of DRR associated with seismic risk into development is well developed, there are no similar concerns for droughts and floods.

Since 17 August 1999, several projects have been carried out in Turkey in order to begin debates on the disaster management concept, risk analyses, GIS etc. The report of Dr. XXX in Annex gives a very detailed overview of the capacities that have been built within many institutions since 1999 to generate disaster risk information. However, the information seems to remain with the technical institutions and there isn't enough use of the information by national authorities in planning processes. Besides the city of Istanbul, other regions has not yet engaged in proper disaster risk assessments and profiling in order to better understand exposures and vulnerabilities to hazards that regularly affect the country. Most of the work so far has been in hazard mapping. In addition, all hazard types at different levels (country, region, urban and local) are not taken into account. At national level there is only an earthquake hazard map that grades the seismic hazards according to earthquake zones. The maps for earthquake, avalanche, landslide and rock fall are prepared according to the number of occurrences in the settlement areas.

Most local governments have some hazard maps but no real risk profiles. An important factor is that technical staff at local government level do not have a good understanding of disaster risk in general. AFAR recognizes that there are gaps at local government level in using proper risk assessment for mainstreaming DRR into regional development planning. AFAR has been promoting the necessity to conduct risk assessments, but again, local governments are free to decide if this is a priority or not. AFAR can only offer technical advice and guidelines once a local government decides to conduct a risk assessment. AFAR has a presence throughout Turkey

and its personnel attend regular training sessions – one of the topics being risk assessment. AFAR has a methodology for risk assessment but lacks guidelines for the risk assessment process. SPO will be working with AFAR in the near future to prepare guidelines. AFAR will then partner with various Turkish universities to conducting risk assessments in most disaster prone regions of Turkey.

In terms of early warning, Turkey has established a national coordination body. Early warning and communications systems for immediate threat of disasters are well developed. Warnings for the public are issued for a variety of parameters, all of which cause damage to life, property and infrastructure – examples of these are strong precipitation, hail, storms, cold and heat waves, coastal and sea area warnings, sand and dust storms and forest fires. The messages outline possible risks such as flash flood, landslides, lightning and hail for a strong precipitation event.

However, it is not clear how much this body looks at early warning for risks that are developing over long periods of time using scientific data collected by different technical agencies such as Hydro-Meteorological Services and seismology institutes. Interviews also brought up the fact that meteorological and hydrological data is not always shared on a 'real time' basis between government agencies. This restricts early assessment of floods, avalanches, droughts and other weather conditions and can cause serious flaws in early warning. In the case of floods, avalanches and droughts, triggers for specific mitigation and response actions are often unreliable because of inadequacy of detection tools (such as weather stations and observations) and inadequate linkages between indices and impacts. The lack of effective impact and reliable assessment methodologies has hindered the activation of mitigation and response programmes and reliable assessments of weather related impacts. In addition, data and information products produced by early warning systems are reported not to be user-friendly, as they often do not provide the type of information needed by users for making decisions (users need to understand the data they are presented with). Users are also seldom trained on how to apply this information in the decision-making process in order to influence the integration of DRR measures into development planning.

HFA PRIORITY 2: RECOMMENDATIONS

For legislative and institutional arrangement in terms of risk assessments and early warning mechanisms, please see the needs assessment report in Annex I

In terms of capacities, the following could be emphasized further:

1. Develop country-tailored models for vulnerability and risk mapping, assessment and analysis. Organize training of technical personnel at central and regional level for vulnerability and risk mapping and assessments. Perform vulnerability and risk mapping and assessments in a pilot area to test the tool and competencies of assessors. This exercise should also help define multi-hazard priority disaster risk areas in Turkey.
2. To conduct proper risk assessments in all regions of Turkey in order to compile a comprehensive risk profile of Turkey. This will then be presented to national authorities to serve as guidance to influence decision making in terms of mainstreaming DRR into

the development processes. The quality of information should be such that non-technical personnel at decision-making level can easily understand it.

3. Develop capacities in GIS at local level – e.g. hardware, software, trainings and technical support.
4. Advocate and support the establishment of a proper national risk observatory in Turkey.
5. Organize sessions for ministries and State level institutions on early warning in order to foster better understating of slowly developing risk trends. Participants should be of the level that is involved or can influence development planning.

HFA PRIORITY 3

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

In terms of public awareness on disaster risk, this has increased since the Marmara earthquake. However, education of the public in disaster prevention and risk management in general has been under the responsibility of the central government (the department of civil defense and the Ministry of National Education). Disaster prevention and risk management are not part of public daily life as they are seen as the responsibility of the government and a few organizations. Therefore, individuals believe it doesn't have much to do with them.

Subjects such as disaster management or DRR are very new. While a lot is being discussed on disaster related issues through local and national media, and also under community-based disaster management programmes, there is still a need to review public messages in order for the public to better understand disaster related concepts. For example, there is a perception regarding cities that only buildings are subject to disaster risks.

Although there have been important projects aimed at raising public awareness on disaster risk (see needs assessment report in Annex I), the current situation can be summarized as a pervasive state of unpreparedness. The educational work done so far has focused solely on 'what to do and how to do it'. Information on earthquakes is presented, non-structural mitigation is demonstrated, what to do during an earthquake is shown and a trial is made. This focus is certainly important, yet clearly another focus is required – to find the mechanisms to get the public to take action.

Media in Turkey (television and radio) play an important role in disseminating public information and educational programmes that help to improve the population's knowledge and behavior in the face of hazards and risks. However, low capacity to make their own programmes reduces the extent to which national media and broadcast services can fulfill a more important role in hazard education and warning. An additional shortcoming is the lack of interaction between professional originators of warnings and professional media presenters and programmers.

When it comes to national authorities and decision makers, one problem is that trainings are conducted in various concepts of disaster risk. However, knowledge is often lost due to the high turnover of personnel in institutions. Local governments and non-governmental organizations (NGOs) are also not playing a sufficient role in raising public awareness in disaster risk – most

likely because they also lack knowledge on DRR concepts (while they are quite well trained in disaster response). Istanbul is an exception as the municipality has undertaken some training and capacity building activities targeting both municipal staff and the general public. In general, there is already good capacity within Turkey itself to produce adequate training materials and to train national and local government level civil servants and to conduct public awareness campaigns (fare schools and safer hospitals).

In terms of school programmes, after 1999 the Ministry of Education changed school curricula with the support of universities. In primary and secondary level (age 6–14) the new curriculum focuses on preparation and protection for disasters. In high school (age 15–17) more detailed knowledge is made available, like reasons for disasters, protection of the community, mitigation and response activities. Schools invite external specialist speakers for training of both teachers and students and they do evacuation exercises yearly. However, only earthquake risk education is offered in primary and high schools – there is no systematic education programme for all natural hazards and existing education programmes are more project-based.

One of the projects is Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP) and the Design and Implementation/Dissemination of Public Awareness Campaign and Materials for Disaster Preparedness and Building Code Enforcement module is conducted by Beyaz Gemi Training and Consulting[4]. Within the scope of the ISMEP project, one of the most important implementations is the preparation of training modules for disaster preparedness. In order to make the public ready for possible disasters and to develop safe life awareness among them, fifteen different training modules have been defined. These require the preparation of different documents with different themes and appropriate contents to reach all people living in Turkey and to ensure the institutional preparedness in every sense. In addition, child-friendly training materials were also prepared. All training materials have been presented to the public in English and Turkish at www.guvenliyasam.org. Moreover, within ISMEP and since 2008, Beyaz Gemi Training and Consulting have been implementing a Safe Life Volunteer Campaign. The aim of the campaign is to ensure disaster prepared and resilient communities in urban areas and Istanbul by dissemination of a 'risk reduction culture' at individual, family and institutional levels – establishing a social alliance against disasters. It also defines who participates in disaster preparedness training organized by the governorship of Istanbul, who takes the role in disaster preparedness activities of Istanbul, who takes responsibility for the safety of him/herself and for his/her surrounding. Up to 26,000 people have been reached by the Safe Life Volunteers campaign, all of whom have received disaster preparedness training.

Recently, a school-based disaster education project was proposed by JICA to be implemented by the Ministry of Education. It is a three-year project that started in 2010. The project proposes to improve school-based disaster education in the Marmara Region. Primary school teachers and school administrators of both primary and secondary education were chosen as target groups. The project's output can be summarized as follows:

- To increase the disaster education capacity of teachers and formatters in order to apply

[4] www.beyazgemi.com.tr

the training on disaster education;
- To build the interdisciplinary implementation basement of disaster education in school;
- To improve disaster management systems in schools.

'Earthquake Parks' that are built as a part of the Disaster Preparedness Education Unit (DPEU) support the theoretical training and enable practical training. DPEU and MoNE are continuing to give basic disaster awareness and earthquake park training to nearly 250 students from grades 4–8 every week during the education period.[5]

In general, development of standards for public education and community organizations reaching the public at large – active participation of the public, training the trainers and production of training materials – have not been considered.

In terms of academic circles, disaster research and studies are mostly focused on Marmara the region and particularly Istanbul, while other regions of the country are quite neglected. On the technical side, Istanbul counts on a number of universities and research institutes where aspects related to DRM are formally taught through regular and specialized training. As JICA gives importance to the training of future core human resources, a long-term PhD training programme entitled 'Strengthen Disaster Research Capacity' was initiated in March 2009 for a period of three years. Within the context of the project, two academic personnel (one from Istanbul Technical University and the other from Middle East Technical University), started PhD education in Japan in the field of Disaster Prevention Strategies and Urban Planning. Bogazici University KOERI has started an earthquake risk mitigation non-thesis master's programme to give information about engineering and urban planning on how to evaluate urban earthquake risk and how to use this information in application since 2010. ITU offers disaster and emergency master's degree and certificate programmes.

Again, in terms of capacities, Turkey has a good network of institutions that can provide trainings, diploma studies and research on earthquake risk management. Turkey has a capacity to offer support to neighbouring countries and to continents facing earthquake risks such as Africa. However, not much is yet developed in terms of DRM for other hazards such as droughts and floods.

HFA PRIORITY 3: RECOMMENDATIONS

1. Provide technical guidance and support to prepare information and public education materials together with AFAR on concepts of disaster risk and vulnerabilities in order to increase awareness of citizens and the media about their exposure to various types of hazards and climate change. There should be a commonly agreed terminology used by all communication mechanisms (the UNISDR terminology guide can be translated and disseminated).

[5] www.ahep.org

2. Advocate for technical institutions to be more proactive in providing understandable information to the public with appropriate timing, and not wait for the public to request it. A template could be developed in order to guide the institutions on the content and the timing for issuing warnings on developing risks.
3. Advocate for the Ministry for National Education to mainstream DRR and climate change into national educational curriculum at all levels – primary, secondary, and university.
4. To include DRR and climate change as subjects in all various disaster management trainings run by various training institutions.

HFA PRIORITY 4

Reduce the underlying risk factors

The analysis below is an extract from the needs assessment report. The assessment team did not have anything else to add as it found the quality of the analysis very good.

Environmental and Natural Resource Management

As the Fourth Assessment Report (AR4) of the IPCC states, Turkey is located in the Mediterranean Basin, an area that will be affected most severely by climate change. Today, climate change affects daily life in a number of ways, ranging across the physical and natural environment, agriculture, food security, clean water, and health to the economy, technology, and even human rights.

Turkey has therefore adopted the "Action Plan on Drought Preparedness and Combating the Drought" in 2008 and Turkey, considering its own special circumstances, is continuing to contribute to global action for mitigation of the negative effects of climate change while sustaining its development within the scope of both UNFCCC and sustainable development principles. Crucial steps have been taken within the framework policy legislation, institutional structuring, and measures concerning the prevention or mitigation of the effects of climate change, although Turkey does not have any mitigation commitments in the first commitment period of the Kyoto Protocol (2008-2012). Contributing to global efforts on climate change, erosion control and protection of water resources is high on the list of topics on Turkey's agenda.

Therefore, the Contract of the Joint Program "MDG_F 1680 Enhancing the Capacity of Turkey to Adapt to Climate Change" (JP hereinafter) was signed on 3rd April 2008. The JP will provide an active contribution to the implementation of the UN Millennium Declaration, specifically to Goal 7, Ensure environmental sustainability, and Goal 8, Develop a global partnership for development. Expected outcomes of the JP were described as: Integrating adaptation to climate

change into Turkey's national development plans; Enhancing national, regional and institutional capacity; Integrating adaptation to climate change into all UN programs.

As part of this program, FAO will work with other UN Country Team members and the government institutions to identify knowledge gaps and will help to strengthen staff capacity to deal with climate change issues in the agricultural, forestry, livestock, and fishery sectors. A second expected outcome of the JP is to improve the institutional capacity to collect, store and use climate related information to help prevent or decrease the negative effects of floods and droughts. This requires coordination among different institutions with different mandates that collect and store hydro-meteorological and environmental information. Moreover, the analysis of data with the aim to produce an early alert for the occurrence of these extreme events is challenging, as it involves a large number of variables, needs access in near real time of a large range of data and more importantly, requires the existence of the appropriate algorithms to interpret them within an acceptable margin of error. As part of this component of the JP, FAO will help to enhance the technical capacity of all those involved in these processes and will work with national institutions to develop and strengthen an environmental information management system and early warning systems for floods and droughts. For this purpose FAO will work with the institutions responsible for implementing the Turkish Agricultural Drought Action Plan as well as the TEFER Project.

Turkey's 9th Development Plan (2007-2013) also highlights the critical importance of environmental issues, including climate change, cleaner production, waste management, and efficient and sustainable use of water and other natural resources. The National Rural Development Strategy for Turkey (2006) also prioritizes natural resources based on rural development as key to overcoming rural and urban disparities. Consequently, UN support to the Turkish authorities on climate change issues through the proposed programme will build on national efforts already underway. Like most European Union (EU) candidate and accession countries, Turkey recognizes the criticality of environment for the success of its reform agenda. UNDP has been asked specifically by the Government, largely through the MEF, and the EC to assist the country's efforts in identifying priority areas for intervention and further investment, mainly in the areas of sustainable development and climate. Turkey's UNDAF covers the 2006-2010 period and includes democratic and environmental governance as one of three outcomes.

On 15 June 2010, regarding Turkey's National Climate Change Strategy, WB approved a loan to promote private sector clean technology investments and operations and integrate principles of environmental sustainability, including climate change considerations in key sectoral policies and programmes in Turkey.

Social and economic development practices

After the two major earthquakes in 1999, which caused widespread destruction of the building stock, the Government of Turkey decided to enforce earthquake insurance on a nationwide basis with the sole purpose of privatizing the potential risk by offering insurance through TCIP and then exporting the major part of this risk on to the international reinsurance and capital markets. One particular transformation that came out of Turkey's policy shift was therefore its risk-financing programme. NCIP was set up to provide compulsory insurance for residential

buildings in order to transfer risks from individuals and State budget. NCIP was carried out by the TCIP, which was set up as per the Turkish Government's Earthquake Insurance Decree, effective in December 1999, as a separate State-owned legal entity.

Initially funded by the WB, TCIP was founded on 8.8.2000 and the programme has been in effect since then. All registered residential dwellings that are located within municipality boundaries are required to be under the compulsory earthquake insurance coverage. With its 2.7 million insurance policies count as of April 2008, TCIP has a potential to become the largest earthquake insurance company in the world.

Before the establishment of TCIP (2000), earthquake insurance in Turkey was mostly provided as an allied peril to fire and engineering policies. The penetration rate was quite low, especially for residential buildings (5 percent at that time). Within a year after the establishment of TCIP, the number of compulsory insurance policies sold reached to 2.4 millions, corresponding to approximately 20 percent penetration rate. In the last few years, in spite of the adverse attitude of the Government and no legal enforcement, the penetration rate was kept slightly above this level (3.4 million as of December 2009, corresponding to a penetration rate of 25 percent).

Limitations of the TCIP, however, are that it; does not cover aspects of DRR such as retrofitting; does not promote renewal of policies; has a limited penalty for absence of insurance, which has prevented a further productivity of the policy. In addition, "The Disaster Insurance Law" still has not been enacted, which limits tighter enforcement and enlargement of the compulsory nature of the insurance. One of the weaknesses of the insurance pool is that it is limited to earthquakes. It does not cover other disasters such as floods, landslides, or avalanches. Therefore a draft insurance law has been prepared and presented to the Parliament.

Hydro-meteorological risks such as drought, frost, hail, heavy rain, flood and storms cause significant agricultural damages in the country. In order to provide coverage to hydro-meteorological risks which are threatening the agricultural sector, and also with increasing likely effect of climate change dependent on global warming, the implementation of an insurance mechanism has been considered and for this purpose, "Agricultural Insurance Code No. 5363" was brought into effect in 2005. In order to improve and expand agricultural insurances and carry out other technical services "The Agricultural Insurance Pool" was established.

Compounded by several extraordinarily costly and disruptive natural disasters during the later years of the 1990's, there has been a growing commercial awareness of a correlation between disaster preparedness, risk reduction, and the survival of businesses. The importance of public-private partnerships for disaster management has been therefore stimulated by a combination of building codes and reinsurance.

Motivated by a desire to protect their own assets or their competitive standing in markets, some of the commercial enterprises have also invested heavily in business continuity services designed to assess and then mitigate physical or operational risks to their businesses. Some of the local businesses, trade groups, corporate interests, labour organizations, NGOs and community leaders are trying to find effective means to share their respective abilities and resources in the

assessment, planning and reduction of the risks they share in their community.

Land-use planning and other technical measures

In Turkey several earthquakes, floods, droughts, etc., that resulted in remarkable losses both in human and social terms and in physical and economic aspects, showed clearly that significant inadequacies existed in the current "spatial planning system" in which the disaster hazard and risk analysis are ignored, and "disaster management approaches" which have mostly focused on "post-disaster works" and also "engineering approaches", which consider the disaster issue mainly as an issue of buildings and focus basically on earthquakes.

With regards to land-use planning and technical measures, a whole range of legislation and institutional arrangements have been define in Turkey:

- According to the Decree Law No. 587, Compulsory Earthquake Insurance Institution was established and implementation was undertaken beginning in 1999.
- Building Inspection Law No. 4708 was put into force in 2001 and to be implemented in 19 provinces.
- The Earthquake Resistance Design Code was revised twice, in 2006 and 2007, and a new Code put into force in March 2009.
- The Circular on Micro-zoning Maps was published in 2008.
- Disaster mitigation plans were prepared in the Ministry of Health.

In addition, just after the Marmara Earthquakes, the Council of Ministers released some regulations including the "Building Audits", "Implementation of Building Audits Regulations", "Building Materials", "Building and Development in the areas which are out of the metropolitan municipalities". These regulations are aimed at "prevention", "reducing the risk" and "mitigation" and all the mentioned regulations are implemented and monitored by the MPWS, or it's internal bodies related to the subject at central level; and by the Municipalities, to which the MPWS assigns some of its responsibilities, at the local level.

While the Disaster Law and the Development Law assigns significant responsibilities to central government ministries, according to the decentralization provisions of the 1985 Development Law, the primary responsibility for land use and building regulation resides at the municipal level. The development law requires that municipal and provincial administrations prepare development plans. Municipalities must develop and maintain urban development master plans with limited technical guidance or review from central authorities. While standards for seismic micro-zonation to guide safe construction are developed by the MPWS within the regulations concerning "Specification for Structures to Be Built in Disaster Areas", it is the responsibility of the municipalities to administer and enforce these regulations in practice.

Natural disasters (mainly earthquake) are also included in strategic plans of municipalities. For example, in strategic plan of IMM, disaster risks and deficiencies of the city are included in the

plan and recommendations are also included in these plans. For example, it is mentioned in the document "Investing in Turkey and Istanbul", prepared by the Metropolitan Municipality of Istanbul, that local authorities continue to work on risk reduction issues, based on the proposals of the EMPI in order "to restore, renew and strengthen the fabric of the city and thus minimize the loss of lives and property from any future earthquakes". The master plan for Istanbul is prepared in coordination between government agencies, universities, NGOs and also private sector entities.

Projects on Urban Development, Rehabilitation and Transformation have a focus on strengthening and rehabilitating earthquake risk areas, transformation projects for geologically weak zones and for unhealthy constructed building districts as well as master projects for rehabilitation and transformation of Historic Peninsula. Urban Transformation Projects are implemented as a continuation of some pilot projects of the EMPI. Re-development programmes have been designed for some neighborhoods such as those in the Zeytinburnu District.

Another example of Turkey's efforts to move from emergency response toward DRR include the Strategic Disaster Management in Urban Areas programme, which covers a range of issues, including emergency management, infrastructure and lifelines, super structure buildings, cultural/historical sites, legal issues and training. In addition, the ISMEP is a significant attempt to implement essential principles of comprehensive disaster management financed by the World Bank and the European Investment Bank. The responsibility for project implementation and monitoring is vested in the Istanbul Project Coordination Unit established under the Istanbul Special Provincial Administration. Accordingly, ISMEP Project consists of three (3) sub-components; Enhancing Emergency Preparedness Capacity, Seismic Risk Mitigation For Priority Public Buildings, and Enforcement Of Building Codes.

The objectives of the ISMEP are therefore to enhance the technical and institutional capacity in disaster management, to improve the public awareness in emergency preparedness and response, the feasibility studies of public buildings against seismic risk and retrofitting or reconstruction of these buildings with respect to the feasibility results, support to the national disaster studies, inventory and the project design of cultural and historical heritage buildings against seismic risk and the practical measures for building code enforcement. ISMEP has initiated a process that aims at transforming Istanbul in the next 10- 20 years into a city resilient to major earthquake (www.srmcistanbul.org).

From the above, it can be derived from the policies that the country is now beginning to take the problem as not only "a problem of response" but also "a problem of development" The policies of the country are reaching a more "comprehensive" approach, but still, they need to be progressive, since the legislation is setting the same responsibilities and authorization for different organizations.

The above description shows that Turkey has gone a long way to develop its capacities in terms of reducing underlying risk factors, especially regarding earthquakes. Few gaps still remain and can be summarized by the following:

Planning for disaster hazards (from macro scale to urban plans) is considered in the context of

geological, geophysical and geotechnical surveys, and is usually done in a general manner; more detailed and specific surveys, multi-hazard maps and micro zoning maps for all disaster-risky settlement are not available.

There is at times a feeling of general resistance of decision makers / governments at central and local level to integrate DRR methods and contingency planning into the spatial planning system.

The Building Inspection Law No. 4708 is not sufficient enough in content, and also in terms of implementation and inspection matters.

HFA PRIORITY 4: RECOMMENDATIONS

The recommendations below are already mentioned in the needs assessment report and are valid ones.

1. Regularly initiate various studies that could influence disaster risk and ensure that the results are systematically presented to members of the National Platform in order to influence decision makers to take measures.
2. Systematically mainstream DRR, CC and ES into policies, plans and programmes for sustainable development and poverty reduction of various sectors of the economy. A mainstreaming tool will be shared with AFAR and adapted to the context of Turkey. Trainings will be offered to technical staff of various ministries and State institutions of different sectors of the economy involved in planning.
3. Increase the involvement of the private sector in activities aimed at DRR with special emphasis placed on insurance companies for the purpose of building on achievements already made in promoting public private partnerships to better engage the private sector in DRR activities. Various trainings can be offered to the private sector to explain how they could, in practice, engage and benefit from DRR.
4. Develop national capacities for climate services to support medium- and long-term sectoral planning through strong collaboration and cooperation across line ministries and with the Meteorological and Hydrological Service, and through enhanced regional cooperation with other SEE and EU countries.
5. Enhance investments in climate modelling and forecasting and analysis to support strategic and sectoral planning for at-risk sectors.
6. Apply comprehensive, compulsory, rewarding and deterrent insurance policies instead of so-called compulsory insurance regulations as a part of risk mitigation activities (to support and enhance the existing law proposal that would include the all types of disasters through some regulations.)

HFA PRIORITY 5

Strengthen disaster preparedness for effective response at all levels

In terms of findings, the assessment team concurs fully with the analysis contained in the needs assessment report. The report explains well all existing capacities and capacity gaps in Turkey in terms of preparedness for response.

HFA PRIORITY 5: RECOMMENDATIONS

The recommendations of the needs assessment report are in line with what this assessment team would have recommended. The recommendations below are the ones that specifically target capacity development.

1. Ensure participation of NGOs and other private sectors in establishing a National Disaster Emergency Aid Plan at a strategic level. These private sectors and NGOs should have a role within Disaster Emergency Aid Plans.
2. Strengthen disaster preparedness for effective emergency response at all levels and ensure that rescue teams get regular training and access to adequate response equipment.
3. Increase the use of simulation exercises (including drills, orientations, functional and tabletop exercises) as a regular feature of emergency response and preparedness training in Turkey.
4. Proceed with the establishment of a National Exercise Simulation Center (NESC) at DEMP Headquarters. The NESC will provide state-of-the-art facilities to serve the all-hazards preparedness and response mission through pooling resources, maximizing efficiency and providing sustained exercise and training support to all stakeholders in the countries of SEE.
5. Proceed with the establishment of the Centre of Excellence for training fire-fighters and coordinating responses to forest fires in the countries of SEE, including the harmonization of the development of fire-fighting brigades in the countries of the region through standardization of equipment and procedures, thus promoting regional cooperation and collaboration in DRR in SEE.
6. Strengthen regional and international links to support more effective wild fire risk preparedness and prevention in Turkey.

TURKEY'S CAPACITY TO CONTRIBUTE TO ADVANCE DRR AT REGIONAL AND GLOBAL LEVEL

During the assessment mission, the team was impressed by the capacity in Turkey in terms of disaster preparedness and response, and the level of engagement that already exists in terms of addressing risk reduction as part of the development process. Although there is always room to improve in a few areas that are clearly defined in the capacity assessment and the needs assessment, Turkey has developed substantial capacities in terms of addressing DRM regarding earthquakes, and also for emergency preparedness and response. Turkey can offer expertise in the subject of earthquake risk management (i.e. earthquake monitoring, building retrofitting, earthquake engineering studies, earthquake preparedness including search and rescue and rubble management) and recovery. In terms of DRR, Turkey has a good experience to share in terms of mainstreaming DRR into development planning processes, which is a subject that many

governments struggle with technically. Technical support could also be offered by Turkey in disaster management on the following areas:

- Building disaster management technical teams;
- Training on disaster management;
- Building early warning system;
- Preparing urban and/or rural DRM plans;
- Organizing regular simulation exercises for testing disaster response plans.

In close collaboration with the UNDP Country office, future steps could be defined on how to reinforce the partnership between Turkey and UNDP in order to facilitate access for Turkey to offer its DRR and disaster management expertise to many ongoing and new initiatives. Concretely, discussions could be initiated to define a role for Turkey in providing technical support to neighboring countries of SEE (Serbia, Croatia, Macedonia, Albania, Kosovo, Montenegro, and Bosnia and Herzegovina) as part of this European Union funded project. And by collaborating with CADRI it could the new project aiming at building capacities of regional organizations in Africa, namely ECOWAS, ECCAS, IGAD and SADC.